

BID ENVELOPE
MSCAA PROJECT NO. 23-1469-03

NAME OF PROJECT: EAST PARKING LOT EXPANSION - PHASE 5 - CONSTRUCTION

BIDS DUE: Thursday, May 7, 2026

TIME: 2:00 PM Local Time

MEMPHIS SHELBY COUNTY AIRPORT AUTHORITY (MSCAA)
PROCUREMENT DEPARTMENT
MEMPHIS INTERNATIONAL AIRPORT
4150 Louis Carruthers Drive
Memphis, TN 38118 (901) 922-8000

BIDDER IDENTIFICATION:

Bidder _____

Address _____

TENNESSEE CONTRACTOR LICENSE INFORMATION:

License Number _____

License Classification Applicable to Project _____

License Expiration Date _____

Dollar Limit _____

SUBCONTRACTORS (OR PRIME CONTRACTORS) TO BE USED ON THIS PROJECT IN THE BELOW LISTED CAPACITIES:

Note: Where applicable, one contractor/subcontractor performing electrical, plumbing, heating, ventilation, air conditioning, and masonry work must have its license number, applicable classification, expiration date and dollar limit on the BID ENVELOPE containing the BID PROPOSAL. **Prime contractors** who are to perform the electrical, plumbing, heating, ventilation, air conditioning or masonry work **MUST** list themselves as "Self-Perform" in the Sub-contractor list below.

	Sub-contractor List	License No.	Applicable Classification	Expiration Date	Dollar Limit
Electrical					
Plumbing					
Heating					
Ventilation					
Air Conditioning					
Masonry					

BID ENVELOPE

COMPLETE THIS FORM AND ATTACH IT TO THE OUTSIDE OF THE BID ENVELOPE. PLEASE REVIEW INSTRUCTIONS TO BIDDERS FOR BID PACKAGE DELIVERY AND FOR OTHER INFORMATION AND CONDITIONS. MSCAA RESERVES THE RIGHT, IN ITS SOLE DISCRETION, TO REJECT AND DISQUALIFY YOUR BID IF YOU, YOUR PARENT, SUBSIDIARY, AFFILIATE, OR PREDECESSOR IN INTEREST OR ANY OF YOUR SUBCONTRACTORS, SUPPLIERS, AND/OR THEIR PARENTS, SUBSIDIARIES, AFFILIATES OR PREDECESSORS IN INTEREST HAVE PENDING LITIGATION OR CLAIMS WITH THE MSCAA.

**SPECIFICATIONS
FOR
EAST PARKING LOT EXPANSION - PHASE 5 - CONSTRUCTION**

**MEMPHIS INTERNATIONAL AIRPORT
MEMPHIS, TENNESSEE**



MSCAA PROJECT NO. 23-1469-03

DATED: 4/7/26

ISSUED FOR BID

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Appendices

Appendix A – MSCAA Construction Standards

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END OF SECTION 00010

DIVISION 0 – SECTION 00015**LIST OF DRAWINGS**

DRAWINGS, Entitled East Parking Lot Expansion - Phase 5 - Construction, Issued for Bid, dated 4/8/26, with revisions, as noted on the drawing sheets:

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TI200	TELECOMMUNICATIONS DETAILS

END OF SECTION 00015

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LEGAL NOTICE
Request for Bids
MSCAA Project Number 23-1469-03
East Parking Lot Expansion - Phase 5 - Construction

Sealed bids for East Parking Lot Expansion - Phase 5 - Construction will be received by the Memphis-Shelby County Airport Authority (Authority), Procurement Department, 4150 Louis Carruthers Drive, Memphis, TN 38118, until **2:00 PM Local Time on Thursday, May 7, 2026**. Bids will not be received at any other location. Within 30 minutes thereafter, the bids will be opened and publicly read via phone/video conference (link/phone information available online at <https://flymemphis.com/rfps-rfqs/>). The Bid Documents, including a description of the scope of work, the required response format, and additional instructions may be obtained on or after **April 13, 2026** online at <https://flymemphis.com/rfps-rfqs/>.

A Virtual Pre-Bid Meeting will be held on Monday April 20, 2026 at 10:00 AM local time via phone/video conference (link/phone information available online at <https://flymemphis.com/rfps-rfqs/>). The project site will be available for inspection following the meeting at approximately 1:00 PM local time. Those wishing to attend the site visit must register. Site Visit registration is done by emailing bidquestions@flymemphis.com. Pre-bid and site visit attendance is strongly recommended. All instructions for the Pre-Bid Meeting and Site Visit can be found at <https://flymemphis.com/rfps-rfqs/>.

All Bidders are responsible for checking the Authority's website up to the submission deadline for any updates, addenda or additional information. The successful Bidder must sign a contract with the Authority that includes Federal Aviation Administration provisions, if applicable, regarding the Buy American Preference, Foreign Trade Restriction, Davis-Bacon, Affirmative Action, Debarment and Suspension, and Drug-Free Workplace, all of which are incorporated herein by reference.

Each bid must be made by a contractor licensed in Tennessee and be accompanied by a 5% Bid Guarantee. The successful bidder must execute a Performance Bond and a Payment Bond in the amount of 100% each of the Contract Price and meet the Small Business Participation Program (SBPP) participation goal for this project, which is **13%**.

The Authority reserves the right to reject any or all responses to this Request for Bids in whole or in part; to waive any informalities, technicalities, or omissions related to this Request for Bids; and to reject responses on any other basis authorized by the Authority's purchasing policies.

The Authority is an equal opportunity employer and prohibits discrimination based on the grounds of age, race, sex, color, national origin, disability, marital status, military service, or sexual orientation in its hiring and employment practices and in the admission to, access to, or operation of its programs, services, and activities.

By order of:
Terry Blue, A.A.E.
President and CEO
Memphis-Shelby County Airport Authority

DIVISION 0 – SECTION 00200**INSTRUCTIONS TO BIDDERS / PROPOSERS**

Instruction for the preparation of proposals and the delivery thereof to the Memphis-Shelby County Airport Authority (MSCAA) are contained in General Provision Section 20 and additionally as follows. Prepare and submit proposals accordingly.

1. RESERVATION OF RIGHTS:

MSCAA reserves the right, in its sole discretion, to reject and disqualify the bid of any bidder that has pending litigation or claims with the MSCAA and to reject the bid when a parent, subsidiary, affiliate, or predecessor in interest of the Bidder has pending litigation or claims with the MSCAA.

MSCAA also reserves the right, in its sole discretion, to reject and disqualify the bid of any bidder if the bid includes any subcontractor(s) or supplier(s) of any tier that have pending litigation or claims with MSCAA, and to reject the bid when a parent, subsidiary, affiliate, or predecessor in interest of the subcontractor or supplier has pending litigation or claims with the MSCAA.

Bidders shall request from MSCAA a list of entities that have pending claims or litigation with MSCAA to avoid including such entities or their parents, subsidiaries, affiliates, or predecessors in interest in their proposal or bid. A list of affected entities may be obtained by a written or telephone request to Development Division at MSCAA, 2491 Winchester Road, Suite 113, Memphis, TN 38116-3856, telephone number (901) 922-8033.

2. PRE-BID CONFERENCE:

A Virtual Pre-Bid Meeting will be held on Monday April 20, 2026 at 10:00 AM local time via phone/video conference (link/phone information available online at <https://flymemphis.com/rfps-rfqs/>). The project site will be available for inspection following the meeting at 1:00 PM local time. Those wishing to attend the site visit must register. Site Visit registration is done by emailing bidquestions@flymemphis.com. Pre-bid and site visit attendance is strongly recommended. All instructions for the Pre-Bid Meeting and Site Visit can be found at <https://flymemphis.com/rfps-rfqs/>.

3. DRAWINGS AND SPECIFICATIONS FURNISHED TO CONTRACTOR:

Electronic set of contract and proposal documents are available at <https://www.flymemphis.com/rfps-rfqs> at no cost. Printed copies are not available.

4. REFUSAL OF ISSUANCE OF PROPOSAL FORM TO BIDDERS IN DEFAULT AND DISQUALIFICATION OF BIDDERS:

See General Provision Section 20 for disqualification of bidders and bidders in default.

5. SUBMIT THE FOLLOWING WITH THE BID IN THE MANNER DESCRIBED BELOW:

- A. (1) Proposal
- (2) Proposal Guarantee (Required Bid Security)
- (3) Buy America Certificate
- (4) SBE Assurance Statement/Letter of Intent on Bidder's / Proposer's Letterhead for each SBE subcontractor, subcontractors' signatures not required.

- (5) Written quote or proposal or other communication from each SBE upon which the scope of work and dollar value contained in your Assurance Statements is based with items included in the Proposal either circled and/or highlighted.
- (6) SBE Goals Accomplishment Statement
- (7) Information on All Firms that Provide Bids or Quotes
- (8) Signed addenda (if applicable)
- (9) Bid Envelope

B. The following must be submitted within 24 hours of the proposal submittal deadline:

- (1) SBE Assurance Statement/Letter of Intent on Bidder's / Proposer's Letterhead for each SBE subcontractor, subcontractors' signatures required.

See General Provision Section 20, PROPOSAL REQUIREMENTS AND CONDITIONS.

C. By executing the proposal submittal, the Contractor is confirming that (1) neither the Contractor nor any of Contractor's potential subcontractors or suppliers have pending claims or litigation, arbitration, or other dispute resolution proceedings where the Owner and the Contractor or potential subcontractors or suppliers are parties; or (2) the Contractor has disclosed in writing any such pending claims or proceedings to Owner through its own writing and/or the writing of Contractor's potential subcontractors or suppliers and submitted same to Owner with the proposal submittal.

D. Bids should be delivered to the following address:

Memphis-Shelby County Airport Authority
Procurement Department
Memphis International Airport
4150 Louis Carruthers Drive
Memphis, TN 38118
Project No. 23-1469-03

The bid must be sealed and the project number must be included in the address.

Within 30 minutes thereafter, the bids will be opened and publicly read via phone/video conference (link/phone information available online at <https://flymemphis.com/rfps-rfqs/>).

6. **CONSIDERATION OF BID:**

The Owner reserves the right to reject any or all bids in whole or in part and to waive any informalities, technicalities, or omissions therein.

It is intention of the Owner to award a contract based upon the lowest responsive bid on the lump sum base bid. Bidder understands and agrees that, after a review of all the bids, the Owner will select the lump sum base bid that best suits the Owner's needs within the sole discretion of the Owner.

7. **NO FINANCIAL INTEREST:**

Respondent understands and agrees that no Airport Authority employee or member of the Board of Commissioners shall receive any financial benefit arising out of this proposal or its contract, if awarded, either directly or indirectly. Further, any fees paid to any person or entity by contractor for assistance in obtaining this contract, if awarded, with the Authority must be fully disclosed to the Authority.

8. PROTEST:

- A. Any protest must be filed in writing and received by the Authority within seven (7) calendar days of the date of the occurrence of the event that is the subject of the protest, e.g., the opening of responses, the award, or a determination that a respondent is not responsible or that a response is not responsive. Any protest must be actually delivered to the Authority during the business hours of 7:00 AM – 3:30 PM Local Time in order to be deemed to be received by the Authority as required under this Section. A protest must be submitted in hard copy and addressed as follows:

Memphis-Shelby County Airport Authority
Attention: Director of Procurement
4150 Louis Carruthers Drive
Memphis, Tennessee 38118-6613

Any protest sent by telegraphic or facsimile transmission or by email or other electronic means will not meet the filing requirements set forth herein and will not be deemed to be received by the Authority.

No objections with regard to the application, meaning, or interpretation of the specifications contained herein will be considered after the opening of the subject bid.

END OF SECTION 00200

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DIVISION 0 – SECTION 00405**PROPOSAL**

Project Identification: **East Parking Lot Expansion - Phase 5 - Construction**

Contract Number: MSCAA Project No. **23-1469-03**

**For Overnight Courier
or Hand Delivery Submit to:**

Memphis-Shelby County Airport Authority
Memphis International Airport
Procurement Department
4150 Louis Carruthers Drive
Memphis, Tennessee 38118

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with Owner in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with other terms and conditions of the Contract Documents.
2. Bidder accepts all of the terms and conditions of the Legal Notice to Bidders and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for seventy-five (75) days after the day of Bid opening. Bidder will sign and submit the Construction Contract with the Bonds and other documents required by the Bidding Requirements, within ten (10) days after the date of Owner's Notice of Award.
3. In submitting this Bid, Bidder represents, as more fully set forth in the Contract that:
 - (a) Bidder has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

Date	Number
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

- (b) Bidder has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

- (c) Bidder has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions which are identified in Division 0 and Division 1 Specifications, and accepts the determination set forth in General Provision Section 20 paragraph 20-06 of the extent of the technical data contained in such reports and drawings upon which Bidder is entitled to rely.
- (d) Bidder has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests and studies (in addition to or to supplement those referred to in (c) above) which pertain to the subsurface or physical conditions at the site or otherwise may affect the cost, progress, performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with other terms and conditions of the Contract Documents, including specifically the provisions of General Provision Section 20 paragraph 20-06; and no additional examination, investigations, explorations, tests, reports or similar information or data are or will be required by Bidder for such purposes.
- (e) Bidder has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said Underground Facilities are or will be required by Bidder in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents.
- (f) Bidder has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
- (g) Bidder has given Owner or Engineer written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by Owner or Engineer is acceptable to Bidder.
- (h) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

4. Bidder will complete Base Bid Work for the following price(s).

UNIT PRICE SCHEDULE – BASE BID

SPECIFICATIONS						
ITEM NO.	ITEM CODE	ITEM	UNIT	EST. QTY	UNIT PRICE	TOTAL EST. PRICE
1	C-102-5.1	CATCH BASIN PROTECTION TYPE D (TDOT EC-STR-19)	EA	9	\$	\$
2	C-105-5.1	MOBILIZATION (10%)	LS	1	\$	\$
3	P-101-5.1	DEMOLITION AND REMOVAL OF CURB & GUTTER (ALL SIZES)	LF	203	\$	\$
4	P-101-5.2	DEMOLITION AND REMOVAL EXTRUDED CURB	LF	905	\$	\$
5	P-101-5.3	REMOVAL OF EXISTING PAVEMENT MARKINGS	LF	7,000	\$	\$
6	P-101-5.4	REMOVAL OF EXISTING PAVEMENT MARKING SYMBOLS	EA	27	\$	\$
7	P-101-5.5	CHAIN LINK FENCE DEMOLITION - 10' TALL AOA FENCE	LF	220	\$	\$
8	P-101-5.6	CHAIN LINK FENCE DEMOLITION - 6' CHAIN LINK FENCE	LF	955	\$	\$
9	P-101-5.7	BITUMINOUS CONCRETE PAVEMENT DEMOLITION - 8" OR LESS	SY	124	\$	\$
10	P-101-5.8	PORTLAND CEMENT CONCRETE PAVEMENT DEMOLITION - 8" THICK FULL DEPTH	SY	350	\$	\$
11	P-101-5.9	DEMOLITION AND REMOVAL OF EXISTING CONCRETE WHEEL STOPS	EA	65	\$	\$
12	P-101-5.10	REMOVE TEMPORARY CROSSWALK AND RESTORE MEDIANS	EA	1	\$	\$
13	P-101-5.11	DEMOLITION AND REMOVAL OF EXISTING SIDEWALK	SY	80	\$	\$
14	P-101-5.12	DEMOLITION AND REMOVAL OF EXISTING OVERHEAD CANOPY (ENTRANCE PLAZA)	EA	1	\$	\$
15	P-610-6.1	INSTALLATION OF EXTRUDED CURB	LF	2,250	\$	\$
16	P-610-6.2	INSTALLATION OF 6-18 CONCRETE CURB AND GUTTER	LF	343	\$	\$
17	P-610-6.3	INSTALLATION OF 4" SIDEWALK	SF	925	\$	\$
18	P-610-6.4	CONCRETE PEDESTRIAN RAMP AND LANDINGS	EA	1	\$	\$
19	P-610-6.5	8" CONCRETE DRIVEWAY PAVEMENT	SY	135	\$	\$
20	P-610-6.6	6" CONCRETE ISLAND FOR GATE EQUIPMENT	SY	80	\$	\$
21	F-162-5.1	BOLLARDS, 8" DIA.	EA	57	\$	\$
22	F-162-5.2	ADA COMPLIANT HANDRAILS	LF	188	\$	\$
23	F-162-5.3	CHAIN LINK FENCE (PERMANENT AOA FENCE) (10' TALL W/DBL ARM, 6 STRAND BARB WIRE & RAZOR RIBBON	LF	355	\$	\$
24	F-162-5.4	CHAIN LINK FENCE (TEMPORARY AOA FENCE) (6' TALL W/3-STRAND BARB WIRE) (MOUNTED ON CONCRETE BARRICADES)	LF	400	\$	\$

25	F-162-5.5	CHAIN LINK FENCE (NON-AOA FENCE) (6' TALL W/3-STRAND BARB WIRE) (MOUNTED ON GRADE)	LF	72	\$	\$
26	F-162-5.6	ORNAMENTAL FENCE	LF	694	\$	\$
27	F-162-5.7	CHAIN LINK FENCE MANUAL DOUBLE SWING GATE (AOA) (10' TALL, 24' TOTAL WIDTH)	EA	2	\$	\$
28	F-162-5.8	CHAIN LINK FENCE AUTOMATED SINGLE SLIDING GATE (AOA) (10' TALL, 24' TOTAL WIDTH)	EA	1	\$	\$
29	T-904-5.1	SODDING	SY	1,550	\$	\$
30	T-905-5.1	TOPSOIL	SY	1,550	\$	\$
31	A-101-3.1	CRUSHED AGGREGATE BASE COURSE - 8" THICK	SY	135	\$	\$
32	A-101-3.2	INSTALLATION OF CONCRETE WHEEL STOPS	EA	74	\$	\$
33	A-101-3.3	PAVEMENT MARKINGS (YELLOW)	SF	855	\$	\$
34	A-101-3.4	PAVEMENT MARKINGS (WHITE)	SF	7,208	\$	\$
36	A-101-3.5	PAVEMENT MARKINGS (BLUE)	SF	3,800	\$	\$
37	A-101-3.6	INSTALL NEW STOP SIGN (R1-1)	EA	3	\$	\$
38	A-101-3.7	INSTALL "CROSS TRAFFIC DOES NOT STOP" SIGN (W4-4P)	EA	1	\$	\$
39	A-101-3.8	INSTALL ADA PARKING SIGNAGE (R7-8)	EA	41	\$	\$
40	A-102-3.1	CONSTRUCTION ACCESS, PROJECT SECURITY, AND STAGING AREA (5%)	LS	1	\$	\$
41	A-102-3.2	MAINTENANCE OF TRAFFIC (5%)	LS	1	\$	\$
42	A-103-5.1a	INSTALL NEW CANOPY STRUCTURE INCLUDING FOUNDATIONS (50' x 25') (PANEL BUILT INC. OR APPROVED EQUAL)	LS	1	\$	\$
43	A-103-5.1b	INSTALL NEW CANOPY STRUCTURE INCLUDING FOUNDATIONS (30' x 25') (PANEL BUILT INC. OR APPROVED EQUAL)	LS	1	\$	\$
44	A-103-5.2a	INSTALL NEW PARKING GATE CONTROL ARMS	EA	6	\$	\$
45	A-103-5.2b	RELOCATE EXISTING PARKING GATE CONTROL ARMS	EA	2	\$	\$
46	A-103-5.3a	INSTALL NEW TICKETING EQUIPMENT	EA	6	\$	\$
47	A-103-5.3b	RELOCATE EXISTING TICKETING EQUIPMENT	EA	2	\$	\$
48	A-103-5.4	INSTALL NEW PLATE BARRIER SYSTEM	EA	3	\$	\$
49	A-103-5.5	INSTALL NEW TIGER TEETH SYSTEM	EA	5	\$	\$
50	A-103-5.6	INSTALL NEW SURFACE MOUNTED BUS SHELTER (5' x 15')	EA	5	\$	\$
51	A-103-5.7	INSTALL ELECTRICAL CONDUIT AND CABLE IN EXISTING PAVEMENT OR TURF (ALL SIZES)	LF	2,615	\$	\$
52	A-103-5.8a	INSTALL HIGH MAST LIGHTING (INCL. FOUNDATIONS, POLES, FIXTURES, & CONNECTIONS)	EA	14	\$	\$
53	A-103-5.8b	INSTALL SURFACE MOUNTED LIGHTING (INCL. WIRING, MOUNTING, FIXTURES, & CONNECTIONS)	EA	22	\$	\$
CONTRACT BASE BID TOTAL (TOTAL OF LINES 1-53)						\$

CONTRACT BASE BID TOTAL (TOTAL OF LINE ITEMS 1-53):

 (use words)

(\$ _____)

5. The Owner reserves the right to reject any or all bids in whole or in part and to waive any informalities, technicalities, or omissions therein.

It is intention of the Owner to award a contract based upon the lowest responsive bid on the lump sum base bid. Bidder understands and agrees that, after a review of all the bids, the Owner will select the lump sum base bid that best suits the Owner's needs within the sole discretion of the Owner.

6. Bidder agrees that the Work: will be completed and ready for final payment within the calendar days (as described in Section 01100) after the date when the Contract Time commences to run. Bidder accepts the provisions of the Contract as to liquidated damages in the event of failure to complete the Work on time.

7. See Section 00200, INSTRUCTIONS TO BIDDERS, for a complete list of documents that are made a condition of this Bid.

8. Communications concerning this Bid shall be addressed to: _____
(Printed Name)

The address of Bidder indicated above, or

the following address: _____

email address: _____

9. The terms used in this Bid which are defined in General Provision Section 10 of the Specifications included as part of the Contract Documents have the meanings assigned to them in the Division 0 and Division 1 Specifications.

Submitted on _____, 20____.

10. The undersigned Bidder confirms that (1) neither Bidder nor any of Bidder's potential subcontractors or suppliers have pending claims or litigation, arbitration, or other dispute resolution proceedings where the Owner and Bidder or Bidder's potential subcontractors or suppliers are parties; or (2) such claims or proceedings are pending and Bidder is disclosing same through its own writing and/or the writing of Bidder's potential subcontractors or suppliers and submitting same to Owner with this proposal submittal.

If Bidder is:

An Individual

(Individual's Printed Name)

(Individual's Signature)

doing business as: _____

Business address: _____

Phone No.: _____ FAX No. _____ E-Mail _____

A Partnership

(Firm Name)

By: _____
(Signature of General Partner and Printed Name)

Business address: _____

Phone No.: _____ FAX No. _____ E-Mail _____

A Corporation

(Corporation Name)

By: _____ Title: _____
(Signature of person authorized to sign)

(Printed Name)

(Corporate Seal)

Attest: _____
(Signature of Secretary) (Printed Name)

(State of Incorporation)

Business address: _____

Phone No.: _____ FAX No. _____ E-Mail _____

A Joint Venture

(Joint Venture)

By: _____
(Signature of Joint Venturer) (Printed Name)

(Address)

Phone No.: _____ FAX No. _____ E-Mail _____

By: _____
(Signature of Joint Venturer) (Printed Name)

(Address)

Phone No.: _____ FAX No. _____ E-Mail _____

(Each joint venturer must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above).

END OF SECTION 00405

ISSUED FOR BID

00405
Page 7

DIVISION 0 – SECTION 00410**PROPOSAL GUARANTEE**

KNOW ALL MEN BY THESE PRESENT, that we, the undersigned, _____

_____ as Principal, and

_____ as Surety, are

hereby held and firmly bound unto Memphis-Shelby County Airport Authority as Owner, in the sum of _____ for the payment of which, well and truly to be made, the said Principal and Surety hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

Whereas the Principal has submitted to Memphis-Shelby County Airport Authority a certain bid, attached hereto and hereby made a part hereof, to enter into a contract in writing for the East Parking Lot Expansion - Phase 5 - Construction, MSCAA Project No. 23-1469-03.

NOW, THEREFORE, if said bid shall be rejected, or in the alternate, if said bid shall be accepted and the Principal shall execute and deliver a contract in accordance with the terms of the Contract Documents and shall furnish a bond for its faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void, otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligation of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers,

this _____ day of _____, 20_____.

PRINCIPAL

By: _____

(Name and Title)

SURETY

SEAL

By: _____

(Attorney-in-Fact)

END OF SECTION 00410

ISSUED FOR BID

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1 SECTION 00445 - SMALL BUSINESS PARTICIPATION PROGRAM (SBPP) REQUIREMENTS

1.1 Overview

The Authority operates a Small Business Participation Program (SBPP) to ensure full and fair opportunities in Authority contracting for small businesses. The Authority administers the SBPP program consistent with 49 CFR Part 26 as outlined below and otherwise indicated in the SBPP requirements. Only firms that are certified consistent with 13 CFR Part 121 or 49 CFR Part 26 will be certified as a Small Business Enterprise (SBE) or reevaluated/certified Disadvantaged Business Enterprise (DBE), **as required by Interim Final Rule effective October 3, 2025 ("IFR") for 49 CFR Part 26**, may be considered as an eligible Small Business Enterprise (SBE) for the purpose of SBPP requirements.

This section, entitled "Small Business Participation Program" is provided to assist Respondents. The information contained in this section is not intended to supplement or amend any federal regulation. All Respondents are responsible for compliance with all applicable rules and requirements.

1.2 SBPP Required Forms

It is a requirement that all Respondents providing services for the Authority take all reasonable steps to ensure that SBEs, including DBEs reevaluated or certified pursuant to the IFR for 49 CFR Part 26 have a full and fair opportunity to compete for and perform contract work without discrimination based on age, race, sex, color, national origin. To satisfy this requirement, Respondents will be expected to timely submit documentation as identified below and throughout the contract period if selected and cooperate with the Authority. Failure to timely submit requested documentation, cooperate with the Authority or answer inquiries truthfully will be considered a material contract breach and may result in termination.

The following documents must be submitted with your response to this solicitation:

1.2.1 Assurance Statement/Letter of Intent

The Respondent must submit an Assurance Statement for each SBE, which includes DBEs reevaluated or certified pursuant to the IFR for 49 CFR Part 26 whose participation the Respondent is counting toward the goal. This may include first, second, third and so on tier subcontractors, and the Respondent and all subcontractors between the Respondent and the SBE should sign the Assurance Statement. The Respondent must submit the prescribed form in Section 17.1 below on Company Letterhead.

For each Assurance Statement, the Respondent must also provide the written quote or proposal from the SBE or other communication from the SBE upon which the scope of work and dollar value contained in your Assurance Statement is based ("quote/proposal").

All portions of the Assurance Statement must be completed (including the description of work, the estimated contract amount, and the estimated dollar value of SBE participation for counting and goal purposes) before the Assurance Statement is signed by either the SBE or the Respondent. If the SBEs, and if applicable the 2nd/3rd Tier Subcontractor's, signature(s) can be obtained on the completed Assurance Statement before the bid submission deadline, the Respondent should submit the fully-

completed and fully signed Assurance Statement. If the Respondent submits an Assurance Statement that is completed except for the SBEs, and if applicable, the 2nd/3rd Tier Subcontractor's signature(s) and a quote/proposal from the SBE as described above, the Respondent will be given 24 hours from the bid submission deadline to submit the completed Assurance Statement signed by the SBE and, if applicable, the 2nd/3rd Tier Subcontractor. Each Assurance Statement submitted during this 24-hour window must conform to the previously submitted Assurance Statement except for SBE signature. These signed Assurance Statements must be submitted pursuant to the same location and time restrictions that applied to the solicitation response.

The Authority reserves the right to ask questions of the Respondent, investigate and require additional information as it determines necessary in its sole discretion to ensure that the regulations and the Authority's rules are followed as it relates to SBE participation.

1.2.2 *Respondent SBE Goals Accomplishment Statement*

The prescribed form provided below must be submitted on Respondent's company letterhead.

1.2.3 *Small Business Participation Plan (SBPP) Bidder's List*

The prescribed form provided below must be completed by Respondent.

1.3 *SBE Voluntary Form*

We ask, but do not require, that each Respondent submit the following information with the response to this solicitation:

1.3.1 *Voluntary Disclosure of Respondent Data*

If submitted, the prescribed form provided below must be completed by Respondent.

1.4 *SBPP Qualifications*

To qualify as an eligible SBE for this solicitation, a firm must meet the following requirements:

- a. A firm (including affiliates) must be an existing small business as defined by Small Business Administration (SBA) regulations, 13 C.F.R. Part 121, for the appropriate type(s) of work that a firm performs and corresponding size standards.
- b. The personal net worth of the qualified owner(s) of the firm must be less than \$2.047 million.
- c. Said qualified owner(s) must own 51% of the subject firm.
- d. Said qualified owner(s) must be U.S. citizen or lawfully admitted permanent residency.
- e. The firm must be certified by the Authority for the SBPP program or granted certification reciprocity by the Authority for an acceptable existing certification.

DBEs reevaluated or certified pursuant to, or in accordance with, the IFR for 49 C.F.R. Part 26 meet the required small business element criteria stated and may qualify for the Authority's SBPP program.

1.5 *Liaison Officer*

For questions or information related to the SBPP, contact ReGina Armstrong, the Senior Manager of Business Diversity Development at (901) 922-0255.

1.6 *SBE Certification*

In order to be considered as meeting the SBE goal for this solicitation, each business wishing to participate as a SBE must be certified by the Authority for participation in the Authority's SBPP program. The Authority is a certifying member of the Tennessee Department of Transportation Unified Certification Program (TNUCP). Given that DBEs certified or reevaluated pursuant to the IFR for 49 C.F.R. Part 26 satisfy the required small business criteria for the SBPP program, DBEs certified or reevaluated pursuant to the IFR for 49 CFR Part 26 by TNUCP or a TNUCP certifying member do not have to apply for SBE certification with the Authority and qualify to be considered to meet the SBE goal for this Contract.

The Authority compiles a directory of SBE firms who have met the criteria for SBPP program eligibility, which can be searched here: www.memvendor.com. If you do not see a firm's name on this list that you believe to be certified, please contact the Office of Business Diversity Development by email at certification@flymemphis.com or by phone at 901-922-0255.

The Authority may grant certification reciprocity to firms with certifications from a Department of Transportation Unified Certification Program of any other state, SBA 8(a) certifications, or SBE certifications from another state, county, local government, or other agency **ONLY IF** the personal net worth requirement and SBA size standards have been met. Certifications from self-certification programs are not acceptable. A business must apply for certification reciprocity with the Authority for an acceptable existing certification outlined above in order to be considered as meeting the SBE goal in this solicitation. Unless a firm is granted certification reciprocity by the Authority by the time the responses to this solicitation are due, its participation will not be considered as meeting the SBE goal.

Each business wishing to participate as a SBE must be certified by the time the responses are due. A business is seeking SBE certification (or certification reciprocity) with the Authority can contact the Office of Business Opportunity Development by email at certification@flymemphis.com or by phone at 901-922-0255. The online certification application can be found here: <https://mscaa.mwdbe.com/>. The certification process may take up to ninety (90) days.

1.7 *Identification of Contract Goal and Requirements*

For this Contract, the SBPP goal is established as **13%**. In order to be responsive, a Respondent must either meet the goal or make good faith efforts to do so. Good faith efforts are defined in Appendix A to 49 CFR Part 26 and discussed in the following section.

If a Respondent's Assurance Statement proposes a SBE percentage less than the established goal, the Respondent must, at the time of making the response, submit appropriate documentation showing good faith efforts to meet the established goal. The Authority reserves the right to request additional documentation or information from Respondent regarding its Assurance Statement and; if applicable, any good faith efforts documentation. If the Authority enters into a contract based on the Respondent's Goals Accomplishment Statement and documentation, the SBE percentage accepted by the Authority

will become a contractual requirement. If the Respondent's Assurance Statement proposes to attain a SBE percentage higher than the established goal, the established goal will remain the contractual requirement.

Respondents shall not contract with, demand, require or coerce a SBE into any agreement or into the signing of any Assurance Statement or any other document which prohibits the SBE from providing subcontracting quotations or doing business with other Respondents. The SBE shall be free to provide their services to any number of Respondents. To ensure that all obligations under sub-contracts awarded to a SBE are met, the Authority will review the agreement between the Respondent and SBE, and Respondent's SBE involvement efforts during the performance of the Contract.

1.8 *Good Faith Efforts Statement and Requirements*

Respondents must either meet the SBPP goal or make good faith efforts to meet the goal. Respondents who do not meet the goal must establish adequate good faith efforts by submitting documentation along with the Respondent's Goals Accomplishment Statement. This statement should show that they took all necessary and reasonable steps to achieve the SBE goal, which could reasonably be expected to obtain sufficient SBE participation, even if they were not fully successful. The Respondent's Goals Accomplishment Statement and supporting documents should conform to the good faith requirements outlined in Appendix A of 49 CFR Part 26.

The following is a list of types of actions that may be part of a Respondent's efforts to obtain SBE participation and may be included in the Respondent's Goals Accomplishment Statement and documentation. This list is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases:

- a. Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified as a SBE who have the capability to perform the work of the Contract. The Respondent must solicit this interest within sufficient time to allow the SBE to respond to the solicitation and take appropriate steps to follow-up on initial solicitations to determine interest.
- b. Selecting portions of the work to be performed by a SBE to increase the likelihood that the goals of the SBE will be achieved.
- c. Providing any interested SBE with adequate information about the plans, specifications, and requirements of the Contract in a timely manner to assist them in responding to a solicitation.
- d. Negotiating in good faith with any interested SBE. It is the Respondent's responsibility to make a portion of the work available to SBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available SBE subcontractors and suppliers, to facilitate SBE participation.
- e. Not rejecting any SBE as being unqualified without sound reasons based on a thorough investigation of their capabilities.
- f. Making efforts to assist any interested SBE in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.

g. Making efforts to assist any interested SBE in obtaining necessary equipment, supplies, materials, or related assistance or services.

h. Effectively using the services of available small business organizations and groups; local, state, and Federal small business assistance offices; and other organizations as allowed on a case-by-case basis to aid in the recruitment and placement of any SBE.

For each SBE listed as a regular dealer or distributor the Authority will make a preliminary counting determination to assess the SBE's eligibility for 60 or 40 percent credit, respectively, of the cost of materials and supplies based on its demonstrated capacity and intent to perform as a regular dealer or distributor, as defined in § 26.55(e)(2)(iv)(A), (B), and (C) and (e)(3) under the contract at issue. The Authority's preliminary determination shall be made based on the SBE's written responses to relevant questions and its affirmation that its subsequent performance of a commercially useful function will be consistent with the preliminary counting of such participation. Where the SBE supplier does not affirm that its participation will meet the specific requirements of either a regular dealer or distributor, the Authority is required to make appropriate adjustments in counting such participation toward the Bidders' good faith efforts to meet the contract goal. The Bidder is responsible for verifying that the information provided by the SBE supplier is consistent with the counting of such participation toward the contract goal.

If a Respondent has not met the SBE goal and submits Respondent's Goals Accomplishment Statement and documentation, the Respondent should summarize in detail all good faith efforts taken by the Respondent, including, but not limited to, the activities listed above in A through I, and supporting documentation. While the Respondent should submit documentation to support its good faith efforts at the time of the Response submission, the Authority may ask questions of Respondent or request additional documentation after review of Respondent's Goals Accomplishment Statement and any documentation. In submitting the information required under this section, Respondent understands and agrees that the determination of whether Respondent has met the SBE goal or established good faith efforts to meet the goal is a judgment call that the Authority will make.

1.9 *Administrative Reconsideration*

Within five (5) business days of being informed by the Authority that it is not responsive because it has not documented sufficient good faith efforts, a Respondent may request administrative reconsideration. Respondent should make this request in writing to the following reconsideration official: Terry Blue, President and CEO, Memphis Shelby County Airport Authority, 2491 Winchester Road, Suite 113, Memphis, Tennessee 38116, (901) 922-8000, tblue@flymemphis.com. The reconsideration official will not have played any role in the original determination that the Respondent did not document sufficient good faith efforts.

As part of this reconsideration, the Respondent will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate good faith efforts to do so. The bidder/offeror will have the opportunity to meet in person with our reconsideration official to discuss the issue of whether it met the goal or made adequate good faith efforts to do. The Authority will send the Respondent a written decision on reconsideration, explaining the basis for finding that the Respondent did or did not meet the goal or make adequate good faith

efforts to do so. The result of the reconsideration process is not administratively appealable to the Department of Transportation.

1.10 Counting SBE Participation

SBE participation shall be counted toward meeting the SBPP goal consistent with the regulations outlined in 49 CFR Part 26, specifically 26.55. When the Respondent completes an Assurance Statement, the Respondent must include not only the total value of the work to be performed and/or the materials to be supplied by the SBE but also the total amount of SBE participation that should be counted toward meeting the goal. If you have any questions about counting, we strongly urge you to consult 49 CFR Part 26. The following may be helpful to you in counting SBE participation and in determining which sections of Part 26.55 you need to review in more detail:

a. When a SBE participates in a contract, you count only the value of the work actually performed by the SBE toward SBE goals.

1) Count the entire amount of that portion of a construction contract (or other contract not covered by paragraph (a)(2) of this section) that is performed by the SBE's own forces. Include the cost of supplies and materials obtained by the SBE for the work of the contract, including supplies purchased or equipment leased by the SBE (except supplies and equipment the SBE subcontractor purchases or leases from the prime contractor or its affiliate).

2) Count the entire amount of fees or commissions charged by a SBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, toward SBE goals, provided you determine the fee to be reasonable and not excessive as compared with fees customarily allowed for similar services.

3) When a SBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward SBE goals only if the SBE's subcontractor is itself a SBE. Work that a SBE subcontracts to a non-SBE firm does not count toward SBE goals. a. When a SBE participates in a contract, you count only the value of the work actually performed by the SBE toward SBE goals.

4) Count the entire amount of that portion of a construction contract (or other contract not covered by paragraph (a)(2) of this section) that is performed by the SBE's own forces. Include the cost of supplies and materials obtained by the SBE for the work of the contract, including supplies purchased or equipment leased by the SBE (except supplies and equipment the SBE subcontractor purchases or leases from the prime contractor or its affiliate).

5) Count the entire amount of fees or commissions charged by a SBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of the contract, toward SBE goals, provided you determine the fee to be reasonable and not excessive as compared with fees customarily allowed for similar services.

6) When a SBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward SBE goals only if the SBE's subcontractor is itself a SBE. Work that a SBE subcontracts to a non-SBE firm does not count toward SBE goals.

b. When a SBE performs as a participant in a joint venture, count a portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the SBE performs with its own forces toward SBE goals.

c. Count expenditures to a SBE contractor toward SBE goals only if the SBE is performing a commercially useful function on that contract. For the definition and explanation of a commercially useful function, see 49 CFR Part 26.55(c).

d. To determine whether a SBE trucking company is performing a commercially useful function see 49 CFR Part 26.55(d).

e. Count expenditures with SBEs for materials or supplies toward SBE goals as provided in 49 CFR Part 26.55(e). Please note that materials or supplies obtained from a SBE manufacturer are counted differently toward SBE goals than a SBE regular dealer. It is imperative that the Bidder consult federal regulations for counting differences.

f. If a firm is not currently certified as a SBE in accordance with the standards of 49 CFR Part 26 Subpart D at the time of the execution of the contract, do not count the firm's participation toward any SBE goals, except as provided for in § 26.87(i)).

g. Do not count the dollar value of work performed under a contract with a firm after it has ceased to be certified toward your overall goal.

h. Do not count the participation of a SBE subcontractor toward a contractor's final compliance with its SBE obligations on a contract until the amount being counted has actually been paid to the SBE.

1.11 Sanctions for Non-Compliance

In case of the Respondent's non-compliance with SBE requirements as applicable, including, but not limited to, documentation, cooperation, and truthfulness, the Authority shall impose such Contract sanctions as it may determine to be appropriate. This may include but is not limited to:

a. Withholding of payments to the Respondent under the Contract until the Respondent complies; and/or

b. Cancellation, termination, or suspension of the Contract, in whole or in part; and/or

c. Assessing sanctions; and/or

d. Payment by the Respondent to the Authority of an amount equal to the difference in the SBE dollar value contracted for and the dollar value achieved in documented SBE participation, which dollar value shall be considered liquidated damages if the Authority determines that Respondent failed to make good faith efforts in meeting the Contract's SBE goal.

1.12 Contract Assurance

The successful Respondent, any successful subrecipient or successful subcontractor shall not discriminate based on race, color, national origin, or sex in the performance of this prime contract. The successful Respondent shall carry out SBPP requirements in the award and administration of Authority contracts. Failure by the successful Respondent 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:

- a. Withholding monthly progress payments;
- b. Assessing sanctions;
- c. Liquidated damages; and/or
- d. Disqualifying the Contractor from future bidding as non-responsible.

1.13 Prompt Payment / Retainage

The successful Respondent agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than fifteen (15) days from the receipt of each payment the successful Respondent receives from MSCAA. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the MSCAA. When MSCAA has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed. Any delay or postponement of payment from the above referenced timeframe may occur only for good cause following written approval of the MSCAA. This clause applies to both SBE and non-SBE subcontractors.

Retainage will not be withheld on this project. No retainage will be withheld by MSCAA from progress payments due to the successful Respondent. Retainage by the successful Respondent or subcontractors is prohibited, and no retainage will be held by the successful Respondent from progress payments due to subcontractors.

1.14 Termination of SBE Subcontracts

The successful Respondent must not terminate a SBE subcontractor listed in response to this solicitation (or an approved substitute SBE firm) without prior written consent of Authority. This includes, but is not limited to, instances in which the successful Respondent seeks to perform work originally designated for a SBE subcontractor with its own forces or those of an affiliate, a non-SBE firm, or with another SBE firm.

The successful Respondent shall utilize the specific SBEs listed to perform the work and supply the materials for which each is listed unless the contractor obtains prior written consent as provided in 49 CFR §26.53(f). Unless prior written consent is provided pursuant to 49 CFR §26.53(f), the successful Respondent shall not be entitled to any payment for work or material unless it is performed or supplied by the listed SBE.

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

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

The successful Respondent must give the SBE five days to respond to the successful Respondent's notice. In response, the SBE must advise the Authority and the successful Respondent of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Owner should not approve the prime contractor's action. If required in a particular case as a matter of public necessity (e.g., safety), Owner may provide a response period shorter than five days.

In addition to post-award terminations, the provisions of this section apply to reward deletions of or substitutions for SBE firms put forward by offerors in negotiated procurements. Forms are provided below

1.15 SBPP Requirements

The Respondent shall carry out the SBPPP requirements, including applicable requirements of 49 CFR Part 26, in the award and administration of Authority contracts. Respondent agrees to provide all its subcontractors and suppliers and to require all its subcontractors and suppliers on this project to provide a complete copy of the Business Diversity Development Program Requirements of the Contract to all those who provide supplies or work related to the Contract and to require all those providing supplies or work to be bound by these requirements as it relates to their work related to the Contract. The form provided below must be completed by the Proposal.

Memphis-Shelby County Airport Authority
Memphis, Tennessee

SBE Assurance Statement/Letter of Intent (Required)

Submit on Company Letterhead for each SBE Subcontractor

SBE ASSURANCE STATEMENT/LETTER OF INTENT		
<u>RESPONDENT:</u>		
Name of Firm: _____		
Address: _____		
City: _____	State: _____	Zip: _____
Telephone: _____		
Local Yes _____ No _____		
<u>SUBCONTRACT:</u>		
Name of Firm: _____		
Address: _____		
City: _____	State: _____	Zip: _____
Local Yes _____ No _____		
Description of work to be performed by SBE:		

The Respondent is committed to utilizing the above-named for the work described above. The estimated dollar value \$ _____, which is _____% of the total base bid proposal.		
AFFIRMATION		
The above-named SBE affirms that it will perform the portion of the contract for the estimated dollar value as stated above		
By: _____		
Signature of SBE and Title	Date	Name
By: _____		
Signature of 2 nd /3 rd Tier Subcontractor and Title	Date	Name
If the Respondent does not receive award of the prime contract, any and all representations in this letter of Intent and Affirmation shall be null and void. If Respondent does receive award of the prime contract, Respondent commits to using the SBE contractor listed and described to meet the SBE contract goal.		
By: _____		
Signature of Respondent and Title	Date	Name

Memphis-Shelby County Airport Authority
Memphis, Tennessee

Respondent SBE Goals Accomplishment Statement (Required)

Submit on Company Letterhead

RESPONDENT SBE GOALS ACCOMPLISHMENT STATEMENT

The undersigned Respondent has satisfied the requirements of the bid/proposal specification in the following manner (please complete the appropriate spaces):

☐ The Respondent is committed to a minimum of 13% SBE utilization on this contract.

☐ The Respondent is unable to meet the SBE goal of 13% but is committed to a minimum of _____%

SBE utilization on this contract and submits the attached narrative and documentation demonstrating good faith efforts consistent with Appendix A of 49 CFR 26. **The Respondent should attach as many pages as necessary to provide a full and complete narrative and supporting documentation of good faith efforts made. This narrative must be written on company letterhead and signed.**

Please provide an explanation for the percentage quoted above:

Provide an explanation of the SBE's participation and how this has been determined to meet the specific goal requirements of this solicitation in whole or part.

If SBE and the company enter into a Joint Venture, please describe the terms of the relationship and attach a copy of the contract between the parties. If the Respondent does receive award of the prime contract, Respondent commits to using the SBE subcontractor listed and described above to meet the SBE contract goal, pursuant to 49 CFR Part 26.

It is the present intent of the Respondent to utilize the specific SBE firms identified in this proposal in the execution of this contract. If for any reason, one or more of the SBE identified here are unable or unwilling to participate, the Respondent will make good faith efforts to replace the SBE with a similar SBE. The Authority SBE Good Faith Procedures are provided in this package and apply to this proposal.

Respondent's Name: _____

State Registration No.: _____

Federal Tax ID No.: _____

By: _____
Signature and Title Date

SMALL BUSINESS ENTERPRISE (SBE) BIDDER'S LIST

The Memphis Airport Authority (MEM) maintains bidding statistics, regarding ALL firms bidding on prime contracts and subcontracts on Non Federal projects in accordance to The The U.S. Department of Transportation's (DOT) Interim Final Ruling (IFR) of 49 CFR Par 26, effective October 10, 2025. **This information will only be used for statistical purposes per the IFR.** This requirement applies to all firms, regardless of whether they are subs or primes, regardless of the gender or race of their owners, and regardless of whether they are ultimately chosen to participate in the contract. Please list below the name, address, phone number and contact person for every firm that provided you a bid or a quote on this project – even if you ultimately decided not to use the firm in pre paring your final bid. The first line should be used for the **prime contractor** on this project. All sections must be completed to the best of your ability.

Firm Name	PRIME /SUB	POC	SBE Y/N	ADDRESS 1	CITY	STATE	ZIP	TELEPHONE	SCOPE OF WORK	EMAIL ADDRESS	NAICS CODE	FIRM AGE YRS	AGR A= Less \$500k B=\$500K- \$1M; etc

*Footnote: Please enter the letter for the category that best identifies your annual gross revenue.

AGRR =Annual Gross Revenue Ranges:

A = Less than \$500,000 **B** = \$500,000 - \$1 Million **C** = \$1 - \$2 Million **D** = \$2 - \$5 Million **E** = Over \$5 Million

Voluntary Disclosure of Respondent Data

Do **not** submit this form on company letterhead

VOLUNTARY DISCLOSURE OF RESPONDENT DATA

For Title VI Compliance, the Authority asks for **voluntary disclosure** of the following information:

Gender:	Male	_____
	Female	_____
Race:	Caucasian	_____
	Black American	_____
	Hispanic American	_____
	Native American	_____
	Subcontinent Asian American	_____
	Asian-Pacific American	_____
	Other (please specify)	_____

Memphis-Shelby County Airport Authority

Memphis, Tennessee

Small Business Participation Plan (SBPP) Termination Request

Prior to submitting this form to Memphis-Shelby County Airport Authority (MSCAA), you must notify the SBPP Firm in writing of your intent and allow the Firm five (5) days to respond. MSCAA must be copied on the notice to the firm. NOTE: The prime contractor may not submit a substitution request until after receiving an approved SBPP termination.

Project ID:	Contract Amount:	Goal:
Prime Contractor:	Requestor:	
Email:	Phone:	

Committed SBPP Firm:			
Original Contract Amount:		Remaining Contract Amount:	
SBPP Type:	☐ Subcontractor/Subconsultant ☐ Material Supplier (60% credit)	☐ Professional Services ☐ Trucking/ Hauling Firm	☐ Manufacturer ☐ Distributor
Scope of Work Description:			
Has SBPP Firm been paid for completed work?		☐ Yes ☐ No / Remaining amount owed:	

Is this request due to an MSCAA Change Order?	☐ Yes (provide info and statement of impact on SBPP participation) ☐ No (see below)
If NO above, select the reason for the request: <i>(must attach a statement of facts and supporting documentation)</i>	
☐ SBPP Firm requests removal ☐ SBPP Firm fails or refuses to perform work or furnish materials ☐ SBPP Firm is not a responsible contractor ☐ Owner died or becomes disabled resulting in the SBPP inability to complete the work on the contract	☐ SBPP Firm is ineligible to receive DBE credit for the type of work required ☐ Work performed by SBPP Firm was unsatisfactory and not in accordance with plans and specifications ☐ Other documented good cause
Date determined SBPP Firm unwilling, unable or ineligible:	
Will this request result in a SBPP goal shortfall:	☐ No (provide SBPP utilization summary) Yes / ☐ Shortfall Amt:

SBPP Response

NAICS CODES:	DESCRIPTION:

Memphis-Shelby County Airport Authority
Memphis, Tennessee

The undersigned acknowledges that they are authorized to submit this request as a representative of the stated prime contractor.		
Requestor Signature:		Date:
For MSCAA Use Only		
Notice of Intent provided to SBE:	Yes (date sent _____)	No (must be sent to SBE 5 days prior to Request)
All required documentation submitted with Request ☐ Yes ☐ No (all documents must be submitted for review)		
Request Approved: ☐ Yes ☐ No	Reason:	
DBELO Signature:		Date:

Memphis-Shelby County Airport Authority
Memphis, Tennessee

Small Business Participation Plan (SBPP) Program Substitution Request

Prior to submitting this form to Memphis-Shelby County Airport Authority (MSCAA), you must have an approved Termination form signed by the DBELO. Without an approved SBPP termination request, a prime contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the committed SBPP.

Project ID:	Contract Amount:	Goal:
Prime Contractor:	Requestor:	
Email:	Phone:	
New Committed SBPP Firm:		
Original Contract Amount:		Remaining Contract Amount:
SBBP type:	☐ Subcontractor/Subconsultant ☐ Material Supplier (60% credit)	☐ Professional Services ☐ Trucking/Hauling Firm
☐ Manufacturer ☐ Distributor		
Scope of Work Description:		

APPLICABLE NAICS CODES	
NAICS CODE:	DESCRIPTION:

THIS SECTION MUST BE COMPLETED IF REQUESTING A SUBSTITUTION OR IF TERMINATION WILL RESULT IN GOAL SHORTFALL (does not apply if shortfall due to MSCAA Change Order)

Proposed SBPP Substitute:			
Proposed SBPP type:	☒ Subcontractor/Subconsultant ☐ Material Supplier (60% credit)	☐ Professional Services ☐ Trucking/Hauling Firm	☐ Manufacturer ☐ Distributor
Proposed Scope of Work:			
Is the substitution a certified SBPP? ☐ Yes ☐ No (must provide Good Faith Effort (GFE))			
Projected date for SBPP substitute to commence work?			
For MSCAA Use Only			
Notice of Intent provided to Firm: ☐ Yes (date sent _____) ☐ No (must be sent to Firm 5 days prior to Request)			
All required documentation submitted with Request: ☐ Yes ☐ No (all documents must be submitted for review)			
Request Approved: ☐ Yes ☐ No		Reason:	
DBELO Signature:		Date:	

Memphis-Shelby County Airport Authority
Memphis, Tennessee

Small Business Participation Plan (SBPP) Requirements for Subcontracts

Received: _____ Date: _____	Project Name: _____
_____ Sr. Manager of BDD	Project No.: _____

Memphis-Shelby County Airport Authority (MSCAA) operates a SMALL BUSINESS PARTICIPATION PLAN (SBPP) to ensure full and fair opportunities in MSCAA contracting for small businesses defined by U.S. Small Business Administration (SBA). This document sets forth SBE provisions that must be included in all contracts and subcontracts for the subject project as required by non-federal regulations. **A SIGNED COPY MUST BE (1) TO THE MSCAA SBE LIASON OFFICER AND (2) INCLUDED IN YOUR SUBCONTRACT AS AN EXHIBIT TO ANY UNDERLYING AGREEMENT FOR THE SUBJECT PROJECT.**

The undersigned parties agree and acknowledge that this document shall be deemed to form, be read and construed as, as if stated verbatim therein, part of any agreement between the parties related to the subject project. This document is an agreement wherein the parties accept, agree to, and incorporate federally mandated contractual provisions into any underlying agreement for the subject project as well as acknowledge applicable MSCAA SBPP rules and regulations. **THE TEXT CONTAINED IN THIS DOCUMENT CANNOT BE REVISED, ALTERED, OR OTHERWISE MODIFIED BY THE PARTIES. THIS IS A FINAL DOCUMENT.**

Any subcontract for the subject project shall be governed by regulations set forth in MSCAA SBE program rules and regulations, including but not limited to the following:

1. **Assurance** : The contractor, sub-recipient, or subcontractor shall not discriminate on the basis of USDOT SBA size standard in the performance of this contract. 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 the contractor from future bidding as non-responsible.
2. **Prompt Payment**: The prime contractor is required to pay its subcontractors performing work related to this contract for satisfactory performance of that work no later than 15 days after the prime contractor's receipt of payment for that work from MSCAA. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by MSCAA. When MSCAA has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed. Any delay or postponement of payment from the above referenced timeframe may occur only for good cause and written approval of the MSCAA. Retainage will not be withheld on this project. No retainage will be withheld by the MSCAA from progress payments due the prime contractor. Retainage by the prime or subcontractors is prohibited. No retainage will be held by the prime from progress due subcontractors.
3. **Termination/Substitution**: The prime contractor may not terminate or substitute any approved SBPP subcontractor listed in the Assurance Statement without prior written consent of MSCAA. The prime contractor must follow the procedures set forth by MSCAA.
4. **Counting Participation**: SBPP participation in a contract must be counted in accordance with and applicable guidance.
5. **SBPP Independence**: An independent business is one of the viability of which does not depend on its relationship with another firm or firms.
6. **DBE Liaison Officer (DBELO)**: For SBPP related questions, issues, and disputes, please contact the MSCAA DBELO (contact information found at <https://flymemphis.com/business-diversity-development-program/>). The

Memphis-Shelby County Airport Authority
Memphis, Tennessee

current DBELO is Regina Armstrong, who may be reached at 901-922-0167 or rarmstrong@flymemphis.com.

This document shall control and supersede any inconsistency, conflict or ambiguity contained in any underlying agreement between the parties for the subject project as to the procedures, processes, or subject matter set forth in this document or otherwise applicable MSCAA SBPP program rules and regulations.

PRIME CONTRACTOR: _____
SIGNATURE: _____
TITLE: _____ DATE: _____

SUBCONTRACTOR: _____
SIGNATURE: _____
TITLE: _____ DATE: _____

DIVISION 0 – SECTION 00490**ADDENDA AND MODIFICATIONS****1. INTERPRETATIONS - ADDENDA AND MODIFICATIONS**

- A. If, during the bidding period Bidder finds discrepancies, ambiguities, omissions, or is in doubt as to meaning or intent of Contract Documents, notify the Owner or Engineer not less than seven (7) days prior to Bid Date. All such necessary clarifications, information, interpretations or amendments shall be answered in the form of written addenda to Drawings and Specifications, and shall be issued simultaneously to all holders of complete sets of Documents.
- B. No Addenda will be issued less than two days prior to the Bid opening date. Neither the Owner nor Engineer shall be responsible for oral interpretations or instructions during the bidding period.
- C. All Addenda are incorporated by reference into the Contract. Failure of any Bidder or sub-bidder to receive any addenda shall not relieve the Bidder of any obligation with respect to the Bid.
- D. All Addenda and Modifications to the Contract Documents shall be inserted and indexed in this location behind this page.

END OF SECTION 00490

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**CONSTRUCTION CONTRACT
FOR
EAST PARKING LOT EXPANSION - PHASE 5 - CONSTRUCTION**

**BY AND BETWEEN
THE MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY
AND
(CONTRACTOR NAME)**

MSCAA PROJECT NO. 23-1469-03

THIS CONSTRUCTION CONTRACT (hereinafter referred to as "Contract") is made and entered into as of _____, between MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY, a body politic and corporate under the laws of Tennessee (hereinafter referred to as "**Owner**" or "**Sponsor**") doing business at 2491 Winchester Road, Suite 113, Memphis, Tennessee 38116-3856, and {insert **CONTRACTOR NAME**}, a {insert **LEGAL ENTITY TYPE and STATE**} doing business at {insert Contractor address}, (hereinafter referred to as "**Contractor**," "**Bidder**," or "**Offeror**"). Owner and Contractor may sometimes be referred to herein individually as "Party" or collectively as "Parties."

RECITALS

1. **WHEREAS**, the Owner desires to have constructed certain work in Memphis, Tennessee, more particularly described as EAST PARKING LOT EXPANSION - PHASE 5 - CONSTRUCTION, MSCAA Project No. 23-1469-03 (herein referred to as "the Project"); and

2. **WHEREAS**, the Contractor desires to enter into this Contract as an independent contractor and is ready, willing and able to construct the Project in accordance with the terms and subject to the conditions of this Contract; and

3. **WHEREAS**, the "Program Manager" is to act as the Owner's representative, and the Owner will advise the Contractor in writing of the name of the Program Manager; and

4. **WHEREAS**, the "Engineer" is the Owner's representative with responsibility for design of the technical specifications, and the Owner will advise the Contractor in writing of the name of the Engineer; and

NOW, THEREFORE, in consideration of good and valuable consideration, received or to be received, the sufficiency of which the Parties acknowledge, the Parties agree as follows:

ARTICLE 1

SCOPE OF THE WORK AND TERM OF AGREEMENT

Section 1.01. Scope of the Work. The general scope of the work is more particularly described in Exhibit A, which is attached hereto and incorporated herein by reference. Contractor agrees that the Project shall be constructed in accordance with the terms of this Contract and the "Contract Documents" as defined in Article 2 of this Contract. The term "Work" includes, but is not limited to, all labor, materials, supplies, tools, equipment and services necessary to construct the Project as described in the Contract Documents, whether or not all materials and equipment are incorporated or will be incorporated in the Project; and all Work deemed necessary to fully close the Project including demobilization.

Section 1.02. Term of Contract and Completion. The term of this Contract shall commence upon Owner's issuance of the Notice to Proceed pursuant to Section 3.01 and shall continue until the Work is completed in accordance with the Contract Documents, unless earlier terminated by the provisions set forth in Section 23 of this Contract.

ARTICLE 2

CONTRACT DOCUMENTS

Section 2.01. Definition. The "Contract Documents" include this Contract, the Legal Notice, Instructions to Bidders, the Proposal, the Proposal Guaranty, the drawings and the specifications, the Federal Aviation Authority ("FAA") General Provisions ("GP"), all addenda, and exhibits or modifications to any of them, issued prior to or after execution of this Contract. The Contract Documents are more particularly described in Exhibit B, which is attached hereto and incorporated herein by reference. As used in this Contract, a "modification" is either:

- (a) a written and signed Contract Amendment to this Contract; or
- (b) an accepted Request for Proposal ("RFP"); or
- (c) an Engineer's Supplemental Instruction ("ESI"); or
- (d) a Construction Change Directive (as defined in Section 9.02(c) of this Contract).

Section 2.02. Intent of Contract Documents. The intent of the Contract Documents is to include all design, architecture and engineering, except as otherwise expressly provided in the Contract Documents, materials, appliances, labor and services of every kind necessary for the proper execution of the Work and the terms and conditions of payment for the Work. The Contract Documents are to be considered as one document, and whatever is called for by any one of the Contract Documents shall be as binding as if called for by all.

Section 2.03. Coordination of the Contract, Plans and Specifications. This Contract, the plans, specifications, and all referenced standards cited in the Contract Documents are essential parts of the Contract requirements. A requirement occurring in one of the Contract Documents is as binding as though occurring in all. They are intended to be complementary and used to describe and provide for a complete project. In case of dimensional discrepancies, calculated dimensions will govern over scaled dimensions. In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

- (a) This Contract.
- (b) The Addenda, with those of later date having precedence over those of earlier date.
- (c) The Technical Specifications.
- (d) The Plans.
- (e) Cited standards for materials or testing and cited FAA General Provisions and advisory circulars.

Section 2.04. Errors in Contract Documents. Prior to commencing the Work, the Contractor shall review all of the Contract Documents for the purpose of identifying any error, inconsistency, omission, discrepancy or variance that may be contained therein. If the Contractor finds any error, inconsistency, omission, discrepancy or variance in the Contract Documents, it shall notify the Owner at least ten (10) days before beginning the affected portion of the Work. The Owner shall make any correction, interpretation or clarification promptly, basing its decision on the intent of the Contract Documents. Failure of the Contractor to timely notify the Owner of any such error, inconsistency, discrepancy or variance within the time provided by this paragraph shall bar the Contractor from making any claim for additional time or compensation caused by any such error, inconsistency, discrepancy or variance even if the error, inconsistency, discrepancy or variance caused the Contractor to incur additional expense or time of performance.

ARTICLE 3

PROGRESS OF THE WORK

Section 3.01. Commencement and Completion. The Contractor shall commence the Work upon receipt of the written Notice to Proceed, as defined in Section 01100 of the Technical Specifications, from the Owner and shall achieve substantial completion of the Work, as defined in Section 01100 of the Technical Specifications. The Contractor warrants that it will deliver the Project to the Owner free from any and all mechanics' liens or other encumbrances. Contractor further agrees to promptly (which is defined for purposes of this paragraph as no more than three (3) days from receipt of any lien

or other notice) notify the Owner of the existence of any and all mechanics' liens filed by any subcontractors, materialmen, suppliers or sub-subcontractors. If any mechanics' liens are filed, Contractor shall, at its expense, bond off any such mechanics' liens within three (3) days from receipt of a written request of Owner to do so. Time is of the essence, and the substantial completion date may be altered only as provided in this Contract. Substantial completion shall occur when the Work is sufficiently complete in accordance with the Contract Documents, so the Owner can occupy or utilize the Work for its intended use, and when only minor punch list work remains to be done and a certificate of occupancy has been issued. The Owner will, upon written request of the Contractor, issue a certificate establishing the substantial completion date at any time after substantial completion has occurred.

Section 3.02. The Progress Schedule. Contractor shall fully comply with the requirements for scheduling the Work as set forth in Section 01100 and Section 01320 of the Technical Specifications. The Owner reserves the right to reschedule the Work, or the sequence of the activities of the Contractor, for no additional compensation should Owner deem such rescheduling to be in its best interest. At least fifteen (15) days prior to the due date of the first payment to be made hereunder by the Owner and thereafter on a monthly basis, the Contractor shall submit to the Owner a cash flow projection depicting the projected monthly cash flow for the entire Project.

Section 3.03. Extension of Substantial or Final Completion Date.

(a) Except as otherwise expressly provided herein, the "Substantial Completion Date" or "Final Completion Date" shall be extended only for such number of calendar days that the Work is actually delayed by a casualty, a fire, or a Contract Amendment (hereinafter referred to as "Excusable Delays"). No extensions to the Substantial Completion Date shall be granted due to the negligence or fault of the Contractor or its subcontractors, non-availability of materials or non-availability of labor. No extension to the Substantial Completion Date shall be granted for the period of time during a delay in the performance of the Work which is caused in part by the Owner or the Engineer, and in part by the Contractor or one for whom the Contractor is responsible ("Concurrent Delay"). A request for a time extension based upon inclement weather shall be governed by the provisions of Section 01320 (3.05) of the Technical Specifications.

(b) In order to obtain an extension of the Final Completion Date or the Substantial Completion Date due to an Excusable Delay, the Contractor in each instance shall give written notice to the Owner within seven (7) days after the occurrence of each Excusable Delay. If the Contractor fails to issue written notice to the Owner, its right to an extension, if any, will be deemed waived. The Owner shall render a written decision, which shall be made in good faith, granting or refusing the request of the Contractor for an extension within a reasonable time after receipt of the request for a time extension. If a Contract Amendment is agreed to by the Contractor and Owner, any extension of the Substantial Completion Date caused by the Contract Amendment work must be stated in the Contract Amendment. If no extension to the Substantial Completion Date is stated in the Contract Amendment, then the Contractor shall be barred from later seeking an extension to the Substantial Completion Date or Final Completion Date because of the Contract Amendment work. No extension to the Substantial Completion Date or the Final Completion Date shall be granted due to the aggregate number of Contract Amendments.

Section 3.04. No Damage for Delay. Contractor agrees to perform the Work and to require the subcontractors to perform the Work in a timely and proper method so as to meet the dates reflected on the progress schedule. In the event that the Contractor is delayed in the performance of the Work through no fault of the Contractor or its subcontractors, and for causes set forth in Section 3.03(a), and defined therein as Excusable Delay, then the Contractor may seek a time extension in accordance with the provisions of Section 3.03(b). Contractor agrees that such time extension is its sole and exclusive remedy for any damages regardless of the cause of such delays. Contractor also agrees that the Owner shall not be liable for any other monetary damages sustained by Contractor or its subcontractors for acceleration, disruption, inefficiencies, suspension or resequencing of the Work or any other damages related to the progress schedule regardless of the cause of such damages. The Owner shall not be liable for consequential damages of any nature for any reason at any time.

Section 3.05. Liquidated Damages. As set forth in Section 01100 of the Technical Specifications, liquidated damages will be assessed for the Project. The Contractor shall proceed with the Work at such rate of progress to ensure full completion by the Final Completion Date.

ARTICLE 4

PAYMENT

Section 4.01. Contract Price. The Owner and Contractor agree that the Contractor shall be paid the amount of **Thousand and 00/100 Dollars (\$000.00)** ("Contract Price"), as set forth in the Contractor's Proposal, for completion of the Work in accordance with the Contract Documents. The Contract Price shall include all profit and overhead, including without

limitation field overhead, general conditions and home office overhead of the Contractor. The Contract Price also includes all allowances specified in the Contract Documents.

Section 4.02. Payment Procedures. As Work proceeds under the Contract, payments ("Progress Payments") shall be made by the Owner to the Contractor in accordance with the following procedure:

(a) By the 1st day of each calendar month during the performance of the Work, the Contractor shall submit to the Owner an Application and Certificate for Payment, based on the Work completed during the previous month ("previous month" being defined for this Section only as the second calendar day of the prior month through the first calendar day of the current month), using a form approved by the Owner. Contractor shall not be paid any amounts exceeding the Contract Price set forth in Section 4.01 of this Contract, unless modified by a properly executed written Contract Amendment in accordance with the provisions of Article 9 of this Contract.

(b) Each Application and Certificate for Payment shall be accompanied by: (1) lien waivers of the Contractor conditioned upon payment by the Owner of the amount sought in the Application; (2) other documentation as may be requested by the Owner for the proper review of the Application and Certificate for Payment; (3) a list of current subcontractors, sub-subcontractors and material suppliers; (4) the Business Diversity Monthly Compliance Reports; and (5) all documents required by the Owner Controlled Insurance Program ("OCIP") Manual, as applicable.

(c) The Owner or Engineer shall promptly review each Application and Certificate for Payment and recommend for approval such amount as is properly due under the Contract Documents.

(d) Payments by the Owner shall be made within thirty (30) days from the date on which an Application and Certificate for Payment has been submitted and approved by the Owner or the next working day if the thirtieth day is a Saturday, Sunday or holiday.

(e) When at least 95% of the work has been completed, no further Progress Payments will be made until Final Payment. See Section 4.08 for Final Payment requirements.

Section 4.03. Mobilization. The work which is conducted in preparation for the construction activities, which includes but is not limited to, movement of personnel, equipment, stockpiles, supplies to the project site, (all as more particularly described in Article 3.01 of Section 01100 of the Technical Specifications) shall be designated as "Mobilization." The Mobilization lump sum amount for this Contract shall be [_____ and 00/100 Dollars (\$_____)_] which is a fixed amount that shall not change for the term of the Contract.

Section 4.04. Demobilization. The activities which are conducted by the Contractor in order to complete the work and conduct any closeout items, which includes but is not limited to, removal of personnel, equipment, Contractor owned stockpiles, supplies and incidentals from the project site, (all as more particularly described in Article 3.01 of Section 01100 of the Technical Specifications) shall be designated as "Demobilization."

Section 4.05. Payment for Material Stored On-Site.

(a) Payment for the actual unit cost of materials suitably stored on the site of the Work ("Work Site") and intended for incorporation in the Work will be made by the Owner to the Contractor subject to the provisions of Section 4.02 of this Contract, Section 90-07 of the FAA General Provisions, and the following conditions:

- (1) The Contractor shall furnish supporting evidence satisfactory to the Owner evidencing the cost of the materials and shipment to the work site.
- (2) The materials shall not be stored on the work site for more than ninety (90) calendar days before they are installed without the written consent of the Owner.
- (3) The materials shall be stored on the work site in accordance with applicable recommendations of the manufacturer and the instructions of the Owner.
- (4) A representative of the Owner or Engineer may inspect and inventory any stored materials.

(b) Payment will not be made for materials stored away from the work site without the written consent of Owner. In the event that the Owner consents to payment for materials stored off-site, such payment shall be conditioned upon submission by the Contractor of bills of sale or such other documentation satisfactory to the Owner to establish the title of the Owner to such materials or equipment, and the submission of satisfactory insurance certificates for the stored materials.

(c) Notwithstanding any provision herein to the contrary, if payments are to be made on account of materials or equipment not incorporated in the Work but delivered and suitably stored at the work site, such payments shall be conditioned upon submission by the Contractor of bills of sale or such other documentation satisfactory to the Owner to establish the title of the Owner to such materials or equipment, and the submission of satisfactory insurance certificates for the stored materials to protect the interest of the Owner.

(d) Regardless of ownership or insurance, the Contractor shall remain the guardian and protector of all materials and equipment stored or incorporated into the Work.

Section 4.06. Use of Payments. The Contractor shall use all sums paid to it pursuant to this Contract for the performance of the Work in accordance with the Contract Documents. Upon the request of the Owner or Engineer, the Contractor shall furnish satisfactory proof of payment, including, but not limited to, partial release of liens and the Business Diversity Monthly Compliance Report, as to the disposition of any monies paid to the Contractor by the Owner.

Section 4.07. Payment Not a Waiver. Neither the approval or making of any payment to the Contractor, nor the partial or entire use or occupancy of the Work by the Owner, shall be deemed an acceptance of any portion of the Work.

Section 4.08. Final Payment.

(a) "Final Payment," by the Owner shall constitute a waiver of all claims by the Owner for performance of the Work except for claims of the Owner arising from unsettled liens, incomplete or defective workmanship, defective materials, failure to perform in accordance with the progress schedule, or for the breach of any guarantees of warranties provided or to be provided by the Contractor under this Contract. Acceptance of the Final Payment by the Contractor shall constitute a waiver and release of any and all claims which the Contractor may then have or in the future have against the Owner or the Engineer arising from the Work or this Contract.

(b) Final Acceptance of the Work shall occur only after all Work (including punch list items) provided for in the Contract Documents has been finally completed and accepted in writing by the Owner, and only after the Contractor has provided the Owner with instructions and operating manuals, parts lists, "record" drawings and all other items required by the Contract Documents.

(c) Within thirty (30) days after "Final Acceptance" of the Work, the Final Payment of amounts found properly due under the Contract Documents shall be paid to the Contractor.

(d) Final Payment shall not become due until the Contractor submits to the Owner the following:

- (1) An affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or its property might in any way be responsible, have been paid or otherwise satisfied; and
- (2) A consent of surety to Final Payment; and
- (3) Other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens arising out of the Work, to the extent and in such form as may be designated by the Owner or Engineer; and
- (4) Any documents required by Article 6 of this Contract.

(e) The Owner shall issue a "Certificate of Final Completion" when, in its sole discretion, the Project has been completed and all conditions required by this Section 4.07 have been complied with by Contractor.

Section 4.09. The Right of Owner to Withhold Payment. The Owner may withhold or, on account of subsequent evidence, nullify, the whole or part of any Progress Payment, including the Final Payment, to such extent as may be necessary to reasonably protect itself from any of the following:

- (a) unacceptable work as further described in Section 50-10 of the FAA General Provisions; or
- (b) third-party claims filed or reasonable evidence indicating probable filing of such claims; or
- (c) reasonable doubt that the Work will be substantially completed by the Substantial Completion Date; or

- (d) failure of the Contractor to make payments properly to subcontractors or for equipment, materials, services or labor; or
- (e) reasonable evidence of fraud, over-billing or overpayment; or
- (f) failure of the Contractor to perform the Work in accordance with the Contract Documents; or
- (g) a reasonable doubt that the Work can be completed for the unpaid balance of the Contract Price; or
- (h) damage to the Owner, or to another contractor, subcontractor or sub-subcontractor caused by the Contractor; or
- (i) failure to provide certified payroll records; or
- (j) failure to provide any documents required by the Owner Controlled Insurance Program (OCIP); or
- (k) failure to keep the record drawings current each month in accordance with Article 6 of this Contract.

ARTICLE 5

EQUIPMENT AND MATERIALS

Section 5.01. Materials Provided by Contractor.

(a) Unless otherwise provided in the Contract Documents, the Contractor shall provide all equipment, materials, labor, services, water, and power to the Work Site, as well as all tools, equipment, lights, transportation, and other facilities necessary for the performance of the Work.

(b) All equipment, machinery, material, and articles incorporated in the Work shall be new and unused unless otherwise specified in the Contract Documents. When not specified in detail in the Contract Documents, the equipment, machinery, material, and articles incorporated in the Work shall be of the most suitable grade and quality for the purpose intended.

Section 5.02. Type of Equipment Used.

(a) When any equipment, machinery, material, or article is referred to by trade name, make, or catalog number followed by the words "or equal," the reference shall be regarded as establishing the minimum standard of quality and performance required and shall not be construed as limiting competition. The Contractor may, with the prior written approval of the Owner, use other equipment, machinery, materials, or articles which are at least equal in quality and performance to that named in the Contract Documents; provided, however, that in no event shall such approval be construed as a waiver of the right of the Owner to require equipment, machinery, materials, or articles which conform to the standard of quality and performance established by reference to the trade name, make, or catalog number of the equipment, machinery, materials, or articles for which the substitution has been approved. Any cost of redesign and additional expense resulting from the substitution shall be at the sole expense of the Contractor.

(b) The name of the manufacturer, model number, and other identifying information respecting the performance, capacity, nature, and rating of equipment, machinery, materials, and articles proposed in substitution of those specified in the Contract Documents shall be submitted to the Owner in sufficient time to avoid delays in the Work.

Section 5.03. Non-Conforming Materials.

(a) Equipment, machinery, materials or articles installed or used in the Work which do not comply with the requirements of the Contract Documents, and which have not been previously approved in writing by the Owner shall be installed or used at the risk of the Contractor of subsequent rejection by the Owner.

(b) The Contractor shall be fully and solely responsible for quality control for all equipment, machinery, materials or articles used in the performance of the Work.

Section 5.04. Owner Furnishing Equipment or Fixtures. The Owner may directly furnish any and all of the equipment or fixtures required for the Project. In the event the Owner elects to do so, the Contract Price shall be reduced by the amount which was to be charged by Contractor for such equipment or fixtures as set forth and included in the Contract

Documents. A Contract Amendment reducing the Contract Price for that item of Work shall be executed by Owner and Contractor to reflect a reduction in the Contract Price for that item of Work and that the Owner is to furnish the equipment or fixtures. The Contractor shall assume responsibility for and be fully responsible for the care, custody, and control of all Owner furnished equipment or fixtures after said equipment or fixtures arrives on the Work Site or in any approved offsite storage facility, as set forth in Section 60-08 of the FAA's General Provisions.

ARTICLE 6

RECORD DRAWINGS AND DATA

Section 6.01. Record Drawings. A complete set of drawings shall be maintained by the Contractor at the Work Site for the purpose of accurately indicating all record conditions. The drawings shall be kept up-to-date and marked each day to show all changes and variations and each entry shall be dated and verified as made. At the completion of the Work and prior to Final Payment, a complete set of marked record drawings shall be furnished by the Contractor to the Owner. If the record drawings are not kept current each month, the Owner shall have no obligation to pay the Contractor until the record drawings are made current.

Section 6.02. Operation and Maintenance Data.

(a) The Contractor shall furnish complete and necessary data for the operation, repair, and maintenance of each operating component of the Work (hereinafter referred to as "the Data"). The Data shall include prints of shop drawings, "as-installed" conditions, sources of equipment and principal materials, specified tests and performance data, repair and maintenance data, lubrication instructions and recommendations, parts lists, and other catalog data or information required to operate and maintain any part of the Work. Care shall be taken to include all pertinent data and to exclude inapplicable or duplicative information.

(b) Prior to Final Payment, a set of Data shall be furnished to the Owner in an electronic PDF format. In addition, three (3) complete sets of the Data in a form directed by the Owner shall be provided to the Owner, indexed alphabetically by components, grouped together and securely bound in a durable folder or binder that is labeled and indexed to show its contents.

(c) Installation information for all machinery and equipment also shall be kept on the site of the Work during construction, but used or marked prints or data sheets are not to be used in assembling the final maintenance and operating manuals described in paragraph (b) of this Section 6.02.

(d) Operations and maintenance demonstrations by the manufacturer of all machinery and equipment shall be complete in all respects and shall specify the appropriate and inappropriate uses of the machinery and equipment.

Section 6.03. Information from Suppliers. The Contractor shall make it a requirement or condition of purchase from its suppliers of equipment and/or materials: (1) to furnish complete and adequate operating and maintenance data pertaining to their equipment and/or materials; (2) to assign to the Owner any warranty, express or implied, furnished by the manufacturer of the equipment and/or materials; and, (3) to assign to the Owner any customary maintenance or repair service, spare parts supply service, or personnel support service furnished by the manufacturer of the equipment and/or materials. If the terms and conditions of any warranty, maintenance or repair service, spare parts supply service, or personnel support service furnished by manufacturer of the equipment and/or materials are negotiable, they shall be negotiated by the Owner and the manufacturer.

ARTICLE 7

SUBCONTRACTS

Section 7.01. Definition.

(a) As used in the Contract Documents, a "subcontractor" is a person or organization that has a contract with the Contractor to perform any portion of the Work or to furnish any equipment, labor or materials to the Project.

(b) As used in the Contract Documents, a "sub-subcontractor" is a person or organization that has a contract with a subcontractor to perform any portion of the Work or to furnish any equipment, labor or materials to the Project.

Section 7.02. No Contractual Relationship with Owner. Nothing contained in the Contract Documents or otherwise shall create any contractual relationship between the Owner and any subcontractor or sub-subcontractor, and no

subcontract or sub-subcontract shall relieve the Contractor of its responsibilities and obligations should any subcontractor or sub-subcontractor fail to perform its work in a satisfactory manner. The Contractor agrees to be as fully responsible to the Owner for the acts and omissions of its subcontractors and their sub-subcontractors and of persons either directly or indirectly employed by them as it is for the acts and omissions of persons directly employed by Contractor.

Section 7.03. Award of Subcontracts.

(a) Unless the Owner gives its written approval to Contractor, the Contractor shall not enter into a subcontract or purchase order with any entity that is a party in any litigation, arbitration, or other dispute resolution proceeding with the Owner. The Contractor shall request written confirmation from any potential subcontractor or supplier prior to the execution of any subcontract or purchase order that there is no pending litigation, arbitration, or other dispute resolution proceeding where the Owner and the potential subcontractor or supplier are adverse parties. Such written confirmation shall be sent to the Owner within seven (7) days from the receipt of bids.

(b) If the Owner refuses to accept any subcontractor or material supplier (or sub-subcontractor) or person or organization because of such pending litigation, arbitration, or other dispute resolution proceeding, the Contractor shall submit an acceptable substitute at no additional cost to Owner.

Section 7.04. Change of Subcontractors. The Owner may require a change of any subcontractor. The Contract Price shall be adjusted accordingly due to the Owner's requiring a change of any subcontractor, sub-subcontractor, or material supplier previously approved in writing by the Owner, unless the change was required because the subcontractor, sub-subcontractor or material supplier was unable to timely or properly perform its work in accordance with the Contract Documents.

Section 7.05. No Substitution of Subcontractors. The Contractor shall not make any substitution for any subcontractor nor allow the substitution of any sub-subcontractor who has been accepted by the Owner, unless the substitution is required and previously approved by the Owner. Acceptable reasons for substitution (other than where required by the Owner) shall be limited to the following:

- (a) Inability of the subcontractor or sub-subcontractor to provide bonds, if required; or
- (b) Failure of the subcontractor or sub-subcontractor to perform according to approved schedules or other provisions of the Contract Documents; or
- (c) Other reasons which would reasonably render the subcontractor or sub-subcontractor unable to perform its work according to the Contract Documents as evidenced in writing by the Contractor.

Section 7.06. Subcontract Terms. All portions of the Work performed by a subcontractor or sub-subcontractor shall be pursuant to an appropriate agreement between the Contractor and the subcontractor (and where appropriate between subcontractors and sub-subcontractors) which shall contain provisions that:

- (a) Preserve and protect the rights of the Owner under the Contract Documents, including, but not limited to, the obligation to indemnify the Owner as set forth in Article 21 of this Contract with respect to the portion of the Work to be performed under the subcontract (or sub-subcontract) so that the subcontracting will not prejudice such rights; and
- (b) Require that such Work be performed in accordance with the requirements of the Contract Documents; and
- (c) Require submission to the Contractor of applications for payment under each subcontract to which the Contractor is a party; and
- (d) Require that all requests for additional compensation, extensions of time or otherwise with respect to subcontracted portions of the Work be submitted to the Contractor (via any subcontractor or sub-subcontractor where appropriate) in sufficient time so that the Contractor may comply in the manner provided in the Contract Documents for like requests by the Contractor upon the Owner; and
- (e) Name the Owner as an additional insured under all applicable insurance policies; and
- (f) Require compliance with the Small Business Participation Program requirements, including, but not limited to, the non-discrimination and prompt pay provisions.

Section 7.07. Subcontractor Relations Requirements. By appropriate written agreement, the Contractor shall require each subcontractor, to the extent of the Work to be performed by the subcontractor, to be bound by the obligations, terms and conditions of this Contract and the Contract Documents, and to assume toward the Contractor all the obligations, terms, conditions and responsibilities which the Contractor, by this Contract and the Contract Documents, assumes toward the Owner and the Engineer. Each subcontract agreement shall preserve and protect the rights of the Owner and the Engineer under this Contract and the Contract Documents with respect to the Work to be performed by the subcontractor so that subcontracting thereof will not prejudice the rights of the Owner or the Engineer. The Contractor shall require each subcontractor to enter into similar agreement with sub-subcontractors. The Contractor shall make available to each proposed subcontractor, prior to the execution of the subcontract agreement, copies of this Contract and the Contract Documents to which the subcontractor will be bound. Subcontracts shall similarly make copies of this Contract and the Contract Documents available to their respective proposed sub-subcontractors.

ARTICLE 8

PAYMENT TO SUBCONTRACTORS

Section 8.01. Payments to Subcontractors from the Contractor. The Contractor shall pay each subcontractor an amount equal to the percentage of completion allowed to the Contractor on account of the work of each subcontractor. The Contractor shall also require each subcontractor to make similar payments to its sub-subcontractors.

Section 8.02. Withholding of Payment by the Owner. If the Owner withholds monies for any cause which is the fault of the Contractor and/or the fault of a particular subcontractor, the Contractor shall pay all other subcontractors, in accordance with the terms of their applicable subcontract, if not in conflict with this Contract and applicable law, any time after the progress payment by the Owner should otherwise have been issued, for its Work to the extent completed. Notwithstanding this Section 8.02, Contractor may withhold funds from any subcontractor that is not performing its work in accordance with the Contract Documents.

Section 8.03. Independent Obligation to Pay. The obligation of the Contractor to pay its subcontractors (and their obligation to pay sub-subcontractors) is an independent obligation from the obligation of the Owner to make payment to the Contractor. The Owner shall have no obligation to pay or to see to the payment of any monies to any subcontractor or sub-subcontractor. The provisions of this Contract are solely intended for the benefit of the Owner and Contractor and not for any other person. Nothing in this Contract is intended to create any third party rights against the Owner.

Section 8.04. Payments to Sub-Subcontractors. This Contract is governed by federal prompt pay provisions where applicable and as set forth in Exhibit "E" to this Contract. To the extent that Tennessee statutes are not superseded by applicable federal statutes, Tennessee statutes also will apply. Contractor agrees to require each of its subcontractors (1) to pay their subcontractors for invoices submitted or normal progress payments for work completed satisfactorily pursuant to its contract with each subcontractor and (2) to make such payments to their respective subcontractors no later than fifteen (15) days after any such subcontractors receive payment from the prime contractor or their respective subcontractor, as applicable.

ARTICLE 9

CHANGES

Section 9.01. Changes in the Work.

(a) The Owner, without invalidating this Contract, may order extra work or make changes by altering, adding to or deducting from the Work by executing a Contract Amendment or a Construction Change Directive in a form provided by the Owner or Engineer. All Work performed pursuant to a valid Contract Amendment or a Construction Change Directive shall be performed under the conditions of this Contract and the Contract Documents.

(b) The Owner shall have authority to make changes in the Work not involving extra cost, not involving an extension to the Substantial Completion Date, and not inconsistent with the purposes of the Work, but otherwise, no extra Work or change in the Work shall be made unless pursuant to a Contract Amendment or a Construction Change Directive and no claim by Contractor for additional cost or fee or any extension of the Substantial Completion Date shall be valid unless so ordered in a written Contract Amendment or a Construction Change Directive.

(c) Engineer's Supplemental Instructions (ESI) are written instruments prepared by the Owner or Engineer to issue additional instructions or interpretations or to order changes in the Work not involving extra costs or fees, or any extension

of the scheduled Substantial Completion Date. Contractor shall give prompt written notice to Owner if it believes that the contents of an ESI require the Contractor to incur extra costs or fees or affect the Substantial Completion Date.

Section 9.02. Construction Change Directive.

(a) A Construction Change Directive is a written order prepared by the Owner, Program Manager, or Engineer and signed by the Owner, Engineer or Program Manager directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Price or the Substantial Completion Date, or both. The Owner may, by Construction Change Directive, without invalidating this Contract, order changes in the Work consisting of additions, deletions or other revisions.

(b) A Construction Change Directive shall be used in the absence of an agreement on the terms of a Contract Amendment.

(c) If the Construction Change Directive provides for an adjustment to the Lump Sum Price, the adjustment shall be based on one of the following methods:

- (1) Mutual acceptance of a lump sum properly itemized and supported by sufficient documentation to permit evaluation; or
- (2) Unit prices stated in the Contract Documents or subsequently agreed upon; or
- (3) Cost to be determined in a manner agreed upon by the Parties and a mutually acceptable fixed or percentage fee; or
- (4) As provided in paragraph (f) of this Section 9.02.

(d) Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Owner of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Price or the Substantial Completion Date.

(e) A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in the Contract Price, the Substantial Completion Date or the method of determining the adjustment. Such agreement shall be effective immediately and shall be recorded as a Contract Amendment.

(f) If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Price, the method and the adjustment shall be determined by the Owner on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Price, a reasonable allowance for overhead and profit. In such case, the Contractor shall keep and present, in such form as the Owner may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purpose of this paragraph shall be limited to the following:

- (1) The actual cost for labor, including social security and unemployment insurance, fringe benefits required by agreement, and workers' or workmen's compensation insurance; and/or
- (2) The actual cost of materials, supplies, machinery, and equipment, including cost of transportation, whether incorporated or consumed; and/or
- (3) The actual cost of subcontractors and sub-subcontractors; and/or
- (4) The actual cost of premiums for all bonds and insurance, permit fees and sales, use or similar taxes related to the Work; and/or
- (5) The actual additional costs of supervision and field office personnel, if any, directly attributable to the change.

(g) Pending final determination of cost to the Owner, amounts not in dispute may be included in Certificates and Applications for Payment. The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Contract Price shall be actual net cost, as confirmed by the Owner. When both additions

and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be calculated on the basis of net increase, if any, with respect to that change.

Section 9.03. Contract Amendment Procedure. If the Owner desires extra Work or changes in the Work, the Owner shall submit a Request for Proposal ("RFP") to the Contractor. The Contractor shall furnish to the Owner a statement setting forth in detail the proposal of the Contractor for performing the extra Work or changes and the effect of the extra Work or changes, if any, in the Contract Price and the Substantial Completion Date attributable to the extra Work or changes set forth in the request of the Owner. If the Owner approves in writing the proposal of the Contractor, a Contract Amendment in the form provided by the Owner shall be executed by the Parties and the Contract Price and the Substantial Completion Date shall be adjusted accordingly. In preparing Lump Sum quotes in response to an RFP, the Contractor shall provide a cost breakdown to the Owner that provides sufficient detail for the Owner or Engineer to determine that the quoted costs are reasonable and allowable and to verify that markups are properly calculated according to the terms of this Contract.

Section 9.04. Changes in the Contract Price. Any increase or decrease in the Contract Price attributable to a Contract Amendment performed by the Contractor or any of its subcontractors shall be governed by the provisions of Section 90-05 of the FAA's General Provisions.

Section 9.05. Time and Materials. In the event that the Owner and the Contractor cannot agree on the amount or time extension, if any due, to the Contractor for a Contract Amendment, the Owner may, in writing, direct the Contractor to proceed with the performance of such Work. The Contractor agrees to comply with any such directive issued by the Owner. If any additional compensation is due to the Contractor as a result of a directive, it will be calculated pursuant to the provisions of Section 150-90 of the FAA General Provisions Addendum.

Section 9.06. Unconditional Obligation to Proceed. Notwithstanding anything herein to the contrary, the Contractor will proceed with the Work so as to complete the Work on or before the Substantial Completion Date even if it has a dispute with the Owner concerning a Construction Contract Amendment, a Construction Change Directive or any extension of time which is or could be due to the Contractor pursuant to a Contract Amendment, a Construction Change Directive or otherwise.

Section 9.07. Request for Additional Compensation. If for any reason the Contractor believes that additional compensation is due for work not clearly provided for in the Contract Documents, the Contractor shall provide written notice to the Owner at least three (3) days before beginning the work which is not clearly provided for in the Contract Documents. If such notification is not given, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor shall not in any way be construed as proving or substantiating the validity of the request for additional compensation. When the work, which is the basis for the Contractor's request for additional compensation, has been completed, the Contractor shall, within ten (10) calendar days, submit evidence of costs incurred by the Contractor and a narrative which provides the basis for the request for additional compensation.

ARTICLE 10

THE UNDERSTANDING OF THE CONTRACTOR

Section 10.01. Examination of Work Site. The Contractor acknowledges that it has, by careful examination, satisfied itself as to the nature and location of the Work, the conformation of the ground conditions, the character, quality and quantity of the materials, equipment, supplies, machinery, and facilities needed preliminary to and during the performance of the Work, the general and local conditions, and all other matters which can in any way affect the Work.

Section 10.02. Sufficiency of Contract Documents and Representations of Contractor.

(a) The Contractor acknowledges that the Contract Documents are sufficient to enable it to determine the cost of all of the Work and that the Work can be completed in accordance with the Contract Documents for the Contract Price.

(b) The Contractor acknowledges that any observed errors, discrepancies, omissions, ambiguities, or conflicts in the Contract Documents will be brought to the attention of the Owner, as set forth in Section 2.04 of this Contract, and in a timely manner in order to ensure substantial completion of the Work by the Substantial Completion Date. The Contractor shall be responsible for using its best efforts to discover and observe errors, discrepancies, omissions, ambiguities, or conflicts in the Contract Documents. In addition, the Contractor acknowledges that the Owner has not made nor shall it be deemed to have made any warranties, guarantees, or representations of any kind whatsoever regarding the sufficiency of the Contract Documents or any conditions relating to the Work.

(c) Contractor represents that it has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing underground use facilities at or contiguous to the Work Site and, subject to the provisions of Section 10.03 of this Contract, assumes responsibility for the accurate location of said underground use facilities. No additional examinations, investigations, explorations, tests, reports, studies or similar information or data in respect of said underground use facilities are or will be required by Contractor in order to perform and furnish the Work for the Contract Price and substantially complete the Work by the Substantial Completion Date. However, notwithstanding anything herein to the contrary, the Contractor may, at its sole expense after receiving written permission from the Owner, and subject to any limitations specified by the Owner or Engineer, conduct any additional testing it deems necessary.

Section 10.03. Differing Work Site Conditions. If conditions are encountered at the Work Site that are: (1) subsurface physical conditions, which differ materially from those indicated in the Contract Documents; or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing Party shall be given to the other Party promptly before conditions are disturbed and in no event later than seven (7) days after the first observance of the conditions. The Owner or Engineer will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost, or time required, for performance of any part of the Work; will recommend an equitable adjustment in the Contract Price or the Substantial Completion Date, or both. However, any equitable adjustment in the Contract Price shall not include additional general conditions costs. If the Owner determines that the conditions at the Work Site are not materially different from those indicated in the Contract Documents and that no change in the terms of this Contract is justified, the Owner shall so notify the Contractor in writing, stating the reasons. Claims by the Contractor in opposition to such determination must be made within fourteen (14) days after the Owner has given notice of the decision.

Section 10.04. No Oral Modification. No oral agreement or conversation with any officer, agent or employee of the Owner or its representatives, including the Engineer, either before or after the execution of this Contract, shall affect or modify any of the terms or obligations contained in this Contract or the Contract Documents.

ARTICLE 11

SUPERVISION OF THE WORK; SAFETY AND SECURITY

Section 11.01. The Superintendent of the Contractor. The Contractor shall designate in writing to the Owner and keep on the Project during its progress a competent employee who has responsibility to oversee the Work ("Superintendent"). The Superintendent shall be satisfactory to the Owner. The Superintendent shall be changed upon written request of the Owner but shall not be changed by the Contractor except with the consent of the Owner, unless the Superintendent ceases to be in its employ. The Superintendent shall represent the Contractor, and all directions given to him by the Owner shall be as binding as if given to the Contractor directly. The Superintendent shall devote his full time to the Work and shall maintain an office on the Work Site. The Superintendent shall direct, coordinate and supervise all Work, inspect all materials delivered to the Work Site to ascertain whether or not they comply with the requirements of the Contract Documents, and reject all non-conforming materials or workmanship.

Section 11.02. Order and Discipline. The Contractor shall at all times be responsible for enforcing strict discipline and good order among its employees, and all employees of its subcontractors and sub-subcontractors. If any person on the Work Site shall appear to be incompetent, disorderly or intemperate, in any way disrupts or interferes with the Work, or is in any other manner not qualified for or unfaithful to the job entrusted to him, such person shall be discharged from the Project immediately and shall not again be employed on the Work Site without the prior written consent of the Owner.

Section 11.03. Cleaning Up.

(a) During the performance of the Work, the Contractor shall keep the Work Site clean and free of all rubbish, waste materials, debris and other materials in accordance with the instructions set forth in the Contract Documents. At the end of each working day, the Contractor shall remove all waste materials, rubbish, debris, and other materials from and about the Work Site as well as all surplus materials, and shall leave the Work Site clean in accordance with the Contract Documents.

(b) The Contractor shall establish an active ongoing program to eliminate any foreign objects from the Work Site that may cause damage to aircraft or cause personal injury to other persons.

(c) The Contractor shall pay particular attention to haul routes used to and from the Work Site to prevent any construction debris from being dropped or tracked that may present a hazard.

(d) The Contractor, upon written notice from the Owner, shall promptly cut the grass and clean debris around the Work Site. If the Contractor fails to clean up any debris which is deposited as a result of construction operations, the Owner will, after notice, immediately do so. The cost thereof will be charged to the Contractor at actual cost per hour, but not less than the minimum rate of Two Hundred Fifty Dollars (\$250.00) per hour. The Contractor shall assume full responsibility for failure to perform cleanup operations required by this Section 11.03.

(e) All materials delivered to the Work Site shall be stored and handled so as to preclude inclusion of any foreign substances, and to prevent any discoloration or damage which might reduce its effectiveness as part of the Work.

Section 11.04. Safety and Security.

(a) The Contractor shall be solely responsible for and oversee all safety orders, precautions and programs necessary for the safety of the Work. The Contractor shall take the precautions set forth in the Contract Documents in order to ensure the safety of all persons involved in the Work, all other persons whom the Work might affect, all equipment and materials incorporated in the Work, all property on the Work Site and adjacent to it, and the Owner's business operations which are functioning on the Work Site or in the vicinity of it.

(b) The Contractor shall keep an accurate record of all persons who are on the Work Site and shall provide a copy of such list to the Owner with each monthly Application and Certificate for Payment. The Contractor, its subcontractors, their sub-subcontractors and all employees of same, shall comply with all security rules made by the Owner and the Federal Aviation Administration. In addition, Contractor shall comply with the construction safety and health guidelines which are set forth in Exhibit D.

(c) The Contractor shall conform to Owner's rules and regulations for airport operations.

(d) Prior to the commencement of the Work, the Contractor shall provide to the Owner a list of all of its employees who will perform any portion of the Work.

Section 11.05. Observation of the Work.

(a) The Engineer, the Owner and persons designated by the Owner, shall at all times have access to the Work Site whenever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for observation. If the Owner or the Engineer discovers any defective Work in connection with any observation, it shall be reported to the Contractor in writing and the Contractor shall correct it.

(b) If the Contract Documents, the written instructions of the Owner, laws, ordinances, rules or regulations, or any public authority require any of the Work to be specifically tested or inspected, the Contractor shall give the Owner timely notice of its readiness for inspection and testing, and of the date set for such test or inspection. Inspections by the Owner or Engineer shall be promptly made. If any of the Work should be covered up without the approval or consent of the Owner, the Engineer or any public authority, it shall be uncovered for examination, if required by the Owner, the Engineer, or such other public authority, at the sole expense of the Contractor.

(c) Re-examination of questioned Work that has been previously tested or inspected by the Engineer or the Owner may be ordered by the Engineer or the Owner and, if so ordered, the questioned Work shall be uncovered by the Contractor. If such Work is found to be in compliance with the Contract Documents, the Owner shall pay the actual cost of the re-examination. If such Work is found not to be in compliance with the Contract Documents, the Contractor shall bear the costs of the re-examination.

(d) The Contractor shall not be required to provide professional services which constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to fulfill the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, then the Contractor shall promptly and at its expense secure such services. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, shop drawings and other submittals prepared by such professional. Shop drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Owner or Engineer. The Owner and the Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals.

ARTICLE 12

PERMITS, LICENSES, LAWS AND REGULATIONS

Section 12.01. Contractor to Secure All Permits. The Contractor shall secure and pay for all construction related permits, including the building permit. The Contractor shall be responsible for all inspections required by governmental authorities in conjunction with the issuance of said permits. Contractor shall secure and pay for all governmental fees, licenses and other permits necessary for the lawful and proper execution and completion of the Work.

Section 12.02. Compliance with Laws. The Contractor shall give all notices and shall comply with all laws, ordinances, rules, regulations and orders of any public authority having jurisdiction over the Work, which have any bearing on the execution of the Work. If the Contractor observes that any of the Contract Documents are at variance in any respect with any such laws, ordinances, rules, regulations and orders, it shall promptly notify the Owner and the Engineer in writing and any necessary changes shall be made by the Contractor. If the Contractor fails to give such notice or executes any of the Work in a manner contrary to any such laws, ordinances, rules, regulations or orders, the Contractor shall bear all resulting costs to correct said Work to comply with such laws and regulations and be liable for any resulting fines, penalties, judgments or damages imposed on or incurred by the Owner.

ARTICLE 13

TAXES AND OTHER FEES AND COSTS

Section 13.01. Payment of Taxes by Contractor.

(a) Any and all taxes, excises, duties and assessments in any manner levied, assessed or imposed by any government or subdivision or agency having jurisdiction over the Work shall be the sole responsibility and liability of the Contractor.

(b) The Contractor shall promptly pay and discharge when due, unless the validity or application is being contested by the Contractor in good faith, any and all taxes, excises, duties and assessments, together with any interest and penalties, if any, the responsibility and liability for which the Contractor has assumed pursuant to the provisions of paragraph (a) of this Section 13.01, unless any such tax, excise, duty or assessment is levied, assessed or imposed upon the Owner, in which case the Owner shall promptly give the Contractor notice of such levy, assessment or imposition, whereupon the Contractor shall promptly pay and discharge the same. Upon the written request and at the sole expense of the Contractor, the Owner shall assist the Contractor in contesting the validity or application of any such levy, assessment or imposition, and in the event a refund of all or any part of any tax, excise, duty or assessment (including interest and penalties, if any), said refund shall be refunded to the Contractor (less the amount of expenses associated with such contest not previously reimbursed by the Contractor to the Owner).

(c) The Contractor shall pay all applicable fees, and for all damage to sidewalks, streets, Owner's property, and other public property or to any public utilities caused by the performance of this Contract.

Section 13.02. Damage to Owner Property. Contractor agrees to promptly notify Owner of any damage caused to Airport property arising from Contractor's activities at the Airport. Contractor also agrees to comply with any request made by the Owner for reimbursement of costs associated with any damage to Airport property arising from work performed at the Airport by Contractor or any of Contractor's representatives, managers, employees, agents, contractors, subcontractors, licensees or invitees or from the conduct of same. This provision shall survive the termination of this Contract.

ARTICLE 14

SHOP DRAWINGS AND SAMPLES; MATERIAL TESTING

Section 14.01. Definitions.

(a) As used in this Contract, "shop drawings" are drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are prepared by the Contractor, any subcontractor, sub-subcontractor, manufacturer, supplier or distributor, and which illustrates some portion of the Work.

(b) As used in this Contract, "samples" are physical examples furnished by the Contractor to illustrate materials, equipment or workmanship.

Section 14.02. Submissions.

(a) Contractor shall submit to Owner all shop drawings in electronic format or as hard copies in accordance with the Technical Specifications. Contractor shall review, stamp with its approval and submit, in orderly sequence so as to cause no delay in the Work or the work of any other contractor, all shop drawings and samples required by the Contract Documents or subsequently by the Owner or Engineer. Shop drawings and samples shall be properly identified as specified in the Contract Documents or as the Engineer or Owner may require. At the time of submission, the Contractor shall inform the Engineer and the Owner by separate written correspondence of any deviation in the shop drawings or samples from the requirements of the Contract Documents.

(b) By approving and submitting shop drawings and samples, the Contractor represents that it has determined and verified all field measurements, field construction criteria, materials, catalogue numbers and other data, and that it has checked and coordinated each shop drawing and sample with the requirements of the Work and the Contract Documents.

Section 14.03. Review of the Engineer.

(a) The Engineer will review and act upon shop drawings and samples with reasonable promptness so as to cause no unreasonable delay in the Work, but only for conformance with the design concept of the Work and with the information given in the Contract Documents. The review of the Engineer or its agents of a given item shall not indicate approval of an assembly in which the item functions.

(b) The approval of the Engineer of shop drawings or samples shall not relieve the Contractor of its responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Engineer and the Owner by separate written letter of such deviation at the time of submission and the Owner or Engineer has given written approval of the specific deviation, nor shall the approval of the Engineer relieve the Contractor from responsibility for errors or omissions in the shop drawings or samples.

Section 14.04. Corrections Made by Contractor. The Contractor shall make any corrections required by the Owner or Engineer and shall submit the required number of corrected copies of shop drawing or new samples until approved by Owner. The Contractor shall direct specific attention in writing or on resubmitted shop drawings or samples to revisions other than the corrections requested by the Engineer or the Owner on previous submissions.

Section 14.05. Prior Approval Required. No portion of the Work requiring a shop drawing or sample submission shall be commenced until the submission has been approved by the Owner or Engineer. All such portions of the Work shall be performed in accordance with approved shop drawings and samples and the Contract Documents.

Section 14.06. Submittal Schedule. Within seven (7) days after execution of this Contract, the Contractor shall provide the Owner and the Engineer with a preliminary submittal schedule of the dates that each shop drawing or sample will be submitted for approval. Within thirty (30) days after execution of this Contract, the Contractor shall provide the Engineer and the Owner with a final schedule of the dates that each shop drawing or sample will be submitted for approval. The sequence of the submittals of the Contractor shall be scheduled so as to permit an orderly review by the Engineer. The schedule shall allow reasonable added time according to the number or complexity of shop drawings or samples in each submittal for the checking, correction and rechecking of corrections, as well as for return of approved or rejected shop drawings and samples to the Contractor. The submittal schedules shall allow not less than fourteen (14) calendar days for the Engineer to review any shop drawing or sample.

Section 14.07. Material Testing.

(a) If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any portion of the Work to be inspected, tested or approved, the Contractor shall give the Owner timely notice of its readiness so the Owner or Engineer may observe such inspection, testing or approval. The Contractor shall bear all costs of such inspections, tests or approvals required by public authorities. Unless otherwise provided, the Owner shall bear all costs of other inspection, tests or approvals.

(b) If the Owner or Engineer determines that any Work requires special inspection, testing or approval which paragraph (a) of this Section 14.07 does not include, the Owner or Engineer will instruct the Contractor to order such special inspection, testing or approval, and the Contractor shall give notice as provided in paragraph (a) of this Section 14.07. If such special inspection or testing reveals a failure of the Work to comply with the requirements of the Contract Documents,

the Contractor shall bear all costs thereof, including compensation for the Owner's or Engineer's additional services made necessary by such failure; otherwise, the Owner shall bear such costs and an appropriate Contract Amendment shall be issued.

(c) Required certificates of inspection, testing or approval shall be secured by the Contractor and promptly delivered to the Owner.

(d) If the Owner or Engineer is to observe the inspections, tests or approvals required by the Contract Documents, they will do so promptly.

ARTICLE 15

THE RIGHT OF THE OWNER TO INSPECT AND AUDIT

Section 15.01. Right to Audit. The Contractor shall keep full and accurate records of all costs incurred and items billed in connection with any Work which records shall be open to audit by the Owner, or any authorized representative of the Owner, including but not limited to the Federal Aviation Administration and the Comptroller General of the United States during the course of the Project and until four (4) years after the final payment by the Owner to the Contractor. In addition, the Contractor shall make it a condition of all subcontracts and sub-subcontracts entered into in furtherance of the Work that any and all subcontractors and sub-subcontractors will keep accurate records of costs incurred and items billed in connection with the subcontract (or sub-subcontract) and that such records shall be open to audit by the Owner, or any authorized representative of the Owner, including but not limited to the Federal Aviation Administration and the Comptroller General of the United States during the course of the Work and until four (4) years after final payment by the Owner to the Contractor.

Section 15.02. Review of Subcontracts. Upon request of the Owner or Engineer, the Contractor shall provide the Owner with an executed copy of all subcontracts, sub-subcontracts and purchase orders entered into in furtherance of the Work.

ARTICLE 16

SEPARATE CONTRACTS

Section 16.01. The Right of the Owner to Award Separate Contracts. The Owner reserves the right to award other contracts in connection with work at or in the vicinity of the Work and the Contractor agrees to cooperate fully and not to unreasonably interfere with the work of such other contractors.

Section 16.02. Cooperation. The Contractor shall afford the other contractors of Owner the opportunity for the introduction and storage of their materials and equipment to their work sites and for the execution of their work. The Contractor shall properly connect and coordinate the Work with work of any other contractors of the Owner.

Section 16.03. Inspection of Work of Other Contractors. If any part of the Work depends, for proper execution or result upon, the work of another contractor of Owner, the Contractor shall inspect and promptly report to the Engineer and the Owner any discrepancies or defects in such work that render it unsuitable for such proper execution or results. Failure of the Contractor to so inspect and report shall constitute an acceptance of the Work of the other contractor as fit and proper to receive the Work.

Section 16.04. Responsibility for Damage. Should the Contractor cause damage to the work or property of any other contractor of the Owner, including, but not limited to, delay, disruption, suspension of work and/or acceleration damages, the Contractor shall settle all claims with such other contractor if the other contractor will so settle. If such other contractor sues the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor who shall defend such proceedings at the expense of the Contractor, or provide counsel of Owner's choice for Owner at the expense of Contractor, and if any judgment or award against the Owner results, the Contractor shall pay or satisfy it and shall reimburse the Owner for all attorney's fees and other litigation costs which the Owner has incurred.

ARTICLE 17

WARRANTIES OF THE CONTRACTOR

Section 17.01. Warranty of Title. The Contractor warrants and guarantees that title to all Work, materials and equipment covered by an Application and Certificate for Payment, whether incorporated in the Work or not, will pass to the

Owner, free and clear of all liens, claims, security interests or encumbrances (hereinafter "Liens") and that none of the Work, materials or equipment covered by an Application and Certificate for Payment will have been acquired by the Contractor, or by any other person performing any part of the Work or furnishing materials and equipment for the Work, subject to an agreement under which a lien is retained by the seller or supplier.

Section 17.02. Special Warranties. When special guarantees or warranties are required by the Contract Documents for specific parts of the Work, the Contractor shall procure certified copies of such guarantees or warranties, countersign them and submit them to the Owner in triplicate. Delivery of such guarantees or warranties will not relieve the Contractor from any obligations assumed under any provision of this Contract or the Contract Documents.

Section 17.03. Assignment of Warranties. The Contractor hereby assigns to the Owner any and all existing assignable warranties, service life policies and patent indemnities of manufacturers of materials, equipment or items incorporated in the Work. Upon the request of the Owner or the Engineer, the Contractor shall give the Owner assistance in enforcing the rights of the Owner arising under such warranties, service life policies and patent indemnities. At the request of the Owner or the Engineer, the Contractor shall give notice (with copies to the Owner) to any such manufacturers of the assignment of such warranties, service life policies and patent indemnities.

Section 17.04. General Warranty and Correction of Work.

(a) In addition to any special guarantees or warranties contained in the Contract Documents, the Contractor warrants to the Owner that all materials and equipment furnished in performance of the Work will be new unless otherwise specified, and that all Work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All work not so conforming to these standards shall be considered defective.

(b) The Contractor shall promptly correct all defective Work to comply with the Contract Documents whether observed before or after the substantial completion date and whether or not fabricated, installed or completed. The Contractor shall bear all costs of correcting defective Work.

(c) If, within one (1) year after the substantial completion date, or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee or warranty required by the Contract Documents, any of the Work is found to be defective and not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Owner, or the Engineer, to do so.

(d) All defective or non-conforming Work shall be removed from the site of the Work if necessary, and the Work shall be corrected to comply with the Contract Documents without cost to the Owner. The Contractor also shall bear the cost of making good all work of other contractors destroyed or damaged by removal or correction of the defective Work of Contractor.

(e) If the Contractor fails to timely and properly correct defective Work, the Owner may correct it and hold the Contractor liable for all costs, expenses and damages, including attorney's fees and litigation costs incurred by Owner in correcting it.

(f) In addition to the foregoing warranty, a warranty period of one (1) year shall apply under the same terms and conditions as the original warranty, to any work, supplied in correction of defective work under warranty pursuant to the provisions of this Section 17.04 and the Contractor shall assign to the Owner any warranties, including extended warranties, which are available in connection with the performance of such correction of defective Work. The warranty period shall commence on the date the Owner accepts the corrective Work of the Contractor.

ARTICLE 18

RIGHT OF THE OWNER TO DO WORK

Section 18.01. Right of the Owner to do Work. If the Contractor should neglect to perform the Work properly or fails to do anything required by the Contract Documents, and the Contractor does not correct the untimely or improper performance within seven (7) days after written demand is made, the Owner may, without prejudice to any other remedy it may have under this Contract or at law or in equity, make good any deficiencies in the Work, including, but not limited to, supplementing the workforces of the Contractor and deduct all costs of doing so from the payment then due or thereafter due the Contractor. The Owner shall not be required to give multiple notices to the Contractor in order to exercise its rights under this paragraph.

Section 18.02. Deduction for Uncorrected Work. If the Owner deems it inexpedient to correct deficiencies in the Work pursuant to Section 18.01 of this Contract, the Owner may deduct the reasonable cost of correcting the deficiencies, including any attorney's fees and additional fees and expenses of the Engineer, from the payment then due or thereafter due to the Contractor, but the making of such a deduction shall in no way be deemed an election of remedies by the Owner.

Section 18.03. Correction of Work before Final Payment.

(a) The Contractor shall promptly remove from the Work Site all materials, equipment or other items rejected by the Engineer or the Owner as failing to conform to the Contract Documents, whether incorporated in the Work or not, and the Contractor shall promptly replace and re-execute its original work to comply with the Contract Documents without expense to the Owner. In addition, the Contractor shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

(b) If the Contractor does not remove rejected material, equipment or other items within a reasonable time (as fixed by written notice from the Owner, or the Engineer), the Engineer or the Owner may remove such items and store them at the expense of the Contractor, or dispose of such material, equipment or other items at the sole discretion of the Owner. If the Contractor does not pay the expense of such removal or storage within ten (10) days, the Owner may, upon ten (10) days written notice, sell such items at auction or at private sale and shall account for the net proceeds of such sale, after deducting all the costs and expenses of removal that should have been borne by the Contractor.

ARTICLE 19

INSURANCE

Section 19.01. Insurance Requirements. The Contractor shall fully comply with all requirements relating to insurance for the Project as set forth in this Article 19.

Section 19.02. Owner Controlled Insurance Program. The Owner has established an Owner Controlled Insurance Program (OCIP). To the extent required by the Owner, Contractor shall fully participate in and comply with all requirements of the OCIP. A copy of the OCIP Manual is attached hereto as Exhibit C and incorporated herein by reference. However, if the OCIP is not used, Contractor agrees to meet the requirements for Insurance coverage referenced in Section 19.03. A copy of the Construction Safety and Health Guidelines is attached hereto as Exhibit D and incorporated herein by reference.

Section 19.03. Contractor Provided Insurance Coverage. During the Term of this Contract, Contractor shall comply with the insurance requirements set forth in Exhibit C ("Insurance Requirements").

Section 19.04. Survival. The insurance provisions of this Article 19 shall survive any termination of this Contract.

ARTICLE 20

SURETY BONDS

Section 20.01. Surety Bonds Required. The Contractor shall furnish and keep in force throughout the performance of the Work a separate performance bond and separate labor and material payment bond, each in the amount of the total of the Contract Price (as the same may be modified from time to time) conditioned upon the faithful performance of the Work by the Contractor and payment of all obligations arising in connection with the Work by the Contractor. The bonds shall also guarantee to the Owner that the Work shall be free of all liens. The bonds shall name the Owner as obligee and shall be in such form and with such sureties as the Owner may approve prior to commencement of the Work.

ARTICLE 21

INDEMNIFICATION

Section 21.01. Indemnification of the Contractor.

(a) Without limiting any insurance required herein and to the fullest extent permitted by law, Contractor, on behalf of itself, its subcontractors, their agents, their employees or any entity or person for which the Contractor is or may be responsible (hereinafter collectively referred to as "Indemnitors"), shall fully defend, indemnify, save and hold the Owner,

the Board of Commissioners of the Owner, the Program Manager, the Engineer, their agents, employees, officers, directors, partners and related entities (hereinafter collectively referred to as "Indemnitees") harmless from and against all liability, damages, loss, claims, demands, actions and expenses of any nature whatsoever, including, but not limited to reasonable attorney's fees which arise out or are connected with: (1) any negligent act, error or omission by any Indemnitor, or (2) the failure of the Indemnitor to comply with any applicable laws, statutes, ordinances, rules or regulations of any governmental or quasi-governmental authority, or (3) the material breach of any term or condition of this Contract by any of the Indemnitors.

(b) Without limiting the generality of the foregoing, the indemnity set forth in this Article 21 shall include all liability, damages, loss, claims, demands and actions on account of personal injury, death or property loss to any third party, any Indemnitees, any of the Indemnitees' employees, agents, licensees or invitees relating to the Project and which results from the negligent act, error or omission of Contractor.

(c) When the Contractor is obligated to provide the Owner a defense hereunder, it shall do so with qualified counsel that is selected by the Contractor and approved by the Owner. Such approval shall not be unreasonably withheld. In light of the Owner and Contractor's continuing relationship, however, the potential for conflicts of interests exists if the same counsel represents both the Owner and Contractor when the Contractor accepts the Owner's tender of defense under the indemnity provision of this Contract. Therefore, the Owner retains the right to select its own counsel from a list of qualified attorneys provided by Contractor or Contractor's insurer. The selected counsel's fees and expenses shall be paid for by Contractor or its insurer, and the counsel shall be different from that selected by Contractor to represent it in the same matter.

(d) The indemnity set forth in this Article 21 shall survive any termination of this Contract.

Section 21.02. Labor Indemnity. The Contractor shall indemnify, defend and hold harmless the Owner, the Board of Commissioners of the Owner, the Program Manager, and the Engineer, their agents, employees, officers, directors, partners and related entities, from any and all administrative and judicial actions (including reasonable attorney's fees related to any such action), incurred by the Owner, the Program Manager, or the Engineer in connection with any labor related activity arising from the wrongful acts or omissions of the Contractor or its subcontractors in the performance of the Work of the Contractor. As used in this Contract, "labor related activity" includes, but is not limited to, strikes, walk-outs, informational or organizational picketing, use of placards, or distribution of hand-outs or leaflets at or in the vicinity of any facility where the Owner conducts business. The Owner shall advise the Contractor if any labor related activity occurs and the Contractor shall arrange for the legal representation necessary to protect the Owner, the Program Manager, and the Engineer provided such representation is previously approved by Owner.

Section 21.03. Royalties and Patents. The Contractor shall pay all royalties and license fees in anyway relating to the Work, shall defend all suits or claims for infringement of any patent or copyrights, and shall indemnify and hold the Owner, the Board of Commissioners of the Owner, their agents, officers, directors, partners and related entities, harmless from loss on account of such suit or claim.

Section 21.04. Attorney's Fees. In the event it becomes necessary for Owner to employ an attorney to enforce any provision of this Contract or to defend against any claim or litigation initiated by the Contractor, then the Contractor shall be liable for all attorney's fees and litigation expenses of Owner.

ARTICLE 22

RIGHT TO OCCUPY BY OWNER

Section 22.01. Early Occupancy by Owner. The Owner has the right to occupy or use ahead of schedule, at no additional cost nor obligation to Owner, all or any substantially completed or partially completed portion of the Work when such occupancy and use are in its best interest, notwithstanding the time of completion for all of the Work. Maintenance of occupied portion will remain the Contractor's responsibility.

Section 22.02. Corrections after Occupancy. After the Owner has taken occupancy of all or any portion of the Work, the Contractor shall not disrupt the use and occupancy of the Owner to make corrections in the Work.

ARTICLE 23

DEFAULT: RIGHT TO TERMINATE BY OWNER

Section 23.01. Breach of Contract Terms. (Required by FAA) Any violation or breach of terms of this contract on the part of the 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 the Contractor must undertake in order to avoid termination of the contract. Owner reserves the right to withhold payments to Contractor until such time the Contractor corrects the breach or the Owner elects to terminate the contract. The Owner's notice will identify a specific date by which the Contractor must correct the breach. Owner may proceed with termination of the contract if the Contractor fails to correct the breach by deadline indicated in the 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.

Section 23.02. Default and Termination by Owner. (Required by FAA)

(a) The Contractor shall be considered in default of his or her Contract and such default will be considered as cause for the Owner to terminate the Contract for any of the following reasons if the Contractor:

- (1) Fails to begin the Work under the Contract within the time specified in the Notice to Proceed, or
- (2) 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
- (3) 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
- (4) Discontinues the execution of the Work, or
- (5) Fails to resume Work which has been discontinued within a reasonable time after notice to do so, or
- (6) Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or
- (7) Allows any final judgment to stand against the Contractor unsatisfied for a period of 10 days, or
- (8) Makes an assignment for the benefit of creditors, or
- (9) For any other cause whatsoever, fails to carry on the Work in an acceptable manner.

Should the Engineer consider the Contractor in default of the Contract for any reason above, the Engineer shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the Owner's intentions to terminate the Contract..

(b) If the Contractor or surety, within a period of 10 days after such notice, does not proceed in accordance therewith, then the Owner will, upon written notification from the Engineer of the facts of such delay, neglect or default and the Contractor's failure to comply with such notice, have full power and authority without violating the Contract, to take the execution of the Work out of the hands of the Contractor. The Owner may appropriate or use any or all materials and equipment that have been mobilized for use in the Work and are acceptable and may enter into an agreement for the completion of said Contract according to the terms and provisions thereof, or use such other methods as in the opinion of the Engineer will be required for the completion of said Contract in an acceptable manner.

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

Section 23.03. Termination for Convenience by Owner. (Required by FAA) The Owner may terminate this Contract without cause at any time by providing fifteen (15) days prior written notice to Contractor. Upon receipt of a written notice of termination, except as explicitly directed by the Owner, the Contractor shall immediately proceed with the following obligations regardless of any delay in determining or adjusting amounts due under this clause:

- (a) Contractor must immediately discontinue work as specified in the written notice;

- (b) Terminate all subcontracts to the extent they relate to the work terminated under the notice;
- (c) Discontinue orders for materials and services except as directed by the written notice;
- (d) Deliver to the 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;
- (e) Complete performance of the Work not terminated by the notice; and
- (f) Take action as directed by the 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 the 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 the 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.

Section 23.04. Suspension by the Owner.

(a) The Owner may order the Contractor in writing to suspend, delay, or interrupt the Work in whole or in part for such period of time as the Owner may determine (hereinafter referred to as "Suspension").

(b) Provided the Suspension lasts for more than ninety (90) days, an adjustment to the Contract Price ("Adjustment") shall be made as set forth in paragraph (c) of this Section 23.02. The Substantial Completion Date shall be extended by written Contract Amendment to the extent that substantial completion is actually delayed by this Suspension. No Adjustment shall be made to the extent:

- (1) That performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is in full or in part responsible; or
- (2) That an equitable adjustment is made or denied under another provision of this Contract.

(c) The amount of the Contractor's compensation for a Suspension pursuant to this Section 23.02 shall be limited to any properly documented costs of maintaining personnel and equipment in the field provided such costs are pre-approved by the Owner in writing. The Owner shall not be liable at any time for home office overhead or consequential damages. At the Owner's option, the Contractor may be ordered to demobilize its forces because the Project is suspended. In such event, the Owner will reimburse the Contractor for the reasonable cost of demobilization and remobilization.

Section 23.05. Assignment of Subcontracts. In the event of termination by the Owner pursuant to this Article 23 or Exhibit E to this Contract, the Owner may require the Contractor to promptly assign to it all or some of the subcontracts, materials, tools, and equipment to be installed under this Contract, or rental agreements, and any other commitments which the Owner, in its sole discretion, chooses to take by assignment. In such event, the Contractor shall promptly execute and deliver to the Owner written assignments of such commitments.

ARTICLE 24

HAZARDOUS MATERIALS

Section 24.01. Hazardous Materials Covenants.

(a) Contractor hereby represents and warrants to and for the benefit of Owner that the Project or Work Site will not be used or operated in any manner that will result in the storage, use, treatment, manufacture or disposal of any Hazardous Materials (hereinafter defined) upon the Project or Work Site or any portion thereof or which will result in Hazardous Materials Contamination (hereinafter defined). For purposes of this Article 24, the term "Hazardous Materials" shall mean and refer to: (1) any "hazardous waste" as defined by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6901 *et seq.*), as amended from time to time, and regulations promulgated thereunder; (2) any "hazardous substance" as defined by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 U.S.C. § 9601 *et seq.*) ("CERCLA"), as amended from time to time, and regulations promulgated thereunder; (3) asbestos; (4) polychlorinated biphenyls; (5) urea formaldehyde; (6) any substance the presence of which on the premises is prohibited by any applicable environmental laws or regulations ("Laws") or by any other legal requirements affecting the Project or the Work Site; (7) petroleum based materials (with the exception of tires affixed to vehicles); and, (8) any other substance which is defined as hazardous, toxic, infectious or radioactive by any Laws or by any other legal requirements affecting the Project or Project site. For purposes of this Article 24, the term "Hazardous Materials Contamination" shall mean and refer to the contamination of the Project or Project site, soil, surface water, ground water, air, or other elements on, or of, the buildings, facilities, soil, surface water, ground water, air, or other elements on or of any other property as a result of Hazardous Materials at any time emanating from the Project or Work Site.

(b) In addition to and without limiting the generality of any other provision of this Contract, Contractor shall and hereby does indemnify and hold Owner, the Board of Commissioners of the Owner, the Program Manager, the Engineer, their agents, employees, officers, directors, partners and related entities harmless from and against any and all losses, damages, expenses, fees, claims, demands, causes of action, judgments, costs and liabilities, including, but not limited to, attorney's fees and costs of litigation, and costs and expenses of response, remedial and corrective work and other cleanup activities, arising out of or in any manner connected with: (1) the "release" or "threatened release" (as those terms are defined in CERCLA and the rules and regulations promulgated thereunder, as from time to time amended) by Contractor or Contractor's employees, agents, delegees, invitees, licensees, concessionaires, subcontractors or representatives, of any Hazardous Materials; or (2) any occurrence of Hazardous Materials Contamination affecting the Project or Work Site caused by or resulting from, in whole or in part, the operations of the Contractor or Contractor's employees, agents, delegees, invitees, licensees, concessionaires, subcontractors or representatives. The provisions of this paragraph shall survive any payment or satisfaction of this Contract and such provisions shall remain in full force and effect.

(c) When use or storage of hazardous materials or equipment or unusual methods of construction are necessary, the Contractor shall obtain prior written approval from the Owner. The use of explosives is strictly prohibited provided, however, powder activated fasteners are permitted.

(d) If Contractor encounters on the Work Site any substance or material reasonably believed by Contractor to be hazardous, Contractor immediately shall (i) stop work in the area affected, (ii) take measures appropriate to the condition to keep people away from the suspected Hazardous Material and, (iii) report the condition to Owner in writing. If the Work is so stopped and Hazardous Material is found, the Work in the affected area shall not thereafter be resumed except by the issuance of a Construction Change Directive pursuant to Section 9.02 of this Contract. Any such Construction Change Directive shall be limited to, an adjustment to the Substantial Completion Date appropriate. If no Hazardous Material is found after the Work is stopped, no Construction Change Directive is required to resume the Work in the affected area.

ARTICLE 25

MISCELLANEOUS

Section 25.01. No Waiver. No consent or waiver, express or implied, by either party to this Contract or of any breach or default by the other in the performance of any of its obligations hereunder shall be deemed or construed to be a consent or waiver to or of any other breach or default by such party. Failure on the part of the Owner to complain of any act or failure to act of the Contractor or to declare the Contractor in default, irrespective of how long such failure continues, shall not constitute a waiver of the rights of Owner.

Section 25.02. Assignment. This Contract shall not be assigned, delegated or transferred in whole or in part by the Contractor nor shall the Contractor assign any monies due or to become due to it without the prior written consent of the Owner.

Section 25.03. Governing Law. This Contract is entered into in Tennessee and shall be governed by and construed according to the laws of Tennessee. Any and all disputes arising out of this Contract, and/or the Project shall be decided by a state or federal court of competent jurisdiction in Memphis, Shelby County, Tennessee.

Section 25.04. Execution of Contract. The parties hereby agree and express their intent to execute this Contract electronically if Owner has a designated information processing system. The parties also hereby agree that this Contract may be executed in counterparts, each of which shall be deemed to be an original, but all of which, taken together, shall constitute one and the same agreement.

Section 25.05. Article and Section Headings. Article and section headings contained in this Contract are for ease of reference only and shall not affect the interpretation or meaning of this Contract.

Section 25.06. Parties in Interest. This Contract shall inure to the benefit of and be binding upon the Parties and their respective successors, assigns and legal representatives. It is specifically agreed between the Owner and the Contractor that the Parties do not intend to create any third party beneficiary rights by the execution of this Contract.

Section 25.07. Severability. If any one or more of the provisions contained in this Contract shall for any reason be held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision of this Contract, but it shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

Section 25.08. Written Notices. Whenever by the terms of this Contract notice shall be given either to Owner or to Contractor, such notice shall be in writing and shall be sent by regular United States Postal Service, by hand-delivery, by registered or certified mail, by a nationally recognized overnight delivery service or by electronic mail with a delivery receipt. Notice intended for Owner shall be addressed to the Vice President of Operations as follows with a copy to Owner's General Counsel at the address for regular mail:

If to the Owner, address to:

Regular Mail or Hand Delivery
Vice President of Operations
Memphis-Shelby County Airport Authority
2491 Winchester Rd., Suite 113
Memphis, Tennessee 38116-3856

Certified Mail or Overnight Delivery
4150 Louis Carruthers Drive
Memphis, TN 38118
(901) 922-8000

If to the Contractor, address to:

Either Party, from time to time, may change its address by giving written notice to the other Party.

Section 25.09. Exhibits. All exhibits described in this Contract shall be deemed to be incorporated into and made a part of this Contract. If there is any inconsistency between this Contract and the provisions of any exhibits, the provisions of this Contract shall control to the extent of the inconsistency.

Section 25.10. Entire Contract. This Contract, together with the exhibits and the other Contract Documents, constitutes the entire agreement between the Owner and the Contractor and supersedes all prior written or oral agreements, understandings, representations, negotiations and correspondence between the Parties. This Contract shall not be supplemented, amended or modified by any course of dealing, course of performance or usage of trade and may only be amended or modified by a written instrument duly executed by officers of both Parties.

Section 25.11. Non-Federally Assisted Projects. Regardless of the funding source for the Project, Contractor hereby agrees to comply with all nondiscrimination provisions of this Contract.

Section 25.12. Small Business Participation Programs.

(a) The Project is subject to the requirements of Owner's Small Business Participation (SBP) Program. It is the responsibility of the Contractor to see that all requirements of the SBP Program are met. The SBP Program participation goal for the Project is **THIRTEEN PERCENT (13%)**. The SBP Program goal shall apply to Change Orders. The Contractor must either meet the goal or make good faith efforts to do so. Good faith efforts are defined in Appendix A to 49 CFR Part 26. To qualify, a firm must be included on the Owner's list of certified SBE firms.

(b) In case of the Contractor's non-compliance with SBP Program requirements as applicable, including, but not limited to, documentation, cooperation, and truthfulness, the Authority shall impose such Contract sanctions as it may determine to be appropriate. This may include but is not limited to:

- (1) Withholding of payments to the Contractor under the Contract until the Contractor complies; and/or
- (2) Cancellation, termination, or suspension of the Contract, in whole or in part; and/or
- (3) Assessing sanctions; and/or
- (4) Payment by the Contractor to the Authority of an amount equal to the difference in the SBE dollar value contracted for and the dollar value achieved in documented SBE participation or any lesser amount or penalty as deemed appropriate by the Authority, which dollar value shall be considered liquidated damages for failure to perform the requirements of the Contract and for which Contractor and all of its subcontractors agree to be bound.

(c) Retainage will not be withheld on this project. No retainage will be withheld by MSCAA from progress payments due the Contractor. Retainage by the Contractor or subcontractors is prohibited, and no retainage will be held by the Contractor from progress payments due to subcontractors.

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

Contractor shall utilize the specific SBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains written consent from the Authority. Unless consent is provided by the Authority, Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed SBE.

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

Before transmitting to the Authority its request to terminate and/or substitute a SBE subcontractor, Contractor must give notice in writing to the SBE subcontractor, with a copy to the Authority, of its intent to request to terminate and/or substitute, and the reason for the request.

Contractor must give the SBE five days to respond to the notice. In the response, the SBE must advise the Authority and Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why Owner should not approve the Contractor's action. If required in a particular case as a matter of public necessity (e.g., safety), Owner may provide a response period shorter than five days.

Section 25.13. No Financial Benefit. Contractor understands and agrees that no Owner employee or member of the Board of Commissioners, Memphis City Council or Shelby County Commission shall receive any financial benefit arising out of this Contract, either directly or indirectly. Further, any fees paid to any person or entity by Contractor for assistance in obtaining this Contract with Owner must be fully disclosed to Owner. Notwithstanding any term, condition, obligation or provision in this Contract, any other writing, any other agreement, any oral understanding or agreement, or any conduct or failure to act by the Owner, Contractor stipulates and agrees conclusively that Contractor has against the Owner no right, entitlement or claim for any payment, compensation, cost or remuneration of any type other than pursuant to the terms of this Contract.

ARTICLE 26

FEDERAL AVIATION ADMINISTRATION (FAA) REQUIRED CONTRACT PROVISIONS

Section 26.01. FAA Required Provisions. Federal laws and regulations require that specific contract provisions be included in certain contracts and subcontracts. All such provisions are set forth in Exhibit E, which is attached hereto and incorporated herein by reference. Contractor hereby agrees to insert these provisions in each contract and subcontract (to the extent applicable) related to the performance of this Contract and to require each of its subcontractors to do the same. Contractor also hereby agrees to incorporate these provisions by reference for work done under any purchase order, rental agreement or other agreement for supplies or services related to the performance of this Contract. Contractor further agrees to be responsible for compliance with these provisions by any subcontractor, lower-tier subcontractor or service provider. Contractor acknowledges that the FAA prevents any modification to these provisions that creates a conflict with federal laws and regulations or changes the intent of the required provision.

ARTICLE 27

STATE REQUIRED CONTRACT PROVISIONS

Section 27.01. State of Tennessee Laws and Regulations - Grant Contract Provisions. State laws and regulations require that specific contract provisions be included in certain contracts and subcontracts. All such provisions are set forth in Exhibit E, which is attached hereto and incorporated herein by reference.

*The remainder of this page intentionally left blank.
[Signature page to follow.]*

IN WITNESS WHEREOF, the Parties have made and executed this Contract as of the day and year first above written.

**MEMPHIS-SHELBY COUNTY
AIRPORT AUTHORITY**

CONTRACTOR

By: _____

By: _____

Title: President and CEO

Title: _____

Approved as to Content:

By: _____

Title: Vice President of Operations

Approved as to Form and Legality:

By: _____

Title: General Counsel

Reviewed and Approved:

By: _____

Title: Director of Development

By: _____

Title: Sr. Manager of Business Diversity Development

**EXHIBIT A
TO
UNIT PRICE CONSTRUCTION CONTRACT
FOR
EAST PARKING LOT EXPANSION - PHASE 5 - CONSTRUCTION**

**BY AND BETWEEN
THE MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY
AND
(CONTRACTOR NAME)**

SCOPE OF WORK

Construct improvements to the existing Yellow Lot at MEM to create partitioned public and employee parking areas. The improvements will include a reconfigured public lot entrance, a new access-controlled employee lot entrance, and an access-controlled entrance to the public lot for airport shuttle buses only. Included in the project will be a new access drive south from the Air Cargo complex to serve the bus entrance and employee lot and a new walkway for employee use which will provide a direct route into Terminal C while eliminating the need to cross the outbound Terminal roadway.

The scope of work is more specifically described in the Contract Documents, as defined in Article 2 of this Contract.

**EXHIBIT B
TO
UNIT PRICE CONSTRUCTION CONTRACT
FOR
EAST PARKING LOT EXPANSION - PHASE 5 - CONSTRUCTION**

**BY AND BETWEEN
THE MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY
AND
(CONTRACTOR NAME)**

CONTRACT DOCUMENTS

**EXHIBIT C
TO
UNIT PRICE CONSTRUCTION CONTRACT
FOR
EAST PARKING LOT EXPANSION - PHASE 5 - CONSTRUCTION**

**BY AND BETWEEN
THE MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY
AND
(CONTRACTOR NAME)**

OWNER CONTROLLED INSURANCE PROGRAM

INSURANCE REQUIREMENTS (OCIP)

C.1. Owner Controlled Insurance Program

The Owner has elected to implement an Owner Controlled Insurance Program (OCIP) that will provide **Workers' Compensation, Employer's Liability, Commercial General Liability, Excess Liability and Builders' Risk insurance** for Contractors and Subcontractors of every tier who have been properly enrolled and are providing direct labor to the Project. A general summary of coverage provided by the OCIP is included in the MSCAA OCIP Manual, (hereinafter called the Manual), a copy of which is attached hereto and made a part of this Agreement and should be attached to and incorporated in every subcontract. All terms and conditions of Exhibit C will apply during the term of the contract. The Owner agrees to pay all premiums associated with the OCIP.

While the OCIP provides uniform coverages and reasonable limits, the OCIP is not intended to meet all the insurance needs of the Contractor and eligible Subcontractors who have been properly enrolled. In addition to any insurance provided by Owner, the Contractor and all Subcontractors working on the Project will be responsible for providing certain insurance as specified in paragraph C.2. Contractors and eligible Subcontractors should discuss the OCIP with their insurance agent or consultant to assure that other proper coverages are maintained. Contractor and eligible Subcontractors enrolled in the OCIP agree that the insurance company policy limits of liability, coverage terms and conditions shall determine the scope of coverage provided by the OCIP.

C.1.1. Applicability of the OCIP

Participation in the OCIP by the Contractor and all eligible Subcontractors is mandatory but not automatic. The Contractor and each eligible Subcontractor (as defined below) must follow the enrollment procedures shown in the Manual. The Contractor shall comply with all requirements of the OCIP as outlined in the OCIP Manual and shall require all eligible Subcontractors to comply with requirements of the OCIP manual. The Manual may be updated and revised during the course of construction to reflect any changes in State Law, Rules and/or Regulations or Procedures that may be necessary or appropriate, and said revisions will replace all previous versions. Copies of any revised Manual will be distributed by the OCIP Administrator.

- If the Contractor or any eligible Subcontractor fails to enroll any of its eligible Subcontractors of any tier, it will be subject to a penalty charge of the full and complete deduct as shown in C.1.2.c or 3% of the subcontract cost, whichever is greater. Note: Collection of the penalty charge of any non-enrolled contractor(s) of any tier does not provide automatic coverage in the program.
- If any Contractor or any eligible Subcontractor enrolls in the OCIP more than 30 days after its start date, it will have to provide a No Known Loss Letter to the Carrier along with the enrollment documentation.

Eligible Subcontractor includes all Subcontractors providing or subcontracting for direct labor on any Designated Project (see definition of ineligible Subcontractors below).

Ineligible Subcontractor includes (but is not limited to) subcontractors performing any type of environmental remediation work (example: asbestos or underground tank removal), consultants, suppliers (that do not perform or subcontract installation), vendors, materials dealers, guard services, janitorial services, truckers (including trucking to any Designated Project where delivery is the only scope of work performed), employee leasing companies, temporary labor services and other temporary project services. However, such Employee leasing and temporary labor service companies can be insured by the OCIP but must be submitted for review to the OCIP administrator prior to acceptance.

A Designated Project is a project designated and approved by the Owner as a Designated Project and, enrolled by the OCIP Administrator with the insurance company. This project is a Designated Project. A Designated Project includes operations necessary or incidental to the Work. The Contractor's/Subcontractor's regularly established workplace, plant, factory, office, shop, warehouse, yard or other property even if such operations are for fabrications of materials to be used at the job site or training of apprentices will be considered off-site and not covered by the OCIP.

Unless otherwise directed by the Owner, the Contractor, eligible Subcontractors and all Subcontractors not enrolled in the OCIP, will be required to maintain at least the insurance coverages set forth in paragraph C.2 and are required to participate in the MSCAA OCIP Safety Program. Contractor will promptly furnish the Owner, or their designated representative, certificates of insurance giving evidence that all required insurance is in force.

C.1.2. Contractor Insurance Cost Identification

The Contractor and eligible Subcontractors will exclude their cost for all insurance coverages to be provided by the Owner for the work at any Designated Project from their bid. The Contractor and each Subcontractor of any tier warrant that all insurance premium calculations for work performed at the Designated Project Site have been correctly identified and removed from their bids.

C.1.3. Change Order Pricing

Contractor and all enrolled Subcontractors will price each change order to exclude the cost of insurance.

C.1.4. Assignment of Return Premiums

The Owner will be responsible for the payment of all premiums associated solely with the OCIP and will be the sole recipient of any dividend(s) and/or return premium(s) generated by the OCIP. In consideration of the Owner's provision of said coverages under the OCIP program, the Contractor and eligible Subcontractors agree to:

- 1) Exclude all applicable insurance costs for coverage provided by the Owner associated with their contract work and excluded from their bid; and cooperate with the OCIP Administrator in the administration of the OCIP.
- 2) Irrevocably assign to and for the benefit of the Owner, all return premiums, premium refunds, premium discounts, dividends, retentions, credits, and any other monies in connection with the OCIP insurance. Contractor also assigns its right of cancellation of all insurance policies provided by Owner. Contractor agrees to evidence such assignment by executing and delivering the Form-2. Contractor further agrees to require each eligible Subcontractor to execute the assignment on the Form-2, for the benefit of the Owner.

C.1.5 Audit of Contractor and/or Subcontractor Payroll

For insurance purposes, the Contractor and all tiers of Subcontractors agree to keep and maintain accurate and classified records of their payroll for operations at any Designated Project. Contractor and all eligible Subcontractors agree to furnish a copy of the Monthly Payroll Reporting Form, Form 5, to the OCIP Program Administrator by the 20th of each month and attach a copy of the Form-5, to their monthly pay application. If this report (Form-5) is not attached to the monthly pay application, payment may be held until the report is received.

The Contractor and all eligible Subcontractors will permit the Owner and its representative to examine and/or audit its books and records pertaining to any Designated Project. Contractor and eligible Subcontractor will also provide any additional information to the Owner or its appointed representatives as may be required. At the end of each contract, an audit may be performed of the reported payroll by the OCIP Carrier.

Upon Final Completion of each contract, the Contractor and eligible Subcontractors will furnish a completed and signed Form-4 - Notice of Anticipated Completion Form (a copy of which is attached hereto as "Form-4") to the OCIP Administrator, together with all required documentation.

Demobilization payments will not be released until all closeout documentation has been received and approved.

C.1.6. OCIP Deductibles

General Liability:

If a claim arises under the Owner provided Commercial General Liability OCIP policy from the partial or sole negligence of a Contractor or Subcontractor, or for violation of any OCIP Safety Requirements, such Contractor or Subcontractor shall be

responsible for reimbursing the Owner's deductible to the extent of their respective negligence, as determined solely by owner, up to a maximum of \$10,000 per occurrence per Contractor.

Builders Risk:

The Contractor shall be responsible for a deductible of \$25,000 for each and every loss.

C.1.7. Termination/Modification of the OCIP

The Owner reserves the right to terminate or to modify the OCIP or any portion thereof. To exercise this right, the Owner will provide thirty (30) days advance written notice of termination or material modification to the Contractor and all eligible Subcontractors covered by the OCIP. In such event, the Contractor will promptly obtain appropriate replacement insurance coverage acceptable to the Owner. Written evidence of such insurance will be provided to the Owner prior to the effective date of the termination or modification of the OCIP coverages. The reasonable cost of such replacement insurance will be reimbursed by the Owner to the Contractor.

SPECIAL NOTE: The Contractor and eligible Subcontractors who have completed their work at any Designated Project and whose insurance as provided by MSCAA OCIP has been terminated, and who returns to the site to perform warranty work does so under its own insurance coverages and not under those provided by MSCAA OCIP.

C.2 Contractor Provided Coverages

All insurance obtained by the Contractor pursuant to this Agreement shall be written by insurance companies licensed to do business in Tennessee and acceptable to Owner.

Prior to the commencement of any operations by or on behalf of the Contractor relating to the Project, and with respect to any and all such operations, the Contractor shall procure, maintain and provide to Owner and the Program Manager:

- 1) Evidence of Contractor's **Commercial Automobile Liability Insurance**. A certificate of insurance and copy of endorsement shall be provided as evidence of:
 - a) Coverage for Owner, their officers, directors and employees as additional insureds.
 - b) Coverage to apply to all liability arising out of the ownership or use of all vehicles owned by, hired by, or used on behalf of the Contractor.
 - c) Waiver of Subrogation to be provided in favor of the Owner, the Design Professional, the Program Manager and their officers, directors, and employees.
 - d) If hazardous materials or waste are to be transported, the policy will be endorsed with the MCS-90 endorsement in accordance with the applicable legal requirements.

This insurance shall be for an amount not less than \$1,000,000 combined single limit liability.

- 2) Evidence of Contractor's **Workers' Compensation and Employer's Liability Insurance**. A certificate of insurance or, at Owner's request, a certified policy copy shall be provided as evidence of:
 - a) Coverage for claims for damages arising out of bodily injury, occupational sickness or disease or death of Contractor's employees under any applicable workers' compensation statute or any other applicable employers' liability law. Certificate of insurance or policy must clearly identify that coverage applies in the state of Tennessee.
 - b) A waiver of subrogation by the insurer against the Owner the Design Professional, the Program Manager and their officers, directors and employees.
 - c) This insurance shall include Employer's Liability limits of not less than \$1,000,000 bodily injury each accident, \$1,000,000 bodily injury by disease each employee and \$1,000,000 bodily injury by disease in the aggregate.
 - d) All Enrolled Contractors must provide Workers' Compensation and Employer's Liability insurance covering all employees for injuries that occur AWAY from the Designated Project Site or after OCIP termination, expiration, or cancellation.
 - e) Ineligible subcontractors or subcontractors not enrolled must provide coverage for ALL operations.

- 3) Evidence of Contractor's **Commercial General Liability Insurance**. Certificate of insurance and copies of endorsements to Contractor's primary commercial general liability policy and shall be provided as evidence of:
- a) Coverage for Owner and the Design Professional, Program Manager, their officers, directors and employees as additional insureds as respects claims or liabilities arising from or connected with Contractor's work, operations and completed operations. The additional insured endorsements shall be at least as broad as the ISO CG 2010 (1001) during the course of construction and CG2037 (1001) until the expiration of the statute of repose, or its carrier equivalent.
 - b) Coverage shall be primary and non-contributing with any coverage Owner maintains in its own name and on its own behalf.
 - c) Coverage shall be written on an occurrence coverage form, with coverage at least as broad as that provided under the current edition of the ISO Commercial General Liability coverage form, CG 0001. Other than standard exclusions applicable to pollution, asbestos, mold, employment practices, ERISA and professional liability, there shall be no limitations or exclusions beyond those contained in the standard policy forms which apply to property damage, products and completed operations, contractual liability or construction defects. In addition to procuring and maintaining this insurance during the duration of the contract, contractor agrees to continue to procure and maintain products and completed operations liability insurance coverage for a minimum of six (6) year(s) after the date the contract is completed or terminated or in accordance with the applicable statute of limitations under state law, whichever is longer.
 - d) Waivers of subrogation by insurers against Owner, Design Professional, Program Manager and their officers, directors and employees.
 - e) Contractual Liability Insurance applicable to the indemnification agreement contained in Section 21.01 of this Agreement.
 - f) The required amounts of primary Commercial General Liability Coverage in the amount of:

\$1,000,000	Bodily Injury and Property Damage Limit for each occurrence
\$1,000,000	Personal & Advertising Injury
\$2,000,000	General Aggregate (Annual)
\$2,000,000	Products/Completed Operations Aggregate (annual)

The general aggregate limit shall apply separately to each project.
 - g) All Enrolled Contractors must provide General Liability insurance covering third-party losses that occur AWAY from the Project Site (including products liability for any product manufactured, assembled or otherwise worked upon away from the Designated Project Site) or after OCIP termination, expiration or cancellation.
 - h) Ineligible contractors or subcontractors not enrolled must provide coverage for ALL operations.
 - i) The policy will be endorsed to exclude any "Designated Project" for onsite coverage only, if you are a participant in the OCIP.
- 4) Evidence of Contractor's **Excess or Umbrella Liability Insurance**. Certificate of insurance and copies of endorsements to Contractor's Excess or Umbrella liability policy and shall be provided as evidence of this excess liability or umbrella insurance with an annual an aggregate amount of not less than **\$10,000,000** for the Contractor and \$1,000,000 limits required of subcontractors unless otherwise stated in the Contract Documents, and shall be excess and follow form over primary coverages included herein. Such coverage will be excess and "drop down" for defense and indemnity in the event of exhaustion of the underlying insurances of Commercial, Automobile, Liability, Employer's Liability and the Commercial General Liability policies.

5) Evidence of **Professional Liability Insurance:**

Per Claim and in the Aggregate:

\$0

All professional services firms must provide professional liability insurance appropriate for their profession. Architectural and engineering firms must provide coverage for liability arising out of design errors and omissions. The policies shall provide a three (3) year extended reporting period.

6) Evidence of **Contractors Pollution Liability Insurance:**

Each Occurrence Limit and in the Aggregate:

\$1,000,000

Coverage applies to third-party bodily injury and property damage claims (including natural resource damage), and clean-up costs, caused by pollution conditions which result from covered operations performed by, or on behalf of, contractors and subcontractors of all tiers at the Designated Project Site. Coverage shall apply to claims for mold and fungus damage that result from the work as well as gradual and sudden and accidental pollution incidents arising from activities of the contractors working at the project site.

Coverage must be evidenced for on-site and off-site transportation which may result in a pollution incident/event and non-owned disposal site coverage (if applicable to the project).

The policy shall be endorsed to provide a Waiver of Subrogation in favor of the Owner, Design Professional and Program Manager. In addition, the Owner, their officers, directors and employees shall be included as Additional Insureds.

7) Evidence of **Contractor's Equipment Insurance:**

The Contractor is responsible for their tools and equipment including, but not limited to, construction trailers and their contents and temporary scaffolding at the project site, whether owned, leased, rented or borrowed. Contractor acknowledges and agrees that the Owner will not be responsible for any loss or damage to their tools and equipment. If insured, the Contractor's insurance policies covering tools and equipment will include a waiver of subrogation and any other rights of recovery in favor of the Owner. If uninsured, the Contractor will hold harmless the Owner, Program Manager and Design Professional for loss or damage to their tools and equipment.

8) **Aircraft/Aviation Liability Insurance:**

Each Occurrence Limit and in the Aggregate (including passenger liability): **\$1,000,000**

The operator of an aircraft of any kind, whether manned or unmanned, must maintain liability insurance covering bodily injury and property damage on a Combined Single Limit basis. If non-employee passengers are carried, there cannot be a per-passenger sublimit.

Prior to commencing operations, the operator must provide the Owner with a certificate of insurance naming the Owner, their officers, directors and employees as additional insureds on a primary and non-contributory basis. Operator and their insurer(s) must hold the Owner harmless and waive subrogation with respect to damage to the aircraft.

If aircraft is to be used to perform lifts at the Designated Project Site, a "slung cargo" endorsement must be included to cover the full replacement value of any equipment being lifted.

NOTE: If the Contractor and / or eligible Subcontractor participating in the OCIP choose(s) to have the policy endorsed to include any "Designated Project" site during the construction period, coverage should be Excess and/or Difference in Conditions (DIC) of the OCIP and this cost should not be passed back to the Owner. Inclusion of any "Designated Project" Site on such insurance policies shall not replace the OCIP coverage or otherwise affect the cost identification requirement in paragraph C.1.2.

C.2.2. Contractor's Insurance Primary.

Any coverage applicable to Owner under Contractor's insurance policies shall be primary and non-contributing with any insurance maintained by Owner in its own name and on its own behalf. Copies of endorsements to Contractor's policies shall be provided to Owner.

C.2.3. Cancellation.

All such insurance shall be in form and substance satisfactory to the Owner and shall provide that not less than thirty (30) days' notice of cancellation or non-renewal, other than non-payment of premium which shall be ten (10) days' notice, be provided to Owner. If unavailable, Contractor must provide Owner with thirty (30) days' advance written notice of cancellation, other than non-payment of premium, which shall be ten (10) days' notice. Contractor must notify Owner of any material change or reduction in coverage to the Contractor's insurance policies.

C.2.4. Certificates of Insurance - Contractor Provided Insurance Coverage Requirements

As shown in Section C.2

Description of Operations for contractors participating in the OCIP shall read:

Workers' Compensation and Commercial General Liability coverages shown above do not apply to any Designated Project at the Memphis International Airport.

Additional Insured Wording for Contractors shall read:

Memphis-Shelby County Airport Authority, Program Manager, Design Professional and their officers, commissioners, agents and employees as now or hereafter exist as respect to the services / work to be performed under this Agreement, for coverages as required by contract MSCAA Project #23-1469-03.

Additional Insured Wording for Subcontractors shall read:

For Subcontractors participating in the OCIP

The Memphis-Shelby County Airport Authority, Program Manager, Design Professional and their officers, commissioners, representatives, agents and employees ATIMA are additional insureds for coverages as required by contract.

For Subcontractors not participating in the OCIP

The Memphis-Shelby County Airport Authority, Program Manager, Design Professional and their officers, commissioners, representatives, agents and employees ATIMA and Awarding Contractor are additional insureds as respect to the services / work to be performed under this Agreement for coverages as required by contract.

IN THE EVENT THAT THE LAW OF THE STATE IN WHICH THE PROJECT IS LOCATED (OR APPLICABLE LAW) LIMITS THE ADDITIONAL INSURED COVERAGE THAT OWNER MAY REQUIRE FROM CONTRACTOR AND SUBCONTRACTORS, THEN CONTRACTOR AND SUBCONTRACTORS SHALL BE REQUIRED TO OBTAIN ADDITIONAL INSURED COVERAGE TO THE FULLEST EXTENT OF COVERAGE AND LIMITS ALLOWED BY APPLICABLE LAW AND THIS CONTRACT SHALL BE READ TO CONFORM TO SUCH LAW.

Filing of Certificates

Certificates of insurance acceptable to the Owner shall be filed with the Owner by furnishing to the OCIP Administrator, prior to commencement of the Work. If any of the foregoing insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment.

A sample is provided of a certificate of insurance is provided in the OCIP Manual.

MSCAA OCIP

c/o Willis Towers Watson National Project Insurance Practice.

Attn: OCIP Administrator

15305 North Dallas Parkway, Suite 1100

Addison, TX 75001

C.2.5. The Right of the Owner to Maintain Insurance.

In the event the Contractor fails to furnish and maintain the required insurance or to furnish certificates of insurance, the Owner shall have the right, at its option, to terminate this Agreement or to take out and maintain such insurance, and hold the Contractor liable for the cost. Compliance by the Contractor with the requirements of this Article shall in no way relieve the Contractor from liability under any provision of this Agreement or the Contract Documents.

C.2.6. Other Insurance

Any type of insurance or any increase of limits of liability not described in this section which the Contractor or any Subcontractor requires for their own protection or on account of any statute will be their own responsibility and their own expense. Any type of insurance or any increases of limits of liability not described herein that the Contractor or any Subcontractor requires for its own protection or on account of statute shall be its own responsibility and its own expense. If the Contractor or the Subcontractors maintain any insurance policies covering owned, leased or borrowed, equipment, such policies shall contain a waiver of subrogation against the Owner. Each item must be shown as a line item and approved by the Owner.

C.2.7. Deductibles

The Contractor shall be responsible for the payment of the deductible amounts for any insurance in force pursuant to this Agreement whether such insurance is furnished by the Owner or the Contractor.

C.2.8. Insurance for Project Property While outside the United States and Canada.

If any project property is in transit or is located outside the continental United States or Canada for any reason, Contractor shall arrange to insure such property for its full replacement value separate from the other insurance described herein.

C.2.9. Subcontractors Flow-Down Clause.

Subcontractors of all tiers are subject to the same insurance requirements as Contractor. Contractor shall cause each Subcontractor employed by Contractor to purchase and maintain such insurance and upon request, must promptly furnish Owner with copies of certificates of insurance evidencing coverage for each Subcontractor.

C.2.10. No Representation of Coverage Adequacy.

In specifying minimum Contractor insurance requirements, Owner does not represent that such insurance is adequate to protect Contractor for loss, damage or liability arising from its work. Contractor is solely responsible to inform itself of the types or amounts of insurance it may need beyond these requirements to protect itself. The insurance requirements set forth in minimum amounts shall not be construed to relieve Contractor for liability in excess of such coverage, nor shall it preclude Owner from taking such other actions as is available to it under any other provision of the contract.

C.2.11. Contractor Responsibilities

The Contractor will cooperate with and will require all eligible Subcontractors to cooperate with The Owner and/or the OCIP Administrator with regards to the administration and operation of the OCIP. The Contractor and eligible Subcontractors responsibilities will include, but not be limited to:

- 1) Compliance with all rules and regulations of the applicable State Insurance Bureau/Board; failure to meet state requirements may result in fines being assessed, and, if this occurs, the Owner shall deduct from monies due or to become due under the provisions of this contract for any applicable fines that are assessed against the Owner, the Contractor or any eligible Subcontractor;
- 2) Compliance with applicable Construction Safety Program;
- 3) Provision of necessary contract, operations and insurance information, including verification of current Worker's Compensation Experience Modifier;
- 4) Cooperation with any insurance company or OCIP Administrator with respect to requests for claims, payroll or other information required under the program;
- 5) The Contractor and all eligible Subcontractors shall adhere to and perform all reporting requirements as set forth in the Claims Procedures portion of the OCIP Program Manual.

C.2.12. Contractor's Responsibility for its Subcontractors.

The Contractor will include this Exhibit and the Manual with the bid documentation. The Contractor will require that all eligible Subcontractors participate in the OCIP and comply with all rules and procedures as outlined in MSCAA Enrollment Process Summary. It will be the Contractor's responsibility to submit to The Owner and its designated representative all bid documentation for approval. If Contractor fails to comply with this section and any eligible Subcontractors do not enroll in the program, the Owner has the right to retain the 3% of subcontracted work as a penalty from the awarding Contractor/Subcontractor as set out in C.1.2.c.

C.2.13. Approval of Forms and Companies

All insurance described in this Section will be written by an insurance company or companies satisfactory to the Owner and licensed to do business in Tennessee and will be in a form and content satisfactory to the Owner. No party subject to the provisions of this contract will violate or knowingly permit to be violated any of the provisions of the policies of insurance described herein.

C.2.14. Coverage to be provided by Contractor during Warranty Period

During the period following the final acceptance date and prior to expiration of the warranty period hereunder, Contractor will maintain in full force and effect all insurance as specified in paragraph C.2 covering all Work performed during such period.

C.3. Waiver of Subrogation and Waiver of Rights of Recovery

Owner Controlled Insurance Program

Except as respects any deductibles identified above, Owner waives all rights of subrogation and recovery against the Contractor and all Subcontractors of all tiers to the extent of any loss or damage, which is insured under the OCIP. Except as respects the deductibles identified above, Contractor waives all rights of subrogation and recovery against the Owner, Design Professional and Program Manager, other Contractors and Subcontractors of all tiers to the extent of any loss or damage, which is insured under the OCIP. The Contractor and each Subcontractor will require all Subcontractors to similarly waive their rights of subrogation and recovery in each of their respective construction contracts with respect to their work on any Designated Project.

Contractor Provided Coverages

Contractor waives all rights of subrogation and recovery against the Owner, Design Professional and Program Manager, to the extent loss or damage is insured under the Contractor's policies. The Contractor and each Subcontractor will require all Subcontractors to similarly waive their rights of subrogation and recovery in each of their respective construction contracts with respect to their work on any Designated Project.

C.4. Project Safety Administration

It is the responsibility of the Contractor to maintain total control of safety to ensure that its employees and the general public will be provided an environment free of recognized hazards during construction activities. In carrying out this policy it is clear the only accepted level of performance is to be "Incident Free" on this project each and every day.

A. Project Safety Manual

The safety requirements of any Designated Project Safety Manual are a supplementary document to all Government rules, codes and regulations. It is understood that the ultimate responsibility for providing a safe place to work rests with each individual Contractor. All Contractors are responsible for full compliance with the requirements and standards referenced in the manual.

B. New Employee Orientation

Each new Contractor or Subcontractor employee will be required to attend an orientation program. This orientation is designed to communicate all project specific safety policies, procedures, and expectations of "the Safety Team" in regard to the construction of any Designated Project.

C. Contractor Safety Program Review

To proactively monitor the safety, health and environmental performance of Contractors and Subcontractors the Owner and/or his Representative, will be conducting a periodic review of Contractor or Subcontractor safety programs. This will be a formal process, which will be done with or without advanced notice. Upon completion of the Safety Program Review, a list of recommendations will be provided to the Contractor or Subcontractor. There will be a timeline developed and agreed upon for the purpose of abating any deficiencies in the Contractor or Subcontractor safety program.

C.5. No Release

The provision of the OCIP by The Owner will in no way be interpreted as relieving the Contractor or any Subcontractor of any other responsibility or liability under this agreement or any applicable law, statute, regulation or order.

C.6. CIP Exclusion Limitation

If any party's insurance includes an exclusion tied to Controlled Insurance Programs (a.k.a. "wrap-ups" or "CIPs") or other project-specific insurance, it may apply only to the extent of coverage available to that party under the CIP or other Sponsor-provided insurance. Such exclusion may not be broader than what the CIP or such other Sponsor-provided insurance actually covers.



MSCAA OCIP V

An Owner Controlled Insurance Program Manual for Construction Projects

MSCAA OCIP – ENROLLMENT SUMMARY

Contract Bid – All Contractors/Subcontractors

Bid package will be furnished to bidders

1. All eligible Contractors/Subcontractors of every tier will exclude their cost of insurance for coverage provided by the Owner from their bid. Contractors and eligible Subcontractors should discuss the OCIP with their insurance agent or consultant to assure that the OCIP insurance identification cost is accurate.
2. Contractors and Subcontractors at any tier shall not charge any eligible Subcontractor for its participation in the OCIP.
3. Workers' Compensation – Tennessee Payroll Rules are applicable to WC payroll. First dollar coverage is given to all Contractors on WC.
4. General Liability – Mandatory deductible not to exceed \$10,000 will apply to any loss as described in the OCIP manual. 5% credit will be applied to Contractor's premium for this deductible

Contract Award

Once notification of contract award has been received, all eligible Contractors/Subcontractors of every tier will complete and submit Form 2 with the required certificate of insurance. Any Contractors or Subcontractors who enroll in the OCIP 30 days after their start date will have to provide a No Known Loss Letter to the Carrier along with the enrollment documentation. The OCIP Administrator will:

- 1) Assign a location code for this contract, forward the **Form 2** to the insurance carrier for enrollment into program
- 2) Issue a certificate of insurance which will reflect all OCIP coverages. The original copy will be sent to the enrolled contractor/Subcontractor with a copy to their awarding contractor.

Change Order

Contractor and all enrolled Subcontractors will price each change order to exclude the cost of insurance provided by the Owner.

Monthly Payroll Reporting

The Enrolled Contractor/Subcontractor will receive a Payroll Request e-mail from the following email address on behalf of Willis Admin at the beginning of each month during construction reminding them to complete their payroll report via the link in the email by the payroll due date. The payroll link will expire in 30 days. If the payroll link expires, please contact your Willis Towers Watson CIP Administrator to receive an updated link.

If Contractor/Subcontract receives additional contracts

Once the contractor/Subcontractor has enrolled in the OCIP, all additional contract bids must also exclude the Contractor's cost of insurance for coverage provided by the Owner. **Form 2** must be submitted to the OCIP Administrator to receive confirmation of enrollment in the OCIP for the additional contract. (Contact the OCIP Administrator if you have questions). The OCIP Administrator will:

- 1) Assign a location code for this contract, forward the **Form 2** to the insurance carrier for enrollment into program
- 2) Issue a certificate of insurance which will reflect all OCIP coverages. The original copy will be sent to the enrolled contractor/Subcontractor, a copy to their awarding contractor.

When Contractor/Subcontract reaches Substantial Completion

Notice of Anticipated Completion - **Form 4** – Prior to completion of all work being performed under the contract. This will initiate Closeout Procedures. Payroll and Receipts may be audited.

When Contractor/Subcontractor has completed the Work

Contractor should notify their insurance agent/broker to remove any exclusion for this Designated Project from their primary policies.

Claims

All Contractors/Subcontractors must follow claims rules and procedures outlined in the MSCAA OCIP Manual.

Safety

All Contractors/Subcontractors must follow safety rules and procedures outlined in the MSCAA OCIP Site Specific Safety Plan.

Notice to All Contractors/Subcontractors

Failure to follow the Enrollment or Claims procedures outlined in MSCAA OCIP Manual may result in fines being assessed by the State Bureau/NCCI, State's Workers' Compensation Commission or the Owner against the Contractor or Subcontractor. If the Owner or Carrier is assessed fines due to Contractor's or Subcontract's failure to follow State rules or regulations, the Owner will deduct from monies due or to become due for any applicable fines.

CHANGES TO ANY OCIP REQUIREMENT OR PROCEDURE MUST BE APPROVED BY THE OWNER AND OCIP ADMINISTRATOR. NO CONTRACTOR OR SUBCONTRACTOR HAS THE AUTHORITY TO AMEND THE OCIP REQUIREMENTS.

INTRODUCTION

This manual identifies, defines, and assigns responsibilities related to the administration of the Memphis-Shelby County Airport Authority (MSCAA) Owner Controlled Insurance Program (OCIP).

This manual:

- Describes the OCIP and details the insurance-related responsibilities of the various parties involved.
- Provides a basic description of the OCIP structure and operation, with an overview of coverage provided by the OCIP and guidelines for carrying out specific administrative and audit procedures.
- Provides answers to questions that are likely to arise during the course of the project.

Because it is impossible to anticipate every question or situation that may arise, the directory lists those involved in the administration of the OCIP and their areas of expertise. Please feel free to call with any questions.

This Manual will be updated as changes dictate during this project.

NOTE

- This Manual does not, and is not intended to, provide coverage interpretations or complete information about coverages.
- The terms and conditions of the insurance policies govern how coverage is applied.
- The information herein is not intended to alter any provisions of the actual contract documents of the Contractors, and if any such conflict occurs, the contract documents will govern.

CHANGES TO ANY OCIP REQUIREMENT OR PROCEDURE MUST BE APPROVED BY THE SPONSOR AND OCIP ADMINISTRATOR. NO CONTRACTOR OR SUBCONTRACTOR HAS THE AUTHORITY TO AMEND THE OCIP REQUIREMENTS.

ADMINISTRATION

Program Management

OCIP Program Coordinator

Willis Towers Watson

John Shorten

8285 Tournament Drive, Suite 130
Memphis, TN 38125

Phone: (901) 248-3102

Fax: (901) 248-3101

E-mail: john.shorten@willistowerswatson.com

OCIP Program Unit Manager

Willis Towers Watson

Nancy Jarmon

500 North Akard St., Suite 4300
Dallas, TX 75201

Phone: (972) 973-2394

Fax: (972) 386-5561

E-Mail: nancy.jarmon@willistowerswatson.com

OCIP Administration

Willis Towers Watson

Starla Lacey

Five Course Parkway, Suite 1800
Atlanta, GA 30328

Phone: (404) 224-5000

Cell: (404) 536-8567

E-Mail: starla.lacey@willistowerswatson.com

On-Site Safety

Willis Towers Watson

Wes Shelby

4225 Airways Blvd.
Memphis, TN 38116

Phone: (901) 344-1659

Cell: (901) 604-2136

Fax: (901) 345-6636

E-Mail: wes.shelby@willistowerswatson.com

Claims Management

Zurich North America

PO Box 968077
Schaumburg, IL 60196-8077

FAX NUMBER FOR REPORTING CLAIMS: (877) 967-2567

GENERAL CLAIMS FAX NUMBER: (615) 872-1303

GENERAL PHONE NUMBER: (800) 366-8366

Leadership	Title	Phone	Email
Tammy Fike	GL Sr. Specialist	(404) 851-3616	tammy.fike@zurichna.com
Ginny Howard	WC Team Manager	(615) 872-1315	ginny.howard@zurichna.com
Karen Kingo	WC Pension Manager	(847)413-5868	karen.kingo@zurichna.com
Vea Storey	WC Claims Specialist	(615) 872-1241	veatrice.storey@zurichna.com
Patricia Painter	WC Claims Specialist	(615) 391-7501	patricia.painter@zurichna.com
Nat Woodruff	Claims Customer Service Executive	(404) 851-3278	nathaniel.woodruff@zurichna.com

Insurance Policy References

Workers Compensation

Insurance Company: Zurich American Insurance Company

Master Policy Number: WC 6675835-00

Each Contractor and/or Subcontractor will be issued their own Workers' Compensation Policy

Part One - Workers' Compensation TN State Limits

Part Two - Employers' Liability

Bodily Injury by Accident – Each Accident \$1,000,000

Bodily Injury by Disease – Policy Limit \$1,000,000

Bodily Injury by Disease – Each Employee \$1,000,000

Part Three – Other States Insurance

All States except those listed in Part One and Monopolistic States (OH,ND,WA,WY)

Commercial General Liability

Insurance Company: Zurich American Insurance Company

Master Policy Number: GLO 6675834-00

General Aggregate Limit (Other than Products – Completed Operations) \$4,000,000

Product-completed Operations Aggregate Limit \$4,000,000

Personal and Advertising Injury Limit (Any One Person or Organization) \$2,000,000

Each Occurrence Limit \$2,000,000

Fire Legal Liability (Any One Fire) * \$250,000

Medical Expense Limit (Any One Person) \$10,000

Umbrella Liability

Insurance Company: ACE Property and Casualty Insurance Company

Master Policy Number: XCQ G46622029 001

Limits: \$25,000,000 excess of primary

Excess Liability – Layer 1

Insurance Company: Allied World National Assurance Company

Master Policy Number: 0313-3804

Limits: \$10,000,000 excess of \$10,000,000

Excess Liability – Layer 2

Insurance Company: ACE Property and Casualty Insurance Company

Master Policy Number: XCQ G7257896A 001

Limits: \$15,000,000 excess of \$15,000,000

Excess Liability – Layer 3

Insurance Company: Great American Security Insurance Co.

Master Policy Number: EXC 4051403

Limits: \$12,500,000 excess of \$12,500,000

Excess Liability – Layer 4

Insurance Company: Starr Indemnity & Liability Company

Master Policy Number: 1000587787221

Limits: \$15,000,000 excess of \$15,000,000

Insurance Company: Endurance Risk Solutions Assurance Co.

Master Policy Number: XSC30019604800

Limits: \$15,000,000 excess of \$15,000,000

Insurance Company: Westchester Surplus Lines Insurance Company

Master Policy Number: G72578387001

Limits: \$20,000,000 excess of \$20,000,000

Program Definitions

Owner Controlled Insurance Program (OCIP)	The Insurance Program under which Workers' Compensation, Employer's Liability, Commercial General Liability and Excess Liability are procured or provided on a project "wrap-up" basis for Contractors/Subcontractors(s) of any tier, who have been properly enrolled, while performing operations on a designated Project Site for Memphis-Shelby County Airport Authority.
Insured	The Memphis-Shelby County Airport Authority, Contractors(s) and Subcontractors of any tier who are enrolled in the OCIP and who have been named in a policy, certificate of insurance, or advice of insurance.
Enrolled Contractors	"Enrolled Contractors", mean "Eligible Contractors" who, prior to the commencement of their work on the covered project, have completed the appropriate enrollments documents for the "designated project site".
Insurer	Insurance Company, as identified in the Insurance Policy Reference section.
OCIP Coordinator and Administrator	The firms responsible for the insurance broker and administration of the OCIP.
OCIP Safety Consultants	These representatives are employees of the Insurer and Willis Towers Watson who will provide safety consulting services to MSCAA, and its contractors enrolled in the OCIP.
Project Description	All Designated Projects identified and approved by the Owner and on file with the Insurance Company.
On-Site Activities/ Designated Project	Zurich's designated project means: "The project shown in this Schedule, including operations on the project site or location that are necessary or incidental to the project as described in contract documents. "Designated Project" includes the work site(s) associated with such "designated project(s)" and any offsite staging areas, if they are dedicated solely to the "designated project(s)" and the sponsor agrees to provide coverage. Also included are those areas immediately adjacent to the "designated projects", including boundaries of local streets or public easement, in which the enrolled subcontractors at any tier perform work under their respective contracts." The OCIP does not provide insurance coverage for permanent yards or other locations of any Contractors/Subcontractors, except as specifically requested by Contractors and, if accepted by insurer, endorsed to the policy.
Eligible Contractors	Insured by the OCIP: Eligible Contractors include all contractors providing direct labor on the Designated Project (see definition of ineligible contractors below). Temporary labor services and leasing companies are to be treated as subcontractors.
Ineligible Contractors	Not insured by the OCIP: Includes (but is not limited to) contractors performing any type of environmental remediation work (example: asbestos or underground tank removal), consultants, suppliers (that do not perform or subcontract installation), vendors, materials dealers, guard services, janitorial services, truckers (including trucking to any Designated Project where delivery is the only scope of work performed), Blasting Contractors or Any Person or organizations that manufactures or fabricates products or components outside the designated project that does not also install the product or component at the designated project, employee leasing companies, temporary labor services and other temporary project services. However, such Employee leasing and temporary labor service companies can be insured by the OCIP but must be submitted for review to the OCIP administrator prior to acceptance.
Certificate of Insurance	Written evidence of the existence of coverage terms of a particular insurance policy.

COVERAGE SUMMARY

The OCIP coverage applies only to work performed under the Agreement at any Designated Project Site for eligible enrolled contractors. Contractor and Subcontractors must provide their own insurance as detailed in the contract.

Through a combination of insured and self-insured insurance programs the Owner, at its sole expense, will provide and maintain in force the types of insurance listed in subsection (1) through (4) below as a part of the OCIP for Contractor and eligible Subcontractors who have been enrolled. Contractor and eligible Subcontractors enrolled in the OCIP agree that the insurance company policy limits of liability, coverage terms and conditions shall determine the scope of coverage provided by the OCIP.

This section provides a brief description of the coverages provided under the OCIP. The Contractor shall refer to the actual policies for details concerning coverages, exclusions, and limitations. Policies are available for review upon request.

While the OCIP is intended to provide uniform coverages and reasonable limits, the OCIP is not intended to meet all the insurance needs of the Contractor and all eligible Subcontractors who have been properly enrolled. Contractor and eligible Subcontractors enrolled in the OCIP agree that they will discuss the OCIP with their insurance agent or consultant to ensure that proper coverages are maintained. It is the contractors' responsibility to notify their agent that the work performed on-site will be insured under an OCIP.

- 1) **Workers' Compensation and Employers' Liability Insurance** (Off-site operations are excluded unless locations are scheduled & approved by the Owner and OCIP insurance carriers) with Statutory Limits with All States Endorsement and minimum Employer's Liability Limits will be provided as follows:
- a) \$1,000,000 Bodily Injury with Accident - Each Accident.
 - b) \$1,000,000 Bodily Injury by Disease - Policy Limit
 - c) \$1,000,000 Bodily Injury by Disease - Each Employee; and

Each Enrolled Contractor will be issued a separate Workers' Compensation policy. The premium and loss experience on the Project Site will be reported to the appropriate rating authorities in the normal manner for use in calculating Enrolled Contractors' future experience modifiers. OCIP loss experience will impact Contractor's future insurance costs and, therefore, compliance with the project safety guidelines will directly benefit all Contractors.

- 2) **Commercial General Liability Insurance**, (Off-site operations are excluded unless locations are scheduled & approved by the Owner and OCIP insurance carriers) will be provided on an "occurrence" form under a single liability policy. Certificates of insurance will be provided to the Contractor and all tiers of eligible Subcontractors reflecting the following Limits of Liability, Coverages, and Terms:

- a) Limit of Liability: Limits of Liability Shared by all Enrolled Contractors
- | | |
|--|-------------|
| General Aggregate Limit (Other than Products – Completed Operations) | \$4,000,000 |
| Product-completed Operations Aggregate Limit | \$4,000,000 |
| Personal and Advertising Injury Limit (Any One Person or Organization) | \$2,000,000 |
| Each Occurrence Limit | \$2,000,000 |
| Fire Legal Liability (Any One Fire) | \$250,000 |
| Medical Expense Limit (Any One Person) | \$10,000 |

- b) Coverage and Terms:
- i) Occurrence Basis.
 - ii) Products.
 - iii) Contractual Liability specifically designating the indemnity provision of this agreement as an insured contract.
 - iv) Completed Operations (Six Year Term).
 - v) Independent Contractor/Subcontractor's Liability.
 - vi) Personal Injury, Explosion, Collapse, and Underground (X, C, U) exclusion deleted.
 - vii) Coverage limited to any Designated Project.
 - viii) General Aggregate Limits will apply per project and annually.

- ix) Products and Completed Operations Aggregate Limit applies once or all projects and applies once for the policy period and extended completed operations period combined; and
 - x) Policy Exclusions include (but are not limited to) asbestos, pollution, mold, professional liability, employment practices, EIFS, impaired property and work or operations performed away from any Designated Project Site.
- c) If a claim arises under the Owner provided Commercial General Liability OCIP policy from the partial or sole negligence of a Contractor or Subcontractor, or for violation of any OCIP Safety Requirements, such Contractor or Subcontractor shall be responsible for reimbursing the Owner's deductible to the extent of their respective negligence, as determined solely by owner, up to a maximum of \$10,000 per occurrence per Contractor.
- d) The limits of liability detailed under 2) a) apply to construction operations within the property boundary of the applicable Airport under the management of MSCAA and as per the issued policies' definitions.
- 3) **Umbrella and Excess Liability Insurance** (Off-site operations are excluded)
- a) Limits of Liability Shared by all Enrolled Contractors
 - i) \$100,000,000 per Occurrence
 - ii) \$100,000,000 Aggregate
 - iii) \$100,000,000 Products / Completed Operations Aggregate
- 4) **Builder's Risk Insurance** will be provided on "All-Risk" coverage on a replacement cost basis, subject to the limits of the insurance policy. This insurance will include the interests of the Owner the Contractor and all tiers of Subcontractors in the Work. The Builders Risk policy will not provide coverage against loss by theft or disappearance of any materials (unless the materials are to be incorporated into the Project), tools, or equipment of the Contractor or any tier of Subcontractor, or any other person furnishing labor or materials for the Work. The Contractor shall be responsible for a deductible of \$25,000 for each loss.

ACCIDENT REPORTING AND CLAIMS PROCEDURES

When accidents happen, everyone needs to work together. Even though the Contractors and each Subcontractor has instituted tough safety measures, work-related accidents are bound to occur. When they do, the OCIP Insurers stand ready to serve the Contractors and Subcontractors, but they need help if they are to perform this service in the most effective and efficient manner.

Each Contractor/Subcontractor should have the claims procedures and emergency numbers posted on the jobsite and in all vehicles.

The Insurer will have a claims adjuster available to handle all Commercial General Liability and Workers' Compensation claims.

The Insurer will arrange for legal counsel to handle all lawsuits emanating from the project.

Never discuss any accident or claim with anyone except authorized representatives of MSCAA, Contractor, the Insurer(s), and the Owners Insurance Broker or Law Enforcement agencies.

MSCAA Emergency Procedures (Serious Injuries)

1. Contact MSCAA Emergency Dispatch at **(901) 922-8333 (DO NOT call 911)**. Specific directions should be given to the accident scene. If the accident occurred in the SIDA area, give location in relation to an active taxiway/runway. If outside the SIDA, give location relative to a street or construction gate. Explain the extent of injuries.
2. Notify the on-site OCIP Safety Coordinator, Wes Shelby, (901) 604-2136 (cell).
3. Methodist South Hospital Emergency Room, 1300 Wesley Drive, Memphis, TN, will be used (901) 516-3700, the decision on the treating medical facility will be made by the EMT, in serious cases, the Med Trauma Center may be used.
4. Contractors must always have currently qualified First Aid personnel on site. First Aid supplies must be readily available and maintained, including rubber gloves to protect First Aid personnel against blood borne pathogens, etc.
5. After the call for emergency unit is made to MSCAA, the contractor should send escorts to all locations where the emergency unit could enter the site.
6. If the injured employee does not speak English, send a good interpreter to the treating medical facility.
7. The Contractor should provide the Medical Facility with a completed Authorization for Treatment form (sample provided in the OCIP Manual).

A. Workers' Compensation Claims

1. Seek immediate medical attention for the injured person(s).
2. Immediately notify your supervisor and project manager of the situation.
3. Notify the on-site OCIP Safety Coordinator, Wes Shelby, (901) 604-2136 (cell). If you cannot reach Wes, please leave a voice mail message.
4. Complete a **First Report of Injury form** and the **Claim Reporting Cover Sheet** (include appropriate Location Code) and forward to **Zurich Insurance Company** via fax **877-967-2567** or email usz_carecenter@zurichna.com immediately. If not possible, then send before the end of the business day.
5. MSCAA the Contractor's safety representative or designated person will transport the injured worker to

Concentra Medical Center
2831 Airways Boulevard
Suite 102
Memphis, TN 38132
Phone: (901) 348-0200
Hours: 8a.m. to 8p.m. (Mon. – Fri.)

If accident occurs and Concentra Medical Center is not open:

Methodist South Hospital
1300 Wesley Drive
Memphis, TN 38116
Phone: (901) 516-3700
24 Hours, 7 days per week

Or

Baptist Memorial Hospital DeSoto
7601 Southcrest Parkway
Southaven, MS 38671
Phone: (662) 349-4000
24 Hours, 7 days per week

6. Complete the **Accident Investigation Form** and forward it along with the **Claim Reporting Cover Sheet** to Wes Shelby, OCIP Safety Coordinator (e-mail: Wes.Shelby@willis.com, fax: (901) 345-6636, or mail: 4225 Airways Blvd., Memphis, TN 38116 before the end of the day.
7. Receipt of Acknowledgement of Claim and claim number from Zurich Insurance Company will be sent to the contact person provided on the Claim Reporting Cover Sheet and to Wes Shelby, OCIP Safety Coordinator. The claim number should be used for future reference.
8. All medical bills, hospital bills, etc. should be forwarded to Zurich Insurance Company identifying the injured employee and claim number.

After Hours / Close of Business Claims Reporting

1. Call Zurich Insurance Company at (800) 987-3373.
2. Tell the Zurich representative that an injury just occurred and that you need to be routed to the on-call specialist to authorize treatment.
3. You will either be placed directly in touch with the on-call person, or the on-call person will be paged and will return your call within two hours.
4. If hospital needs to speak with Zurich directly, the contractor will have to supply the hospital name and phone number to Zurich, and they will call the hospital directly.

B. Commercial General Liability Claims

Any occurrence involving Bodily Injury or Property Damage to members of the public that is NOT caused by an automobile accident.

1. Seek immediate medical attention for any injured person(s).
2. Immediately notify your supervisor and project manager of the situation.
3. Notify the on-site OCIP Safety Coordinator, Wes Shelby, (901) 604-2136 (cell). If you cannot reach, please leave a voice mail message.
4. Complete the **Claim Reporting Cover Sheet** (include appropriate Location Code) and forward to Zurich Insurance Company via fax **(866) 691-7068** or email usz_carecenter@zurichna.com immediately. If not possible, then send before the end of the business day.
5. Complete the Accident Investigation Form and Claim Reporting Cover Sheet (include appropriate Location Code) and forward to Wes Shelby, OCIP Safety Coordinator, (e-mail: wes.shelby@willis.com, fax: (901) 345-6636, or mail: 4225 Airways Blvd., Memphis, TN 38116.
6. Receipt of Acknowledgement of Claim and claim number from Zurich Insurance Company will be sent to the contact person provided on the Claim Reporting Cover Sheet and to Wes Shelby, OCIP Safety Coordinator. The claim number should be used for future reference.
7. All investigation reports, pictures, medical bills, hospital bills, etc should be forwarded to Zurich Insurance Company identifying the injured individual, claimant and claim number.

C. Duties in the event of a claim or suit

1. Follow the claims reporting procedures above.
2. You must see to it that the OCIP Safety Coordinator, Wes Shelby, is notified promptly of an "occurrence" which may result in a claim. Notice should include:
 - a. How, when and where the "occurrence" took place; and
 - b. The names and addresses of any injured persons and witnesses.
3. If a claim is made or "lawsuit" is brought against any insured, you provide written notice of the claim or "lawsuit".
4. You and any other involved insured must:
 - a. Cooperate with the Insurer in their investigation, settlement or defense of the claims or "suit"; and
 - b. Assist the Insurer, upon their request, in the enforcement of any right against any person or organization which may be liable to the insured because of injury or damage to which this insurance may also apply.

5. No Insureds will, except at their own cost, voluntarily make a payment, assume any obligation, or incur any expense, other than for first aid, without Insurer's consent.

D. Automobile Claims

Even though no Automobile Liability or Physical Damage coverage is provided under the OCIP, the Contractor/Subcontractor must notify Wes Shelby, OCIP Safety Coordinator, in writing of any automobile accident which could be related to the project. This should be done as soon as possible following the accident.

E. Contractor's Equipment Claims

Even though no coverage is provided under the OCIP for loss of or damage to Contractor's or Subcontractor's owned equipment the Contractor/Subcontractors must notify Wes Shelby, OCIP Safety Coordinator, in writing, of any loss or damage to their equipment at the project. This should be done as soon as possible, following first knowledge of loss or damage.

F. Miscellaneous Claims Notes

1. Any incident that involved injury to persons or property is to be reported to Wes Shelby, OCIP Safety Coordinator's office immediately.
2. Any claims adjuster representing a Contractor/Subcontractor's normal insurer who seeks to come onto Any Designated Project site must obtain written authorization from Wes Shelby, OCIP Safety Coordinator, prior to coming on the site. There will be no exceptions to this stipulation.

FORMS

Zurich Claim Reporting Cover Sheet

Incident Investigation Report

Workers' Compensation Referral Slip for Injured Employees

Authorization to Treat

Form 1 – Notice of Sub-contract Award

Form 2 – Enrollment Form

Form 4 – Notice of Anticipated Completion

Certificate of Insurance

ZURICH CLAIM REPORTING COVER SHEET

Email to: USZ_CARECENTER@ZURICHNA.COM

OR

Fax to: (866) 691-7068

Account Name: Memphis Shelby County Airport OCIP V

Master WC policy #: WC 6675835-00

Master GL Policy #: GLO 6675834-00

Project Location: _____

Subcontractor/Employer: _____

Subcontractor/Employer Policy Number: _____

Contact Name: _____

Contact Phone Number: _____

Contact Fax Number: _____

Location Code: _____

Injured Worker: _____

Attention Zurich Representative – Please fax the receipt and claim number immediately to the contact above.

Incident Investigation Report

(To be completed within 24 hours by Supervisor at time of incident)

INJURED EMPLOYEE INFORMATION

Employee Name	Male	Female	Date of Birth	Ht.	Wt.
Employee Address					
Street	City	State	Zip Code	Home Phone	
Employer Name	Address				
Date of Incident	Time	AM/PM	Jobsite/Area		
Employee Job Title			Length of Employment		
Weather Condition	Shift	Supervisor			

UNSAFE ACTS

What actions caused or contributed to the incident?

☐ Operating equipment without authority

☐ Failure to warn/signal

☐ Failure to secure/lock out/tag out

☐ Reaching into/servicing equipment in operation

☐ Making safety devices inoperable

☐ Used defective equipment

☐ Took unsafe/improper position

☐ Horseplay, disruptive actions

☐ Improper lifting or movement

☐ Other: _____

☐ No unsafe action

What actions caused or influenced above unsafe acts?

☐ Unaware of job hazards

☐ Inattention to hazards

☐ Unaware of safe method/procedure

☐ Tried to gain or save time

☐ Influence of fatigue/illness

☐ Influence of emotions/stress

☐ Defective vision/bodily defects

☐ Under influence of alcohol or drugs

☐ Failure to enforce procedures/rules

☐ Other: _____

UNSAFE CONDITIONS

What conditions of tools, equipment, or environment contributed to incident?

☐ Inadequate guard/barrier/safety device

☐ Inadequate/improper protective equipment

☐ Inadequate warning system

☐ Defective or work tools/equipment materials

☐ Congestion or restricted area

☐ Fire or explosion hazard

☐ Hazardous storage method

☐ Unsecured against movement

☐ Lighting/noise/visual obstruction

☐ Environmental/atmospheric conditions

☐ Other: _____

☐ No unsafe condition

What caused or influenced above unsafe condition?

☐ Defective/worn from normal use

☐ Defective/worn from abuse/misuse

☐ Housekeeping/cleaning failure

☐ Lack of preventative maintenance

☐ Inadequate maintenance

☐ Exposure to environment

☐ Inadequate purchasing

☐ Safety inspection failure

☐ Other: _____

☐ Unknown

INJURY/ILLNESS DATA

Describe the nature and extent of injury/illness (body part affected, type of injury, etc.) _____

Was first aid administered?	Yes	No	If yes, what type and by whom
Was employee taken to hospital/clinic?	Yes	No	If yes, list name, address, and phone number of
hospital/physician/nurse attending		_____	

List any eyewitnesses to the incident and others who might provide information about the incident _____

INCIDENT/ILLNESS EVALUATION

How did the incident occur? Describe in detail the task the employee was doing when injured or became ill. Include specifics such as equipment, structure tools, materials, objects (size, shape, and weight), people involved in the task, positions, distances, rate of movement, sequence of events, etc.

(Attach any additional information comments, documentation of interviews, sketches, pictures, etc. as necessary)

Incident Investigation Report**Incident/Illness Evaluation (continued)**

Type of exertion/body motion during injury: Pull _____ Lift _____ Bend _____ Reach _____ Twist _____ Other _____
Was this the employee's regular job? Yes _____ No _____ How much experience does this employee have on this job? _____
Was the employee trained in this job or task? Yes _____ No _____ When was last training on this task? _____
Was this the employee's first job-related injury or illness? Yes _____ No _____ If no, briefly describe previous injuries (date, nature, extent, etc.) _____

Hours of overtime worked in last 24 hours _____ Did this possibly contribute to incident? If so, describe _____

Does a safety rule or policy apply to this task? Yes _____ No _____ If yes, describe rule and how employee followed or violated _____

Does a specific procedure for task exist? Yes _____ No _____ If yes, describe procedure briefly and if it was followed _____

Is protective equipment required for this task? Yes _____ No _____ If yes, describe equipment, if it was used, if it was adequate/functioned properly, and if the employee(s) were trained on it. _____

Is there possibly any third party which contributed to the incident? (Other contractors, employee, etc.) Yes _____ No _____
If yes, describe. _____

Did any unsafe physical/environmental conditions exist? Yes _____ No _____ If yes, describe conditions (physical, mechanical, electrical, etc.) which contributed to the incident _____

Is material handling equipment required for this task? Yes _____ No _____ If yes, was it used and did it function properly? _____

Possible actions to be taken to prevent reoccurrence

_____ Reinstruction of employee(s) involved	_____ Do/revise Job Safety Analysis	_____ Repair/replace/modify equipment
_____ Preventative instruction of others who do job	_____ Revise/establish safety rule	_____ Improve clean-up procedure
_____ Training of employee(s)	_____ Reassign employee to another job	_____ Improve inspection procedure
_____ Action to improve enforcement	_____ Require/replace protective equipment	_____ Eliminate/reduce congestion
_____ Reprimand/discipline of employee(s) involved	_____ Install safety guard device	_____ Improve design/construction
		_____ Improve environmental conditions

CORRECTIVE ACTION(S) TAKEN OR PLANNED

What was/will be done	By Whom	Estimated Completion Date	Completion Confirmed	
			Date	Initials

Was incident discussed with employee to prevent reoccurrence? Yes _____ No _____ Date _____
Any disciplinary action taken? Yes _____ No _____ If yes, describe what type. _____

FOLLOW UP COMMUNICATION

YES _____ NO _____ Incident site reviewed by supervisor with employee (and safety coordinator if applicable.)
YES _____ NO _____ Incident review meeting conducted. Attended by _____
YES _____ NO _____ Employee or supervisor reviewed incident with work group.
YES _____ NO _____ Employee reviewed injury with safety committee
YES _____ NO _____ Project Safety informed of incident

Date of Report _____ Prepared by _____ Signature _____ Title _____

Reviewed by _____ Superintendent _____

MSCAA OCIP V

4225 Airways Blvd.
Memphis, TN, 38116

WORKER'S COMPENSATION REFERRAL SLIP FOR INJURED EMPLOYEES

On-Site EMT: (901) 922-8333

Authorized Clinic: **Concentra Medical Center**
2831 Airways Boulevard
Suite 102
Memphis, TN 38132
(901) 348-0200 (Phone)
(901) 348-0046 (Fax)

Clinic Hours: 8 a.m. to 8 p.m. (Mon. – Fri.)

Authorized After- **Methodist South Hospital**

Hours Clinics: **1300 Wesley Drive**
Memphis, TN 38116
(901) 516-3700

Baptist Memorial Hospital DeSoto
7601 Southcrest Parkway
Southaven, MS 38671
(662) 349-4000

Employee Name: _____ Date: _____

Employer: _____ Employer Policy Number: _____

Location Code (if known): _____ Claim Number (if known): _____

Account Name: **Memphis Shelby County Airport Authority OCIP V**
Insurer: **Zurich**
Master Policy Number: **WC 6675835-00**

Instructions for medical facility:

The person listed above has been injured on the job. Please provide the employee with medical treatment per OCIP protocol.

MSCAA OCIP V
Authorization to Treat

Local Office Information

Company Name: _____
Designated Representative: _____
Address: _____
Phone: _____ **Fax:** _____ **E-mail:** _____

Billing Information for Drug Screens

Company Name: **Zurich North America**
Address: PO Box 968077
Schaumburg, IL 60196-8077

Phone: (800) 366-8366 **Fax:** (615) 872-1303

Insurance Information for Work Comp Carrier

Company Name: Zurich American Insurance Company **Master Policy #: WC 0183275-00**
Address: PO Box 968077
Schaumburg, IL 60196-8077

Phone: (877) 928-4531 **Fax:** (866) 691-7068

Services Required

Worker's Comp Injuries _____

Drug Screen Required For (employer to check necessary testing):

☐ Pre-Employment	☐ Random
☐ Probable Cause	☐ Post Accident
☐ Urine (collection only)	☐ Breath Alcohol
☐ Test Cup (Cocaine, PCP, etc.)	

Treating Medical Center: Please be advised if negative, DO NOT send out. Be sure to mark on the Chain of Custody (COC) the information for the employer:

Employer: _____ **Fax:** _____

Special Instructions: Use TEST CUP. Do NOT send out unless the test reads positive.

Fax results to designated employer listed above.

MSCAA V - FORM 1

Company Authorized Signature: _____ **Date:** _____

MSCAA OCIP V
Notice of Subcontract Award and Request for Insurance

Send this Form to:

Willis Towers Watson
Starla Lacey, CSS
Copy: Nancy Jarmon, CSS
500 N. Akard St., Suite 4300
Dallas, TX 75201

Phone: (972) 715-6303
Email: starla.lacey@wtwco.com
Email: nancy.jarmon@wtwco.com
Phone: (404) 536-8567

RE: Project Name: _____

This is to inform you that we have awarded the following subcontract to the following Subcontractor:

Name of Firm: _____

Address: _____ City: _____ State: _____ Zip: _____

Phone: (____) _____ Fax: (____) _____

Office Contact: _____ E-Mail: _____

Type of Work: _____ Job # _____ Contract Value: \$ _____

Award Date: _____ Estimated Start Date: _____

Awarding Contractor: _____

By: _____

Title: _____

Date: _____

Prime Contractor (if different) _____

DO NOT complete this form for your own company.

A Form-1 should be completed on each of your Subcontractors.

- **Award Date – date Notice to Proceed was given (Verbally or in Writing)**
- **Start date is mandatory – date shown will be the effective date of coverage.**

Any Contractors or Subcontractors who enrolls in the OCIP 30 days after their start date will have to provide a No Known Loss Letter to the Carrier along with the enrollment documentation.

- ☐ Additional Contract
☐ Time & Material Contract
☐ Short Term (< 30 days)
☐ Small Contract (< \$30,000)

MSCAA OCIP V ENROLLMENT FORM

Project: _____

CONTRACTOR'S INFORMATION

Contractor: _____ Indv _____ Ptshp _____ Corp _____ J/V _____
 Address: _____ FEIN: _____
 Office Contact: _____ Phone: _____ Email: _____
 Site Contact: _____ Phone: _____ Email: _____
 Safety Contact: _____ Phone: _____ Email: _____
 Insurance Contact: _____ Phone: _____ Email: _____
 Payroll Contact: _____ Phone: _____ Email: _____
 Address (if different): _____

CONTRACT INFORMATION

Contract Value: \$ _____

Job Name/Description: _____ Contract/JOB #: _____
 Awarding Contractor: _____ Prime Contractor: _____
 Award Date: _____ Start Date: _____ Est Completion Date: _____
 Self Performed: _____ %, Est. CV \$: _____ Subcontracted _____ %, Est. CV \$: _____
 Est. # of Subcontractors _____ Est. Man hours _____ DBE/MBE/WBE: _____

CURRENT INSURANCE INFORMATION;

Contractors' Insurance Broker or Agent:

PLEASE PRINT

Company Name: _____ Contact: _____
 City/State/Zip: _____ Phone: (_____) _____

WORKERS' COMPENSATION

Current Experience Modifier: ____ (Provide documentation confirming)

W.C. Classification	W.C. Class Codes	Estimated Payroll
1.		
2.		
3.		
4.		

It is each Contractor's responsibility to notify its own insurance carrier to exclude all work to be done under this contract from your current insurance program. Any Contractors or Subcontractors who enrolls in the OCIP 30 days after their start date will have to provide a No Known Loss Letter to the Carrier along with the enrollment documentation.

Contractor warrants that the insurance costs for coverages provided by the Owner have been removed from the bid and no eligible Subcontractor has been charged by the Contractor for its participation in the OCIP. The OWNER, or their Agent, is granted permission by Contractors to inspect the insurance and payroll records. At completion of the Work, Owner's Agent shall have the right to audit the project payroll records of Contractors. Any and all returns of premiums, dividends, discounts or other adjustments to any OCIP policy, including rights of cancelation, is assigned, transferred and set over absolutely to OWNER. This assignment is valid for insurance policies whose premiums have been paid by the OWNER on behalf of such Contractors.

Signed _____ Title _____ Date _____

Send this Form to:

Willis Towers Watson

Starla Lacey, CSS

Copy: Nancy Jarmon, CSS

500 N. Akard St., Suite 4300

Dallas, TX 75201

Phone: (972) 715-6303

Email: starla.lacey@wtwco.com

Email: nancy.jarmon@wtwco.com

Phone: (404) 536-8567

MSCAA OCIP V NOTICE OF ANTICIPATED COMPLETION

(to be submitted with Final Pay Request)

Send this Form to:

Willis Towers Watson

Starla Lacey, CSS

Copy: Nancy Jarmon, CSS

500 N. Akard St., Suite 4300

Dallas, TX 75201

Phone: (972) 715-6303

Email: starla.lacey@wtwco.com

Email: nancy.jarmon@wtwco.com

Phone: (404) 536-8567

Please be advised, we, _____ are scheduled to complete our work

for: Awarding Contractor: _____ Prime Contractor: _____

Project Description: _____ Actual Start Date: _____ Completion Date: _____

Reported Contract Value: _____ Final Contract Value: _____

Self Performed Work: _____ Subcontracted Work: _____

Estimated WC On Site Payroll: _____ Final WC On Site Payroll: _____

We used the following enrolled subcontractors, who will also complete their work on the date shown above:

<u>Subcontractors</u>	<u>Reported Contract Value</u>	<u>Final Contract Value</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

This is our contract: YES ☐ NO ☐

We are still working on the following contracts:

<u>Location Code</u>	<u>Awarding Contractor</u>	<u>Prime Contractor</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Your Company's Name: _____ Date: _____

By: _____ Title: _____

Final insurance audits may be made under the applicable policies. Please show who in your office (or another location if applicable) is responsible for this information:

Name: _____ Phone: _____ Fax: _____ E-Mail: _____

Address: _____ City: _____ State: _____ Zip _____



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Agent Company Name Address City, State ZIP Attn:	CONTACT NAME:	
	PHONE (A/C, No. Ext):	FAX (A/C, No):
INSURED OCIP Enrolled Contractor	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	
	NAIC#	
	INSURER A : AM BEST Rating A- VII or better	
	INSURER B :	
	INSURER C :	
	INSURER D :	
INSURER E :		
INSURER F :		

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YY)	LIMITS
	GENERAL LIABILITY <i>Applies to Off Site Risks</i>	X	X				EACH OCCURRENCE \$1,000,000
X	COMMERCIAL GENERAL LIABILITY						DAMAGES TO RENTED PREMISES(Ea occurrence) \$
	CLAIMS-MADE ☒ OCCUR						MED EXP (Any one person) \$
							PERSONAL & ADV INJURY \$1,000,000
							GENERAL AGGREGATE \$2,000,000
							PRODUCTS-COMP/OP AGG \$2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						
	☐ POLICY ☒ PRO-JECT ☐ LOC						
	AUTOMOBILE LIABILITY <i>Applies to Off and On Site Risks</i>	X	X				COMBINED SINGLE LIMIT (Ea accident) \$1,000,000
	ANY AUTO						BODILY INJURY(Per person) \$
X	ALL OWNED AUTOS						BODILY INJURY(Per accident) \$
X	HIRED AUTOS						PROPERTY DAMAGE (Per accident) \$
	SCHEDULED AUTOS						\$
	NON-OWNED AUTOS						
X	UMBRELLA LIAB	X					EACH OCCURRENCE \$1,000,000
	EXCESS LIAB						AGGREGATE \$1,000,000
	DED ☐ RETENTION \$	X	X				\$
	WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY <i>Applies to Off Site Risks</i>	N/A	X				X WC STATUTORY LIMITS OTH-ER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. EACH ACCIDENT \$1,000,000
							E.L. DISEASE - EA EMPLOYEE \$1,000,000
							E.L. DISEASE - POLICY LIMIT \$1,000,000
	OTHER						

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Workers' Compensation and Commercial General Liability coverages shown above do not apply to any Designated Project at the Memphis International Airport – only for off-site activities/operations. The Memphis-Shelby County Airport Authority, its officers, commissioners, representatives, agents and employees ATIMA and [AWARDING CONTRACTOR] are additional insureds applicable to the Auto Liability Insurance and off-site Commercial General Liability insurance policies including Excess Umbrella. 30 Day Notice of Cancellation or Non-Renewal other than 10 days for non-payment of premium is provided to MSCAA. Waiver of Subrogation in favor of MSCAA is provided by all policies.

CERTIFICATE HOLDER

MSCAA OCIP
c/o Willis Towers Watson
Attn: OCIP Administrator
500 North Akard St., Suite 4300
Dallas, TX 75201

CANCELLATION

SHOULD ANY OF THE ABOVE-DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

**EXHIBIT D
TO
UNIT PRICE CONSTRUCTION CONTRACT
FOR
EAST PARKING LOT EXPANSION - PHASE 5 - CONSTRUCTION**

**BY AND BETWEEN
THE MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY
AND
(CONTRACTOR NAME)**

CONSTRUCTION SAFETY AND HEALTH GUIDELINES

OCIP CONSTRUCTION SAFETY AND HEALTH GUIDELINES

Memphis-Shelby County Airport Authority

Construction Safety and Health Guidelines



Revision	Date
1	11/30/2012
2	05/02/2016
3	02/06/2017

Confirmation of these Project Safety & Health Guidelines

It is the responsibility of the Contractor to maintain total control of safety to ensure that employees and the general public are provided with an environment free of hazards during construction and renovation activities. This program does not relieve the Contractor of their responsibilities regarding the safety of their employees, the employees of their Subcontractors and sub-subcontractors, protection of the general public and the preservation of property.

Contractors shall develop their own written site-specific safety and health plans for the Memphis-Shelby County Airport Authority. At minimum, the safety and health plan shall meet the requirements of 29CFR1926 – Federal OSHA Construction regulations and the requirements established in the **Memphis-Shelby County Airport Authority Construction Safety Guidelines**. In short, as required by law, each Contractor is responsible for protecting the health and safety of its employees and the employees of each subcontractor and sub-subcontractor while ensuring they have a safe and healthful place to work. The site-specific safety and health program shall be submitted for approval within fifteen (15) days after the Notice to Proceed for approval to the Project Safety Manager, Wes Shelby, 4225 Airways Blvd., Memphis, TN.

The Safety Requirements of these safety guidelines are a supplementary document to all Government rules, codes and regulations. It does not negate, abrogate, alter or otherwise change any provisions of these rules, codes and/or regulations, and is intended to supplement and enforce the individual program of each contractor and the overall safety effort. It is understood that the ultimate responsibility for providing a safe place to work rests with each individual Contractor.

In the event of a conflict between the provisions of these guidelines and applicable local, State or Federal safety and health laws, regulations and/or standards, contract documents or the Contractor's Safety Plan the more stringent shall apply.

By Signature, each individual confirms their understanding of the contents of this manual and shall conform to the standards of safety outlined in this manual.

Contractor – Project Manager

Contractor – Field Supervisor

Date

Date

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POLICY STATEMENT

Memphis-Shelby County Airport Authority is committed that all construction workers have the best possible working environment while working on this project. It shall be the responsibility of each Contractor/Subcontractor to abide by the Safety and Health Provisions listed in OSHA 29 CFR 1926.

In addition, each Contractor, Subcontractor and Sub-Subcontractor shall abide by **Memphis-Shelby County Airport Authority** Construction Safety Guidelines, Federal Regulations, State laws and regulations, local and county laws and regulations which are applicable.

The primary goal established for the **Memphis-Shelby County Airport Authority** is to safely perform work with “**ZERO ACCIDENTS**”; totally free from lost time injuries for the mutual benefit of the worker, environment, and community.

The safety goals and objectives established for the Project can only be achieved when everyone commits to perform their tasks safely and efficiently. This commitment to achieve these goals will result in both increased productivity and the PREVENTION of job related injuries and illnesses. This will be considered as safe construction.

Definitions

OCIP Team – Means the Owner **Memphis-Shelby County Airport Authority**, Willis Towers Watson and all applicable insurance carrier representatives or the representative of defined such agencies and firms working together to implement the OCIP insurance program.

Construction Managers – Means the Management Group or General Contractor that has direct contract with the Owner **Memphis-Shelby County Airport Authority** to provide the overall control of the construction at the project.

General Contractor – Means the Contractor that has direct contract with the owner or Construction Managers as bid for the project. The General Contractor is also the controlling contractor on the construction site when a Construction Manager is not present.

Subcontractor – Means the contractor and or contractors that carry contracts with the General Contractor or Construction Managers. Subcontractors bid portions of the scope of work to be completed.

Sub-Subcontractors – Means any subcontractors of a subcontractors working or contracted to do work on the project.

Critical Lift – A lift that exceeds 75% of the rated capacity of the crane or requires the use of more than one crane. Also, relates to the installation of equipment and or materials that are critical to the completion of the project and damage to such equipment and/or material could result in delays to the project.

The General Public – Is defined as all persons not employed by or under contract, subcontract or sub-subcontract to the **Memphis-Shelby County Airport Authority**.

PREFACE

From the inception of **Memphis-Shelby County Airport Authority** there has been a determination and commitment to provide a safe environment for all workers and for the public from hazards associated with the construction of the Project.

All Contractors shall implement measures that will create safety awareness, promote safe work practices at the job site and pursue the contract objectives in the safest possible manner. Each Contractor shall bear sole and exclusive responsibility for safety in all phases of their work. Nothing contained herein shall relieve such responsibility.

Each Contractor shall be responsible for all its subcontractors' and sub-subcontractors' compliance with the project safety requirements.

Contractors shall develop their own written site-specific safety and health plan for the MSCAA OCIP. At minimum, the safety and health plan shall conform to the requirements addressed in the Occupational Safety and Health Act of 1970

and all additions and revisions thereto, and the requirements established in the **Memphis-Shelby County Airport Authority** Construction Safety Guidelines. In short, as required by law, each Contractor is responsible for protecting the health and safety of its employees while ensuring they have a safe and healthful place to work.

Contractor developed plans/program(s).

Programs will be reviewed and approved by OCIP Team. Example(s) of such OSHA mandated plans/programs are shown below.

Site Traffic Control Plan	Fall Protection Plan
Fire Protection Plan	Trench Safety Plan
Respiratory Protection Plan	Hazard Communication Program
Confined Space Entry	Scaffold Safety Program
Hearing Conservation Program	Ladder Safety Training
Dust Control Plan	

Emergency Procedures shall be made part of the Contractor's Safety Program. The following provisions shall be included in the emergency plan:

- a. Highest ranking supervisor automatically becomes responsible for the handling any emergency that occurs during his working hours; they may call upon the assistance of any available worker. A responsible supervisor must be designated for each shift.
- b. On a regular basis, at both supervisory and "weekly tool box meetings" instruct and update all employees in any course of action for emergencies.
- c. Establish teams to handle each of the various emergencies.
- d. Following an emergency, ranking personnel shall secure the area as expediently as possible and provide access and an account of the emergency to authorized representative(s) of MSCAA. Questions from the media should be referred to MSCAA.

Emergency procedures that may occur during any 24-hour period in the following categories must be established by each contractor:

- a. Fire
- b. Employee injury
- c. Pedestrian injury due to work activity of any kind
- d. Property damage and damage to above ground and buried utilities
- e. Public demonstrations
- f. Bomb threats

On a regular basis, the Contractor shall review and, when necessary, update Emergency Procedures for maximum effectiveness. The contractor should provide MSCAA, the Construction manager, and the on-site safety rep a telephone list of key management personnel, for after-hours emergency contact.

Should a serious accident or emergency occur, the contractor shall contact the Construction Manager immediately. If an emergency requires the presence of an ambulance or the Fire Department, including nights, weekends and holidays, the contractor shall call MSCAA emergency dispatch at (901)922-8333. Non injury accidents need to be reported to the airport police at (901)922-8298. **DO USE 911**

Site Access

- 1. Use only designated haul routes/crossings.**
- 2. Stay in assigned work area as identified on plans and as defined by fences and barricades. Barricades/fences must not be crossed.**
- 3. Instructions from guards and escort personnel must be obeyed.**

Contractors, Subcontractors, and Sub-Subcontractors will be monitored for implementation and application of their respective safety programs at the work site. Members of the OCIP Team shall have the authority to stop work when either site conditions and/or work practices present an imminent danger until those conditions and/or practices are corrected. Contractors will be notified of any non-compliance and corrective action required. This notice, when delivered to the contractor or their representative at the site of the work, shall be deemed sufficient notice of non-compliance and corrective action required. After receiving the notice, the contractor shall immediately take corrective action. If the contractor fails or

refuses to take corrective action promptly, a stop work order may be issued. The cost to bring the work activity into compliance shall be incurred by the Contractor, Subcontractor or Sub-subcontractor. The Contractor, Subcontractor or Sub-Subcontractor shall not submit a request for extension of time or increased costs as a result of any such stop work order. Members of the OCIP Team shall not be liable for any damages experienced by the Contractor due to the work stoppage. Progress payments may also cease until the Contractor and/or its Subcontractor and Sub-Subcontractors is in full compliance with all applicable safety and health rules, standards and regulations.

Each Contractor and their subcontractors and sub-subcontractors shall establish and enforce an effective disciplinary program (Appendix B). Contractors shall discipline and/or dismiss employees who violate established rules and regulations. This includes immediate termination for serious violations, repeated violations, or the refusal to follow safety and health rules.

OCIP Team members shall have the authority to effectively remove from the site, any person (employees including supervisors and management of any contractor) who is regarded as a frequent violator of safe work practices, or who fails to ensure persons working under their supervision or in a work place they control are not exposed to serious work hazards. Any Competent Person assigned to identify existing and predictable hazards and authorized to eliminate them, which fails to perform this duty for any reason shall be replaced by the employer.

The Contractor shall not receive additional payment or reimbursement for safety items and procedures which have been identified as required by the Project Safety and Health Guidelines.

Failure to comply with the contract safety requirements will be considered as non-compliance with the contract and may result in remedial action including withholding of progress payments due the Contractor and/or termination of the Contractor from the site.

In the event the work or any portion thereof is shut down by either an outside agency or because of an unsafe condition as determined by the OCIP Team, the responsible Contractor shall bear the total cost caused by that shut down.

In no case shall the Contractor be relieved of overall responsibility for compliance with the requirements of federal, state and local safety and health laws for all work to be performed under the contract

For any construction equipment working near operating right of way and in aircraft safety areas that could encroach into MSCAA's operating right of way and air craft safety areas shall submit to MSCAA (and obtain approval from the MSCAA) a plan describing the use of such equipment, and the necessary precautions to be taken to preclude any accidental encroachment unto the right of way or aircraft safety area.

INTRODUCTION

Construction Safety and Health Guidelines, Purpose and Scope

These guidelines are established to aid in the prevention of job-related accidents and health problems during the construction of the **Memphis-Shelby County Airport Authority**. These guidelines set forth elements which all Contractors, subcontractors and sub-subcontractors shall include in their safety plan. This manual is not all-inclusive. Other elements may be added, or conveyed individually to Contractors to whom they expressly apply. There are other essentials which some Contractors, by nature of the specific type of work being performed, must integrate within their own safety plan.

These guidelines set forth basic rules and regulations for all personnel involved in the construction of the Project. The intent of these guidelines is to enhance and supplement the safety and health standards which are required by law, in contract documents, and are applicable to the construction projects for which it is applied. These guidelines do not cover the full spectrum of published safety and health standards mandated by law, and Contractors shall not assume that they are responsible only for those which are referenced in this manual, nor that they are current and quoted as published. It is the responsibility of the Contractor and its employees to ensure that they are in compliance and their safety plan is in compliance with all safety directives required by law.

In the event of a conflict between the provisions of these guidelines and applicable local, State or Federal safety and health laws, regulations and/or standards, contract documents or the Contractor's Safety Plan the more stringent shall apply.

RESPONSIBILITIES

General

Each participant involved in the construction of the Project is individually responsible for conducting their activities to ensure compliance with all applicable safety and health requirements. Construction activities of the Contractor and their Subcontractors and sub-subcontractors will be monitored for compliance with FAA, MSCAA, Federal, State, County, and local safety and health regulations and contract safety and health requirements.

Contractors

The Contractor shall be responsible for the safety and health of employees, subcontractors, sub-subcontractors, visitors, and vendors in accordance with State, Local and Federal regulations, and the Contract Documents. Each Contractor shall establish and submit for review a written Safety and Health Plan which includes details commensurate with the work to be performed. The Contractor's Safety and Health Plan shall clearly describe the contractor's commitments for meeting its obligations to provide a safe and healthful work environment for its employees and subcontractor employees, to protect vendors, visitors, and members of the general public. The Contractor's Safety and Health Plan shall reference Federal OSHA standards, and any other rules or regulations applicable to construction activities.

Each Contractor shall designate an on-site Safety Representative who is charged with the responsibility of on-site safety management. The Safety Representative's sole duty shall be safety management and shall not have other collateral duties. At minimum the safety representative shall meet the requirements of a "competent person" as defined by OSHA for all phases of construction and have a minimum of three (3) years construction safety experience. A resume shall be provided that outlines such items as: work experience, education, training completed and professional organizations, etc. The safety representative shall remain on the Project until contract acceptance (full-term of contract). Safety representative must be knowledgeable on SC-230, SC-240, and other safety requirements as outlined in GP-200, the safety plan and site safety manual. The safety representative shall be interview by the OCIP Team.

As a condition of this contract, a safety improvement team shall be established for this project. The following guidelines (Appendix H) shall be followed.

As a condition of their contract, all Contractors shall submit to the Project Safety Manager or designee:

- A site-specific safety plan within fifteen (15) days after receipt of Notice to proceed and prior to start of any construction activities.
- The name and qualifications (resume) of designated on-site safety person;
- An immediate copy of all citations and/or warning of safety violations received from any state or federal jurisdiction, agency, insurance company, or by any of its subtier contractor.

The Contractor shall:

- Ensure that all employees, subcontractors' and sub-subcontractors' employees are given a comprehensive Safety and Health orientation. This orientation shall include general Safety and Health procedures and policies as well as the project specific rules, regulations and specific hazards. Employees shall be advised that disregard for these rules, or any other applicable Safety and Health regulations shall be subject to company disciplinary action and/or removal from the project. All workers shall complete an acknowledgment that indicates the worker has read, understood, and will abide by the rules and regulations. The following information shall be obtained from all employees: worker's name, date of orientation, Contractor's name and project name (Appendix A).
- Investigate all accidents and incidents that result in personal injury or illness to workers, damage to buildings or equipment and any incident with the general public.
- Conduct daily job inspections, identify unsafe conditions or work practices and assure they are corrected, and maintain documentation.
- Conduct weekly, documented, safety meetings with Contractor supervisory personnel.
- Attend monthly Safety committee meetings and participate
- Assure that employees acting in a supervisory capacity understand and enforce all safe work practices. **Foreman and supervisors are required to have completed a 10-hour OSHA Outreach hazard recognition course within Two (2) years prior to directing work on the project.** Documentation must be made available for review
- Assure that employees acting in a supervisory capacity understand and enforce all safe work practices. **Foreman and supervisors are required to have completed a 10-hour OSHA Outreach hazard recognition course within Two (2) years prior to directing work on the project.** Documentation must be made available for review.

- Assure a Competent Person is provided at work locations where required by OSHA.
- Assure that all Personal Protective Equipment (PPE) is available and being used as required.
- Assure all construction equipment and motor vehicles certification, inspection, repair and controls are in compliance with the safety requirements of the project and OSHA. Annual crane certification shall be available for review for each to a crane on the project.
- Prior to making critical crane lift, detailed lift plan shall be submitted. (See Appendix C, "Critical Lift Checklist")
- Assure that all hand and power tools are in safe working order.
- Assure that all work areas are kept clear of debris and trash and that adequate trash barrels are placed throughout the work area and emptied frequently.
- Provide the appropriate number and types of sanitary facilities for employees.
- Assure that fall protection equipment is provided and used. Inspections of this equipment shall be documented and on file for review.
- Assure that all perimeter cables, barricades, or any other safety-related items are installed correctly and maintained. If another Contractor must remove a safety item, coordinate this activity with the Contractor who installed the device and other Contractors who may be exposed. **Safety devices shall be replaced by the Contractor removing them.** Warning signs, tags, or barricades shall be installed if other safety devices are removed.
- Assure that employees receive adequate training as required by the Project and OSHA. Additional training for foreman and safety representative may be required based on unique hazards involved in a task.

WORKPLACE SUBSTANCE ABUSE POLICY

The contractor shall submit as a part of their overall Safety and Health Plan a copy of their company Workplace Substance Abuse policy. This policy shall at minimum comply with Appendix D, "Substance Abuse".

The Contractor shall ensure that all subcontractors and sub-subcontractors are in compliance. The Contractor shall submit a monthly notarized letter stating they and their subcontractors are in compliance with the Project's Substance Abuse Policy.

Contractors should contact the State of Tennessee, at 1-800-332-2667, if there are questions concerning the Tennessee Drug Free Workplace Program. Contractors should also consult their own legal counsel.

INSTRUCTION AND TRAINING

Safety Orientation Program

Newly employed, promoted, and/or transferred personnel shall receive an orientation regarding the general safety and health rules and regulations as well as the site specific policies and hazards prior to starting work on the construction site. The Contractor shall be responsible for the orientation of their employees, Subcontractors and sub-subcontractors, and visitors. Documentation of this orientation shall be maintained on file for review (Appendix A). Hard hat stickers (provided by the Project) are to be issued to an employee following their orientation, and then documented on training Log Sheet. It is the responsibility of the contractor to ensure that non-English speaking employees receive these same instructions in a language they understand. Safety orientation of all personnel shall include at a minimum the following topics Safety orientation of all personnel shall include at a minimum the following topics:

- Unique hazards of the project
- Employer/personnel responsibilities under OSHA Standards – location of required posters
- Personal protective equipment, including appropriate work attire
- Confined space entry
- 6-Foot fall rule - 100% continuous fall protection (***including steel erection and scaffolds***)
- 100% eye protection, 100% hard hat protection
- Appropriate guarding and other warning devices
- Housekeeping
- Fire protection
- Accident reporting procedures - First-aid facilities - Emergency procedures
- Crane and lifting hazards
- Scaffolding tagging requirements
- Hazard communication/ Right-to-Know, location of MSDS's

- Substance abuse policy
- Disciplinary procedures
- Trenching & excavation
- Electrical hazards

PROTECTION OF THE PUBLIC

All necessary precautions to prevent injury to the public or damage to property of others shall be taken. The “Public” is defined as all persons not employed by or under contractor or subcontractor to **Memphis-Shelby County Airport Authority**. Installation of temporary barriers and/or fencing designated to protect the Public shall be reviewed and approved by the Owner and/or their representative. Precautions shall include but not be limited to the following:

1. Work shall not be performed in any area occupied by the Public unless specifically permitted according to the terms of the contract or in writing.
2. When necessary to maintain public use of work areas involving vehicular roadways, etc., the contractor shall protect the Public in accordance with the applicable regulations.
3. Appropriate warnings, signs and instructional safety signs shall be conspicuously posted where necessary. In addition, a signal person shall control the moving of motorized equipment in areas where the public might be endangered. All signage warnings and traffic control shall comply with the particular agency that takes judicial precedence.
4. Each project work area shall be protected by a fence constructed and erected per MSCAA requirements.
5. Barricades for the general public or public roadways shall be secured against accidental displacement and in place at all times, except when temporary removal is required. As such times, a flag person shall be assigned to control the unprotected area. Barricades used on the airfield will be reconstructed erected and maintained per MSCAA/FAA requirements.
6. Required signs and symbols shall be visible at all times when work is being performed and shall be removed or covered promptly when the hazards no longer exist.

Group Tours and Site Visitors

It is particularly important that a high degree of protection be afforded to all persons on the authorized tours of construction work-sites. The following instructions shall be complied with, as applicable, by the Contractor and those responsible for arranging such tours. The following procedures shall be followed:

- a) Group tours shall be cleared through the site **Memphis-Shelby County Airport Authority** office, allowing maximum advance notice.
- b) If visitors to the site will be on foot or out of the vehicle/bus, the individual or organization requesting the tour shall ensure that:
 - In all cases, the Construction Manager, MSCAA and the contractor shall be advised of any tour in a timely manner prior to the tour taking place.
 - Release and Hold Harmless Agreement – Each visitor shall be required to sign a release and hold harmless agreement prior to the commencement of the tour.
 - MSCAA will coordinate the tour arrangements and ensure notification to the Construction Manager
 - Tour groups are limited to no more than (25) twenty-five persons.
 - Visitors are required to wear appropriate clothing and shoes.
 - Children under 18 years of age are not be permitted on the Project tours.
 - All visitors shall comply with Contractor safety requirements.
 - Site **Memphis-Shelby County Airport Authority** or designee personnel will escort Tours.

HARASSMENT-FREE WORK POLICY

Employee Harassment

It is the policy of **Memphis-Shelby County Airport Authority** to provide a workplace free from employee harassment on the basis of race, color, religion, sex, national origin, age, handicap, disability, etc. Improper interference with the ability of

an employee to perform their work activities will not be tolerated. Harassment can appear in many forms, including derogatory comments, jokes, slurs, unwanted physical contact, derogatory drawings or threats.

Sexual Harassment

Unwanted sexual advances, requests for sexual favors and other verbal physical conduct of a sexual nature will not be tolerated. Sexual harassing conduct includes, but is not limited to:

- ☐ Unwelcome sexual flirtation, touching, advances or propositions
- ☐ Verbal abuse of a sexual nature, including graphic or suggestive comments about an individual's dress or degrading words used to describe and individual
- ☐ The display in the work place of sexually suggestive objects or pictures, including nude photographs
- ☐ Other verbal or physical conduct of a sexual nature can affect an employee's work performance

Reporting of Harassment

It is the policy of **Memphis-Shelby County Airport Authority** to actively investigate any alleged incidence of harassment. Anyone who believes they have been harassed should contact the project manager. Any allegation or complaint will be held in the strictest confidence.

Any employee who commits a wrongful act of harassment shall be subject to disciplinary action, up to and including termination.

REPORTING, ACCIDENT INVESTIGATION, AND RECORDKEEPING

Contractors shall provide an American Red Cross and CPR Certified First Aid representative and designate an appropriate area for the first aid and medical care to treat injured employees at the job site. A copy of the First Aid Representative's qualifications shall be submitted to the Project Safety Manager.

The contractor must designate an individual to coordinate injury treatment with the workers' compensation carrier. The contractors' designated representative should also coordinate return to work and availability of modified work.

To coordinate medical services, the contractor will complete "Employee Medical Data Sheet" and "Company Drug Screen Request" forms.

Reporting

All accidents resulting in employee injury, property damage, or involving the general public shall be reported immediately to the designated project representative and the Project Safety Manager.

The Contractor and their subcontractors and sub-subcontractors shall complete a Supervisor's Incident Report Form (See Appendix E) and submit the report to the Project Safety Manager for all job-related accidents involving any of the following:

1. Any employee injury of the contractor, any subcontractor or sub-subcontractor.
2. Any injury and/or incident with the general public (including any alleged injuries reported by a member of the general public).
3. Equipment
4. Property

A formal accident investigation report and "First Report of Injury" shall be submitted within 24 hours. Pertinent facts that are not available within the above time shall be submitted as soon as available in a supplemental report.

A drug and alcohol test shall be administered to employee(s) injured and/or any employees in a work crew involved in an accident involving bodily injury.

Record-Keeping and Files

The Contractor and all Subcontractors and sub-subcontractors shall maintain a master or central file for safety and health

related documentation on the jobsite. Files shall be maintained in such a manner that distinguishes each contractor and their subcontractors from other subcontractors and sub-subcontractors.

See Insurance manual for claim reporting procedures.

Accident Investigation

All accident/incidents shall be investigated by the contractor's safety supervisor and/or their safety designee. An accident investigation report must be submitted to the Designated Project Representative, OCIP Administrator/Willis Towers Watson and OCIP Insurance Carrier within twenty-four (24) hours of the occurrence.

The accident investigation should generate appropriate recommendations for corrective actions to prevent recurrence of similar accidents. Depending upon severity of the accident, the foreman of the injured worker may be requested to appear at the job safety and coordination meeting to:

1. Describe the cause of accident.
2. Report as to what corrective action has been initiated to avoid future accidents.

The Contractor and all Subcontractors shall maintain a current OSHA 300 log. The log shall be available for review by any OCIP team member at any time.

The Contractor and all Subcontractors and Sub-Subcontractors shall submit on a monthly basis a monthly summary of accident/incidents for the project. The summary shall follow the format contained within (Appendix G).

Under the direction of MSCAA AD HOC Committee may be appointed for investigation of serious accidents that result in loss of life, injury to several workers on pedestrians or major property loss. The committee will submit a report to MSCAA at the conclusion of the investigation.

RETURN-TO-WORK

Under the OCIP Program, every effort shall be made to **return employees to work as soon as possible** after an accident and under the direction of the physician. The insurance carrier will be in contact with the physician to determine the employee's physical demands and limitations.

A return-to-work program shall be developed and implemented by each Contractor to assist workers who are temporarily disabled due to an injury or illness. The Contractor and all subcontractors shall participate in the return-to-work program.

The Contractor, Subcontractor or Sub-subcontractor shall agree that their injured employees shall be treated by an authorized medical treating facility. The medical facility shall be utilized for initial treatment and evaluation of all injured employees. Follow-up care will be provided in accordance with applicable Workers' Compensation statutes.

When employees report a work related illness or injury, they shall be taken to the approved medical facility for examination and/or treatment. If the doctor determines that the employee qualifies for "Return to Work" ("light-duty"), the doctor will complete appropriate forms indicating the restrictions and conditions for transitional work.

The Contractor, Subcontractor or Sub-subcontractor shall provide modified work until the employee is able to resume regular duties. All modified work is temporary in nature and is designed to facilitate a return to regular duties as soon as possible. Modified duty positions may be offered at any location of the project or on any shift. Modified work can also be provided at other work locations of the Contractor with approval from the OCIP Team.

In no case shall an injured employee be laid-off or terminated from a "alternative work" position, unless first discussed with the Owner and it's representatives.

WORK PRACTICE CONTROL

Overview

The primary focus of these Safety and Health Guidelines is to provide guidance for Contractors. Each Contractor shall have on site and available for employee review a written safety and health plan. This plan shall cover work exposures the contractors work operations. It is a project requirement that each and every employee conduct their operations in accordance with OSHA and all other applicable standards for all project operations

Memphis-Shelby County Airport Authority prohibits the use, possession, concealment, transportation, promotion or sale of the following controlled items:

- a. Firearms, weapons, and ammunition – except when authorized for security reasons.
- b. Switchblades.
- c. Unauthorized explosives, including fireworks.
- d. Stolen or contraband.

Hazard Communication Program

The Contractor shall develop a written Hazard Communication Program that contains at minimum the following elements:

- The name of the program coordinator.
- A list of hazardous substances present within the Contractor's workplace.
- A written system that ensures MSDS's are obtained and made readily accessible to all employees, including lower tier subcontractor personnel, on each shift. In the event of an emergency, MSDS's shall be made available on an immediate basis.
- A labeling program that ensures that containers of hazardous substances in the workplace are properly labeled with the name of the substance and any applicable hazard warnings.
- A training program regarding hazards of substances that are used in the workplace and the protective measures that must be taken by the employee or any other persons potentially exposed to the hazardous substances.

The Contractor shall ensure that each employee, prior to working with, or being potentially exposed to hazardous substances, receives initial training on the Hazard Communication Program and the safe use of the hazardous substances. Additional training shall be provided to employees whenever new substances are introduced to the workplace.

Permanent records shall be maintained by the Contractor, describing all Hazard Communication Program training.

Record-Keeping and Files

The Contractor and all Subcontractors and sub-subcontractors shall maintain a master or central file for safety and health related documentation on the jobsite. Files shall be maintained in such a manner that distinguishes each contractor and their subcontractors from other subcontractors and sub-subcontractors.

Contractors shall submit and/or have available on site:

REPORT NAME	Annual	Immediately	24 Hr.	Weekly ¹	Monthly ²	Per Occurrence	Per Request
Annual Crane Inspection	X						X
Chemical Inventory					X		X
Contractor Weekly Inspection				X			X
Critical Lift Checklist						X	X
First Report of Injury		X				X	
Incident Investigation		X				X	
MSDS's					X		X
OSHA 300 Log					X		X
OSHA Citations		X				X	
Safety Observation				X			
Safety Plan of Action or JSA ³				X		X	X
Safety Statistics					X		X
Safety Training					X		X

Substance Abuse Policy compliance notarized letter					x		x
Toolbox Safety Meetings				x			x
Daily equipment / Vehicle Inspections							x

Daily -- Daily inspections are required on all equipment / vehicles.

¹ Weekly – Weekly reports are due the following Tuesday morning

² Monthly – Monthly reports are due by the 6th of the following month.

³ Safety Action Plan or JSA – As required by contract or specification

The Owner and it's Representatives shall have the right to review all documentation at any time upon request. The Contractor shall give full cooperation during these reviews.

The following documentation shall be in the safety files:

- A written project site specific Safety & Health Plan
- Hazard Communication Program, including current MSDS's. A project specific MSDS file shall be maintained on-site for employee review
- Site emergency plans
- All required safety & health permits
- Weekly safety meeting reports - including meeting topic(s) and employee attendance sheets
- Specific job hazard worker training
- Daily jobsite safety inspection reports - including documentation of corrective measures
- Equipment inspection reports
- Crane inspection reports - daily and monthly (annual certification reports required prior to equipment operation)
- Employee orientation training records
- Accident investigation reports, including near-misses
- Job hazard analysis
- Competent person qualifications
- Written safety violations
- Noise and air quality monitoring

Job Safety Analysis (JSA)

In order to provide Contractor employees with a safe workplace through pre-planning hazardous work, a Job Safety Analysis (JSA) shall be prepared. JSA's shall be required when thorough pre-job planning, it is determined that the process, equipment or procedure indicates potential for serious injury and/or property damage. The Contractor shall also prepare a JSA upon request by an OCIP Team member. . JSA's will be done daily. JSA's should be kept in the work area, possibly at the tool box and/or where they are readily available to the workers. JSA's will be also be on file with the contractor.

The JSA shall be used by Contractors to analyze the jobs they perform, to identify the existing and potential hazards associated with each job step and establish controls for them. These JSA's shall be used as a task specific training tool to instruct employees, inspectors, and visitors of potential hazards and required safety precautions. Each employee working on the project shall sign a training log indicating that they understand the hazards of the project as indicated on the JSA.

Examples of activities that may require a JSA:

- Potential for collapse, (work-in trenching, tunneling. This may include demolition, etc).
- Potential release of stored energy, (electrical, pressure, explosive, etc).
- Crane supported work plate form use.
- Critical crane lifts (two cranes used to lift one load).
- Unusual crane operation as defined by the CIP Team.
- Potential exposure to uncontrolled hazardous materials or wastes.
- Blasting operations
- Abrasive /Sandblasting, Hydro blasting, etc.
- Potential injury from burns, both chemical and thermal.
- Respirator use.
- Potential oxygen-deficient environments.

- Entry into confined space.
- Potential of entanglement in, on, or between objects.
- Work in public streets and highways.
- Lockout/Tagout.
- Operations involving fall exposure.
- Structural Steel Erection.
- Use of new or Hazardous Materials, procedures, equipment.
- Material Storage & Handling.
- Powder actuated tool use.
- Suspended scaffolds.
- Scaffold erection.
- Scaffold dismantlement
- Rock drilling.
- Work on live electrical systems.

SPECIFIC PROJECT SAFETY REQUIREMENTS

Controls for possible conflicts between construction operations and aircraft

- 1) Contractor must request that a notice to Airmen (NOTAM) be issued prior to start of any construction that might affect navigable airspace or surface movement.
- 2) Barricades and temporary lighting must be installed and maintained per specs.
- 3) Operators of equipment/vehicles must be instructed on routes and haul procedures.
- 4) All personnel must stay in defined work areas. Fences/barricades are not to be crossed.
- 5) No access to active taxiways/runways will be allowed without prior authorization and direction/escort by MSCAA personnel.

Scaffolds, Stair Towers and Work Platforms

The Project requires **100% continuous fall protection** during the erection and dismantling of scaffolds where employees may be exposed to a fall greater than (6) six feet. A competent person must be present during erection, dismantling or moving of scaffold. The Contractor/Subcontractor shall develop and use a scaffold tagging system similar to the following:

Tagging

The tagging procedure, at minimum, shall consist of three (3) tags. The appropriate tag will be placed on a scaffold approved by the competent person. Each tag must have at least the following information and be visible by all employees:

- Date tag was placed - date of the last inspection.
- Name of person inspecting. All tags must be weather resistant.

A **GREEN** tag means the scaffold complies with federal OSHA regulations and can be used by any person.

A **YELLOW** tag indicates the scaffold is complete but does not meet all federal OSHA specifications. This tag will be used only in special circumstances. Special precautions, such as wearing a safety harnesses may be required because any accessory, such as a handrail, could not be installed due to the location of the scaffold.

A **RED** tag shall be placed on a scaffold that is being erected, dismantled, damaged and/or defective. No employees except members of the erection/dismantling crew shall work from a red tagged scaffold.

Employees will be instructed to read tags before using scaffolds. If a tag is not attached to the scaffold, **DO NOT USE** the scaffold.

Exceptions: Single buck or Baker scaffolds need not be tagged.

Walking and Working Surfaces

Barrier Identification Tape

Barrier identification tape is strictly prohibited from being used for any form of personnel fall protection. Barricade tape around excavations can be used for short term (24-hours), after this period physical barriers are required.

- **YELLOW** barricade tape shall be used for **CAUTION/WARNING**
- **RED** barricade tape shall be used for **DANGER DO NOT ENTER**

Note: Once the area barricaded is free of the hazard(s) for which it was erected the tape will be removed and properly discarded.

Fall Protection

Employees shall not be exposed to fall hazards. When an employee observes a fall hazard, they will notify their supervisor of the hazard. The responsible Contractor will immediately correct the hazard. **100% continuous fall protection, for fall hazards greater than six (6') feet, shall be implemented on this Project - including steel erection and scaffold use, erection and dismantling.**

Each Contractor shall be responsible for meeting fall protection requirements in their overall safety and health program.

Each Contractor shall evaluate ALL fall exposure conditions or tasks and must develop a Fall Protection Plan which outlines what methods, procedures and/or devices will be used in their program.

Each Contractor shall be responsible for implementing the requirements to achieve fall protection in accordance with all Federal, State, local rules, regulations, and the OCIP Safety and Health Guideline.

All fall protection systems used on this project shall comply with OSHA regulations and the project safety guidelines. Fall protection shall provide a positive means of protection. **Controlled Access Zones and Safety Monitoring Systems are not considered positive means of fall protection and shall not be permitted.** Any employee exposed to a fall greater than six (6) feet shall use approved fall protection equipment or devices. Fall protection systems shall be designed and installed under the direction of a Registered Professional Engineer or Qualified Person. Fall protection is required, as a minimum, under the following examples:

- Formwork and reinforcing steel. Each employee on the face of formwork or reinforcing steel shall be protected from falling 6 feet or more to lower levels by Personal Fall Arrest Systems, safety net systems, or positioning device systems.
- When working from a telescoping, articulating, or rotating type lifts and scissors lifts, personnel shall wear a safety harness with shock absorbing lanyard, secured to an approved anchorage point.
- When working on a ladder higher than six (6) feet from a solid surface, if the employee's torso extends past the side rails or if a vertical ladder extended a total of 20' or greater.
- When working on a platform or other support not equipped with an adequate guardrail, which is higher than six (6) feet from a solid surface.
- When working from a crane-suspended work platform, a safety harness with shock absorbing lanyard is mandatory.
- When an employee may have to be lowered into or raised from a confined space, a personal fall arrest system will be worn. The employee will be supported by an approved platform or a boatswain's chair, with certified hoisting device and fall arrest device.
- When working adjacent to an unguarded floor opening or sloped roof, a lifeline system is desirable for mobility. A positive means of fall protection must be provided unless it can be proven infeasible.
- When working adjacent to a deep excavation, pit or trench. Employees will be instructed on the proper wearing and use of personal Fall Protection Arresting Device Systems.
- **Barricade tape is not adequate fall protection.**

The Fall Protection Plan shall detail in writing when fall protection is required and exactly how this protection is to be provided. This written plan is required for any Contractor exposing workers to falls six (6) feet or greater.

The Contractor shall prepare a written training program to ensure that each employee who might be exposed to fall hazards is knowledgeable of the Fall Protection Plan requirements. The program shall enable each employee the ability to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to eliminate or minimize these hazards.

The Contractor shall assure that each employee has been trained.

Personnel, who have been trained, then re-trained and continue to violate the established fall protection plan/regulations shall be removed from the project IMMEDIATELY.

Confined Space Entry

All employees required to enter a confined space shall be knowledgeable of the hazards involved with confined space entry. Prior to the start of such an entry the Contractor involved in the work will develop a Confined Space Entry Procedure. The Contractor shall train all personnel who will enter the confined space. No one shall enter a confined space area until properly instructed. Contractors shall identify all confined spaces within their work area with a sign identifying the area as a confined space.

A Confined Space Entry procedure shall be used to:

- Prevent inadvertent operation of equipment and/or work process while people are working in the confined space.
- Eliminate unexpected exposure to hazardous materials, oxygen deficient or inert/toxic gaseous atmosphere while working in confined spaces.
- Plan for a timely and effective response to an emergency during a confined space entry.

Confined Spaces are considered to be areas with limited entry and exit, or poor natural ventilation, and not intended for human occupancy. Examples of a confined space include: tanks, covered basins, vaults, columns, mixers, manholes, pipelines, sumps, ditches or excavations. All spaces shall be considered permit-required confined spaces until the pre-entry procedures demonstrate otherwise.

Safety considerations include but are not limited to: atmosphere testing for gaseous conditions/lack of oxygen, appropriate personal protective and emergency equipment, and additional personnel as needed to assure communications and assist the individual conducting the entry.

A Permit Required Confined Space means confined space that has one or more of the following:

- May or may not potentially contain a hazardous atmosphere;
- Contains a material that has potential for engulfing entrant;
- Has internal configuration that could trap the entrant;
- Contains any other recognized serious health or safety hazard;

Contractors shall provide their own permit.

A Non-Permit Required Confined Space is a confined space that does not contain or with respect to atmospheric hazards, the potential of causing death or serious physical harm.

Employee Ground Transportation

The purpose of this section is to establish minimum acceptable guidelines for the safe transportation of all personnel traveling within the Project confines. Eliminate personal accidents and injuries resulting from improper equipment use.

Contractors are responsible for assuring that all personnel follow the requirements of this section and prohibit improper transportation of employees and visitors. Transporting employees in cargo beds of pick-ups, vans, etc. is prohibited, unless approved seats and seat belts are provided and used.

- Operators must be qualified. Vehicle operators must have valid state operator's license
- All equipment/vehicles must be identified (company logo) per specifications.
- Safe speed must be maintained and adjusted to site conditions.
- Use flashers/headlamps as directed.
- Mobile cranes, forklifts, winch trucks, front-end loaders, tractors and other materials handling equipment are not permitted to transport passengers.
- Trucks
 - A maximum of three passengers are permitted to ride inside of the truck cab unless the cab is specifically designed to accommodate additional passengers.

- Passengers shall ride with all portions of their bodies inside the truck body or frame.
- Passengers shall be in the seated position, with the seat belts secured and adjusted properly, before the vehicle is set in motion.
- Riding on a vehicle's bumper or tailgate is prohibited.
- Tailgates will be closed and latched before the vehicle is operated.
- Passengers are not permitted to ride in the body of a dump truck, in the bed of a pickup truck or in trailers.
- Passengers are not permitted to ride on top of the load or to hold materials from shifting.
- Vehicles must be designed to accommodate passenger transportation or the vehicle shall not be used for that purpose.
- Drivers transporting passengers shall follow the posted speed limit and Project traffic rules.
- The Contractor shall establish a designated employee parking area. Employee vehicles shall not be allowed on the construction project.

Housekeeping - MUST BE A CONTINUING PROCESS

The purpose of this section is to incorporate into the day-to-day work activity a good housekeeping action plan that will be followed by all Contractors working on the project.

- Contractors, through inspection and example, are responsible for assuring that trash and debris remain out of the work areas. Contractors are responsible for all of their work areas and the work areas of their subcontractors and sub-subcontractors. If poor housekeeping practices are observed, corrective action will be discussed with the appropriate Contractor to remind them that cluttered work areas will not be tolerated and that their work area(s) pose a hazard to his employees and other personnel.
- Should the Contractor fails to address and correct their poor housekeeping upon 24 hour written notification, the "owner" may at its option, cause the same to be removed and charge the expense of such removal to the appropriate Contractor.
- Specific attention is needed for operations to the Aircraft Operation Area (AOA).
- Contractors shall monitor their work areas daily or more frequently if needed to assure that all debris is removed to minimize hazards.
- Immediately available vacuum sweeper for cleaning taxiway/runway crossings.
- Personnel immediately available for taxiway and runway cleanup. (Provide brooms to supplement cleanup by sweeper.)
- Access to taxiway/runway crossings for cleanup only at the direction of MSCAA guard.
- Loading of haulage vehicles to minimize spillage.
- Maintenance of vehicles/equipment so that no fluids will leak.
- Provide waste containers at the direction of the Construction Manager.

Project Electrical Requirements

- The Contractor shall implement an electrical safety program. This safety program element shall include safe installation, work practices, maintenance, and special equipment considerations. All electrical installations, either temporary or permanent, shall be in conformance with the National Electrical Safety Code, NFPA-70, ANSI-C1, and low and high voltage electrical safety orders OSHA code requirements. Only qualified employees shall install electrical tools and equipment, defective and/or improperly installed equipment shall be repaired immediately.
- Only qualified electricians familiar with code requirements shall be allowed to perform electrical work.
- Extension cords used with portable electrical tools and appliances shall be heavy duty (minimum 12 AWG) and of the three-wire type. Cords shall be covered, elevated or otherwise protected from damage that would create a hazard to construction site personnel.
- Electrical cords and equipment shall be visually inspected before each shift for external defects. All damaged and defective cords shall be removed from service immediately (this includes cords with the ground prong missing). Cords shall be repaired with approved heat-shrink methods, electrical tape is not permitted.
- All temporary electrical tools, cords and equipment shall be properly protected by ground fault circuit interrupters (GFCI). All portable generators shall have properly functioning GFCI outlets. GFCI receptacles shall be tested monthly with a multi-range GFCI tester (the tests shall be documented) to insure the GFCI is properly functioning and protecting the worker.
- A "task-specific" lockout/tagout safety plan shall be established to ensure power sources to equipment and/or machinery are isolated and de-energized. This plan shall establish minimum steps necessary to disable equipment and machinery to prevent the unexpected release of potentially hazardous energy. Lockout/Tagout shall be performed in accordance with 29 CFR 1910.147.

Cranes and Hoisting Equipment

- Cranes and hoists shall not be used without a current annual certificate of examination and testing issued by an accredited crane examiner. **Annual inspection certificates shall be available when cranes arrive on-site. Operators manual shall be in the cab of each crane prior to crane operation.**
- Only qualified and designated personnel shall operate cranes or hoisting equipment. Crane operators must have current (Certified Crane Operator) CCO certification and/or local or state certification.
- Rated load capacities and recommended operating speeds, special hazard warnings, or instructions, shall be conspicuously posted on all equipment; they shall be visible to the operator from his/her control station, and an accessible fire extinguisher of 10:ABC rating, shall be available at all operator stations or cabs of equipment. Crane operations position shall be kept clear of loose tools or material.
- Outrigger cribbing shall be used for all crane operations. The size of the cribbing shall be determined by taking the cranes capacity and dividing by 5 (example: 40 to crane divided by 5 = 8 sq. ft. per outrigger).
- All cranes working over shafts or lifting personnel platforms shall have anti-two block devices installed and operating properly.
- Radio or other positive means of communication shall be used to direct the operator when the point of operation is not in direct view of the operator.
- The operator shall respond to signals from only one person. The operator shall not follow any signal which is not understood, but shall always obey a stop signal.
- The operator shall be responsible for the operations and load under their control at all times. Whenever there are doubts about the safety of movement, the operator shall stop operations until safety is assured.
- A warning signal, such as a horn, shall be sounded to alert personnel to proximity of moving loads. Loads should not be passed over personnel, and personnel should not be permitted to work in the area directly under a suspended load.
- Concrete buckets - Employees shall be permitted to work under concrete buckets while the buckets are elevated.
- **Employees shall keep out from under suspended loads at all times.**
- Employees shall not ride on loads, slings, hooks, buckets or other load handling attachments.
- All repairs, adjustments, modifications, rigging assembly or dismantling shall be conducted only by qualified and authorized personnel.
- The swing radius shall be barricaded or other positive means shall be taken to prevent personnel from entering the area between the counter weight/swing radius and any stationary and/or outside obstructions.
- A critical lift checklist will be completed and submitted anytime:
 - 2 cranes are used to make a lift
 - when a lift exceeds 75% of the load chart
 - or any unusual conditions are encountered(See Appendix C, "Critical Lift Checklist")
- Crane suspended work platforms shall only be used if there is no other safe means to reach the work area. The Contractor shall complete a JSA prior to the lift.
- Any overhead wire shall be considered to be energized unless and until the person owning such line or operating officials of the electrical utility supplying the line assures that it is NOT ENERGIZED and it has been visibly grounded at the work site.
- Taglines shall be used to control all loads
- Daily inspection of all cranes shall be completed and documented prior to crane use

Rigging

- Major rigging operations shall be planned and supervised by Competent Personnel to ensure that the best methods and most suitable equipment and tackle are employed. This should be the superintendent or foreman in charge.
- Job site management shall ensure that:
 - Proper rigging equipment is available.
 - All rigging is inspected before use. Documented inspections are required.
 - Correct load ratings are available for the material and equipment used for rigging.
 - Rigging material and equipment are maintained in proper working condition.
- The supervisor of the hoisting operation shall be responsible for:
 - Proper rigging of the load.
 - Supervision of the rigging crew.

- Ensuring that the rigging material and equipment have the necessary capacity for the job and are in safe condition.
- Ensuring correct assembly of rigging material or equipment as required during the operation, such as the correct installation of lifting bolts.
- Safety of the rigging crew and other personnel as they are affected by the rigging operation.

Excavation (Any process which disturbs soil)

- A. Contact MSCAA/FAA thru the Construction Manager at least 72 hours prior to proposed work for location of underground hazards (cables, ducts, fuel lines, etc.). A request form will be provided to the contractor.
- B. The contractor must contact Tennessee one call at least 72 hours prior to proposed excavation for location of utilities. Contractor must make arrangements to have personnel at the site when utilities are located. Documentation of the control number must be maintained on site.
- C. **Utilities must be located/marked prior to any process that disturbs the soil.**

Earthmoving Equipment and Trucks

- All earthmoving equipment shall be maintained in safe working condition and shall be appropriate and adequate for the intended use.
- Only authorized personnel shall operate equipment. Operators of equipment, machinery or vehicles shall be qualified and properly licensed for the operation involved.
- Equipment maintenance shall be performed only by qualified mechanics.
- Equipment operators and truck drivers shall make a documented pre-shift safety inspection of their equipment. Any conditions that effect safe operation will be corrected before use.
- Equipment shall not be operated unless all required safety devices are in place and functioning properly.
- Careless, reckless or otherwise unsafe operation or use of equipment shall result in discipline and may constitute grounds for dismissal.
- Before performing any service or repair work, all equipment shall be stopped and positively secured against movement or operation, locked and tagged out of service, unless it is designed to be serviced while running, following the manufacturer's instructions.
- When equipment is serviced or repaired, the operator shall dismount until the service or repair is completed and then make a complete walk-around safety check before remounting.
- All heavy equipment including: cranes, forklifts, dozers, end-loaders, skid-steers, etc., shall have a reverse signal/back-up alarm audible above surrounding background noise.
- All off-highway earthmoving equipment and trucks such as loaders, dozers, scrapers, motor graders, rock trucks, tractors, rollers and compactors shall be equipped with roll-over protective structures (ROPS) and seat belts.
- Seat belts shall be used and adjusted properly by operators of all heavy equipment.
- Mobile equipment shall not be left unattended unless parked securely to prevent movement, with all ground engaging tools lowered to the ground, brakes set and the engine off.
- Equipment parked at night shall be lighted, barricaded or otherwise clearly marked when exposed to traffic. Keys shall not be left in equipment overnight.
- Personnel shall not be transported or ride on equipment or vehicles that are not equipped with seats for passengers.
- When fueling equipment or vehicles with gasoline or liquefied petroleum gas (LPG) the engine shall be shut down.
- All equipment and vehicles shall be equipped with appropriate fire extinguisher or fire suppression system.
- Haul roads shall be designed, constructed and maintained for safe operation consistent with the type of haulage equipment in use. Standard traffic control signs shall be used where necessary.
- Elevated roadways shall have axle high beams or guards maintained on their outer banks.
- Equipment, tools, and materials hauled on pickups and flat bead trucks must be secured to prevent them from falling onto the road.

Welding & Cutting

- Welding leads and cutting hoses shall be kept clear of walkways and stairways.
- Flash arrestors shall be installed provided in both oxygen and acetylene hoses at the regulator connection.
- Welders shall wear approved eye and head protection when welding. Personnel assisting the welder shall also wear approved eye protection.

- Prior to welding or cutting a "20-ABC" rated fire extinguisher shall be within easy reach of the worker. A fire watch shall be stationed at all locations where sparks and/or flames may fall to a lower floor/work area or to another side of a wall.
- A suitable cylinder truck, with chain shall be used to keep cylinders from being knocked over while in use.
- Spent welding rods shall be picked up and disposed of daily.
- When practical all welding and cutting operations shall be shielded by non-combustible or flame-proof screens.
- Oxygen and acetylene cylinders shall not be stored inside buildings.
- Rubber boot protectors shall be provided on all welding leads where they make connections at the welding machine

Personal Protective Equipment

Eye and Face Protection

All employees shall wear safety glasses 100% of the time while on the construction site. Minimum eye protection shall include approved safety glasses **with side shields** which meet the standards specified in ANSI Z-87.1-1989 (this shall also include prescription eye wear).

Additional eye and face protection in combination shall be worn when:

- Welding, burning or cutting with torches
- Using abrasive wheels, portable grinders or files
- Chipping concrete, stone or metal
- Working with any materials subject to scaling, flaking or chipping
- Drilling or working under dusty conditions
- Using explosive actuated fastening or nailing tools
- Working with compressed air or other gases

Only clear safety glasses shall be worn inside any building(s).

Head Protection

All construction workers shall wear hard hats which meet ANSI Z 89.1-1986, 100% of the time while on the construction site. Hard hats shall display the company decal where the employee works.

All delivery personnel, vendors and visitors shall wear approved hard hats while on the project.

Hearing Protection

Work areas shall be monitored to identify areas of high noise exposure (85 dBA and higher). All work areas identified as high noise exposure shall be properly posted to warn employees of the exposure.

Appropriate hearing protection shall be worn in work areas where noise levels are 85 dBA or greater.

Respiratory Protection

Contractors whose work activities warrants that employees wear respiratory protection, shall establish and implement a respiratory protection program. The program shall meet the requirements set forth in 29 CFR 1926.134.

Foot Protection

All personnel on the construction site shall wear leather hard-soled work boots. No one is permitted to wear sneakers (including ANSI approved), tennis shoes or athletic shoes of any type, sandals, high heels or thongs on the construction site.

Clothing

Suitable clothing for construction shall be worn on the construction site. Shirts with sleeves (at least t-shirt (4 inches) in length), full length pants and reflective safety vests shall be required. Shorts, sweat pants or tank-tops are not allowed.

Appendix A - Safety Orientation

Check each box when completed - To be completed by all employees on the jobsite. To be completed by site supervision and employee prior to beginning work.

- ☐ Alcohol and/or drug use, fighting or horseplay are prohibited and will result in immediate termination
- ☐ 100 % eye protection, hard hats and reflective safety vests are required when on the construction project
- ☐ Review potential hazards on the project and the precautions to be taken to prevent injury
- ☐ Disciplinary Policy:
 - Non-serious violation**
 - First violation - Verbal warning
 - Second violation - Verbal & written warning
 - Third violation - Verbal & written warning and three day suspension without pay
 - Fourth violation - Employee discharge from company

Serious violation - (see disciplinary policy)

- First violation - Verbal & written warning
- Second violation - Employee discharge from company

- ☐ Hazard Communication Program - location of MSDS's and written program on the project
- ☐ All accidents, injuries and unsafe conditions shall be reported to supervisor immediately
- ☐ Medical treatment protocols for injuries requiring off-site medical treatment with a doctor
- ☐ Safety meetings are held on a weekly basis (attendance is mandatory)
- ☐ All employees shall dress properly while working. Minimum attire is long pants, shirt with at least 4 inch sleeves and sturdy above the ankle work boots
- ☐ Ground fault circuit interrupters (GFCI) are required on all tools. All extension cords and power tools shall be properly grounded. Notify supervision immediately if defective equipment exists.
- ☐ All employees exposed to a fall exposure of six or greater, shall be protected by the means of fall protection. Specific training is required for fall protection.
- ☐ Employee are not allowed to work in excavations 4 feet or more in depth, unless they are properly sloped or protected by shielding or shoring
- ☐ Lockout/tagout is required when working on equipment or tools where unexpected start-up may occur or the release of energy may result in injury
- ☐ Before any employee is allowed to wear a respirator (including paper masks) they must be medically approved by a doctor and fit-tested
- ☐ Scaffolds shall be inspected and tagged prior to use by any personnel. Red tag means DO NOT USE; Yellow Tag means section of scaffold does not meet OSHA standards and Green Tag means SAFE FOR USE.
- ☐ Other hazards discussed related to the construction project:

Equipment Issued

- ☐ Hardhat
- ☐ Safety Glasses
- ☐ Orange vest
- ☐ Fall Protection Harness & Lanyard
- ☐ Respirator
- ☐ Other _____

To be completed by supervisor in the field with the employee

- ☐ Show employee around the project and discuss potential hazards
- ☐ Introduce employee to crew members
- ☐ Assign new employee to experienced work crew
- ☐ Specify work duties
- ☐ Where to eat lunch

This is to acknowledge that I have completed new employee orientation and understand that failure to comply with the Safety Program may be grounds for dismissal.

Employee Print Name: _____ Date: _____

Emergency Contact: _____

Employee Signature: _____

Supervision Signature: _____ Date: _____

Appendix B – Employee Disciplinary Guideline

The discipline policy is intended to encourage compliance with the requirements of the Federal Occupational Safety and Health Act of 1970 (OSHA) and all additions and revisions thereto, as well as other applicable federal, state and local requirements and this Safety and Health Guideline. Workers performing work in an unsafe manner that would endanger the employee, other workers or the public shall be subject to discipline or termination.

The Project Representative in conjunction with the Project Manager and Project Foreman will determine the course of action best suited to the circumstances. The steps to be taken shall be progressive, except in the most egregious circumstances and shall include:

- a) **Non-Serious** – Initial, isolated, or rare instances of violation, that do not result in danger to the employee, property, or others, should be corrected through non disciplinary discussion and instruction. Safety violations of a less serious nature will be handled as follows:

First Offense	Verbal Warning
Second Offense	Written Warning
Third Offense	Employee given three-day suspension without pay
Fourth Offense	Employee Discharge

- b) **Serious** – One which could result in serious injury or loss of life or serious loss of property, shall be subject to:

First Offense	Employee given three-day suspension without pay
Second Offense	Employee Discharge

- c) **Supervisor Accountability** – If two or more employees working for the same supervisor are found in serious violation as described above, that subcontractor supervisor is also subject to disciplinary action up to and including immediate discharge.

Documentation - Notice of safety violation (written) shall be given to the employee, and a copy sent to the Project Safety Representative.

Appendix C - Critical Lift Checklist

Project: _____

Date: _____

Description of Lift: _____

Name of supervisor in charge of lift: _____

Name of crane operator(s): _____

Name of signal person(s): _____

Crane Data:

Make and Model: _____

Boom Length: _____

Counterweight: _____

Capacity: _____

Load Data:

Gross Load Weight: _____

Rigging Weight: _____

Load block & line Weight: _____

Max. Load Radius: _____

Min. Load Angle: _____

Max. Boom Angle: _____

Min. Boom Angle: _____

Net Load Weight: _____

Pre-Lift Requirements:

- _____ Load is within chart limits.
- _____ Has the Center of Gravity of the Load been established and marked?
- _____ Is rigging adequate and in good condition?
- _____ Load chart utilized is for exact crane model; boom type, length, tip; counterweight.
- _____ Competent person in charge of lift: Name _____
- _____ Competent signal person identified: Name _____
- _____ Pre-pick meeting held with crew
- _____ Written crane inspection completed within 1 day of critical pick
- _____ Swing path not over personnel
- _____ Footing is sound and level (soil conditions/compaction, underground tunnel or utilities).
- _____ Pre-planning for radio or hand signal communications.
- _____ Minimum clearances from power lines can and will be maintained.
- _____ The load radius has been measured with tape measure.
- _____ Weather conditions have been checked, including wind speed.
- _____ Load will not touch boom at any time.
- _____ For dual crane lift – diagrams have been prepared.
- _____ Pad blocking is adequate and substantial.
- _____ Outriggers are fully extended.

Signed: _____
Supervisor in Charge

Appendix D – Substance Abuse

Policy Statement

The Owner **Memphis-Shelby County Airport Authority** and the OCIP Team are committed to providing project employees with a drug-free and alcohol-free workplace. It is our goal to protect the health and safety of these employees and visitors to our job site, promote a productive workplace, and protect the reputation of our project.

Consistent with those goals, the use, possession, distribution or sale at project sites of drugs, drug paraphernalia or alcohol is prohibited. A program of drug and alcohol testing will be instituted to monitor compliance with this policy.

Contractors / Subcontractors refusing to comply with this Drug and Alcohol Policy will not be permitted to work on this OCIP project and will be noted as being in violation of their contract with the (Project Name) / or other contractors & subcontractors working on this project.

This Policy does not represent a contract between the Owner **Memphis-Shelby County Airport Authority**, Design and Development, the OCIP Team, Owners of project, Construction Managers, General Contractors, Subcontractors, employees or perspective employees of the project.

Policy Administration

It is our combined goal to protect the health and safety of personnel, craft workers, and visitors to our job site; to promote a productive workplace, and protect the reputation of this OCIP.

Prohibited Substances

1. Drugs or Drug is defined as any substance which may impair mental or motor function including but not limited to illegal drugs, controlled substances, designer drugs, synthetic drugs, look alike drugs, and under circumstances described in this policy -prescription drugs.
2. Alcohol is defined as any beverage or substance containing alcohol, ethyl alcohol or ethanol. "Alcohol Testing or Alcohol test means testing by certified breath-alcohol technician using a DOT approved initial screening device or urine alcohol testing conducted by a certified laboratory and confirmed by gas chromatography/mass spectroscopy (GC/MS)". Test levels must not meet or exceed .04 grams per 210 liter of breath.

Pre-Project Testing

Prior to the beginning work on this Project, employers will be required to insure that all employees have met the requirements of this policy with a negative (passing) test result. Employers and employees not meeting the requirements will not be allowed to work on this OCIP job site.

Additional Testing of Employees

1. **Post-Accident:** It is agreed that drug and alcohol testing of employees shall be required after each and every work related incident. This testing shall take place at the medical facility providing treatment for the injury. A work related accident is defined as an accident resulting in an injury requiring treatment by a physician to the employee or other employees injured and / or resulting in damage to property or equipment.
2. **Reasonable Suspicion:** Is defined as supervision having a reason to suspect employee drug or alcohol use. The employer will bear the cost of this test.

Points of Understanding Regarding Substance Abuse Testing

1. The employer, the medical facility and the testing laboratory agree that the results of the described tests are to be held in strictest **CONFIDENCE** between the employer, the OCIP Workers Compensation Carrier and the medical facility (MRO). This is an issue of employee – employer relationship (employment) and falls under the requirements within the employers program.

2. This statement is noted for the purpose of adjudicating a workers compensation claim. The OCIP Workers Compensation Carrier requires the employer to report all accident related drug and alcohol test results to them immediately.

Testing Procedures

1. At a minimum pre-project and post-accident testing is required.
2. Testing shall include the following drugs at a minimum:
Marijuana, Cocaine, Opiates, Amphetamines, Phencyclidine, Barbiturates, Benzodiazepines, Methadone, Propoxyphene
3. For reasons of safety, any employee subject to a reasonable suspicion test shall be suspended until test results are available.

Prescription Drugs

The use of current valid prescription Drugs that may impair an Employee's ability to safely perform his or her duties must be reported to the safety director, supervisor and management personnel.

Alcoholic Beverages

Under no circumstances are alcoholic beverages allowed on the project site.

Disciplinary Action

1. A positive pre-project or post-accident test will result in worker dismissal from this project site
2. Employees found using, selling, possessing or manufacturing drugs shall be removed from this project and may be reported to local law enforcement.

Confidentiality

All actions taken under this policy will be in conformance with the Local Drug Testing Act

Subcontractors and Vendors

Subcontractors, sub-tiered contractors, vendors and their employees shall cooperate with this policy in achieving a drug-free and alcohol-free workplace.

Amendments to Policy

Amendments to this policy may be issued to comply with project owner requirements, state or local laws, or federal contract requirements.

Company Name _____

**DRUG AND ALCOHOL POLICY
ACKNOWLEDGMENT AND ACCEPTANCE STATEMENT**

I certify that I have read and understand the statement and policy. I further understand that prior to employment and during employment, I am subject to drug and alcohol screening tests. I agree to provide the specimen appropriate to such drug or alcohol test(s) as may be required. I further understand that my property and I may be subject to search under the terms of this policy while I am on the Owner's premises. Failure to provide the appropriate specimen, or to permit a search, will subject me to removal from this site.

I also understand that I will not be allowed to go to work prior to the reporting of my pre-employment drug test results.

If I am an employee of a subcontractor company, an employee of an affiliate company assigned to the job site, or a contract staff, I understand that I am subject to pre-employment drug testing and all testing conditions of this Policy. Failure to provide the appropriate specimen or to permit a search or a positive test result will result in my immediate removal from this job site.

Signature

Date

Print Name and Title

Witness

Guidelines for Reasonable Suspicion

Observation Checklist

1. Walking	☐ Stumbling	☐ Staggering	☐ Falling	☐ Unable to Walk
	☐ Swaying	☐ Unsteady	☐ Holding On	☐ Normal
2. Standing	☐ Swaying	☐ Rigid		☐ Unable to Stand
	☐ Staggering	☐ Sagging at Knees		☐ Feet Wide Apart
3. Speech	☐ Shouting	☐ Silent	☐ Whispering	☐ Slow
	☐ Rambling	☐ Mute	☐ Slurred	☐ Slobbering
	☐ Incoherent	☐ Confused	☐ Normal	
4. Demeanor	☐ Cooperative	☐ Polite	☐ Calm	☐ Sleepy
	☐ Silent	☐ Talkative	☐ Crying	☐ Excited
	☐ Sarcastic	☐ Fighting		
5. Actions	☐ Resisting	☐ Fighting	☐ Threatening	☐ Erratic
	☐ Communications			
	☐ Drowsy	☐ Profanity	☐ Hyperactive	☐ Hostile
	☐ Calm			
6. Eyes	☐ Bloodshot	☐ Watery	☐ Dilated	☐ Glassy
	☐ Droopy	☐ Closed	☐ Normal	
7. Face	☐ Flushed	☐ Pale	☐ Sweaty	☐ Normal
8. Appearance/ Clothing	☐ Unruly	☐ Messy	☐ Dirty	☐ Partially Dressed
	☐ Body	☐ Stains	☐ Neat	☐ Normal
	☐ Excrement			
9. Breath	☐ Alcoholic	☐ Faint Alcohol	☐ No Odor	
	☐ Odor	☐ Odor		
10. Movement	☐ Fumbling	☐ Jerky	☐ Slow	☐ Hyperactive
	☐ Nervous	☐ Normal		
11. Eating/ Chewing	☐ Gum	☐ Candy	☐ Mints	☐ Other – identify
12. Other observations: (Visible drug use, possession, sale, etc.: attendance; poor work performance or accident; tampering with drug test; credible reports, etc.)				

Observed by: _____ Observed by: _____

Date: _____ Time: _____ Location: _____

Appendix E - Supervisor's Report of Bodily Injury

Date of Accident _____ Date Returned to Work: _____
Location of Accident _____ Time of Accident _____ am/pm
Contractor/Subcontractor Involved _____
First Aid: _____ Recordable _____ Lost Time _____ Fatality _____
Damage* _____ Fire _____ Property _____
Equipment _____
Injured Person: _____ SSN: _____
Address: _____ Occupation: _____
_____ Home Phone: _____
Male _____ Female _____ Age _____
Nature of Injury: _____
First Aid Administered By: _____
Hospital _____
Physician _____
Witnesses: _____

Equipment and/or Materials Involved: _____
Cause Of Accident: _____

Superintendent's Corrective Action: _____

Employee's Signature: _____
Supt. Signature _____
Date of report: _____

*Attach a list of damaged property and/or equipment excluding motor vehicles. Indicate owner's names and addresses. Complete "Report of Damage to Equipment or Property" (Appendix F).

Appendix F - Report of Damage to Equipment or Property

Date _____

Contractor/Subcontractor _____

Location of Accident _____

Equipment Involved _____

Personal injuries Yes _____ No _____

Damage Estimate \$ _____

Witness to Accident

Statement Obtained

Statement Attached

Yes No

Yes No

Yes No

Yes No

Yes No

Yes No

Yes No

Yes No

Remarks _____

Time of Accident _____ AM _____ PM _____ Date _____

Weather Conditions _____ Temperature _____

Roadway or surface type _____ Wet _____ Dry _____ Other _____ *

*If other, explain _____

If more space is required, use back of this sheet for additional information and sketches.

Signed _____

Title _____

Employee Name _____

Appendix G - Contractor Monthly Report of Safety Statistics

MONTHLY ACCIDENT EXPERIENCE SUMMARY		CONTRACT NO:	
		CONTRACTOR/SUBCONTRACTOR NAME:	
		MONTH	YEAR
		REPORTING PERIOD: THROUGH:	
	THIS MONTH	YEAR TO DATE	PROJECT TO DATE
HOURS WORKED			
PAYROLL			
A. FIRST-AID CASES B. OSHA RECORDABLE CASES C. LOST TIME CASES (list each under comments) D. TOTAL LOST WORK DAYS E. PROPERTY DAMAGE F. EQUIPMENT G. GENERAL PUBLIC			
OSHA Recordable Incidence Rate* Lost Time Incident Rate*			
COMMENTS:			
Prepared By:	Date	PM/Superintendent	Date

Appendix H – Safety Improvement Team Guidelines

The Owner recognizes that a cooperative effort is required to insure a safe construction project. Therefore, the Contractor shall establish a Safety Improvement Team to facilitate the proper cooperative attitude.

The Safety Improvement Team shall be composed of an equal number of employee and management representatives. The management personnel (4) will consist of one Owner representative, one person from the Contractor, one from the workers' compensation/general liability insurance carrier and a representative of subcontractor supervision. The employee members (4) shall be selected from the various subcontractor trades on a voluntary basis or by nomination to serve a minimum of one year each.

The Contractor's Safety Manager shall serve as the Safety Improvement Team advisor and is responsible for providing meeting agendas and minutes, giving assignments to the committee, and publicizing committee accomplishments. Safety Improvement Team meeting minutes and attendance roster shall be maintained.

The Contractor's Safety Manager is responsible for assuring that Committee members are adequately trained to perform their duties and responsibilities.

The Contractor's Safety Manager is responsible for assuring that subcontractors with 25 or more employees establish their own Safety Improvement Team commensurate with the NRS requirements.

The primary purpose of the Safety Improvement Team is to evaluate safety and health program effectiveness, suggestions, hazard reports, hotline reports, etc., and to provide suggestions and recommendations to improve workplace safety.

Additional duties include advising and educating employees in safe working practices, investigating accidents and their causes, recommending preventative measures, inspecting work areas, and other duties as assigned

Meetings shall be held at least monthly, discussion items shall include:

- Inspection Reports

- Accident Reports

- The safety of construction methods and practices

- Review and make recommendations on employee hazard reports, hotlines, etc.

The Safety Improvement Team members will receive their regular rates of pay while performing Safety Improvement Team duties. Time spent performing Safety Improvement Team duties shall be documented using normal time reporting procedures.

**EXHIBIT E
TO
UNIT PRICE CONSTRUCTION CONTRACT
FOR
EAST PARKING LOT EXPANSION - PHASE 5 - CONSTRUCTION**

**BY AND BETWEEN
THE MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY
AND
(CONTRACTOR NAME)**

FAA REQUIRED CONTRACT PROVISIONS

FAA REQUIRED CONTRACT PROVISIONS – ALL CONTRACTS

Federal laws and regulations require that recipients of federal assistance (Sponsors) include contract provisions in certain contracts, requests for proposals, or invitations to bid. The provisions are as follows:

1. Title VI Clauses for Compliance with Nondiscrimination Requirements (FAA Provision A6.4.1). (Reference: 49 USC § 47123)

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

Compliance with Regulations: The 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.

Non-discrimination: The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin, creed, sex, age, or disability in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The 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 including amendments thereto.

Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Nondiscrimination Acts And Authorities on the grounds of race, color, or national origin.

Information and Reports: The 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, the 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.

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 the contractor under the contract until the contractor complies; and/or
- b. Cancelling, terminating, or suspending a contract, in whole or in part.

Incorporation of Provisions: The 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. The 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 the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the 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.

2. Title VI List of Pertinent Nondiscrimination Acts and Authorities (FAA Provision A6.4.5).

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “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 U.S.C. § 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) including amendments thereto;

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 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 U.S.C. § 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 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);

Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);

The Civil Rights Restoration Act of 1987, (PL 100-209), (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 U.S.C. § 12101, *et seq.*) (which 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 Department of Transportation regulations at 49 CFR parts 37 and 38; and

Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. § 1681, *et. seq.*).

3. Federal Fair Labor Standards Act (FAA Provision A17). (Reference: 29 U.S.C. § 201, *et seq.*)

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, 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.

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

4. Occupational Safety and Health Act of 1970 (FAA Provision A20). (Reference: 29 CFR part 1910)

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. Contractor must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The Contractor 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). Contractor 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.

5. General Civil Rights Provisions (FAA Provision A5). (Reference: 49 U.S.C. § 47123)

In all its activities within the scope of its airport program, the Contractor agrees to comply with pertinent statutes, Executive Orders and such rules as are promulgated to ensure that no person shall, on the grounds of race, creed, color, national origin, sex, 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.

The above provision binds the contractor and subcontractors from the bid solicitation period through the completion of the contract.

**EXHIBIT F
TO
CONSTRUCTION CONTRACT
FOR
EAST PARKING LOT EXPANSION - PHASE 5 - CONSTRUCTION**

**BY AND BETWEEN
THE MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY
AND
(CONTRACTOR NAME)**

STATE REQUIRED CONTRACT PROVISIONS

STANDARD TERMS AND CONDITIONS:

Grantees shall not assign an Aeronautics Grant Contract or enter into a subcontract for any of the services performed under an Aeronautics Grant Contract without obtaining the prior written approval of the State. If such subcontracts are approved by the State, each shall contain, at a minimum, sections of the Aeronautics Grant Contract pertaining to "Conflicts of Interest," "Lobbying," "Nondiscrimination," "Public Accountability," "Public Notice," and "Records" (as identified by the section headings). Notwithstanding any use of approved subcontractors, the Grantee shall remain responsible for all work performed.

CONTRACT CLAUSES:

- F.1. Conflicts of Interest. Contractor warrants that no part of the total contract amount shall be paid directly or indirectly to an employee or official of the State of Tennessee as wages, compensation, or gifts in exchange for acting as an officer, agent, employee, subcontractor, or consultant to MSCAA in connection with any work contemplated or performed relative to this Contract.
- F.2. Lobbying. The Contractor certifies, to the best of its knowledge and belief, that:
- a. No federally appropriated funds have been paid or will be paid, by or on behalf of the undersigned, 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.
 - b. If any funds other than federally 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 contract, grant, loan, or cooperative agreement, the Promisor shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.
 - c. The Contractor shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients 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 and is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. § 1352.
- F.3. Nondiscrimination. Contractor hereby agrees, warrants, and assures that no person shall be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination in the performance of this Grant Contract or in the employment practices of the Contractor on the grounds of handicap or disability, age, race, color, religion, sex, national origin, or any other classification protected by federal, Tennessee state constitutional, or statutory law. The Contractor shall, upon request, show proof of nondiscrimination and shall post in conspicuous places, available to all employees and applicants, notices of nondiscrimination.

- F.4. Public Accountability. If the Contractor is subject to Tenn. Code Ann. § 8-4-401 *et seq.*, or if this Contract involves the provision of services to citizens by Contractor on behalf of the State, Contractor agrees to establish a system through which recipients of services may present grievances about the operation of the service program. The Contractor shall also display in a prominent place, located near the passageway through which the public enters in order to receive Grant supported services, a sign at least eleven inches (11") in height and seventeen inches (17") in width stating:

NOTICE: THIS AGENCY IS A RECIPIENT OF TAXPAYER FUNDING. IF YOU OBSERVE AN AGENCY DIRECTOR OR EMPLOYEE ENGAGING IN ANY ACTIVITY WHICH YOU CONSIDER TO BE ILLEGAL, IMPROPER, OR WASTEFUL, PLEASE CALL THE STATE COMPTROLLER'S TOLL-FREE HOTLINE: 1-800-232-5454.

The sign shall be on the form prescribed by the Comptroller of the Treasury. MSCAA shall obtain copies of the sign from the Tennessee Department of Transportation, Aeronautics Division, and upon request from the Contractor, provide Contractor with any necessary signs.

- F.5. Public Notice. All notices, informational pamphlets, press releases, research reports, signs, and similar public notices prepared and released by the Contractor in relation to this Contract shall include the statement, "This project is funded under a grant contract with the State of Tennessee." All notices by the Contractor in relation to this Contract shall be approved by the State.
- F.6. Records. The Contractor and any approved subcontractor shall maintain documentation for all charges under this Contract. The books, records, and documents of the Contractor and any approved subcontractor, insofar as they relate to work performed or money received under this Grant Contract, shall be maintained in accordance with applicable Tennessee law. In no case shall the records be maintained for a period of less than five (5) full years from the date of the final payment. The Contractor's records shall be subject to audit at any reasonable time and upon reasonable notice by the Tennessee Department of Transportation, the Comptroller of the Treasury, or their duly appointed representatives.

The records shall be maintained in accordance with Governmental Accounting Standards Board (GASB) Accounting Standards or the Financial Accounting Standards Board (FASB) Accounting Standards Codification, as applicable, and any related AICPA Industry Audit and Accounting guides.

In addition, documentation of grant applications, budgets, reports, awards, and expenditures will be maintained in accordance with U.S. Office of Management and Budget's *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*.

Contract expenditures shall be made in accordance with local government purchasing policies and procedures and purchasing procedures for local governments authorized under state law.

The Contractor shall also comply with any recordkeeping and reporting requirements prescribed by the Tennessee Comptroller of the Treasury.

The Contractor shall establish a system of internal controls that utilize the COSO Internal Control - Integrated Framework model as the basic foundation for the internal control system. The Contractor shall incorporate any additional Comptroller of the Treasury directives into its internal control system.

Any other required records or reports which are not contemplated in the above standards shall follow the format designated by the head of the Tennessee Department of Transportation, the Central Procurement Office, or the Commissioner of Finance and Administration of the State of Tennessee.

- F.7. No Boycott of Israel. Pursuant to T.C.A. § 12-4-119, Contractor certifies that it is not currently engaged in, and will not for the duration of services herein engage in, a boycott of Israel.

DIVISION 0 – SECTION 00605
CERTIFICATE OF SECRETARY

AS TO RESOLUTION ADOPTED BY BOARD OF DIRECTORS

On _____

I, _____, hereby certify that I am the duly authorized Secretary of _____, charged with keeping the records and the seal of said Corporation, and that the following is a true and correct copy of a resolution adopted at a meeting of the Board of Directors of the Corporation duly held on _____, which resolution is now in full force and effect.

RESOLVED, that _____, (President, Vice President) of _____ is hereby authorized to execute contracts, performance bonds and labor materials bonds on behalf of the Corporation.

WITNESS my hand as Secretary, and the seal of the Corporation this ____ day of _____, 20____.

 Secretary

BEFORE ME, a notary public of the state and county mentioned, personally appeared

_____, with whom I am personally acquainted, and who, upon oath,

acknowledged such person to be _____, and officer authorized to execute the

instrument, of _____, the within named bargainor, a corporation, and that such

officer, as such _____, executed the foregoing instrument for the purposes therein contained, by personally signing their name of the corporation as _____.

WITNESS my hand and seal, at office, this _____ day of _____, 20____.

 Notary Public

(SEAL)

My Commission Expires: _____

END OF SECTION 00605

ISSUED FOR BID

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PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

as Principal, hereinafter called Contractor or Principal, and

as Surety, hereinafter called Surety, are held and firmly bound unto

MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY

hereinafter called Owner, or Obligee, in the amount of _____ Dollars, for the performance whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly, severally, and solidarily, firmly by these presents.

The penal sum of this Performance Bond shall be increased by the amount that the Contract, as herein below defined, is increased during the term of the Performance Bond.

WHEREAS, Principal has entered into a written agreement with the Owner (hereinafter referred to as "Contract") for:

in accordance with Drawings and Specifications prepared and to be prepared by

Foth Infrastructure & Environment, LLC

which Contract is by reference incorporated herein and made a part hereof.

WHEREAS, the Surety represents that it possesses an A-VIII rating or higher in the most recent edition of Best Insurance Reports and that Surety is authorized to execute and deliver bonds in the State of Tennessee.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly and faithfully perform each and every term, condition, obligation and provision of said Contract, including but not limited to, completion and delivery of the work described in the Contract within the scheduled time as such time may be extended from time to time as permitted in the Contract, then this obligation shall be null and void; otherwise, it shall remain in full force and effect.

The Surety shall within sixty (60) days from notice by Owner to the Surety, either

1. Proceed to complete the performance of the Contract timely in accordance with the terms and conditions of the Contract, including but not limited to:

(a) The responsibilities of the Principal for completion of the Work, correction of defective Work, warranty Work and payment for the Work; and

(b) Payment of liquidated damages specified in the Contract, or

2. Pay to the Owner the amount of its costs and damages, up to the penal sum of this bond, that would be owed by the Principal to the Obligee under the Contract to complete the obligations of the Principal, including any liquidated damages that may be due and any additional legal, design professional or delay costs resulting from the Contractor's default less any remaining contract funds.

ISSUED FOR BID

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The Surety hereby waives notice of any alteration or extension of time made by the Owner. The Surety hereby waives notice of any change in the scope of the Contract.

Any suit under this Performance Bond must be instituted in a court of competent jurisdiction, in Shelby County, Tennessee, and not elsewhere within four (4) years from Substantial Completion as defined in the Contract.

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

Notice of claim to the Surety under the bond shall be sent to the following address:

SIGNED AND SEALED this ____ day of _____, 20 ____.

PRINCIPAL

TITLE: _____

SURETY

TITLE: _____

ADDRESS

CITY STATE ZIP CODE

LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

as Principal, hereinafter called Contractor or Principal, and

as Surety, hereinafter called Surety, are held and firmly bound unto

MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY

hereinafter called Owner or Obligee, in the amount of _____ Dollars, for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly, severally, and solidarily, firmly by these presents.

The penal sum of this Labor and Material Payment Bond shall increase by the amount that the Contract, as herein below defined, is increased during the term of the Labor and Material Payment Bond.

WHEREAS, Principal has entered into a written agreement with the Owner (hereinafter referred to as the "Contract") for:

in accordance with Drawings and Specifications prepared and to be prepared by

Foth Infrastructure & Environment, LLC

which Contract is by reference incorporated herein and made a part hereof.

WHEREAS, the Surety represents that it possesses an A--.VIII rating or higher in the most recent edition of Best Insurance Reports and that Surety is authorized to execute and deliver bonds in the State of Tennessee.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly and faithfully complete the work as defined in the Contract free and clear of all claims, liens and any other contractual, statutory, or legal rights the Claimants, as hereinbelow defined, may have for the payment of amounts owed in connection with or arising out of the Contract ("Claims"); and the Principal shall make prompt payment to all persons having a Claim or lien pursuant to any statute or law of the State of Tennessee, then this obligation shall be void; otherwise, it shall remain in full force and effect.

1. A Claimant is defined as one having a contract with the Principal or a subcontractor or supplier of any tier for labor, materials, equipment used or reasonably required for use in the performance of the Contract, labor and materials being construed to include water, power, gas, light, heat, oil, gasoline, or telephone services applicable to the Contract.
2. No suit or action shall be commenced by any Claimant:
 - a) After the expiration of two (2) years following the date which Substantial Completion as defined in the Contract is achieved. However, if any limitation embodied in this bond is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

- b) Other than in a court of competent jurisdiction in Shelby County, Tennessee, and not elsewhere.
3. Upon written notice to Surety from the Owner, Surety shall, within forty-five (45) days after receipt of said notice, pay or cause to be paid all Claims made or if the Surety contests in good faith the validity of any Claim, the Surety shall, within forty-five (45) days after receipt of said notice, cause bonds to be posted in an amount and form acceptable to Obligee to bond off such Claims. Surety shall indemnify, defend and hold Obligee harmless from any such Claims together with any and all attorney's fees, costs and expenses or liability in any manner arising out of or in connection therewith.
4. The Surety hereby waives notice of any alteration or extension of time made by the Owner. The Surety hereby also waives notice of any changes in the scope of the Contract, including changes to the contract amount.

Notice of claim to the Surety under the bond shall be sent to the following address.

SIGNED AND SEALED this the _____ day of _____, 20____.

PRINCIPAL

TITLE: _____

SURETY

TITLE: _____

ADDRESS

CITY STATE ZIP CODE



MEMPHIS INTERNATIONAL AIRPORT

APPLICATION FOR PAYMENT NO. ____

TO: MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY

REGARDING CONTRACT FOR:

MSCAA PROJECT NO. 23-1469-03
EAST PARKING LOT EXPANSION - PHASE 5 - CONSTRUCTION

CONTRACTOR:

CONTRACTOR

FOR WORK ACCOMPLISHED FROM __ TO __

STATUS OF CONTRACT:

ORIGINAL CONTRACT PRICE:

\$0.00

APPROVED CONTRACT AMENDMENTS:

No. 1 Approved	MM/DD/YYYY	Adds <u>0</u> days	<u>\$0.00</u>
No. 2 Approved	MM/DD/YYYY	Adds <u>0</u> days	<u>\$0.00</u>
No. 3 Approved	MM/DD/YYYY	Adds <u>0</u> days	<u>\$0.00</u>
No. 4 Approved	MM/DD/YYYY	Adds <u>0</u> days	<u>\$0.00</u>
No. 5 Approved	MM/DD/YYYY	Adds <u>0</u> days	<u>\$0.00</u>
No. 6 Approved	MM/DD/YYYY	Adds <u>0</u> days	<u>\$0.00</u>
Total time extension:		Adds <u>0</u> days	<u>\$0.00</u>

TOTAL AMENDED CONTRACT PRICE

\$0.00

NOTICE TO PROCEED DATE:

ORIGINAL COMPLETION DATE:

AMENDED COMPLETION DATE:

REMARKS:

TOTAL INSTALLED TO DATE		
previously installed to date	\$0.00	
this application installed	<u>\$0.00</u>	\$0.00
plus STORED MATERIALS		
previously stored materials	\$0.00	
this application stored materials	<u>\$0.00</u>	\$0.00
less PREVIOUSLY CERTIFIED FOR PAYMENT		\$0.00
equals AMOUNT DUE THIS APPLICATION		<u>\$0.00</u>

CONTRACTOR'S CERTIFICATION:

The undersigned Contractor certifies that (1) all previous progress payments received from Owner on account of Work done under the Contract referred to above have been applied to discharge in full all obligations of Contractor incurred in connection with Work covered by prior Application for Payment number 0 through ____ inclusive; and (2) title to all materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all liens, claims, security interests and encumbrances (except such as covered by Bond acceptable to Owner). Progress status is as described in schedule under monthly construction payment request.

Dated: MM/DD/YYYY

State of: TennesseeCounty of: Shelby

Subscribed and sworn to before me this _____ day of _____, YYYY.

Notary Public:

CONTRACTOR:

Contractor

BY: _____

Signatory

Title

My Commission Expires:

PROGRAM MANAGER'S RECOMMENDATION:

Payment of the above AMOUNT DUE THIS APPLICATION to CONTRACTOR is recommended.

DATED:

BY: _____

Program Manager Signatory

Title

ISSUED FOR BID

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DIVISION 0 – SECTION 00765
SUPPLEMENTAL PROVISIONS

00765-01 CONTRACTOR'S FIELD OFFICE

A Contractor's field office is not required for this project. Contractor shall keep on file at the project site copies of contract drawings, shop drawings, specifications, and other records pertaining to the project, in good condition, and readily accessible to the Contractor, Owner, Engineer, and all parties concerned.

00765-02 PROTECTION OF PERSONS AND PROPERTY

00765-02.1 The Contractor shall be responsible for initiating, maintaining and supervising safety and anti-substance abuse precautions and programs in connection with the Work, and shall provide all protection to prevent injury to all persons involved in any way in the Work and all other persons, including, without limitation, the employees, agents, guests, visitors, invitees and licensees of the Owner who may visit or be affected thereby. These precautions shall include, but in no event be limited to: the posting of danger signs and personal notification to all affected persons of the existence of a hazard of whatever nature; the furnishing and maintaining of necessary traffic control barricades and flagman services; the use, or storage, removal and disposal of required explosives or other hazardous materials only under the supervision of qualified personnel and after first obtaining permission of all applicable governmental authorities; and the maintenance of adequate quantities of both hose and operable fire extinguishers at the job site. The Contractor shall set forth in writing its safety and anti-substance abuse precautions and programs in connection with the Work and, if requested by the Owner, submit the same to the Owner for review. The Owner may, but shall not be obligated to, make suggestions and recommendations to the Contractor with respect thereto.

00765-02.2 All Work, whether performed by the Contractor, its Subcontractors or Sub-Subcontractors, or anyone directly or indirectly employed by any of them, and all equipment, appliances, machinery, materials, tools and like items incorporated or used in the Work, shall be in compliance with, and conform to: (a) all applicable laws, ordinances, rules, regulations and orders of any public, quasi-public or other governmental authority relating to the safety of persons and their protection against injury, specifically including, but in no event limited to, the Federal Occupational Safety and Health Act of 1970, as amended, and all rules and regulations now or hereafter in effect pursuant to said Act; and (b) all codes, rules, regulations and requirements of the Owner and its insurance carriers relating thereto. In the event of conflicting requirements, the more stringent shall govern.

00765-02.3 The Contractor shall designate a responsible member of its organization at the Job site as the Project Safety Officer, whose duties it shall be to enforce the Contractor's safety and anti-substance abuse programs, to assure compliance with the Contract Documents and to prevent accidents. This person shall have enforcement authority and be responsible for carrying out the relevant duties and be designated in writing by the Contractor and approved by the Owner. The Contractor shall further cause each of its Subcontractors and Sub-Subcontractors to designate a responsible supervisory representative to assist the Contractor's Project Safety Officer representative in the performance of their duties as aforesaid.

00765-02.4 Should the Contractor fail to provide a safe area for the performance of the Work or any portion thereof, the Owner shall have the right, but not the obligation, to suspend Work in the unsafe area. All costs of any nature (including, without limitation, overtime pay) resulting from the suspension, by whomsoever incurred, shall be borne by the Contractor.

00765-02.5 The Contractor shall provide to each worker on the job site the proper safety equipment for the duties being performed by that worker and will not permit any worker on the job site who fails or refuses to use the same. The Owner shall have the right, but not the obligation, to order the Contractor to send a worker home for the day or to discharge a worker for their failure to comply with safe practices or anti-substance abuse policies, with which order the Contractor shall promptly comply.

00765-02.6 The Contractor shall indemnify the Owner, from and against any and all liability, public or private, penalties, contractual or otherwise, losses, damages, costs, attorney's fees, expenses, causes of action, claims or judgments resulting either in whole or in part from any failure of the Contractor, its Subcontractors or Sub-Subcontractors or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, to comply with the provisions of the Contract. The Contractor shall not be relieved of its responsibilities under the Contract, should the Owner act or fail to act pursuant to its rights hereunder, nor shall the Owner thereby assume, nor be deemed to have assumed, any responsibilities otherwise imposed upon the Contractor by this Construction Contract, in any manner whatsoever.

00765-02.7 The Contractor shall, throughout the performance of the Work, maintain adequate and continuous protection of all Work and temporary facilities against loss or damage from whatever cause, shall protect the property of the Owner and third parties from loss or damage from whatever cause arising out of the performance of the Work and shall comply with the requirements of the Owner, its designated agents, and its insurance carriers and with all applicable laws, codes, rules and regulations with respect to the prevention of loss or damage to property as a result of fire or other hazards. The Owner may, but shall not be required to, make periodic patrols of the job site as a part of its normal security program. In such event, however, the Contractor shall not be relieved of its aforesaid responsibilities.

END OF SECTION 00765

DIVISION 0 – SECTION 00801**AIRPORT CONSTRUCTION SAFETY REQUIREMENTS****PART 1 GENERAL****1.01 SUMMARY**

- A. This section contains the minimum level of safety requirements for construction projects at Memphis International Airport, General DeWitt Spain Airport, and/or Charles W. Baker Airport.
- B. Related work:
 - 1. Other contract documents affecting construction safety include, but are not limited to, the DIVISION 0 AND DIVISION 1 specifications.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION**3.01 CONTRACTOR PERSONNEL SAFETY ORIENTATION**

- A. The Contractor shall be responsible for briefing all construction personnel on the requirements contained in this section prior to their working in the construction area and at periodic intervals throughout the course of the contract. These briefings will be documented in writing.

3.02 SCHEDULING WORK

- A. See Specification section 01100, SEQUENCE OF CONSTRUCTION & LIQUIDATED DAMAGES.
- B. See General Provision Section 80, Paragraph 80-04, Limitation of Operations.

3.03 CONSTRUCTION SECURITY

- A. See Specification section 00802, AIRPORT SECURITY REQUIREMENTS.

3.04 LIMITATION ON CONSTRUCTION

- A. The limits of construction, material storage areas, equipment parking and other areas defined as available for the contractor's exclusive use during construction shall be identified and defined by the contractor prior to starting work on the project. Temporary barricades, flagging and flashing caution lights may be required at access points, taxiway crossings and pavement tie-ins. The type markings, barricades and flashing caution lights are designated on the construction plans and must be inspected and approved by the Airport Authority.
- B. The Contractor shall store all materials and park construction equipment, when not in use only in the areas designated on the plans or during the pre-construction conference.
- C. Stockpiling of dirt and construction materials shall be constrained in a manner preventing movement resulting from jet blast or wind in excess of 10 knots.
- D. Construction debris, waste, wrappings or loose material capable of causing damage to aircraft engines, propellers, or landing gear shall not be allowed on active aircraft movement areas.

Material meeting this criteria shall be contained and removed immediately from the AOA.

- E. Open flame, welding, or torch cutting operations are prohibited in the construction area unless written permission has been given by the Airport Authority and adequate fire and safety precautions have been taken.
- F. The use or possession of explosives is prohibited on Airport property.
- G. Extensive stockpiles of construction materials will not be permitted near runway ends, runway edges, taxiways or aircraft parking aprons.
- H. Excavation and open trenches may be permitted within runway safety areas and up to the edge of structural pavement on taxiways and aprons, on a case-by-case basis, i.e. cable trenches, pavement tie-ins, etc.; but only with prior approval of the Owner and, where required, the FAA.
- I. Hazardous areas, into which no part of an aircraft may enter, (i.e., excavations, open trenches, material stockpiles, etc.) must be permanently delineated by use of barricades with alternate orange and white markings. The barricades are to be supplemented with orange flags (20x20 inch minimum) made and installed so that they are always in the extended position and properly oriented. For nighttime use, the barricades are supplemented with flashing red lights. Light intensity and barricade spacing must adequately delineate the hazardous area. Flare pots are prohibited.

Note: The Contractor shall designate an individual by name who is on call 24 hours per day for emergency maintenance of airport hazard lighting and barricades.

- J. FAA approval is required in advance of scheduled operation of any crane or other construction equipment with top elevation exceeding 300 feet mean sea level or that will penetrate any navigable surface as defined under FAR PART 77. Advance notification of intended use will be provided by the Owner well in advance of intended use.

3.06 CONSTRUCTION VEHICLE TRAFFIC

- A. Access to the construction site is as shown on the plans or as directed by the Owner. No other access point is authorized unless designated in writing by the Airport Authority. Construction traffic will operate only on designated haul routes within the construction area limits.
- B. Drivers of construction vehicles will be knowledgeable of construction routes or will be escorted by other Contractor or Owner designated personnel who are knowledgeable.
- C. The Contractor will be responsible for traffic control in the various construction areas of the work site. The Contractor will not permit unauthorized personnel or vehicles on the construction site.
- D. The Contractor shall be responsible for immediate cleanup of any debris deposited along construction routes, as result of his construction traffic.
- E. Directional signing at the construction access gate and along the delivery route to work site temporary storage areas shall be as designated and approved by the Owner.
- F. Construction vehicle identification shall be as prescribed in Specification Section 00802, AIRPORT SECURITY REQUIREMENTS.
- G. No construction vehicle is authorized on any active AOA pavement surface or to enter runway safety areas without specific authorization from the Owner.

3.07 REPORTING PROPERTY DAMAGE OR PERSONNEL INJURY

- A. All persons involved in any accident whether personal injury, aircraft or automotive, occurring on Airport property, shall make a full report to the Airport Police (922-8298) as soon after the accident as possible. The report shall include, but not be limited to, the names, addresses of all principals and witnesses, if known, and a statement of the facts. Construction accidents fall under this category.
- B. In the event of personnel injury requiring ambulance response, the Airport Police Dispatcher, upon notification, telephone 922-8333, will call the ambulance and arrange Airport Police escort to the injury site. A written report will be prepared by the Airport Police after the injury is treated.

END OF SECTION 00801

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DIVISION 0 – SECTION 00802**AIRPORT SECURITY REQUIREMENTS****PART 1 GENERAL****1.01 CONTRACTORS SECURITY AND VEHICLE PROCEDURES OVERVIEW**

- A. This overview outlines procedures concerning Airport security requirements, vehicle operation, and maintenance requirements for contractors at Memphis International Airport or any airport owned and operated by the Memphis-Shelby County Airport Authority. The sponsor Memphis-Shelby County Airport Authority (Airport Authority), airline, tenant, or concessionaire at the Airport who has hired the contractor is responsible for ensuring the contractor understands and complies with all the rules and regulations. This is a consolidated synopsis of the contractor requirements from the Airport Security Program and the Airport Rules and Regulations.

1.02 DEFINITIONS

- A. **Aircraft** - shall mean any contrivance known or hereinafter invented, used or designed for navigation of or flight in the air.
- B. **Air Operations Area (AOA)** - that part of the Airport used or intended to be used for landing, taking off, surface maneuvering, loading, unloading, or servicing the aircraft.
- C. **Airport** - shall mean the Memphis International Airport and/or the General DeWitt Spain Airport and/or the Charles W. Baker Airport – where applicable.
- D. **Airport Restricted Area** - area of Memphis International Airport that is not intended for public uses or access. These are areas designated by the Airport Authority as restricted areas and clearly identified with signs designating those areas as "RESTRICTED AREA." The restricted area also includes the AOA.
- E. **AOA Driver's Permit** - permit issued by the Airport Authority for operating unescorted motor vehicles on the AOA.
- F. **Construction Restricted Area** - any area, inside or outside of the Airport Restricted Area, which is fenced, or in some like manner defined by the Contractor. The Contractor is responsible for the security of the Construction Restricted Area.
- G. **Director** - shall mean the Director of Operations and Public Safety or his duly authorized representatives.
- H. **Job Site** - a predetermined geographic area with specific boundaries established by the Airport Authority.
- I. **Movement Area** - runways, taxiways, and other areas of the Airport used for taxiing, takeoff, and landing of aircraft, except loading ramps and parking areas.
- J. **Personal Escort** - remaining within sight of the individual under escort at all times while in the Airport restricted areas at a distance not to exceed 20 feet.
- K. **Public Area** - any area within Airport facilities open to the general public.
- L. **SIDA** - Security Identification Display Area.

- M. **Unescorted Identification Badge** - pictured identification badge issued by the Airport Authority, which allows bearer to enter Airport Restricted Areas where there is a job related need.
- N. **Vehicle Escort** - means the following of an authorized escort vehicle into the Airport Restricted Areas.

PART 2 PRODUCTS

(No products are required in this Section.)

PART 3 EXECUTION

3.01 AMENDMENTS AND SPECIAL NOTICES

- A. The Contractor will be bound by any future amendments, additions, deletions, or corrections of the Airport Rules and Regulations promulgated by the Airport Authority, as dictated by changes in Federal Transportation Security Administration (TSA) regulations, as dictated by changes in Federal Aviation Administration (FAA) regulations, or safety requirements at Memphis International Airport or any airport owned and operated by Memphis-Shelby County Airport Authority.
- B. Special regulations, notices, memoranda, or directions of an operations nature of interest to persons engaged in business with the Airport Authority, as generated by the Director, shall be issued under the authority of the Airport Regulations and shall have the same effect as the Airport Rules and Regulations.
- C. The Director is authorized to interpret and construe these regulations wherever necessary, either by directions of general or specific application, and his interpretation and construction should be deemed a part of the regulations and binding upon all persons.

3.02 ENFORCEMENT AND COMPLIANCE WITH AIRPORT REGULATIONS

- A. The uniformed Airport Police Officers of the Airport Authority and other representatives as designated by the Director are empowered to require compliance with Airport Rules and Regulations, ordinances of the City of Memphis, laws of the State of Tennessee, and federal rules and regulations. No authority is either hereby expressed or implied, however, that would permit any individual other than the Director to change, alter, or amend Airport Rules and Regulations.
- B. It shall be unlawful for any person to do or commit any act forbidden herein or fail to perform any act required by Airport Rules and Regulations.

3.03 SCOPE

- A. All users of and persons on Airport property shall be governed by the Airport Rules and Regulations and directions of the Director. Airport Rules and Regulations are subject to change by the Airport Authority Board of Directors at any time.
- B. Airport Rules and Regulations are not intended to amend, modify or supersede federal, state, or local laws or regulations.
- C. If any portion of the Airport Rules and Regulations shall be invalid or unenforceable, all other portions shall remain in effect and be construed to achieve the purposes hereof.

3.04 IDENTIFICATION REQUIREMENTS

- A. Entry into the SIDA is controlled by an automated access control system as mandated under CFR 49 Part 1540 and 1542. All persons in the SIDA must display, on the outermost garment, below the head and above the waist, an Airport-approved identification media unless under Airport approved escort.
- B. The Airport Authority will issue Airport Identification badges to the Contractor's employees who require access to the Airport Secured/Restricted Areas. The extent of the background check necessary for access into any worksite will be determined on a project by project basis. AIRPORT ID BADGES REMAIN AIRPORT AUTHORITY PROPERTY. Other identification procedures must be authorized by the Director in accordance with TSA regulations.
- C. Recent changes to Federal TSA Regulations provide for individual sanctions against employees who violate regulatory requirements. Individual employees may be subject to federal enforcement action by the TSA to include civil penalties. Some examples of punishable actions would include:
 - 1. Loaning a badge to someone else for use in the system.
 - 2. "Tailgating" through restricted area doors (or not using their own badge when entering or exiting).
 - 3. Failing to challenge unauthorized individuals in Airport restricted areas.
 - 4. Failing to notify proper authorities for individuals violating prescribed security regulations.
- D. The Memphis International Airport Identification Badge is the property of the Memphis-Shelby County Airport and must be surrendered upon termination of employment or completion of the project. The bearer will be held personally responsible for its return and is subject to any fines or penalties imposed. The badge is mandated through federal government guidelines and any misuse or tampering of badges is punishable under federal guidelines.
- E. Any employee attempting to bypass security measures will be subject to having their badge confiscated and access privileges terminated. Further, any efforts by an employee to circumvent prescribed security measures could result in arrest and the imposition of penalties from the TSA to the employee and to the related employer.
- F. Identification badges will be issued following the procedures listed below.
 - 1. Identification Badge Application – To be issued at Pre-Construction Meeting.
 - a. Prior to the issuance of an Airport identification badge to a contract employee of the Airport or Airport tenant, a badge application form must be prepared and submitted to the Airport Authority Identification Office.
 - b. Badge applications must be completed before badges will be issued. Employees should be instructed to print all information clearly and legibly. After an employee completes the employee and applicant portions of the application, certification by a designated MSCAA Approved Certifying Official is required.
 - c. Access is limited to only those restricted areas predicated on the Contractor's duties determined by the Development and Operations Divisions.
 - d. The Aviation Transportation Security Act (ATSA), which was passed by Congress on November 19, 2001, changed the requirements for SIDA access by requiring immediate fingerprint based background checks of all persons applying for and currently with unescorted SIDA access.

In addition, the number of disqualifying criminal offenses has increased. (See Attachment) The fingerprint based check must be complete and not reveal any disqualifying crimes in the last 10 years prior to any applicant receiving unescorted access to the SIDA.

- e. For employees unable to produce a legible set of fingerprints, they will submit to a manual criminal history check by the TSA. The process will take 30 days or more.

2. Airport Security Briefing

- a. Each employee requesting an Airport identification badge must attend a security training class. This briefing is conducted Monday through Friday. Contact the Airport Authority Identification Office at 922-8005 for the correct time.

3. Accountability

- a. In accordance with TSA guidelines, no more than 5% of identification badges issued by the Airport Authority can be unaccounted for at any time. A badge is considered unaccounted for if it is lost, stolen or not returned. If 5% of issued identification badges are unaccounted for, all badges must be reissued. Contractors will be assessed a fee for each badge leading to this reissuance. See Section 3.04, Identification Requirements, paragraph H.1.h below for the applicable fee.
- b. Federal regulations require immediate notification of employee terminations and lost badges to the operator in charge of deleting access privileges, which, in our case, would be the Control Center, 922-8298.
- c. When the Contractor has reason to believe that the terminated employee may pose a threat to the Airport or air carrier operations, the Contractor is responsible to immediately notify the Airport Authority Identification Office in person, via telephone, or in writing whichever is most expeditious.
- d. Routine termination of employee access authority will be accomplished by the Airport Authority Identification Office **within 8 hours** of notification. The identification badge must be returned to the Airport Authority Identification Office or the Airport Authority Security Coordinator **within 24 hours** of employee dismissal or resignation. Identification cards recovered from the employee at the time of routine termination are considered to be denied access.
- e. It is the Contractor's responsibility to retrieve the Airport identification badge IMMEDIATELY upon an employee's termination (voluntary or involuntary), transfer, retirement, death, reassignment, or completion of work assignment.
- f. Reportedly lost or stolen identification badges must be thoroughly investigated and closely scrutinized. Replacement Identification badges will be issued only upon written request from the employer. Such request must be on company letterhead stationary, must state the circumstances surrounding the loss, and must be signed by an authorized company representative on file with the Airport Authority. A fee will be charged for a lost badge.
- g. Identification badges shall be valid only during the term of the contract for which it is issued.

- h. If the Airport Authority Identification Office receives notification from an outside source (e.g. Airport Police Department, etc.) that immediate denial should be enacted, then our office will contact the proper company officials to notify them of the change that is being requested.

H. Identification Badge Fees.

1. After the Contractor meets all requirements, the Airport Authority shall issue the Contractor's employees automated photo identification badges for the following fees. Payment must be made according to the arrangement made with the Finance Division as indicated on the badge application. The following fees will be implemented as of September 1, 2018.

a.	Fingerprint Fee (required initially and every two years)	\$27.00
b.	Fingerprint Admin Fee	\$10.00
c.	Initial ID Badge (Includes \$11 lifetime STA fee)	\$25.00
d.	Deposit Per Badge	\$100.00
e.	Badge Renewal Fee	\$10.00
f.	1 st Lost Badge Fee (Refund of \$50 upon return)	\$100.00
g.	2 nd Lost Badge Fee (Refund of \$75 upon return)	\$150.00
h.	3 rd Lost Badge Fee (Refund of \$100 upon return)	\$200.00*
i.	Non-Returned Badge	\$100.00
j.	Badge Replacement	\$10.00
k.	Damaged Badge	No Charge

*Requires meeting with Project Manager and Security Coordinator before identification badge can be replaced.

2. Deposits.
 - a. Badge deposits are due prior to the release of any badges.
 - b. Payments may be made by check, money order or cashier's check. Absolutely no cash will be accepted.
 - c. The fee for expired badges will be deducted from the deposit until the badge is returned. If an update for the expired badge is requested, the Contractor must bring the amount on deposit to \$100 before the badge can be released.
 - d. Deposits will be reimbursed to the Contractor upon receipt of the identification badges once a project has been completed or badging is no longer required.
3. Employees challenged in the Airport Restricted Areas without an Airport Identification Badge PROPERLY DISPLAYED will be transported to the Airport Police Office where a fine of \$25.00 will be assessed and access authority removed for a minimum of 5 days. FINES NOT PAID WITHIN 14 DAYS OF THE VIOLATION WILL RESULT IN THE SUSPENSION OF THE EMPLOYEE'S ACCESS TO AIRPORT RESTRICTED AREAS.

I. Airport Access Gate Control.

1. At the Contract preconstruction conference a specific airfield security gate will be designated in writing for Contractor ingress and egress to and from the construction site. The Contractor's, suppliers, and subcontractors are required to use **only** this gate unless designation is made in writing by the Director of Operations and Public Safety, authorizing use of a different gate.
2. Under normal circumstances the designated access gate will be manned by security personnel under contract with the Airport Authority. These gates are manned only during

specific hours. Contractors scheduling work are required to coordinate with the Construction Security Coordinator, 922-8021, a minimum of 24 hours in advance of required gate use.

3. If a gate other than the regular construction gate is necessary, the Contractor must provide a guardhouse for the Airport security guard. If the Airport Authority does not have a portable guard house available for the Contractor's use, the Contractor will be required to furnish a guard house which meets the requirements as set forth in Exhibit B.
4. The Contractor will submit a projected estimate of the guard services required for the following week. This projection must be submitted by noon each Thursday to the Security Coordinator. (Exhibit C)

J. Clearance Procedures.

1. Gate guards will perform the following procedures for all persons requesting entrance into restricted areas:
 - a. The guard will take possession of the badge of each person entering an access gate.
 - b. The photo is checked against the holder.
 - c. The badge information is checked against the stop list.
(1) If a badge is on the stop list the guard will retain the badge and notify the Airport Police.
 - d. Expiration date is checked to ensure that the badge has not expired.
 - e. The vehicle will be checked for an authorizing decal, debris and unauthorized items. A request to enter a restricted area IMPLIES CONSENT TO SEARCH.
 - f. The person or vehicle (if applicable) will be logged in by entering name, employer, destination, license number, time in and badge expiration date.
 - g. Clear persons to be escorted (if required) to destination.
2. Under special circumstances, Contractors may have airfield security gates designated for their contract use, which are not manned by security personnel. In this event the Airport Authority, with the concurrence of the TSA, will furnish the Contractor with written requirements for the control of authorized access gates proper to the beginning of any construction.

K. Escorts Into An Airport Restricted Area.

1. Contractors who do not have a valid Airport identification badge wishing to enter a restricted area must be escorted by a person holding a valid Airport identification badge.
2. All vehicles operated in a restricted area must either be driven by or escorted by a person holding an Airport identification badge and an Airport Driver's Permit.

L. Operating Without Escort.

1. The Airport Authority will take under consideration, on a case-by-case basis, the issuance of an Airport Driver's Permit to one project supervisor on each shift. The Contractor will be required to justify, in writing to the Director of Public Safety, the need for unescorted vehicle movement. This Airport Driver's Permit does not permit the holder to escort other vehicles.
2. If a Contractor is authorized by the Airport Authority to provide their own vehicle escorts, the Airport Police will conduct the necessary training. This training will consist of approximately 16 hours of classroom and practical exercises.

M. Exiting Restricted Areas.

1. Construction workers must exit the same gate they entered.
2. Upon exiting the restricted area, vehicles may be required to stop and all persons in the vehicle may be required to present an Airport photo identification badge to the gate guard.

N. Flag Persons.

1. The Airport Authority will provide flag persons within the Airport Restricted Area.

3.05 VEHICLE PARKING AND OPERATION

A. General.

1. All streets on the Airport shall have the status of dedicated city streets for the purpose of traffic enforcement.
2. Motor vehicles operated on the public roadways and parking lots of the Airport shall be governed by the traffic ordinance of the city and state laws applicable and, in addition thereto, the following regulations shall be applicable.

B. Traffic Rules and Regulations in the Air Operations Area.

1. The driver of any motor vehicle operating within the Airport boundary shall comply with the lawful orders, signals or directives of Airport Police Officers.
2. All drivers operating motor vehicles within the Airport boundary must possess a valid state driver's license.
3. Only drivers possessing a valid Airport Driver's Permit issued by the Airport Authority are authorized to operate any motorized vehicle unescorted on the AOA of Memphis International Airport. (The Security Coordinator may designate certain construction areas as void of this requirement)
4. Riding on trailer hitches, fenders, or on any portion of a vehicle not equipped with proper seats, running boards, or handholds is prohibited. Standing up in a moving motor vehicle, riding outside of a moving motor vehicle, or riding with arms or legs protruding from the body of the vehicle is prohibited.
5. All vehicle lights shall be lighted during the hours of darkness or during the time of reduced visibility when said vehicle is being operated in the restricted area.
6. No person shall operate any motorized vehicle when vision is restricted due to the load being carried, or for any other reason.
7. No person under the influence of alcoholic beverages or narcotic drugs shall operate any motor vehicle or motorized equipment on the Airport.
8. It shall be the responsibility of the operator to ascertain that the vehicle is in good operating condition. Operators are required to check proper operation of the vehicle's brakes before commencing any operation on airport.

9. Vehicles dripping oil, gasoline, water, or debris of any kind, shall be restricted.
10. Pedestrians and aircraft shall at all times have right-of-way over vehicular traffic. All vehicles must pass to the rear of taxiing aircraft.

C. Radio Equipment.

1. All vehicles operating in the aircraft movement area must be equipped with a two-way radio and, when the movement area is being controlled, be in continuous communication with the Control Tower, unless being escorted by authorized escort vehicle.
2. The installation of two-way radios does not permit the operation of vehicles on the Airport without proper authorization of the Director.

D. Contractor Employee Parking.

1. Employee parking is not available on the job site. The Contractor must provide for remote parking for employees and transport them to the job site.

E. Authorized Contractor Vehicles.

1. Unless otherwise authorized, the Contractor and each subcontractor shall be permitted to have no more than one (1) vehicle per trade on the job site. All Contractor vehicles authorized access to Airport restricted areas shall be:
 - a. Owned or hired by the Contractor or subcontractor;
 - b. Insured under company policy;
 - c. On a pre-approved list; and
 - d. Marked in accordance with Airport regulations.
2. Passenger type vehicles, including pickup trucks, must have the company name displayed on each front door of the vehicle. The company name must be readable, but at a minimum (the letter size shall be 4.5"). The vehicle must display the appropriate Airport registration decal. Specialized equipment such as bulldozers, cranes, etc., will be exempted from this requirement.
3. Cranes used during daylight hours shall have a red flag affixed to the top of boom. Cranes shall have a red obstruction light on the top of boom when used at night. Crane booms shall not be left erect when not in use or following end of workday.

F. Emergency Vehicles and Conditions.

1. Any person operating a motor vehicle on the air operations area shall immediately yield the right-of-way to the police, ambulance, fire department, or other emergency vehicle giving an audible or visual signal or as otherwise directed by an Airport law enforcement officer or fire/rescue department personnel.
2. Emergency conditions existing on the air operations area will not mitigate or cancel existing regulations for non-emergency vehicles in areas not affected by the emergency.
3. Under emergency conditions such as an aircraft accident or fire, access to the scene is denied to all vehicles or persons except those whose duties require their presence. Permits and licensing shall be rendered invalid in the area of emergency conditions and the Airport Authority shall determine when normal operations may be resumed.

G. Passing Aircraft.

1. All vehicles shall pass to the rear of taxiing aircraft and shall pass no nearer than 200 feet horizontal distance.
- H. Passenger Concourse.
1. No motorized vehicles or carts of any type shall be used in any concourse or terminal lobby unless approved by the Director.
 2. No vehicle or motorized equipment shall be driven under concourses except at authorized vehicle pass-throughs designated by the Director.
- I. AOA Driving Lanes.
1. Vehicles on the aircraft parking apron at the terminal and air cargo buildings shall be operated within the marked driving lanes and in compliance with marked traffic control signs except for the following:
 - a. Authorized vehicles engaged in parking apron repair and inspection; and
 - b. Vehicles exceeding a width of 12 feet which shall follow marked lanes as closely as possible.
 2. Vehicles shall enter and exit designated driving lanes at a point nearest to the origin and destination.
 3. No vehicles or equipment shall be parked in a manner as to obstruct any portion of the driving lanes.
- J. Taxiing Aircraft.
1. Vehicles shall yield to taxiing aircraft or aircraft under tow.
- K. Speed Limits.
1. No person shall operate a motor vehicle or other motorized equipment at a speed greater than the following:
 - a. Five miles per hour in designated drives under the terminal;
 - b. Fifteen miles per hour on paved service roads in the vicinity of the terminal and air cargo buildings; or
 - c. Twenty-five miles per hour on all aprons or ramps unless the area has an otherwise posted speed limit.
 - d. Fifteen miles per hour on all aprons or ramps at General DeWitt Spain Airport and Charles W. Baker Airport unless the area has an otherwise posted speed limit.
- L. Inspection of Vehicles.
1. Contractors authorized to operate vehicles on the air operations area shall be responsible for ensuring that each motor vehicle is inspected at least each 12 months by a qualified mechanic, is in good mechanical condition and has all the required safety equipment.
 2. The Contractor shall remove from service any vehicle, which, in the opinion of the Director, is defective and in need of repair and said vehicle will not be returned to service until properly repaired.

M. Violations of Restricted Area Traffic Regulations.

1. The penalties for a violation of restricted area traffic regulations shall be as follows:
 - a. First offense within any 12-month period: retraining;
 - b. Second offense within any 12 month period: retraining and fine not to exceed \$50.00;
 - c. Third offense within any 12 month period: retraining and fine not to exceed \$100.00; and
 - d. Fourth offense within any 12 month period: revocation of privilege to drive in restricted area (unescorted or escorted).
2. The above set penalties do not negate the right of the Airport Authority to immediately revoke driving privileges, dependent upon the seriousness of the violation.

N. Vehicle Registration.

1. The Contractor shall list all construction vehicles requiring passage through the access gate on the "AOA Access Decal Request Form," which will be provided upon request.
2. Each vehicle approved will be issued a windshield decal, which must be affixed to the driver's side of the windshield. This decal is not transferable. Only those vehicles so marked will be allowed through the access gate with the following exceptions:
 - a. dump trucks;
 - b. concrete trucks;
 - c. vehicles making deliveries; and
 - d. cranes, tractor, etc.

O. Delivery Vehicles.

1. Each day the Contractor shall give the access gate guard a written list of deliveries expected. No delivery will be cleared into the restricted area unless it is on the list or the construction supervisor is contacted for clearance.

3.06 GENERAL INFORMATION

A. Access to Public Facilities.

1. Contractor employees are not authorized to use public facilities, (i.e., rest rooms, eating facilities, boarding gate hold rooms or other public areas of the terminal), except as specifically authorized by the Airport Authority and as necessary for access to job site.
2. Contractors shall provide adequate rest room and break facilities within the job site and staging areas as appropriate.
3. All public areas authorized for use by the Contractor's employees are to be kept in a clean and sanitary manner, free of all construction debris.

B. Accident Reports.

1. All persons involved in any accident whether personal injury, aircraft or automotive, occurring on Airport property, shall make a full report to the Airport Police (922-8298) as soon after the accident as possible. The report shall include, but not be limited to, the names,

addresses of all principals and witnesses, if known, and a statement of the facts. Construction accidents fall under this category

2. To request paramedics call 922-8333.

C. Airport Rules and Regulations.

1. The Contractor shall conform to the "Memphis-Shelby County Airport Authority Rules and Regulations."
2. The Contractor shall conform to "Memphis-Shelby County Airport Authority's Air Operations Area Rules and Regulations and its Airport Security Program."

D. Alcoholic Beverages and Narcotic Drugs.

1. No person shall have any alcoholic beverages or narcotic drugs on Airport property.

E. Damages.

1. Contractors shall be fully responsible for all damages to buildings, equipment, real property and appurtenances in the ownerships or custody of the Airport Authority caused by negligence, abuse or carelessness on the part of their employees, agents, customers, visitors, suppliers or persons with whom they do business.

F. Disorderly Conduct.

1. No person shall commit any disorderly, obscene or indecent act nor commit any nuisance.
2. Abusive behavior by Contractor supervisors or their employees will not be tolerated.

G. Debris and Cleanup.

1. No person shall dispose of any garbage, trash, refuse or any other material on the Airport except in the receptacles provided for that purpose.
2. No person shall dispose of any fill or building materials or any other materials on Airport property except in such areas as are specifically designated by the Director.
3. Contractors are responsible for the cleanliness of the job site and access to the job site as appropriate. All Contractors must establish an active ongoing program to eliminate any foreign objects which may cause damage to aircraft or cause personal injury to other persons. Contractors must pay particular attention to haul routes used to and from the job site to clean up any debris which may be tracked onto or dropped on the air operations area. Contractor will immediately remove such debris to eliminate the hazard. **END OF THE WORKDAY CLEANUP WILL NOT SUFFICE.** Cleanup shall be done to the satisfaction of the Airport Authority. All Active taxiway crossings and work areas adjacent to the taxiways shall be kept clean.
4. If it should become necessary for the Airport Authority to remove debris left by a Contractor, the Contractor shall be billed at 2 1/2 times the actual cost of the cleanup or a minimum of \$250 per trip whichever is greater.

H. Firearms and Explosives.

1. No person shall have any firearm, explosive or incendiary device on or about their person or accessible property while on Airport property.

I. Fire Equipment.

1. All Contractors shall supply and maintain adequate and readily accessible fire extinguishers for the particular hazard involved as directed by the Airport Authority or the Fire Marshal. All fire apparatus shall be maintained in first class operable condition.
2. The Contractor shall maintain the following items on site:
 - a. Two-pound dry chemical extinguisher, or
 - b. Four-pound carbon dioxide extinguisher.
3. Carbon tetrachloride chlorobromethene or other vaporizing liquid extinguishers are not permitted inside buildings due to their high toxicity unless approved in writing by the Fire Marshal.

J. Gambling.

1. No person shall conduct gambling in any form or operate gambling devices anywhere on Airport property.

K. Hazards.

1. No person shall use flammable volatile liquids having a flash point of less than 100°F in cleaning of parts, appliances, or for any other purpose unless such operations are conducted in the open air not within 50 feet of an aircraft, away from structures and equipment or in properly ventilated, approved paint booths.
2. No person shall keep or store any flammable liquids, gases, oil, oil wastes, flares, paints, or other similar material in any building within the Airport boundary except that such materials may be kept in specially provided rooms or receptacles approved by the Fire Marshal.
3. Contractors shall provide suitable metal receptacles with covers for the storage of wastes, rags, or other rubbish.
4. No person shall start any open fires of any type, including flare posts, torches or fires in containers formerly used for oil, paint, or similar materials on any part of an Airport without permission of the Director.

L. Picketing and Public Demonstrations.

1. Subject to applicable federal, state and local regulations and laws, no persons shall walk in a picket line as a picketer or take part in any labor or other public demonstration on any Airport property or facilities therein except in those places which may be specifically assigned for use of such picket lines or other public demonstration by the Director.

M. Restricted Areas.

1. No persons shall enter any area posted as being restricted or closed to the public except for the following:
 - a. Persons assigned to duty therein;
 - b. Persons authorized by the Director; or

- c. Persons under contractual agreement with the Airport Authority or tenants of the Airport Authority.
 - 2. All persons in restricted areas of Memphis International Airport must be duly authorized and must have displayed on their person an official identification badge which will clearly establish the individual by name, contractor affiliation, and construction project completion date.
 - 3. The identification badge must be worn on the outermost garment above the waist except in those cases where there exists an overriding safety consideration approved by the FAA.
- N. Signs on the Airport.
- 1. Signs may not be installed in public view on the Airport without prior approval of the Airport Authority. Proposals should be documented and submitted to the Airport Authority with an accompanying sketch depicting the general appearance and location of the desired sign, and the name and telephone number of an individual to contact.
- O. Smoking.
- 1. No person shall smoke or carry lighted cigars, cigarettes, pipes, matches or any naked flame in or on any fuel storage areas, Air Operations Area, public aircraft parking and storage area, in any other place where smoking is specifically prohibited by signs or upon any open space within 50 feet of any fuel carrier which is not in motion. Smoking by tank vehicle drivers, helpers, repairmen, or other personnel is prohibited while they are driving, making deliveries, filling or making repairs to tank vehicles. No person shall smoke or permit any open flame within 100 feet of any aircraft undergoing fuel service or within at least 50 feet of any hangar or building.
- P. Storage of Equipment.
- 1. Contractors shall store or stock material or equipment in a neat and orderly manner and in a manner not to constitute a hazard to personnel or property.
- Q. Trash Containers.
- 1. Areas to be used for trash and garbage containers shall be designated by the Director and no other areas shall be used. Only trash containers approved by the Director shall be used by contractors for the collection of trash and garbage. The placement of trash or garbage outside approved containers is strictly prohibited.
- R. Utilities.
- 1. The following instructions must be adhered to without exception:
 - a. No contractor or employee for any craft shall turn off any utilities without contacting the Airport Authority. This includes water, electrical and HVAC;
 - b. No one shall open any electrical substations, distribution or motor control centers without first notifying the Airport Authority. No branch circuits shall be turned off or on, without obtaining permission from the Airport Authority; and
 - c. No one shall turn off the water or the HVAC or open any drain lines without notifying the Airport Authority.

2. All notifications for utility disruption must be made through the Airport Authority and coordinated with as much notice as possible but a minimum of 72 hours prior to scheduled shutoff.
3. The Airport Authority has a responsibility to keep the Airport in operation; it is your responsibility to conform to the above instructions. You may contact the Airport Authority.

FOR ANY QUESTIONS CONCERNING SECURITY REGULATIONS CONTACT THE SECURITY COORDINATOR AT 901/922-8021.

END OF SECTION 00802

EXHIBIT B**GUARD HOUSE SPECIFICATIONS**

1. No less than 5' x 8'
2. Heated, air conditioned and lighted
3. Counter or table (minimum size 16" x 36")
4. House must have two doors to allow guards to check entering and exiting vehicles.
5. Windows on all sides, large enough for guard to observe restricted areas from a seated position.
6. Chair with turning radius of 360 degrees, at a height which allows guards to observe restricted areas through windows.
7. Trash can (dumping daily responsibility of Contractor)

PORTABLE TOILETS

1. Daily cleanliness responsibility of Contractor
2. Restricted to guards only. NO CONSTRUCTION PERSONNEL PERMITTED.

PLACEMENT OF GUARD HOUSES AND PORTABLE TOILETS

1. Area to be designated by Airport Authority
2. Clear Accessibility (paved or gravel)

The Contractor is responsible for supplying and maintaining power source for the guard houses. The contractor is also responsible for maintaining the heating and cooling of same.

END OF EXHIBIT B

EXHIBIT C

CONTRACT SECURITY SERVICE PROJECTION FORM (.PDF VERSION IS AVAILABLE)



CONTRACT SECURITY SERVICE PROJECTION FORM

CONSTRUCTION

A CONTRACT SECURITY SERVICE PROJECTION FORM SHOULD BE SUBMITTED TO THE AIRPORT SECURITY COORDINATOR EACH THURSDAY NO LATER THAN 12:00 PM FOR THE FOLLOWING WEEK. CONTRACT SECURITY SERVICES MAY NOT BE AVAILABLE IF AN ACCURATE PROJECTION FORM IS NOT RECEIVED ON TIME. IF YOU HAVE ANY QUESTIONS CONTACT THE MSCAA SECURITY COORDINATOR AT 901-922-8021 OR EMAIL @CROBINSON@FLYMEMPHIS.COM.

IMPORTANT NOTE: THIS FORM MUST BE FILLED OUT COMPLETELY & SIGNED PRIOR TO SUBMITTAL.

PROJECTED SCHEDULE FOR THE WEEK OF:		SCHEDULE				
		DAY	DATE	OPEN TIME	CLOSE TIME	SIGN IN TIME (FOR OFFICIAL USE ONLY)
COMPANY NAME: PROJECT NAME: PROJECT NUMBER: LOCATION: POINT OF CONTACT: PHONE#:		SUNDAY				
		MONDAY				
		TUESDAY				
		WEDNESDAY				
		THURSDAY				
		FRIDAY				
SATURDAY						

IMPORTANT NOTE: A 24 HOUR NOTICE IS REQUIRED FOR ANY CHANGES TO A SUBMITTED SCHEDULE.

COMPANY AUTHORIZED SIGNATORY AUTHORIZATION/VERIFICATION

(LAST NAME)
(FIRST)
(MI)
(SIGNATURE)
(COMPANY)
(DATE)
(CONTACT TEL #)

ALL REQUESTS FOR SERVICE MUST BE MADE BY AN AIRPORT AUTHORIZED SIGNATORY

CS FM03 – CONTRACT SECURITY SERVICE PROJECTION FORM

END OF EXHIBIT C

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).

Paragraph Number	Term	Definition
10-09	Award	The Owner's notice to the successful bidder of the acceptance of the submitted bid.
10-10	Bidder	Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.
10-11	Building Area	An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.
10-12	Calendar Day	Every day shown on the calendar.
10-13	Certificate of Analysis (COA)	The COA is the manufacturer's Certificate of Compliance (COC) including all applicable test results required by the specifications.
10-14	Certificate of Compliance (COC)	The manufacturer's certification stating that materials or assemblies furnished fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer's authorized representative.
10-15	Change Order	A written order to the Contractor covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for work within the scope of the contract and necessary to complete the project.
10-16	Contract	A written agreement between the Owner and the Contractor that establishes the obligations of the parties including but not limited to performance of work, furnishing of labor, equipment and materials and the basis of payment. The awarded contract includes but may not be limited to: Advertisement, Contract form, Proposal, Performance bond, payment bond, General provisions, certifications and representations, Technical Specifications, Plans, Supplemental Provisions, standards incorporated by reference and issued addenda.
10-17	Contract Item (Pay Item)	A specific unit of work for which a price is provided in the contract.
10-18	Contract Time	The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of

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

Paragraph Number	Term	Definition
		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 the Contractor on a time and material basis. b. Owner Force Account - Work performed for the project by the 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 the Engineer and/or Resident Project Representative (RPR) is intended; and similarly, the words “approved,” “acceptable,” “satisfactory,” or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer and/or RPR, subject in each case to the final determination of the Owner. 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

Paragraph Number	Term	Definition
		20% of the total amount of the award contract. All other items shall be considered minor contract items.
10-34	Materials	Any substance specified for use in the construction of the contract work.
10-35	Modification of Standards (MOS)	Any deviation from standard specifications applicable to material and construction methods in accordance with FAA Order 5300.1.
10-36	Notice to Proceed (NTP)	A written notice to the Contractor to begin the actual contract work on a previously agreed to date. If applicable, the Notice to Proceed shall state the date on which the contract time begins.
10-37	Owner	The term "Owner" shall mean the party of the first part or the contracting agency signatory to the contract. Where the term "Owner" is capitalized in this document, it shall mean airport Sponsor only. The Owner for this project is Memphis-Shelby County Airport Authority .
10-38	Passenger Facility Charge (PFC)	Per 14 Code of Federal Regulations (CFR) Part 158 and 49 United States Code (USC) § 40117, a PFC is a charge imposed by a public agency on passengers enplaned at a commercial service airport it controls.
10-39	Pavement Structure	The combined surface course, base course(s), and subbase course(s), if any, considered as a single unit.
10-40	Payment bond	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will pay in full all bills and accounts for materials and labor used in the construction of the work.
10-41	Performance bond	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.
10-42	Plans	The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications. Plans may also be referred to as 'contract drawings.'

Paragraph Number	Term	Definition
10-43	Project	The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
10-44	Proposal	The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.
10-45	Proposal guaranty	The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Owner.
10-46	Quality Assurance (QA)	Owner's responsibility to assure that construction work completed complies with specifications for payment.
10-47	Quality Control (QC)	Contractor's responsibility to control material(s) and construction processes to complete construction in accordance with project specifications.
10-48	Quality Assurance (QA) Inspector	An authorized representative of the Engineer and/or Resident Project Representative (RPR) assigned to make all necessary inspections, observations, tests, and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.
10-49	Quality Assurance (QA) Laboratory	The official quality assurance testing laboratories of the Owner or such other laboratories as may be designated by the Engineer or RPR. May also be referred to as Engineer's, Owner's, or QA Laboratory.
10-50	Resident Project Representative (RPR) / Program Manager	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for all necessary inspections, observations, tests, and/or observations of tests of the contract work performed or being performed, or of the materials furnished or being furnished by the Contractor, and acting directly or through an authorized representative. RPR and Program Manager are used interchangeably.
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

Paragraph Number	Term	Definition
		construction safety and phasing plan (CSPP) for limits of the RSA.
10-53	Safety Plan Compliance Document (SPCD)	Details how the Contractor will comply with the CSPP.
10-54	Specifications	A part of the contract containing the written directions and requirements for completing the contract work. Standards for specifying materials or testing which are cited in the contract specifications by reference shall have the same force and effect as if included in the contract physically.
10-55	Sponsor	A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.
10-56	Structures	Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, handholes, lighting fixtures and bases; transformers; navigational aids; buildings; vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.
10-57	Subgrade	The soil that forms the pavement foundation.
10-58	Superintendent	The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the RPR, and who shall supervise and direct the construction.
10-59	Supplemental Agreement	A written agreement between the Contractor and the Owner that establishes the basis of payment and contract time adjustment, if any, for the work affected by the supplemental agreement. A supplemental agreement is required if: (1) in scope work would increase or decrease the total amount of the awarded contract by more than 25%; (2) in scope work would increase or decrease the total of any major contract item by more than 25%; (3) work that is not within the scope of the originally awarded contract; or (4) adding or deleting of a major contract item.
10-60	Surety	The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.

Paragraph Number	Term	Definition
10-61	Taxilane	A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
10-62	Taxiway	The portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.
10-63	Taxiway/Taxilane Safety Area (TSA)	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See the construction safety and phasing plan (CSPP) for limits of the TSA.
10-64	Work	The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.
10-65	Working day	A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work will be considered as working days.
10-66	Owner Defined terms	See Section 150 General Provisions Addendum for additional terms.

END OF SECTION 10

Section 20 Proposal Requirements and Conditions

20-01 Advertisement (Notice to Bidders). See specification section 00100, Legal 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 the Owner at the time of bid opening.

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

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

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

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

See sections C-105, 00405, and 01100 for information on Mobilization.

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

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

20-05 Interpretation of estimated proposal quantities. An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful

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

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

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

The bidder shall correctly sign the proposal in ink. If the proposal is made by an individual, their name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the proposal shall give the name of the state where the corporation was chartered and the name, titles, and business address of the president, secretary, and the treasurer. Anyone signing a proposal as an agent shall file evidence of their authority to do so and that the signature is binding upon the firm or corporation.

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

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

20-09 Irregular proposals. Proposals shall be considered irregular for the following reasons:

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

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

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

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

20-12 Withdrawal or revision of proposals. A bidder may withdraw or revise (by withdrawal of one proposal and submission of another) a proposal provided that the bidder's request for withdrawal is received by the Owner in writing or by fax or 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 the Owner until any such participating bidder has been reinstated by the Owner as a qualified bidder.

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

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

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

END OF SECTION 20

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Section 30 Award and Execution of Contract

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

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

a. If the proposal is irregular as specified in Section 20, paragraph 20-09, *Irregular Proposals*.

b. If the bidder is disqualified for any of the reasons specified Section 20, paragraph 20-14, *Disqualification of Bidders*.

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

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

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

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

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

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

30-06 Execution of contract. The successful bidder shall sign (execute) the necessary agreements for entering into the contract and return the signed contract to the Owner, along with the fully executed surety

bond or bonds specified in paragraph 30-05, *Requirements of Contract Bonds*, of this section, within fifteen (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, the Owner shall complete the execution of the contract in accordance with local laws or ordinances, and return the fully executed contract to the Contractor. Delivery of the fully executed contract to the Contractor shall constitute the Owner's approval to be bound by the successful bidder's proposal and the terms of the contract.

30-08 Failure to execute contract. Failure of the successful bidder to execute the contract and furnish an acceptable surety bond or bonds within the period specified in 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 the Owner.

END OF SECTION 30

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Section 40 Scope of Work

40-01 Intent of contract. The intent of the contract is to provide for construction and completion, in every detail, of the work described. It is further intended that the Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the plans, specifications, and terms of the contract.

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

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

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

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

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

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

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

When determined by the RPR to be in the Owner's best interest, the RPR may order the Contractor to proceed with extra work as provided in Section 90, paragraph 90-05, *Payment for Extra Work*. Extra work

that is necessary for acceptable completion of the project, but is not within the general scope of the work covered by the original contract shall be covered by a supplemental agreement as defined in Section 10, paragraph 10-59, *Supplemental Agreement*.

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

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

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

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

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

c. When the contract requires the maintenance of an existing road, street, or highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep the road, street, or highway open to all traffic and shall provide maintenance as may be required to accommodate traffic. The Contractor, at their expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel. The Contractor shall furnish, erect, and maintain barricades, warning signs, flag person, and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices (MUTCD) (<http://mutcd.fhwa.dot.gov/>), unless otherwise specified. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways. Unless otherwise specified herein, the 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 the Contractor, unless such existing structures are otherwise specified to be relocated, adjusted up or down, salvaged, abandoned in place, reused in the work or to remain in place. The cost of removing such existing structures shall not be measured or paid for directly, but shall be included in the various contract items.

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

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

40-07 Rights in and use of materials found in the work. Should the Contractor encounter any material such as (but not restricted to) sand, stone, gravel, slag, or concrete slabs within the established lines, grades, or grading sections, the use of which is intended by the terms of the contract to be embankment, the Contractor may at their own option either:

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

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

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

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

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

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

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

END OF SECTION 40

Section 50 Control of Work

50-01 Authority of the Resident Project Representative (RPR). The RPR has final authority regarding the interpretation of project specification requirements. The RPR shall determine acceptability of the quality of materials furnished, method of performance of work performed, and the manner and rate of performance of the work. The RPR does not have the authority to accept work that does not conform to specification requirements.

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

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

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

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

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

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

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

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

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

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

50-04 List of Special Provisions. NOT APPLICABLE

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

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

50-06 Cooperation between Contractors. The Owner reserves the right to contract for and perform other or additional work on or near the work covered by this contract.

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

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

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

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

Prior to the start of construction, the Contractor will check all control points for horizontal and vertical accuracy and certify in writing to the RPR that the Contractor concurs with survey control established for the project. All lines, grades and measurements from control points necessary for the proper execution

and control of the work on this project will be provided to the RPR. The Contractor is responsible to establish all layout required for the construction of the project.

Copies of survey notes will be provided to the RPR for each area of construction and for each placement of material as specified to allow the RPR to make periodic checks for conformance with plan grades, alignments and grade tolerances required by the applicable material specifications. Surveys will be provided to the RPR prior to commencing work items that cover or disturb the survey staking. Survey(s) and notes shall be provided.

Laser, GPS, String line, or other automatic control shall be checked with temporary control as necessary. In the case of error, on the part of the Contractor, their surveyor, employees or subcontractors, resulting in established grades, alignment or grade tolerances that do not concur with those specified or shown on the plans, the Contractor is solely responsible for correction, removal, replacement and all associated costs at no additional cost to the Owner.

See Section 01321 for additional surveying requirements.

No direct payment will be made, unless otherwise specified in contract documents, for this labor, materials, or other expenses. The cost shall be included in the price of the bid for the various items of the Contract.

50-08 Authority and duties of Quality Assurance (QA) inspectors. QA inspectors shall be authorized to inspect all work done and all material furnished. Such QA inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. QA inspectors are not authorized to revoke, alter, or waive any provision of the contract. QA inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

QA Inspectors are authorized to notify the Contractor or their representatives of any failure of the work or materials to conform to the requirements of the contract, plans, or specifications and to reject such nonconforming materials in question until such issues can be referred to the RPR for a decision.

50-09 Inspection of the work. All materials and each part or detail of the work shall be subject to inspection. The RPR shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the RPR requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

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

Should the contract work include relocation, adjustment, or any other modification to existing facilities, not the property of the (contract) Owner, authorized representatives of the Owners of such facilities shall have the right to inspect such work. Such inspection shall in no sense make any facility owner a party to the contract, and shall in no way interfere with the rights of the parties to this contract.

50-10 Removal of unacceptable and unauthorized work. All work that does not conform to the requirements of the contract, plans, and specifications will be considered unacceptable, unless otherwise

determined acceptable by the RPR as provided in paragraph 50-02, *Conformity with Plans and Specifications*.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of Section 70, paragraph 70-14, *Contractor's Responsibility for Work*.

No removal work made under provision of this paragraph shall be done without lines and grades having been established by the RPR. Work done contrary to the instructions of the RPR, work done beyond the lines shown on the plans or as established by the RPR, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply with any order of the RPR made under the provisions of this subsection, the RPR will have authority to cause unacceptable work to be remedied or removed and replaced; and unauthorized work to be removed and recover the resulting costs as a liquidated damage against the Contractor.

50-11 Load restrictions. The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage that may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor, at their own expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel.

50-12 Maintenance during construction. The Contractor shall maintain the work during construction and until the work is accepted. Maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the work is maintained in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

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

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

50-14 Partial acceptance. If at any time during the execution of the project the Contractor substantially completes a usable unit or portion of the work, the occupancy of which will benefit the Owner, the

Contractor may request the RPR to make final inspection of that unit. If the RPR finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, the RPR may accept it as being complete, and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by the Owner shall not void or alter any provision of the contract.

50-15 Final acceptance. Upon due notice from the Contractor of presumptive completion of the entire project, the RPR and Owner will make an inspection. If all construction provided for and contemplated by the contract is found to be complete in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The RPR shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the RPR will notify the Contractor and the Contractor shall correct the unsatisfactory work. Upon correction of the work, another inspection will be made which shall constitute the final inspection, provided the work has been satisfactorily completed. In such event, the RPR will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

50-16 Claims for adjustment and disputes. If for any reason the Contractor deems that additional compensation is due for work or materials not clearly provided for in the contract, plans, or specifications or previously authorized as extra work, the Contractor shall notify the RPR in writing of their intention to claim such additional compensation before the Contractor begins the work on which the Contractor bases the claim. If such notification is not given or the RPR is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the RPR has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed, the Contractor shall, within 10 calendar days, submit a written claim to the RPR who will present it to the Owner for consideration in accordance with local laws or ordinances.

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

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).

In order to expedite the inspection and testing of materials, the Contractor shall furnish documentation to the RPR as to the origin, composition, and manufacture of all materials to be used in the work. Documentation shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the RPR's option, materials may be approved at the source of supply before delivery. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

The Contractor shall furnish airport lighting equipment that meets the requirements of the specifications; and is listed in AC 150/5345-53, *Airport Lighting Equipment Certification Program* and *Addendum*, that is in effect on the date of advertisement.

60-02 Samples, tests, and cited specifications. All materials used in the work shall be inspected, tested, and approved by the RPR before incorporation in the work unless otherwise designated. Any work in which untested materials are used without approval or written permission of the RPR shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the RPR, shall be removed at the Contractor's expense.

Unless otherwise designated, quality assurance tests will be made by and at the expense of the Owner in accordance with the cited standard methods of ASTM, American Association of State Highway and Transportation Officials (AASHTO), federal specifications, Commercial Item Descriptions, and all other cited methods, which are current on the date of advertisement for bids.

The testing organizations performing on-site quality assurance field tests shall have copies of all referenced standards on the construction site for use by all technicians and other personnel. Unless otherwise designated, samples for quality assurance will be taken by a qualified representative of the RPR. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work. Copies of all tests will be furnished to the Contractor's representative at their request after review and approval of the RPR.

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

The Contractor shall employ a Quality Control (QC) testing organization to perform all Contractor required QC tests in accordance with Item C-100 Contractor Quality Control Program (CQCP).

60-03 Certification of compliance/analysis (COC/COA). The RPR may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's COC stating that such materials or assemblies fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the

work must be accompanied by a certificate of compliance in which the lot is clearly identified. The COA is the manufacturer's COC and includes all applicable test results.

Materials or assemblies used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with contract requirements will be subject to rejection whether in place or not.

The form and distribution of certificates of compliance shall be as approved by the RPR.

When a material or assembly is specified by "brand name or equal" and the Contractor elects to furnish the specified "or equal," the Contractor shall be required to furnish the manufacturer's certificate of compliance for each lot of such material or assembly delivered to the work. Such certificate of compliance shall clearly identify each lot delivered and shall certify as to:

- a. Conformance to the specified performance, testing, quality or dimensional requirements; and,
- b. Suitability of the material or assembly for the use intended in the contract work.

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

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

60-04 Plant inspection. The RPR or their authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for acceptance of the material or assembly.

Should the RPR conduct plant inspections, the following conditions shall exist:

- a. The RPR shall have the cooperation and assistance of the Contractor and the producer with whom the Contractor has contracted for materials.
- b. The RPR shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.
- c. If required by the RPR, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Place office or working space in a convenient location with respect to the plant.

It is understood and agreed that the Owner shall have the right to retest any material that has been tested and approved at the source of supply after it has been delivered to the site. The RPR shall have the right to reject only material which, when retested, does not meet the requirements of the contract, plans, or specifications.

60-05 Engineer/ Resident Project Representative (RPR) field office. NOT REQUIRED

60-06 Storage of materials. Materials shall be stored to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the RPR. Materials to be stored on airport property shall not create an obstruction to air navigation nor shall they interfere with the free and unobstructed movement of aircraft. Unless otherwise shown on the plans and/or CSPP, the storage of materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the RPR. Private property shall not be used for storage purposes without written permission of the Owner or lessee of such property. The Contractor shall make all arrangements and bear all expenses for

the storage of materials on private property. Upon request, the Contractor shall furnish the RPR a copy of the property Owner's permission.

All storage sites on private or airport property shall be restored to their original condition by the Contractor at their expense, except as otherwise agreed to (in writing) by the Owner or lessee of the property.

60-07 Unacceptable materials. Any material or assembly that does not conform to the requirements of the contract, plans, or specifications shall be considered unacceptable and shall be rejected. The Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by the RPR.

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

60-08 Owner furnished materials. The Contractor shall furnish all materials required to complete the work, except those specified, if any, to be furnished by the Owner. Owner-furnished materials shall be made available to the Contractor at the location specified.

All costs of handling, transportation from the specified location to the site of work, storage, and installing Owner-furnished materials shall be included in the unit price bid for the contract item in which such Owner-furnished material is used.

After any Owner-furnished material has been delivered to the location specified, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies that may occur during the Contractor's handling, storage, or use of such Owner-furnished material. The Owner will deduct from any monies due or to become due the Contractor any cost incurred by the Owner in making good such loss due to the Contractor's handling, storage, or use of Owner-furnished materials.

END OF SECTION 60

Section 70 Legal Regulations and Responsibility to Public

70-01 Laws to be observed. The Contractor shall keep fully informed of all federal and state laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the Owner and all their officers, agents, or servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor or the Contractor's employees.

70-02 Permits, licenses, and taxes. The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful execution of the work.

70-03 Patented devices, materials, and processes. If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the Patentee or Owner. The Contractor and the surety shall indemnify and hold harmless the Owner, any third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the Owner for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the execution or after the completion of the work.

70-04 Restoration of surfaces disturbed by others. The Owner reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, FAA or National Oceanic and Atmospheric Administration (NOAA) facility, or a utility service of another government agency at any time during the progress of the work. To the extent that such construction, reconstruction, or maintenance has been coordinated with the Owner, such authorized work (by others) must be shown on the plans and is indicated as follows: NONE

Except as listed above, the Contractor shall not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the work without the written permission of the RPR.

Should the Owner of public or private utility service, FAA, or NOAA facility, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the work, the Contractor shall cooperate with such Owners by arranging and performing the work in this contract to facilitate such construction, reconstruction or maintenance by others whether or not such work by others is listed above. When ordered as extra work by the RPR, the Contractor shall make all necessary repairs to the work which are due to such authorized work by others, unless otherwise provided for in the contract, plans, or specifications. It is understood and agreed that the Contractor shall not be entitled to make any claim for damages due to such authorized work by others or for any delay to the work resulting from such authorized work.

70-05 Federal Participation. The United States Government has agreed to reimburse the Owner for some portion of the contract costs. The contract work is subject to the inspection and approval of duly authorized representatives of the FAA Administrator. No requirement of this contract shall be construed

as making the United States a party to the contract nor will any such requirement interfere, in any way, with the rights of either party to the contract.

70-06 Sanitary, health, and safety provisions. The Contractor's worksite and facilities shall comply with applicable federal, state, and local requirements for health, safety and sanitary provisions.

70-07 Public convenience and safety. The Contractor shall control their operations and those of their subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall maintain the free and unobstructed movement of aircraft and vehicular traffic with respect to their own operations and those of their own subcontractors and all suppliers in accordance with Section 40, paragraph 40-05, *Maintenance of Traffic*, and shall limit such operations for the convenience and safety of the traveling public as specified in Section 80, paragraph 80-04, *Limitation of Operations*.

The Contractor shall remove or control debris and rubbish resulting from its work operations at frequent intervals, and upon the order of the RPR. If the RPR determines the existence of Contractor debris in the work site represents a hazard to airport operations and the Contractor is unable to respond in a prompt and reasonable manner, the RPR reserves the right to assign the task of debris removal to a third party and recover the resulting costs as a liquidated damage against the Contractor.

70-08 Construction Safety and Phasing Plan (CSPP). The Contractor shall complete the work in accordance with the approved Construction Safety and Phasing Plan (CSPP) developed in accordance with AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP is on sheets G-PH-01 to G-PH-05 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. The Contractor shall be responsible for the preservation of all public and private property, and shall protect carefully from disturbance or damage all land monuments and property markers until the Engineer/RPR has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the execution of the work, resulting from any act, omission, neglect, or misconduct in manner or method of executing the work, or at any time due to defective work or materials, and said responsibility shall not be released until the project has been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, the Contractor shall restore, at their expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, or otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in an acceptable manner.

70-11 Responsibility for damage claims. The Contractor shall indemnify and hold harmless the Engineer/RPR and the Owner and their officers, agents, and employees from all suits, actions, or claims, of any character, brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act," or any other law, ordinance, order, or decree. Money due the Contractor under and by virtue of their own contract considered necessary by the Owner for such purpose may be retained for the use of the Owner or, in case no money

is due, their own surety may be held until such suits, actions, or claims for injuries or damages shall have been settled and suitable evidence to that effect furnished to the Owner, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he or she is adequately protected by public liability and property damage insurance.

70-12 Third party beneficiary clause. It is specifically agreed between the parties executing the contract that it is not intended by any of the provisions of any part of the contract to create for the public or any member thereof, a third-party beneficiary or to authorize anyone not a party to the contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the contract.

70-13 Opening sections of the work to traffic. If it is necessary for the Contractor to complete portions of the contract work for the beneficial occupancy of the Owner prior to completion of the entire contract, such “phasing” of the work must be specified below and indicated on the approved Construction Safety and Phasing Plan (CSPP) and the project plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified.

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

No portion of the work may be opened by the Contractor until directed by the Owner in writing. Should it become necessary to open a portion of the work to traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the RPR, such portion of the work is in an acceptable condition to support the intended traffic. Temporary or intermittent openings are considered to be inherent in the work and shall not constitute either acceptance of the portion of the work so opened or a waiver of any provision of the contract. Any damage to the portion of the work so opened that is not attributable to traffic which is permitted by the Owner shall be repaired by the Contractor at their expense.

The Contractor shall make their own estimate of the inherent difficulties involved in completing the work under the conditions herein described and shall not claim any added compensation by reason of delay or increased cost due to opening a portion of the contract work.

The Contractor must conform to safety standards contained AC 150/5370-2 and the approved CSPP.

Contractor shall refer to the plans, specifications, and the approved CSPP to identify barricade requirements, temporary and/or permanent markings, airfield lighting, guidance signs and other safety requirements prior to opening up sections of work to traffic.

70-14 Contractor’s responsibility for work. Until the RPR’s final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with Section 50, paragraph 50-14, *Partial Acceptance*, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane or other cataclysmic phenomenon of nature, or acts of the public enemy or of government authorities.

If the work is suspended for any cause whatever, the Contractor shall be responsible for the work and shall take such precautions necessary to prevent damage to the work. The Contractor shall provide for normal drainage and shall erect necessary temporary structures, signs, or other facilities at their own expense. During such period of suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established planting, seeding,

and sodding furnished under the contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

70-15 Contractor's responsibility for utility service and facilities of others. As provided in paragraph 70-04, *Restoration of Surfaces Disturbed by Others*, the Contractor shall cooperate with the owner of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the Owner to construct, reconstruct or maintain such utility services or facilities during the progress of the work. In addition, the Contractor shall control their operations to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services, FAA, or NOAA facilities, or utility services of another governmental agency are known to exist within the limits of the contract work, the approximate locations have been indicated on the plans and/or in the contract documents.

It is understood and agreed that the Owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, facilities, or structures that may be shown on the plans or encountered in the work. Any inaccuracy or omission in such information shall not relieve the Contractor of the responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that the Contractor shall, upon execution of the contract, notify the Owners of all utility services or other facilities of their plan of operations. Such notification shall be in writing addressed to "The Person to Contact" as provided in this paragraph and paragraph 70-04, *Restoration of Surfaces Disturbed By Others*. A copy of each notification shall be given to the RPR.

In addition to the general written notification provided, it shall be the responsibility of the Contractor to keep such individual Owners advised of changes in their plan of operations that would affect such Owners.

Prior to beginning the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such Owner of their plan of operation. If, in the Contractor's opinion, the Owner's assistance is needed to locate the utility service or facility or the presence of a representative of the Owner is desirable to observe the work, such advice should be included in the notification. Such notification shall be given by the most expeditious means to reach the utility owner's "Person to Contact" no later than two normal business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor shall furnish a written summary of the notification to the RPR.

The Contractor's failure to give the two days' notice shall be cause for the Owner to suspend the Contractor's operations in the general vicinity of a utility service or facility.

Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use hand excavation methods within 3 feet (1 m) of such outside limits at such points as may be required to ensure protection from damage due to the Contractor's operations.

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

The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to their operations whether due to negligence or accident. The Owner reserves the right to deduct such costs from any monies due or which may become due the Contractor, or their own surety.

70-15.1 FAA facilities and cable runs. The Contractor is hereby advised that the construction limits of the project include existing facilities and buried cable runs that are owned, operated and maintained by the FAA. The Contractor, during the execution of the project work, shall comply with the following:

a. The Contractor shall permit FAA maintenance personnel the right of access to the project work site for purposes of inspecting and maintaining all existing FAA owned facilities.

b. The Contractor shall provide notice to the FAA Air Traffic Organization (ATO)/Technical Operations/System Support Center (SSC) Point-of-Contact through the airport Owner a minimum of seven (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, the Contractor shall contact the FAA Point-of-Contact a minimum of 72 hours prior to the time of the required outage.

d. Any damage to FAA cables, access roads, or FAA facilities during construction caused by the Contractor's equipment or personnel whether by negligence or accident will require the Contractor to repair or replace the damaged cables, access road, or FAA facilities to FAA requirements. The Contractor shall not bear the cost to repair damage to underground facilities or utilities improperly located by the FAA.

e. If the project work requires the cutting or splicing of FAA owned cables, the FAA Point-of-Contact shall be contacted a minimum of 72 hours prior to the time the cable work commences. The FAA reserves the right to have a FAA representative on site to observe the splicing of the cables as a condition of acceptance. All cable splices are to be accomplished in accordance with FAA specifications and require approval by the FAA Point-of-Contact as a condition of acceptance by the Owner. The Contractor is hereby advised that FAA restricts the location of where splices may be installed. If a cable splice is required in a location that is not permitted by FAA, the Contractor shall furnish and install a sufficient length of new cable that eliminates the need for any splice.

70-16 Furnishing rights-of-way. The Owner will be responsible for furnishing all rights-of-way upon which the work is to be constructed in advance of the Contractor's operations.

70-17 Personal liability of public officials. In carrying out any of the contract provisions or in exercising any power or authority granted by this contract, there shall be no liability upon the Engineer, RPR, their authorized representatives, or any officials of the Owner either personally or as an official of the Owner. It is understood that in such matters they act solely as agents and representatives of the Owner.

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

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

70-19 Environmental protection. The Contractor shall comply with all federal, state, and local laws and regulations controlling pollution of the environment. The Contractor shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, asphalts, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

70-20 Archaeological and historical findings. Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during their operations, any building, part of a building, structure, or object that is incongruous with its surroundings, the Contractor shall immediately cease operations in that location and notify the RPR. The RPR will immediately investigate the Contractor's finding and the Owner will direct the Contractor to either resume operations or to suspend operations as directed.

Should the Owner order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract change order or supplemental agreement as provided in Section 40, paragraph 40-04, *Extra Work*, and Section 90, paragraph 90-05, *Payment for Extra Work*. If appropriate, the contract change order or supplemental agreement shall include an extension of contract time in accordance with Section 80, paragraph 80-07, *Determination and Extension of Contract Time*.

70-21 Insurance Requirements. See Article 19 of Section 00500 Construction Contract.

END OF SECTION 70

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Section 80 Execution and Progress

80-01 Subletting of contract. The Owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Resident Project Representative (RPR).

The Contractor shall perform, with his organization, an amount of work equal to at least twenty-five (25) percent of the total contract cost.

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

The Contractor shall provide copies of all subcontracts to the RPR 14 days prior to being utilized on the project. As a minimum, the information shall include the following:

- Subcontractor's legal company name.
- Subcontractor's legal company address, including County name.
- Principal contact person's name, telephone and fax number.
- Complete narrative description, and dollar value of the work to be performed by the subcontractor.
- Copies of required insurance certificates in accordance with the specifications.
- Minority/ non-minority status.

80-02 Notice to proceed (NTP). The Owners notice to proceed will state the date on which contract time commences. The Contractor is expected to commence project operations within ten (10) days of the NTP date. The Contractor shall notify the RPR at least 24 hours (24) in advance of the time contract operations begins. The Contractor shall not commence any actual operations prior to the date on which the notice to proceed is issued by the Owner.

80-03 Execution and progress. Unless otherwise specified, the Contractor shall submit their coordinated construction schedule showing all work activities for the RPR's review and acceptance at least 10 days prior to the start of work. The Contractor's progress schedule, once accepted by the RPR, will represent the Contractor's baseline plan to accomplish the project in accordance with the terms and conditions of the Contract. The RPR will compare actual Contractor progress against the baseline schedule to determine that status of the Contractor's performance. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the RPR's request, submit a revised schedule for completion of the work within the contract time and modify their operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the execution of the work be discontinued for any reason, the Contractor shall notify the RPR at least 24 hours in advance of resuming operations.

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

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.

The Contractor shall maintain the work schedule and provide an update and analysis of the progress schedule on a twice monthly basis, or as otherwise specified in the contract. Submission of the work schedule shall not relieve the Contractor of overall responsibility for scheduling, sequencing, and coordinating all work to comply with the requirements of the contract.

80-04 Limitation of operations. The Contractor shall control their operations and the operations of their subcontractors and all suppliers to provide for the free and unobstructed movement of aircraft in the air operations areas (AOA) of the airport.

When the work requires the Contractor to conduct their operations within an AOA of the airport, the work shall be coordinated with airport operations (through the RPR) at least 48 hours prior to commencement of such work. The Contractor shall not close an AOA until so authorized by the RPR and until the necessary temporary marking, signage and associated lighting is in place as provided in Section 70, paragraph 70-08, *Construction Safety and Phasing Plan (CSPP)*.

When the contract work requires the Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications as specified; immediately obey all instructions to vacate the AOA; and immediately obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until satisfactory conditions are provided. The areas of the AOA identified in the Construction Safety Phasing Plan (CSPP) and as listed below, cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as follows: N/A

The Contractor shall be required to conform to safety standards contained in AC 150/5370-2, Operational Safety on Airports During Construction and the approved CSPP.

80-04.1 Operational safety on airport during construction. All Contractors' operations shall be conducted in accordance with the approved project Construction Safety and Phasing Plan (CSPP) and the Safety Plan Compliance Document (SPCD) and the provisions set forth within the current version of AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a SPCD that details how it proposes to comply with the requirements presented within the CSPP.

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

The Contractor is responsible to the Owner for the conduct of all subcontractors it employs on the project. The Contractor shall assure that all subcontractors are made aware of the requirements of the CSPP and SPCD and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved CSPP and SPCD unless approved in writing by the Owner. The necessary coordination actions to review Contractor proposed modifications to an approved CSPP or approved SPCD can require a significant amount of time.

80-05 Character of workers, methods, and equipment. The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

Any person employed by the Contractor or by any subcontractor who violates any operational regulations or operational safety requirements and, in the opinion of the RPR, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the RPR, be removed immediately by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the RPR.

Should the Contractor fail to remove such person or persons, or fail to furnish suitable and sufficient personnel for the proper execution of the work, the RPR may suspend the work by written notice until compliance with such orders.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the work shall not cause injury to previously completed work, adjacent property, or existing airport facilities due to its use.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless otherwise authorized by the RPR. If the Contractor desires to use a method or type of equipment other than specified in the contract, the Contractor may request authority from the RPR to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the RPR determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the RPR may direct. No change will be made in basis of payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this paragraph.

80-06 Temporary suspension of the work. The Owner shall have the authority to suspend the work wholly, or in part, for such period or periods the Owner may deem necessary, due to unsuitable weather, or other conditions considered unfavorable for the execution of the work, or for such time necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the contract.

In the event that the Contractor is ordered by the Owner, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the written order to suspend work to the effective date of the written order to resume the work. Claims for such compensation shall be filed with the RPR within the time period stated in the RPR's order to resume work. The Contractor shall submit with their own claim information substantiating

the amount shown on the claim. The RPR will forward the Contractor's claim to the Owner for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather or for any other delay provided for in the contract, plans, or specifications.

If it becomes necessary to suspend work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. The Contractor shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

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 the Contractor's control, it shall be adjusted as follows:

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 the Contractor or their own surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional engineering services that will be incurred by the Owner should the Contractor fail to complete the work in the time provided in their contract.

Schedule	Liquidated Damages Cost	Allowed Construction Time
Substantial Completion	\$750 per calendar day	140 calendar days
Final Completion & Demobilization Phase	\$500 per calendar day	45 calendar days

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the Owner of any of its rights under the contract.

80-09 Default and termination of contract. The Contractor shall be considered in default of their contract and such default will be considered as cause for the Owner to terminate the contract for any of the following reasons, if the Contractor:

- a. Fails to begin the work under the contract within the time specified in the Notice to Proceed, or
- b. Fails to perform the work or fails to provide sufficient workers, equipment and/or materials to assure completion of work in accordance with the terms of the contract, or
- c. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or
- d. Discontinues the execution of the work, or
- e. Fails to resume work which has been discontinued within a reasonable time after notice to do so, or
- f. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or
- g. Allows any final judgment to stand against the Contractor unsatisfied for a period of 10 days, or
- h. Makes an assignment for the benefit of creditors, or
- i. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

Should the Owner consider the Contractor in default of the contract for any reason above, the Owner shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the Owner's intentions to terminate the contract.

If the Contractor or surety, within a period of 10 days after such notice, does not proceed in accordance therewith, then the Owner will, upon written notification from the RPR of the facts of such delay, neglect, or default and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the execution of the work out of the hands of the Contractor. The Owner may appropriate or use any or all materials and equipment that have been mobilized for use in the work and are acceptable and may enter into an agreement for the completion of said contract according to the terms and provisions thereof, or use such other methods as in the opinion of the RPR will be required for the completion of said contract in an acceptable manner.

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

80-10 Termination for national emergencies. The Owner shall terminate the contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the execution of war or in the interest of national defense.

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

Reimbursement for organization of the work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

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

Termination of the contract or a portion thereof shall neither relieve the Contractor of their responsibilities for the completed work nor shall it relieve their surety of its obligation for and concerning any just claim arising out of the work performed.

80-11 Work area, storage area and sequence of operations. The Contractor shall obtain approval from the RPR prior to beginning any work in all areas of the airport. No operating runway, taxiway, or air operations area (AOA) shall be crossed, entered, or obstructed while it is operational. The Contractor shall plan and coordinate work in accordance with the approved CSPP and SPCD.

END OF SECTION 80

Section 90 Measurement and Payment

90-01 Measurement of quantities. All work completed under the contract will be measured by the RPR, or their authorized representatives, using United States Customary Units of Measurement.

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet (0.8 square meters) or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the RPR.

Unless otherwise specified, all contract items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

The term “lump sum” when used as an item of payment will mean complete payment for the work described in the contract. When a complete structure or structural unit (in effect, “lump sum” work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

When requested by the Contractor and approved by the RPR in writing, material specified to be measured by the cubic yard (cubic meter) may be weighed, and such weights will be converted to cubic yards (cubic meters) for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the RPR and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

Measurement and Payment Terms

Term	Description
Excavation and Embankment Volume	In computing volumes of excavation, the average end area method will be used unless otherwise specified.
Measurement and Proportion by Weight	The term “ton” will mean the short ton consisting of 2,000 pounds (907 kg) avoirdupois. All materials that are measured or proportioned by weights shall be weighed on accurate, independently certified scales by competent, qualified personnel at locations designated by the RPR. If material is shipped by rail, the car weight may be accepted provided that only the actual weight of material is paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the RPR directs, and each truck shall bear a plainly legible identification mark.

Term	Description
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.
Asphalt Material	Asphalt materials will be measured by the gallon (liter) or ton (kg). When measured by volume, such volumes will be measured at 60°F (16°C) or will be corrected to the volume at 60°F (16°C) using ASTM D1250 for asphalts. Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when asphalt material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work. When asphalt materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, will be used for computing quantities.
Cement	Cement will be measured by the ton (kg) or hundredweight (km).
Structure	Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.
Timber	Timber will be measured by the thousand feet board measure (MFBM) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.
Plates and Sheets	The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inch.
Miscellaneous Items	When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gauge, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.
Scales	Scales must be tested for accuracy and serviced before use. Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end. Scales shall be accurate within 0.5% of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the RPR before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed 0.1% of the nominal rated capacity of the

Term	Description
	scale, but not less than one pound (454 grams). 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 subsequent to the 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 the 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 the RPR can safely and conveniently view them. Scale installations shall have available ten standard 50-pound (2.3 km) weights for testing the weighing equipment or suitable weights and devices for other approved equipment. 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>.
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 the RPR. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

90-02 Scope of payment. The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the execution thereof, subject to the provisions of Section 70, paragraph 70-18, *No Waiver of Legal Rights*.

When the “basis of payment” subsection of a technical specification requires that the contract price (price bid) include compensation for certain work or material essential to the item, this same work or material will not also be measured for payment under any other contract item which may appear elsewhere in the contract, plans, or specifications.

90-03 Compensation for altered quantities. When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in Section 40, paragraph 40-02, *Alteration of Work and Quantities*, will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or indirectly from their own unbalanced allocation of overhead and profit among the contract items, or from any other cause.

90-04 Payment for omitted items. As specified in Section 40, paragraph 40-03, *Omitted Items*, the RPR shall have the right to omit from the work (order nonperformance) any contract item, except major contract items, in the best interest of the Owner.

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

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

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

90-05 Payment for extra work. Extra work, performed in accordance with Section 40, paragraph 40-04, *Extra Work*, will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work.

90-06 Partial payments. Partial payments will be made to the Contractor at least once each month as the work progresses. Said payments will be based upon estimates, prepared by the RPR, of the value of the work performed and materials complete and in place, in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with paragraph 90-07, *Payment for Materials on Hand*. No partial payment will be made when the amount due to the Contractor since the last estimate amounts to less than five hundred dollars.

- a. Retainage will not be withheld on this project. No retainage will be withheld by the Owner from progress payments due the prime Contractor. Retainage by the prime or subcontractors is prohibited, and no retainage will be held by the prime from progress due subcontractors.
- b. The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than 30 days after the Contractor has received a partial payment. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the Owner. When the Owner has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.
- c. When at least 95% of the project work has been completed to the satisfaction of the RPR, the RPR shall, at the Owner's discretion and with the consent of the surety, prepare estimates of both the contract value and the cost of the remaining work to be done.

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders or supplemental agreements, except when such excess quantities have been determined by the RPR to be a part of the final quantity for the item of work in question.

No partial payment shall bind the Owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in paragraph 90-09, *Acceptance and Final Payment*.

The Contractor shall deliver to the Owner a complete release of all claims for labor and material arising out of this contract before the final payment is made. If any subcontractor or supplier fails to furnish such a release in full, the Contractor may furnish a bond or other collateral satisfactory to the Owner to indemnify the Owner against any potential lien or other such claim. The bond or collateral shall include all costs, expenses, and attorney fees the Owner may be compelled to pay in discharging any such lien or claim.

90-07 Payment for materials on hand. Partial payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided that such materials meet the requirements of the contract, plans, and specifications and are delivered to acceptable sites on the airport property or at other sites in the vicinity that are acceptable to the Owner. Such delivered costs of stored or stockpiled materials may be included in the next partial payment after the following conditions are met:

- a. The material has been stored or stockpiled in a manner acceptable to the RPR at or on an approved site.
- b. The Contractor has furnished the RPR with acceptable evidence of the quantity and quality of such stored or stockpiled materials.
- c. The Contractor has furnished the RPR with satisfactory evidence that the material and transportation costs have been paid.
- d. The Contractor has furnished the Owner legal title (free of liens or encumbrances of any kind) to the material stored or stockpiled.
- e. The Contractor has furnished the Owner evidence that the material stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work.

It is understood and agreed that the transfer of title and the Owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of their responsibility for furnishing and placing such materials in accordance with the requirements of the contract, plans, and specifications.

In no case will the amount of partial payments for materials on hand exceed the contract price for such materials or the contract price for the contract item in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant materials.

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

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

- a. The Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to the Owner.

b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the Owner and having a value not less than the retainage that would otherwise be withheld from partial payment.

c. The Contractor shall enter into an escrow agreement satisfactory to the Owner.

d. The Contractor shall obtain the written consent of the surety to such agreement.

90-09 Acceptance and final payment. When the contract work has been accepted in accordance with the requirements of Section 50, paragraph 50-15, *Final Acceptance*, the RPR will prepare the final estimate of the items of work actually performed. The Contractor shall approve the RPR's final estimate or advise the RPR of the Contractor's objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the contract as amended by change order or supplemental agreement. The Contractor and the RPR shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of the Contractor's receipt of the RPR's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the RPR's estimate under protest of the quantities in dispute, and such disputed quantities shall be considered by the Owner as a claim in accordance with Section 50, paragraph 50-16, *Claims for Adjustment and Disputes*.

After the Contractor has approved, or approved under protest, the RPR's final estimate, and after the RPR's receipt of the project closeout documentation required in paragraph 90-11, *Contractor Final Project Documentation*, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

If the Contractor has filed a claim for additional compensation under the provisions of Section 50, paragraph 50-16, *Claims for Adjustments and Disputes*, or under the provisions of this paragraph, such claims will be considered by the Owner in accordance with local laws or ordinances. Upon final adjudication of such claims, any additional payment determined to be due the Contractor will be paid pursuant to a supplemental final estimate.

90-10 Construction warranty.

a. In addition to any other warranties in this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, workmanship, or design furnished, or performed by the Contractor or any subcontractor or supplier at any tier.

b. This warranty shall continue for a period of one year from the date of final acceptance of the work, except as noted. If the Owner takes possession of any part of the work before final acceptance, this warranty shall continue for a period of one year from the date the Owner takes possession. However, this will not relieve the 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 (4) years after date of installation inclusive of all electronics.

See technical specifications for additional equipment with extended warranties.

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

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

e. The Owner will notify the Contractor, in writing, within seven (7) days after the discovery of any failure, defect, or damage.

f. If the Contractor fails to remedy any failure, defect, or damage within fourteen 14 days after receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

g. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall: (1) Obtain all warranties that would be given in normal commercial practice; (2) Require all warranties to be executed, in writing, for the benefit of the Owner, as directed by the Owner, and (3) Enforce all warranties for the benefit of the Owner.

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

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

a. Provide two (2) copies of all manufacturers warranties specified for materials, equipment, and installations.

b. Provide weekly payroll records (not previously received) from the general Contractor and all subcontractors.

c. Complete final cleanup in accordance with Section 40, paragraph 40-08, *Final Cleanup*.

d. Complete all punch list items identified during the Final Inspection.

e. Provide complete release of all claims for labor and material arising out of the Contract.

f. Provide a certified statement signed by the subcontractors, indicating actual amounts paid to the Disadvantaged Business Enterprise (DBE) subcontractors and/or suppliers associated with the project.

g. When applicable per state requirements, return copies of sales tax completion forms.

h. Manufacturer's certifications for all items incorporated in the work.

i. All required record drawings, as-built drawings or as-constructed drawings.

j. Project Operation and Maintenance (O&M) Manual(s).

k. Security for Construction Warranty.

l. Equipment commissioning documentation submitted, if required.

See Section 01770 for additional closeout procedures.

END OF SECTION 90

Section 150 General Provisions Addendum

150-10 GENERAL PROVISIONS ADDENDUM - Section 10 Definition of Terms

Whenever the following terms are used in these specifications, in the contract, in any documents or other instruments pertaining to construction of the project where these specifications govern, the intent and meaning shall be interpreted as follows; and whenever one of the following capitalized words, terms or phrases is used herein, it shall be interpreted or construed first as defined in Specification Section GP-10, second as defined below, third according to its generally accepted meaning in the construction industry, and fourth according to its common and customary usage.

150-10-101 ACCESS ROAD

As defined in GP-10 and shall further be defined to include “or an internal roadway for construction or maintenance.”

150-10-102 ADDENDA

Written or graphic instructions issued prior to the opening of Proposals, which clarify, correct or change the bidding documents or the Contract Documents.

150-10-103 AIRPORT OPERATIONS or OPERATIONS

Depending on use, airport operations may refer to a department of the Airport Authority or the movement of aircraft on, or approaching the airfield.

150-10-104 BID ITEMS

The proposal provides for quotation of a price, for one or more bid items, which may be lump sum bid prices, alternate bid prices, unit bid prices, or a combination thereof. No payment will be made for items not set up in the proposal, unless otherwise provided by contract amendment. Bidders are cautioned that they should include in the prices quoted for various bid items all necessary allowances for the performance of all work required for the satisfactory completion of the project.

150-10-105 BUILDER

A term to be used interchangeably with “Contractor.”

150-10-106 CONTRACT AMENDMENT

A term to be used interchangeably with “Change order.”

150-10-107 CONTRACT FOR PROFESSIONAL SERVICES

A written agreement between the Owner and a Professional for provision of services and related items required to design, engineer or program manage all or part of a Project.

150-10-108 DEFECTIVE

An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any Inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to the Program Manager's recommendation of final payment.

150-10-109 DRAWINGS

A term to be used interchangeably with “Plans.”

150-10-110 ENGINEER or PROFESSIONAL

As defined in GP-10 and shall further be defined to include “Engineer will not supervise, direct, control, or have authority over or be responsible for Contractors means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with laws and regulations applicable to performance of the Work. Foth Infrastructure & Environment, LLC is the Engineer for this Project.”

150-10-111 FINAL COMPLETION

The stage of construction when the Work has been 100% completed including all punch list items, record drawings, O&M manuals, lien waivers, maintenance training, warranties, consent of surety to final payment, and all other required closeout documentation.

150-10-112 GP

Abbreviation for General Provision.

150-10-113 HAZARDOUS SUBSTANCES

The term "Hazardous Substance" shall have the same meaning and definition as set forth in the Comprehensive Environmental Response Compensation and Liability Act as amended, 42 U.S.C. § 6901 *et seq*, and regulations promulgated thereunder (collectively "CERCLA") and any corresponding state or local law or regulation, and shall also include: (a) any Pollutant or Contaminant as those terms are defined in CERCLA; (b) any Solid Waste or Hazardous Constituent as those terms are defined by, or are otherwise identified by, the Resource Conservation and Recovery Act as amended, 42 U.S.C. § 6901 *et seq*, and regulations promulgated thereunder (collectively "RCRA") and any corresponding state or local law or regulation; (c) crude oil, petroleum and fractions of distillates thereof; (d) any other material, substance or chemical defined, characterized or regulated as toxic or hazardous under any applicable law, regulation, ordinance, directive or ruling; and (e) any infectious or medical waste as defined by any applicable federal or state laws or regulations.

150-10-114 INTENTION OF TERMS

As defined in GP-10 and shall further be defined to include “The use of any such term shall not be effective to assign to Program Manager any duty or authority to supervise or direct the furnishing or performance of the work. Wherever in the specifications or on the drawings the words "install," "furnish," "provide," or words of like import are used, they mean the Contractor shall install, furnish, or provide, as the case may be complete and ready for Owner's use.”

150-10-115 LUMP SUM PRICE

The dollar amount for which a Contractor agrees to perform the Work or a specific component of the Work as set forth in a Contract for construction.

150-10-116 MAJOR SUBCONTRACTOR

A major subcontractor shall be any subcontractor who is responsible for 15 percent or more of the full amount of the contract.

150-10-117 OWNER or SPONSOR

As defined in GP-10 and shall further be defined to include “The Owner shall mean the Memphis-Shelby County Airport Authority.”

150-10-118 PARTIAL COMPLETION

The stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents when the Owner can satisfactorily occupy or beneficially use a finite portion of completed Work for its intended purpose. Partial completion and acceptance of a finite portion of the work will in no way imply the overall project is substantially complete or start of the project warranty.

150-10-119 PROGRAM MANAGER

The individual, partnership, firm, or corporation duly authorized by the Owner (sponsor) to be responsible for engineering supervision during construction and acting directly or through an authorized representative. The term Program Manager means the person, person or organization named by the Owner to act as their representative. Program Manager will not supervise, direct, control, or have authority over or be responsible for Contractors means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with laws and regulations applicable to performance of the Work. All authority granted to the Engineer by these construction documents shall also be available to the Program Manager, at the discretion of the Owner. Foth Infrastructure & Environment, LLC is the Program Manager for this Project.

150-10-120 PUNCHLIST ITEM

Any item of work, in whole or in part, which the Program Manager has identified as being unsatisfactory after an inspection of the project. A punch-list item may be further classified as being either "major" or "minor". A "major" punch-list item is defined as any punch-list item the correction of which is, in the Program Manager's determination, necessary for the Owner to use the completed project for its intended purpose. A "minor" punch-list item is defined as any punch-list item not classified as "major" by the Program Manager.

150-10-121 SHOP DRAWINGS

All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for the Contractor to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a supplier, manufacturer, subcontractor or fabricator and submitted by the Contractor to illustrate material or equipment for some portion of the Work.

150-10-122 SITE

The geographical location of a Project, usually defined by legal boundary lines, and the location characteristics including, but not limited to, grades and lines of streets, alleys, pavements and adjoining structures, rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, existing buildings and improvements, and service and utility lines.

150-10-123 SUBSTANTIAL COMPLETION

The stage in the progress of the Work when the Work is substantially complete in accordance with the Contract Documents and the Owner can occupy or beneficially use satisfactorily completed Work for its intended purpose.

150-20 GENERAL PROVISIONS ADDENDUM - PROPOSAL REQUIREMENTS AND CONDITIONS

150-20-01 ADVERTISEMENT (NOTICE TO BIDDERS)

General Provisions 20-01 shall include: “See Section LEGAL NOTICE TO BIDDERS for the ADVERTISEMENT notifying prospective Bidders of this project.”

150-20-05 INTERPRETATION OF ESTIMATED PROPOSAL QUANTITIES

General Provisions 20-05 shall include: “The proposal provides for quotation of a price, for one or more bid items, which may be lump sum bid prices, alternate bid prices, unit bid prices, or a combination thereof. No payment will be made for items not set up in the proposal, unless otherwise provided by contract amendment. Bidders are cautioned that they should include in the prices quoted for various bid items all necessary allowances for the performance of all work required for the satisfactory completion of the project.”

150-20-07 PREPARATION OF PROPOSAL.

General Provisions 20-07 shall include “The bidder shall state the unit price and extension, written in ink or typed, for which he proposes to do each pay item furnished in the proposal. In case of conflict between the unit price and extension, the unit price, unless obviously incorrect, shall govern.”

150-20-09 IRREGULAR PROPOSALS

General Provisions 20-09 item f) shall include:

- f.** If the proposal does not meet the SBE participation requirement specified in Section SBE REQ.

150-20-10 BID GUARANTEE.

General Provisions 20-10 shall include

“Each proposal shall be accompanied by either a cashier's check or a certified check drawn on a solvent bank, or a Bidder's bond executed by the Bidder and a surety company acceptable to the Memphis-Shelby County Airport Authority, in the amount of not less than five (5) percent of the total bid price, made payable without conditions to the Memphis-Shelby County Airport Authority, as a guarantee that if the proposal is accepted, the Bidder will enter into a contract and execute a Performance and Payment Bond with legally responsible surety within ten (10) days after contract award is made by the Memphis-Shelby County Airport Authority. Bidder's Bond (if used) shall be executed on the form prescribed within these documents.

“In the event that the Bidder's proposal is accepted and the contract is awarded by the Memphis-Shelby County Airport Authority, and the Bidder fails or refuses to execute the contract and furnish the required Performance and Payment Bond within ten (10) days after such award is made by the Memphis-Shelby County Airport Authority, unless given a written extension of time by the Memphis-Shelby County Airport Authority, then the Bidder will be considered as having abandoned his proposal, and his proposal guarantee will be retained by the Memphis-Shelby County Airport Authority as liquidated damages and not as a penalty, IT NOW BEING AGREED that the amount of the proposal guarantee is a fair estimate of the amount of damages that the Memphis-Shelby County Airport Authority will sustain in case the Bidder fails to enter into the contract and furnish the required Performance and Payment Bond within ten (10) days after receiving notice of such award.”

150-20-14 DISQUALIFICATION OF BIDDERS.

General Provisions 20-14 item d) shall include:

- d.** Failure to show evidence of possessing a valid state of Tennessee Contractor's License, as required by law.

150-20-15 EXPLANATIONS AND INTERPRETATIONS OF CONTRACT DOCUMENTS

All explanations desired by Bidders regarding the meaning or interpretation of the drawings and specifications must be requested with sufficient time allowed for a written reply to reach them before the submission of their bids. Oral explanation or instructions will not be given. All necessary explanations or interpretations will be made in the form of written addenda to the specifications or drawings, and will be furnished to all Bidders, and the receipt thereof shall be acknowledged by each Bidder on his proposal.

150-20-16 SBPP/SBE REQUIREMENTS

All Bidders shall submit with his/her proposal the SBE's Assurance Statement/Letter of Intent for each SBE subcontractor (subcontractors' signatures not required) Subcontractors' bids to the Prime Contractor with items included in the bid either circled and/or highlighted, SBE's Current Certification for each SBE Subcontractor, Respondent SBE Goals Accomplishment Statement, and Information on All Firms that Provide Bids or Quotes, which have been provided in the bid envelope. There must be one SBE's Assurance Statement/Letter of Intent for each proposed SBE subcontractor properly completed and signed by the Bidder.

Within 24 hours of the proposal submittal deadline, all Bidders shall submit the SBE's Assurance Statement/Letter of Intent for each SBE subcontractor (subcontractors' signatures required). There must be one SBE's Assurance Statement/Letter of Intent for each proposed SBE subcontractor properly completed and signed by the SBE subcontractor, and if applicable the 2nd/3rd Tier Subcontractor's, and the Bidder.

See specification section SMALL BUSINESS PARTICIPATION PROGRAM (SBPP) REQUIREMENTS for additional proposal requirements and conditions.

150-40 GENERAL PROVISIONS ADDENDUM - SCOPE OF WORK

150-40-04 EXTRA WORK.

General Provisions 40-04 shall include “When determined by the Program Manager to be in the Owner's best interest, the Owner may order the Contractor to proceed with extra work by time and materials as provided in Section GP-150-90.”

150-50 GENERAL PROVISIONS ADDENDUM - CONTROL OF WORK

150-50-04 COOPERATION OF CONTRACTOR.

General Provisions 50-04 shall include “The Owner shall allocate the work and designate the sequence of construction in case of controversy between contractors.”

150-70 GENERAL PROVISIONS ADDENDUM - LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

150-70-01 LAWS TO BE OBSERVED.

General Provisions 70-01 shall include “Applicable laws, ordinances, regulations, orders, and decrees shall be considered as MINIMUM requirements, and everything shown or specified in excess of these minimum requirements shall be installed in excess thereof, as shown or specified. No instructions given in the contract documents shall be construed as an authorization to violate any law, ordinance, regulation, order, or decree.

“If the Contractor observes that the drawings or specifications are at variance with any applicable law, ordinance, regulation, order, or decree, he shall immediately notify the Program Manager in writing, and obtain the Program Manager's decision before proceeding with the portion of the work involved.

“The Contract shall be governed by the law of the State of Tennessee. Any action brought which involves the Contract, the Work or the Project shall be brought and determined in accordance with the Laws of the State of Tennessee.”

150-70-14 CONTRACTOR'S RESPONSIBILITY FOR WORK

General Provisions 70-14 shall include “The Program Manager shall not be responsible for the methods and means employed by the Contractor in the performance of the Contractor's work. The Program Manager shall have no responsibility for the safety of workmen and others who may be injured during the course of the Contractor's work.”

150-70-21 CONTINUANCE OF WORK NOTWITHSTANDING DISPUTES, ETC.

Unless otherwise agreed in writing, the Contractor shall, notwithstanding any dispute, proceeding, or litigation, proceed forthwith in accordance with the Program Manager's written decision and/or direction and shall continue the Work and maintain its progress. The Owner shall continue to make payments to the Contractor to the extent that the sums due and owing the Contractor are not in dispute, in accordance with the Contract Documents.

150-70-22 SCOPE OF PROGRAM MANAGER’S RESPONSIBILITIES TO CONTRACTOR AND OWNER

The Program Manager is to act as Owner’s representative, and shall have the duties and responsibilities and the rights and authority assigned to Program Manager in the Contract in connection with completion of the Work in accordance with the Contract. Neither the Program Manager’s authority to act under the Contract, nor any decision made by him in good faith either to exercise or not to exercise authority under the Contract, shall give rise to any duty or responsibility of the Program Manager to the Contractor, any Subcontractor, any of their agents or employees. However, nothing contained herein shall exculpate in any manner nor relieve the Program Manager of his duties and responsibilities to the Owner in accordance with the Contract and in accordance with any other agreements between the Program Manager and Owner establishing the Program Manager’s duties and responsibilities to properly administer the Contract and to correctly apply the requirements of the Contract to the Work.

150-80 GENERAL PROVISIONS ADDENDUM - PROSECUTION AND PROGRESS

150-80-01 SUBLETTING OF CONTRACT

General Provisions 80-01 shall include “The Contractor shall obtain prior approval from the Owner before subcontracting any portion of this contract. Only those subcontractors who are known for doing quality, first class airport work of the type required of the subcontract will be approved by the Owner. For each proposed subcontract, the Contractor shall supply the Program Manager with the subcontractor's name, the amount of the subcontract, their previous, related experience, their available appropriate equipment both owned and leased, and their available personnel. The Contractor shall also submit to the Program Manager those items of the contract to be performed directly by his own organization. The amounts of these items and the amounts of all items awarded to all subcontractors shall correspond to the contract price for the entire project. The Owner reserves the right to withhold approval of any subcontractor who, in the Owner's opinion, is not qualified to perform the work. If the Owner withholds approval of a subcontractor the Contractor shall be required to find an alternate subcontractor that meets the approval of the Owner or he shall perform the work himself. In either event, contract pay items shall not be adjusted. The contract will not be signed until all major subcontractors have been approved by the Owner. In case of approval, the Contractor shall file copies of all subcontracts with the Program Manager.”

150-80-07 DETERMINATION AND EXTENSION OF CONTRACT TIME

General Provisions 80-07 shall include “Time extension for delays caused by the effects of inclement weather are justified only when rains or other excessive inclement weather conditions or related adverse soil conditions prevent the Contractor from productively performing critical activities of work resulting in:

1. The Contractor being unable to work at least 50% of the normal work day on pre-determined critical path items due to adverse weather conditions or;
2. The Contractor being required to make major repairs to the work damaged by excessive weather, provided that the damage was not attributable to the Contractor's negligence or failure to perform, and provided that the Contractor was unable to work an available day as defined under GP-10.

“The Contractor will be granted a time extension based on weather days in excess of the anticipated days during the original contract completion. After the new contract completion date has been established by the Program Manager, additional anticipated days as identified by SC-120 Section 3.05 paragraph E for the months covered within the contract extension period will be granted. Once the Contractor reaches the revised completion date and has not completed the project due to additional weather delays, the Contractor will be granted, only the verified lost weather days leading to the revised contract completion. No other weather days will be granted beyond the established final completion date.

“If the Contractor finds it impossible for reasons beyond his/her control to complete the work within the contract time as specified or as extended he may, within ten (10) days after commencement of the cause of delay make a written request to the Program Manager for an extension of time setting forth the reasons which he believes will justify the granting of his/her request; otherwise, such claim will be waived. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the Program Manager finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, he may recommend the Owner extend the time for completion in such amount as the conditions justify. The extended time for completion shall then be in full force and effect, the same as though it were the original time for completion. Should the contract time require extension it shall be by change order or supplemental agreement”

150-80-09 DEFAULT AND TERMINATION OF CONTRACT

General Provisions 80-09 shall include “The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall:

- a. Cease operations as directed by the Owner in the notice;

- b. Take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- c. Except for the Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing Subcontractors and purchase orders and enter into no further Subcontracts and purchase orders.

“In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment from the Owner for Work executed and for proven loss with respect to materials, equipment, tools and construction equipment and machinery, including reasonable overhead, profit and damages.”

150-90 GENERAL PROVISIONS ADDENDUM - MEASUREMENT AND PAYMENT

150-90-05 PAYMENT FOR EXTRA WORK OR TIME AND MATERIALS WORK

General Provisions 90-05 shall include:

“EXTRA Work and TIME and MATERIALS Work will be paid in accordance with the paragraphs below and will include documented costs for labor, labor burden, insurance and taxes, materials, equipment, plus a set allowance for combined overhead and profit to be included in the total cost to the Owner. The Contractor is responsible for preparing detailed daily reports documenting all labor, material, and equipment charges incurred and signed by both Contractor and Program Manager for all TIME and MATERIALS work.

When the change order or supplemental agreement authorizing extra work or time and materials work is prepared, compensation will be based on actual expended labor, equipment, and materials costs as follows:

a. Labor. For all labor (skilled and unskilled) and foremen in direct charge of a specific time and materials item, the Contractor shall receive the rate of wage (or scale) for every hour that such labor or foreman is actually engaged in the specified time and materials work. Such wage (or scale) shall be the same U.S. Secretary of Labor wage determination as is included in the originally awarded contract.

The Contractor shall receive the actual costs paid to, or on behalf of workers by reason of subsistence and travel allowances, health and welfare benefits, pension fund benefits or other benefits, when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the work.

The Contractor shall submit an audited labor burden percentage for review and approval which, after approval, will also be paid to the Contractor based upon actual labor costs expended. The Contractor's audited labor burden rate will include any and all insurance costs not paid by OCIP, unemployment insurance contributions, and social security taxes paid on the employees behalf. The Contractor shall furnish satisfactory evidence of the rate or rates paid for such insurance and taxes.

c. Materials. For materials accepted by the Program Manager and used exclusively for the Extra or Time and Materials Work, the Contractor shall receive the actual cost of such materials delivered on the work, including transportation charges paid by him (exclusive of machinery rentals as hereinafter set forth) and applicable sales or use tax.

d. Equipment. For any machinery or special equipment (other than small tools) including fuel, lubricants, and transportation costs, the use of which has been authorized by the Program Manager, the Contractor shall receive the current published "Blue Book" rental rates for the actual time that such equipment is committed to the work.

e. Miscellaneous. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

The Contractor and the Program Manager shall compare records of the cost of TIME AND MATERIALS WORK at the end of each day. Agreement shall be indicated by signature of the Contractor and the Program Manager or their duly authorized representatives. Failure to obtain the Program Manager's signature shall constitute a waiver on the part of the Contractor of any right to collect reimbursement for such costs.

No payment will be made for work performed on an EXTRA WORK or TIME AND MATERIALS basis until the Contractor has furnished the Program Manager with itemized statements and all required backup documentation of the cost of such extra or time and materials work.

The fixed percentage allowance for combined overhead and profit to be added to the total of the labor, materials, and equipment costs above will be based on the following schedule:

- a. For the Contractor, for Work performed by the Contractor's own forces, ten percent (10%) of the cost.
- b. For the Contractor, for Work performed by the Contractor's Subcontractor, five percent (5%) of the amount due the Subcontractor.
- c. For each Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor's or Sub-subcontractor's own forces, fifteen percent (15%) of the cost.
- d. For each Subcontractor, the Work performed by the Subcontractor's Subcontractor, five percent (5%) of the amount due the Subcontractor's Subcontractor.

The total payment will be based on the total documented labor, material, and equipment cost plus the fixed percentages for combined overhead and profit specified above. This total payment shall constitute full compensation for all items of expense not specifically provided for the extra work or time and materials work.

150-90-07 PAYMENT FOR MATERIALS ON HAND

General Provisions 90-07 shall include "Request for partial payments must be accompanied by a completed, accurate stored material work sheet. The stored material work sheet will be supplied by the Program Manager upon request by the Contractor."

END OF SECTION GP-150

DIVISION 1 – SECTION 01100**SUMMARY OF THE WORK, SEQUENCE OF CONSTRUCTION & LIQUIDATED DAMAGES****PART 1 GENERAL**

Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to Division 0 and Division 1 and other Sections of these Specifications.

1.01 SUMMARY**SUMMARY OF WORK**

- A. The "Project," of which the "Work" of this Contract is a part, is titled East Parking Lot Expansion - Phase 5 - Construction, MSCAA Project 23-1469-03.
- B. The "Work" of this Contract is defined in the Contract Documents to include, but not be limited to, demolition of existing infrastructure, grading/earthwork, storm drainage, utility installation (fiber optic/electrical/water), erosion control, Portland cement concrete pavement (including subgrade preparation), joint sealing, asphalt pavement, sodding, chain link fencing, and other efforts normally required for site preparation.
- C. Airport Improvement Program Project: The work in this contract is included in an Airport Improvement Program Project (which project is subject to receipt of confirmation of federal funds) which is being undertaken and accomplished by the Owner in accordance with the terms and conditions of an agreement between the Memphis-Shelby County Airport Authority and the United States, under the provision of Title 49, United States Code, herein called Title 49, USC, pursuant to which the United States Government has agreed to pay a certain percentage of the costs of the project that are determined to be allowable project costs under that Act. The United States Government is not a party to this contract and no reference in this contract to the FAA or any representative thereof, or to any rights granted to the FAA or any representative thereof, or the United States Government, by the contract, makes the United States Government a party to this contract.
- E. FAA Inspection and Review: The Contractor shall allow any authorized representative of the FAA to inspect and review any work or materials used in the performance of this contract.
- F. Subcontracts: The Contractor shall insert in each of his subcontracts the provisions contained in paragraphs C. and D., of this section and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION**3.01 PROJECT PHASING AND COMPLETION**

- A. This is a fixed-duration Contract required to be substantially completed within one hundred and forty (140) calendar days from the Notice to Proceed ("NTP") date. The project scope of work is as stated in Paragraphs 1.01 (A) and (B) above. Final Completion of the project shall be within forty-five (45) days of the Substantial Completion Date.

“Substantial Completion” of the project shall be defined as the stage of construction when work is substantially completed and excludes all punch list items, record drawings, O&M manuals, lien waivers, maintenance training, warranties, consent of surety to final payment, and all other required closeout documentation.

“Final Completion” of the project shall be defined as work that is 100% complete including all punch list items, record drawings, O&M manuals, lien waivers, maintenance training, warranties, consent of surety to final payment, and all other required closeout documentation. Final Completion shall include Demobilization.

“Demobilization” shall consist of all activities by the Contractor and subcontractors necessary for 100% completion of the work and final contract closeout as listed above and all cleanup work and operations, including but not limited to, removal of personnel, equipment, contractor-owned stockpiles, supplies, and incidentals from the project site; return of any and all airport-issued security identification badges; cleanup of all offices, buildings, batch plant, staging/lay-down areas, and other facilities; and restoration of all areas to preconstruction condition or better or to other condition as stipulated in the project plans and specifications; completion and delivery to the Owner of all contract closeout documentation and any other documentation request by Owner, including but not limited to, Operations and Maintenance Manuals, Warranties, Final Lien-waivers, Owner Controlled Insurance Program closeout paperwork, SBPP/SBE paperwork, Final Project Record Documents and finalization of any and all punch list items.

- B. The actual NTP date will be negotiated and mutually agreed by both parties (Owner and Contractor) prior to issuance of the NTP. If mutual agreement cannot be reached between the parties, the Owner reserves the right to establish the actual Notice to Proceed date. The NTP letter will state the date on which the Contractor will begin construction and from which date contract time will be charged. Contractor shall be mobilized and on site ready for work on the date stated in the Notice to Proceed.
- C. “Mobilization” shall consist of all preparatory work and operations needed to begin construction activities on the date mutually agreed including but not limited to, movement of personnel, equipment, stockpiles, supplies and incidentals to the project site; the establishment of all offices, buildings, batch plant, staging/lay-down areas and other facilities necessary for work on the project; all other work and operations which must be performed or costs incurred prior to beginning work on the various items on the project site, and utility services for all offices, buildings, batch plant, staging/ lay-down areas, and other facilities. The Mobilization lump sum amount becomes fixed and will not change for the duration of contract.
- D. All days are calendar days.
- E. The work site will be available as described on the plans and applicable sections of these specifications. Work is permitted 24 hours per day, 7 days per week except that only non-noise producing activities shall be permitted between 11:00 PM and 6:00 AM, except with prior written approval of the Owner.
- F. The Contractor shall proceed with the work at such rate of progress to ensure full completion within the specified duration. It is expressly understood and agreed, by and between the Contractor and the Owner, that the contract time for the completion of the work described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the work.
- G. If the Contractor experiences weather related delays, he shall submit a report documenting the weather conditions and delays, if any, experienced during any calendar month.
- H. If the Contractor is prevented from working due to any other legitimate reason he shall notify the

Owner in writing as per the Lump Sum Construction Contract of the delay and request a corresponding increase in the number of contract days.

- I. The Owner shall be the sole judge as to whether or not a request for a contract time extension is legitimate.
- J. The Owner reserves the right to adjust limits of construction to accommodate the Owner's requirements for maintenance of Airport Operations and Public Traffic with minimum interruption during the construction of this project. Any required adjustment of limits of construction will be at no additional cost to the Owner.

3.02 LIQUIDATED DAMAGES

- A. The OWNER and the CONTRACTOR recognize that time is an essential element of this contract and that delay in completing this project will result in damages due to public inconvenience, obstruction to aviation and vehicular traffic, interference with businesses both on and off the airport, increased operational costs to airport users, and increased costs to the OWNER associated with engineering services, inspections, testing, and project administration. It is therefore agreed that in view of the difficulty of making a precise determination of such damages, the CONTRACTOR will pay the OWNER, sums of money in the amounts herein stipulated, not as a penalty, but as Liquidated Damages for not meeting the schedule for specific critical Project Milestones.
- B. If the CONTRACTOR fails to deliver equipment or materials, or perform any services within the times and dates specified in this Contract to achieve the established Milestones, or any extensions granted in writing, the CONTRACTOR shall pay to the OWNER as Liquidated Damages, the sums specified in Table 1, below:

Table 1

<i>Milestone</i>	<i>Completion Date</i>	<i>Liquidated Damages</i>
Substantial Completion	140 days	\$750 per Day or any portion thereof
Final Completion and Demobilization Phase	45 days	\$500 per Day or any portion thereof

- D. Application of Liquidated Damages is not a Change to the Contract. The application of any Liquidated Damages to one Milestone shall not effect a change in the subsequent Contract Milestone dates or relieve CONTRACTOR of his responsibility to meet all construction schedules. If multiple Milestone dates are missed, Liquidated Damages for more than one Milestone will be imposed concurrently.
- E. If Liquidated Damages are imposed, the OWNER shall deduct the same from any amounts due the CONTRACTOR at the time Liquidated Damages are imposed. If sufficient amounts are not due to the CONTRACTOR to cover such Liquidated Damages, then the OWNER shall invoice the CONTRACTOR for the amounts due to the OWNER. Such invoices shall become due and payable immediately upon receipt by the CONTRACTOR.
- F. Liquidated Damages are in addition to any other damages or penalties which may be assessed and withheld under other provisions of this contract.

3.03 COMPLETION BONUS

NO completion bonus has been budgeted for this project.

END OF SECTION 01100

ISSUED FOR BID

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DIVISION 1 – SECTION 01210**ALLOWANCES****PART 1 GENERAL****1.01 SUMMARY**

- A. To provide adequate budget and bonding to cover items not precisely determined by the Owner prior to bidding, allow within the proposed Contract Sum the amounts described in this Section.
- B. Unless stated otherwise herein, all allowances are to be paid as Time and Materials Work per GP-150.
- C. Related Work:
 - 1. Documents affecting Work of this Section include, but are not necessarily limited to, Division 0, Division 1 and other Sections of these Specifications.
 - 2. Other provisions concerning Allowances may be stated in other Sections of these Specifications.

1.02 SPECIFIC ALLOWANCES – The following cash allowances are included within this Contract:

- A. None.

END OF 01210

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DIVISION 1 – SECTION 01230**ALTERNATES****PART 1 GENERAL****1.01 SUMMARY**

- A. This selection includes identification of each Alternate by number, and describes the basic changes to be incorporated into the Work if a particular Alternate is made a part of the Work by specific provisions in the Agreement between the Owner and the Contractor.
- B. Related Work:
 - 1. Documents affecting Work of this Section include, but are not necessarily limited to, Division 0, Division 1 and other Sections of these Specifications.
 - 2. Materials and methods to be used in the Base Bid and in the Alternates also may be described on the Drawings and/or in pertinent other Sections of these Specifications.
 - 3. Method for stating the proposed Contract Sum is shown on the Bid Form.

1.02 SUBMITTALS

- A. All Alternates described in this Section are required to be reflected on the Bid Form as submitted by the Bidder.
- B. Do not submit Alternates other than as described in this Section.

1.03 SELECTION OF ALTERNATES

- A. Immediately after award of the Contract, or as soon thereafter as the Owner has made a decision on which, if any, of the Alternates will be selected, thoroughly and clearly advise necessary personnel and suppliers as to the nature of Alternates selected by the Owner.
- B. If the Owner elects to proceed on the basis of one or more of the described Alternates, make modifications to the Work required in providing the selected Alternate or Alternates to the approval of the Owner and at no additional cost to the Owner except as proposed in the Bid.

1.04 ADVANCE COORDINATION

- A. Immediately after award of the Contract, or as soon thereafter as the Owner has made a decision on which, if any, of the Alternates will be selected, thoroughly and clearly advise necessary personnel and suppliers as to the nature of Alternates selected by the Owner.

PART 2 **ALTERNATES** – The following alternates are included within this Contract:

- A. None.

END OF SECTION 01230

DIVISION 1 – SECTION 01250**AMENDMENT PROCEDURE****PART 1 GENERAL****1.01 SUMMARY**

- A. Make such changes in the Work, in the Contract Price, in the Contract Time, or any combination thereof, as are described in written Amendments signed by the Owner and the Contractor and issued after execution of the Construction Contract, in accordance with the provisions of this Section.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Division 0, Division 1, and other Sections of these Specifications.
 - 2. Any proposal for a change in the Work shall include SBE participation consistent with the required SBE percentage for this Contract. If the Contractor is unable to meet said SBE percentage, a written justification of the good faith efforts made shall be submitted along with the response to the Engineer's or Owner's proposal request.
 - 3. Engineer or Owner supplemental instructions:
 - a. From time to time during progress of the Work the Engineer or Owner may issue supplemental instructions, which interpret the Contract Documents or order minor changes in the Work without change in Contract Sum or Contract Time.
 - b. Should the Contractor consider that a change in Contract Sum or Contract Time is required, he shall submit an itemized proposal to the Engineer or Owner immediately and before proceeding with the Work. If the proposal is found to be satisfactory and in proper order, the supplemental instructions in that event will be superseded by an Amendment.
 - 4. Proposal requests:
 - a. From time to time during progress of the Work the Engineer or Owner may issue a Request for Proposal (RFP) proposal request for an itemized quotation for changes in the Contract Price and/or Contract Time incidental to proposed modifications to the Contract Documents.
 - b. This will not be an Amendment, and will not be a direction to proceed with the changes described therein.

1.02 QUALITY ASSURANCE

- A. Include within the Contractor's quality assurance program such measures as are needed to assure familiarity of the Contractor's staff and employees with these procedures for processing Amendment data.

1.03 PROCESSING PROPOSAL REQUESTS

- A. Make timely written reply to the Engineer or Owner in response to each proposal request. Proposal requests will be numbered in sequence and dated.
1. State proposed change in the Contract Sum, if any.
 2. State proposed change in the Contract Time of Completion, if any.
 3. Clearly describe other changes in the Work, if any, required by the proposed change or desirable therewith.
 4. State amount of SBE participation applicable to the proposed changes.
 5. Include full backup data such as subcontractor's letter of proposal or similar information.
 6. Submit this response in single copy.
- B. When cost or credit for the change has been agreed upon by the Owner and the Contractor, or the Owner has directed that cost or credit be determined in accordance with provisions of Division 0 and Division 1 Specifications, the Engineer or Owner will prepare an Amendment for execution by the Owner and Contractor.

1.04 PROCESSING AMENDMENTS

- A. Amendments will be numbered in sequence, and dated.
1. The Amendment will describe the change or changes, will refer to the proposal requests or supplemental instructions involved, and will be signed by the Contractor and Owner, in sequence.
 2. The Engineer or Owner will issue two copies of each Amendment to the Contractor.
 - a. The Contractor shall promptly sign all copies and return all copies to the Engineer or Owner for further processing by the Owner.
 - b. The Engineer or Owner will forward all copies to the Owner with a request for complete processing.
 - c. The Owner will sign and return a copy to the Contractor for distribution.

END OF SECTION 01250

DIVISION 1 – SECTION 01310**PROJECT MANAGEMENT AND COORDINATION****PART 1 PROJECT MANAGEMENT****1.01 DESCRIPTION**

- A. The Contractor will be required to utilize an integrated construction project management software platform for coordination, meeting organization, submittals, payment applications, project records, drawings, specifications, reports, punch-lists, and schedules throughout the duration of the project.
 - 1. Project Management software platform utilized for this project will be Procore.
- B. The project management software will be provided by the Owner. The Contractor will be allowed seat licenses with access to the project management software as needed for the duration of the project.
- C. Any training required in order for the Contractor to become proficient in the utilization of the construction project management software, shall be the responsibility of the Contractor at no additional cost to the Owner.

PART 2 PRECONSTRUCTION CONFERENCE**2.01 SUMMARY**

- A. To help clarify construction contract administration procedures, the Engineer or Owner will schedule a Preconstruction Conference prior to start of the Work, as described in this Section.
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Division 0 and Division 1 Specification Sections.

2.02 AGENDA AND MEETING SUMMARIES

- A. To the maximum extent practicable, advise the Engineer or Owner at least 24 hours in advance of the Conference as to items to be added to the agenda.
- B. The Engineer or Owner will compile summaries of the Conference, and will furnish copies of the summaries to the Contractor. The Contractor may make and distribute such other copies as he wishes.

2.03 QUALITY ASSURANCE

- A. For those persons designated by the Contractor, his subcontractors, and suppliers to attend the Pre-Construction Conference, provide required authority to commit the entities they represent to schedules and solutions agreed upon in the Conference.

2.04 PRECONSTRUCTION CONFERENCE

- A. The Conference will be held at a time and date established by the Engineer or Owner. If requested by the Engineer or Owner, additional conferences will be held.
- B. Attendance:

1. Insure attendance by authorized representatives of the Contractor and major Subcontractors.
 2. The Engineer or Owner will advise other interested parties, including the Owner, and request their attendance.
- C. Minimum agenda:
1. Organizational arrangement of Contractor's forces and personnel and those of subcontractors, material suppliers, and the Engineer or Owner;
 2. Channels and procedures for communications;
 3. Construction schedule, including sequence of critical work;
 4. Contract Documents, including distribution of required copies of Drawings and revisions;
 5. Processing of Shop Drawings and other data submitted to the Engineer or Owner for review;
 6. Processing of field decisions and Change Orders;
 7. Rules and regulations governing performance of the Work;
 8. Procedures for safety and first aid, security, quality control, housekeeping, and related matters; and
 9. Reports required and schedule for submittal.
 10. Items requiring long lead time and special requirements.

PART 3 PROGRESS MEETINGS

3.01 DESCRIPTION

- A. Work included: To enable orderly review during progress of the Work, and to provide for systematic discussion of problems, the Engineer or Owner will conduct project meetings throughout the construction period.
- B. Related work:
1. Documents affecting work of this Section include, but are not necessarily limited to, General Provisions, and other Sections of these Specifications.
 2. The Contractor's relations with his subcontractors and materials suppliers, and discussions relative thereto, are the Contractor's responsibility and normally are not part of project meetings content.

3.02 SUBMITTALS

- A. Agenda items: To the maximum extent practicable, advise the Engineer or Owner at least 24 hours in advance of project meetings regarding items to be added to the agenda.
- B. Summaries:

1. The Engineer or Owner will compile summaries of each project meeting, and will furnish copies to the Contractor and the Owner.
2. Recipients of copies may make and distribute such other copies as they wish.

3.03 QUALITY ASSURANCE

- A. For those persons designated by the Contractor to attend and participate in project meetings, provide required authority to commit the Contractor to solutions agreed upon in the project meetings.

PART 4 EXECUTION

4.01 MEETING SCHEDULE

- A. Project meetings will be held at times as determined by the Engineer or Owner.
- B. Coordinate as necessary to establish a mutually acceptable schedule for meetings.

4.02 MEETING LOCATION

- A. The Engineer or Owner will establish the meeting location.

4.03 PROJECT MEETINGS

- A. Attendance:
 1. To the maximum extent practicable, assign the same person or persons to represent the Contractor at project meetings throughout progress of the Work.
 2. Subcontractors, materials suppliers, and others may be invited to attend those project meetings in which their aspect of the Work is involved.
- B. Minimum agenda:
 1. Review, revise as necessary, and approve summaries of previous meetings.
 2. Review progress of the Work since last meeting, including status of outstanding submittals.
 3. Identify problems which may impede planned progress.
 4. Develop corrective measures and procedures to reestablish planned schedule.
 5. Discuss other current business.
- C. Revisions to summaries:
 1. Unless published summaries are challenged in writing prior to the next regularly scheduled progress meeting, they will be accepted as properly stating the activities and decisions of the meeting.
 2. Persons challenging published summaries shall reproduce and distribute copies of the challenge to all indicated recipients of the particular set of summaries.
 3. Challenge to summaries shall be settled as priority portion of "old business" at the next

regularly scheduled meeting.

END OF SECTION 01310

DIVISION 1- SECTION 01320**SCHEDULES AND REPORTS****PART 1 GENERAL****1.01 SUMMARY**

- A. The work under this Contract shall be planned, scheduled and reported using computerized precedence diagram format of the Critical Path Method in calendar days, unless otherwise specifically provided in the Contract Documents. The Detailed Construction Schedule shall be developed by using the latest revision of Microsoft Project, or approved equal computer software.
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, other Sections of these Specifications.
 - 2. Other provisions concerning Schedules and Reports are stated to Specification Sections:
 - 01100 – Summary of Work, Sequence of Construction & Liquidated Damages
 - General Provision Section 60 - Control of Materials
 - General Provision Section 90 - Measurement and Payment

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION**3.01 GENERAL REQUIREMENTS**

- A. The Detailed Construction Schedule shall be developed by using the latest revision of Microsoft Project, or approved equal computer software that is compatible with Owner's scheduling software.
- B. The primary objectives of the requirements of this section are:
 - 1. to insure adequate planning and execution of the Work by Contractor;
 - 2. to assist Owner and Engineer in evaluating the progress of the Work;
 - 3. to provide a mechanism or tool for use by the Owner, Engineer and Contractor in determining and monitoring any actions of the Contractor which may be required in order to comply with the requirements of the Contract relating to the timely completion of the various portions of the Work
- C. The Detailed Construction Schedule, defined in Paragraph 3.04, shall represent the Contractor's commitment and intended plan for completion of the Work in compliance with the Contract. The Contractor will not:
 - 1. Misrepresent to the Owner its planning, scheduling, and coordination of the work;
 - 2. Utilize schedules different from those provided to the Owner and Engineer for the direction, execution and coordination of the work;
 - 3. Utilize schedules which are not feasible or realistic; or

4. Prepare schedules, updates, revisions or reports which do not accurately reflect the Contractor's actual intent or the Contractor's reasonable and actual expectations as to: the sequences of activities, labor availability, productivity, or efficiency; expected or reasonably foreseeable inclement weather conditions; the percentage complete of any activity or path of activities; completion of any item of work or activity; projected dates of completion; delays, slippage, or problems encountered or expected and Subcontractor requests for time extensions,
- D. Once approved by the Engineer or Owner, the Detailed Construction Schedule will become the Schedule of Record for coordinating the work, scheduling the work, monitoring the work, issuing progress payments, evaluating time extension requests, and all other objectives listed in Paragraph 3.01.B. The Contractor is required to employ whatever means he deems necessary to implement the Detailed Construction Schedule and to comply with the requirements of this Section. Updates shall be provided to the Engineer or Owner at each construction progress meeting or as requested by the Engineer or Owner. Updates shall be both electronic media and hard copy.
- E. Contractor is responsible for determining the sequence of activities, the time estimates of the detailed construction activities and the means, methods, techniques and procedures to be employed. Each construction schedule shall represent the Contractor's best judgment of how he will prosecute the Work in compliance with the Contract.
- F. Contractor shall consult with his Subcontractors and Suppliers (if any) relating to the preparation of each construction schedule. Subcontractors shall receive copies of each construction schedule and shall be continually advised of any updates or revisions to each construction schedule as the Work progresses.
- G. When there are separate contractors working concurrently on Airport whose work must interface or be coordinated with the Work of Contractor, Contractor shall coordinate his activities with the activities of the separate contractors and shall, prior to the submission of any construction schedule to the Engineer or Owner, obtain written approval of his construction schedule by the separate contractors.
- H. To carry out the intent of this Section, the Contractor agrees that the reasonable exercise of any rights under this Section by the Engineer or Owner shall not be grounds for any claim by Contractor or any of his Suppliers, Subcontractors or Sub-subcontractors of alleged interference, lack of cooperation, delay, disruption, negligence or hindrance by Owner or Engineer, and Contractor covenants not to sue therefor.
- I. It is understood and agreed that the Detailed Construction Schedule, defined in Paragraph 3.04, is to represent Contractor's best plan and commitment for the Work; however, Contractor acknowledges that the Detailed Construction Schedule may have to be revised from time-to-time as progress proceeds. Contractor further acknowledges and agrees that the Owner and Engineer do not guarantee that:
 1. Any changes, modifications or adjustments to any schedule by Contractor can only be made by the written approval of the Engineer or Owner.
- J. It is understood and agreed that should the Engineer or Owner provide the Contractor, at Contractor's request, with any advice relating to the scheduling or coordination of the Work or any other matter that:
 1. Owner and Engineer shall not be liable to Contractor for any errors, omissions, negligence or deficiencies which may in any way occur because of same;
 2. Such advice is provided solely as aids in the development by Contractor of a

representation of Contractor's actual construction plan and schedule in accordance with the requirements of the Contract Documents, and Owner and Engineer shall not be liable to Contractor should Contractor rely on such advice or counsel to his detriment;

3. Such advice shall not relieve Contractor of any responsibility under Paragraph 3.01.E hereof for all construction means, methods techniques, sequences and procedures and for planning, scheduling and coordinating all portions of the Work; and
 4. Any advice provided by the Engineer or Owner or the lack or alleged untimeliness thereof will not in any way take the place of or relieve the Contractor of full responsibility for compliance with all requirements of the Contract, including, but not limited to the obligations to complete the Work within the Contract.
- K. Approval or acceptance by the Owner or Engineer of any Contractor's construction schedule, or any revisions or updates thereto, shall not relieve the Contractor of the responsibility for accomplishing the Work by the Project Substantial Completion date.
- L. Contractor shall be solely responsible for expediting the delivery of all materials and equipment to be furnished by him so that the progress of construction shall be maintained according to the currently approved construction schedule for the Work. Contractor shall notify the Owner or Engineer in writing, and in a timely and reasonable manner, whenever Contractor determines or anticipates that the delivery date of any material or equipment to be furnished by Contractor will be later than the delivery date indicated by the currently approved construction schedule, or the current update thereof as herein provided.

3.02 NOT USED

3.03 DETAILED CONSTRUCTION SCHEDULE DRAFT

- A. No later than two (2) weeks after the Notice to Proceed, the Contractor shall complete a draft of the Detailed Construction Schedule in accordance with the requirements of this Paragraph 3.03.
- B. Except for procurement activities, Contractor shall differentiate activities of the Detailed Construction Schedule Draft so that no single activity shown has a duration longer than twenty-eight (28) calendar days, unless the Engineer, in its sole discretion, shall approve a longer duration for certain specific activities.
- C. The Detailed Construction Schedule Draft shall represent the Contractor's commitment and intended plan for completion of the Work in compliance with Contract Times listed elsewhere in the Contract. The Detailed Construction Schedule Draft shall take into account all foreseeable activities to be accomplished by any separate contractors, and interface dates with utility owners, the Owner's operations and others. The Detailed Construction Schedule Draft shall anticipate all necessary manpower and resources to accomplish the activities within the durations set forth therein.
- D. The Detailed Construction Schedule Draft shall consist of a time-scaled, detailed network graphic representation of all activities, which are part of the Contractor's construction plan. The Detailed Construction Schedule Draft submission shall include, but not be limited to, the following information:
 1. Project name;
 2. Activities of completed Work ready for use by next trade, Owner, etc.;
 3. Activities relating to different areas of responsibility, such as subcontracted Work, which is distinctly separate from that being done by the Contractor directly;
 4. Activities relating to different categories of Work as distinguished by craft or crew requirements;
 5. Activities relating to different categories of Work as distinguished by equipment requirements;
 6. Activities relating to different categories of Work as distinguished by materials;

7. activities relating to distinct and identifiable subdivisions of Work;
8. Activities relating to locations of Work within the Project that necessitates different times or crews to perform;
9. Activities relating to outage schedules for existing utility services that will be interrupted during the performance of the Work;
10. Activities relating to acquisition and installation of equipment, materials and supplies installed by the Owner and/or separate contractors;
11. Activities relating to material to be stored on site;
12. Contract Times consistent with those required in the contract;
13. A legible time scaled network diagram;
14. Activity durations not exceeding twenty-eight (28) calendar days for all activities for which the Contractor will perform actual field work. Material procurement, submittals, concrete curing and other similar activities may exceed twenty-eight (28) calendar days for this draft submission only.

3.04 DETAILED CONSTRUCTION SCHEDULE

- A. Prior to any monthly Application for Payment, the Contractor shall complete the Detailed Construction Schedule to the satisfaction of the Owner or Engineer.
- B. The Detailed Construction Schedule shall represent the Contractor's commitment and intended plan for completion of the Work in compliance with the Contract.
- C. The Owner/Engineer reserves the right to require the Contractor to furnish such manpower, materials facilities and equipment and shall work such hours, including additional shifts and overtime operations as may be necessary, to insure completion of the Work or specified portions thereof within the specific dates as set forth in the Contract Documents. If it becomes apparent to the Owner or Engineer that the work, or any required portion thereof, will not be completed by any such dates, the Contractor shall undertake the following actions, at no additional cost to the Owner, and comply with the requirements as set forth in Section 01320, 3.07 and 3.08, in order to ensure that it complies with all completion requirements:
 1. Increase the quantity of manpower, materials, trades, crafts, and equipment and facilities on the site;
 2. Increase the number of working hours per shift, shifts per working day, or any combination of the foregoing; and
 3. Reschedule activities to achieve maximum activity accomplishment.

3.05 DETAILED CONSTRUCTION SCHEDULE CONTENT

- A. The Detailed Construction Schedule shall consist of a time-scaled graphic representation of all activities, which are part of the Contractor's construction plan and an accompanying listing of each activity's dependencies and interrelationships.
- B. The Contractor shall anticipate and account for, as a minimum, the potential loss of the number of **calendar** days listed below for each calendar month due to weather and shall schedule the work accordingly.

January	12	July	6
February	10	August	6
March	9	September	4
April	6	October	5
May	8	November	6
June	5	December	10

The preceding days were derived from historical data provided by the National Climatic Data Center regarding rainfall at Memphis International Airport. They represent a number less than the actual number of days of measurable rainfall that can be expected to occur during a twenty-four (24) hour period for the months indicated. **The Contractor shall make his own determination as to the likely impact of weather on his operation and shall include as part of the Detailed Construction Schedule submission an accounting of how the impact of anticipated weather was determined and accounted for in the schedule.** These values listed above are the minimum number of weather related days the Contractor shall consider in developing his Detailed Construction Schedule. It is further understood that said calendar day period shall be derived through assuming that work will take place on a calendar day basis.

The Owner or Engineer will continually monitor the effects of weather and when found justified, grant time extensions, if required, at the end of the Contract. In the event less weather days are actually encountered than provided for in this section, those days will accrue to subsequent months of the phase or contract and be balanced against actual weather. In accordance with the Contract Documents weather days occurring during the extension beyond the original completion date will be compensated day for day, if justified. No weather days will be granted beyond the final Contract completion date as computed herein.

- C. All activity durations shall be given in calendar days.
- D. Contractor shall plan his operations and schedule the work to ensure that the critical path runs through on-site construction activities and that off-site procurement activities do not control the critical path of the Detailed Construction Schedule, unless approved in writing by the Owner or Engineer.

3.06 UPDATING OF CONSTRUCTION SCHEDULE/PROGRESS REPORTS

- A. The Detailed Construction Schedule will be reviewed and updated as needed during each project progress meeting.

3.07 RECOVERY SCHEDULE

- A. Should the updated Detailed Construction Schedule, at any time during Contractor's performance, show, in the sole opinion of the Owner or Engineer, that the Contractor is seven (7) or more days behind schedule for any location or category of work, or should Contractor be required to undertake actions under Paragraph 3.04.D hereof, the Contractor shall immediately prepare a Recovery Schedule explaining and displaying how Contractor intends to reschedule his Work in order to regain compliance with the Approved Detailed Construction Schedule during the immediate subsequent pay period.

3.08 SCHEDULE REVISIONS

- A. Should Contractor desire to or be otherwise required under the Contract to make modifications or changes in his method of operation, his sequence of Work or the durations of the activities in his Construction Schedule, he shall do so in accordance with Paragraph 3.04 of this specification. The approved Detailed Construction Schedule may only be revised by the written approval of the Owner or Engineer as provided herein.

END OF SECTION 01320

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DIVISION 1 – SECTION 01321**CONSTRUCTION SURVEYING****PART 1 GENERAL****1.01 SUMMARY**

- A. This section describes the Owner's airport survey grid and surveying requirements.
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to the General Provisions and other Sections of these Specifications.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTIONS**3.01 EXISTING SURVEY CONTROL MONUMENTS**

- A. The Owner has established an airport-wide survey grid consisting of both first order and second order survey monuments. The monuments are distributed both inside and outside the Air Operations Area fence.
- B. The monuments are tied to the Tennessee State Plane Coordinate System in U.S. Survey feet with the North American Datum, 1983.
- C. Survey control monuments typically, but not always, consist of aluminum disks stamped with identifying codes, set in concrete, and marked by orange witness posts.
- D. The Contractor may obtain the current Survey Control Monument Manual from the Program Manager.

3.02 REQUIREMENTS

- A. Contractor is responsible for all construction surveying.
- B. Any deviations from the existing grades shall be immediately reported to the Program Manager.
- C. Contractor shall tie the project to the survey grid as established by the monuments described in section 3.01.
- D. Contractor shall protect all survey monuments within the vicinity of the project and all survey monuments used for survey while they are occupied.
- E. The Contractor shall, at his expense, have a Tennessee Professional Land Surveyor replace any monument disturbed or destroyed by Contractor's construction activities (using first order techniques); replaced monuments shall be located at least ten feet, but not more than fifty feet, from the location of the disturbed monument. New monuments shall consist of aluminum disks stamped with an identifying code, set in concrete using a procedure approved by Program Manager, and marked by an orange witness post. Replaced-monument survey information shall be provided to Owner in exact format as contained within Owner's Survey Control Monument Manual.

END OF SECTION 01321

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DIVISION 1 – SECTION 01325**DELAYS AND EXTENSIONS OF TIME****1.01 DESCRIPTION**

- A. Work included:
 - 1. Delays and extensions of time.
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to the General Provisions, and other Sections of these Specifications.

1.02 OBLIGATION OF OWNER AND PROGRAM MANAGER

- A. Neither the Owner nor the Program Manager shall be obligated or liable to the Contractor for any damages, cost or expenses of any type which the Contractor, its subcontractors, sub-subcontractors, or any other person may incur as a result of any disruption or delay from any cause, regardless of the actual source of delay, whether avoidable or unavoidable, it being understood and agreed that the Contractor's sole and exclusive remedy in such event shall be an extension of the Contract Time, but in accordance with provisions of the Contract Documents.
- B. Except for weather delays, any claim for extension of time shall be made in writing to the Program Manager not more than ten (10) days after commencement of such delay, otherwise, such claim will be waived. The Contractor shall provide an estimate of the probable effect of such delay on the progress of the Work.
- C. The time during which the Contractor is delayed in performance of the work caused by the acts or omissions of the Owner, Program Manager or their employees or agents, or by acts of God, fires, floods, epidemics, quarantine restrictions, riots, civil commotions or freight embargoes, or other conditions beyond the Contractor's control which the Contractor could not have reasonably foreseen and provided against shall be added to the Contract Time; however, the Contractor must submit his claim for such delays in accordance with the requirements of this Section and any other applicable provisions of these Contract Documents in order to be considered for an extension of time.
- D. The Contract Time shall be adjusted only for changes in the work pursuant to GP-40, suspensions of the work, excusable delays or emergencies. Whenever the Contractor requests an extension of the Contract Time, the Contractor shall furnish such justification and supporting evidence as required by this section and such other and additional information as the Owner may deem necessary to determine whether the Contractor is entitled to an extension of the Contract Time. All such requests shall conform to all of the requirements of the Contract Documents, shall include evidence that the reasons for the requested Contract Time extension were beyond the control of the Contractor, and the Contractor shall bear the burden of substantiating and proving the necessity of an extension to the Contract Time. The Owner, with the assistance of the Program Manager, shall review all requests for Contract Time extensions and shall advise the Contractor of its decision and finding of fact in writing. If the Owner determines that the Contractor is entitled to an extension of the Contract Time, the length of the extension shall be based upon the currently approved detailed construction schedule and on all other relevant data, which data shall be incorporated into and from the basis for revision to the construction schedule.

The Contractor acknowledges and agrees that the actual delays due to said changes, suspension of the work, or excusable delays in activities which, according to the detailed construction schedule, do not affect the Contract Time, shall not affect the Contract Time, and therefore, cannot form the basis for an extension in the Contract Time or a change in the construction schedule.

- E. The Contractor shall be entitled to an extension of the Contract Time but no increase in the Contract sum, for delays arising from unforeseeable causes beyond the control and without the fault of negligence of the Contractor or its Subcontractors as follows:
 - 1. Acts of God, tornadoes, fires, blizzards, earthquakes, or floods that severely damages completed work or stored materials.
 - 2. Acts of the public enemy; acts of the state, federal or local governments in their sovereign capacities; and acts of a separate contractor in the performance of a separate contract with the Owner relating to this or another project.
- F. The Contractor shall not be entitled to any extension of Contract Time resulting from any condition or cause unless the Contractor strictly complies with the requirements of this Section and the Contractor must submit to the Program Manager within ten (10) days of the first instance of the delay a written request for an extension in the Contract Time which shall include the following information: (a) the nature of the delay; (b) the date of anticipated date of commencement of the delay; (c) activities on the schedule affected by the delay, and/or new activities created by the delay and their relationship with existing activities; (d) identification of persons or organizations or events responsible for the delay; and (e) recommended action to avoid or minimize the delay.
- G. No claim for delay shall be allowed and the Contractor waives any such claim if the Contractor fails to furnish the written request, required by this or other sections, within the period of time specified therein.

END OF SECTION 01325

DIVISION 1 – SECTION 01330**SUBMITTALS****PART 1 GENERAL****1.01 SUMMARY**

- A. This section describes the process for handling Contractor submittals.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Division 0, Division 1, and other Sections of these Specifications

1.02 SUBMITTALS

- A. Except as otherwise specified below, as soon as practicable after contract award and without causing delay in the work, submit at least 7 bound copies of submittals of all items for which submittals are specified in other sections, and for all major submittal equipment whether specified in other sections or not. Alternatively, all Submittals may be submitted electronically in lieu of hard copies, if possible. Each submittal shall be clearly marked with the project name, dated, and accompanied by a letter of transmittal listing all items included in the submittal and referencing the project specification page and article numbers applicable to each item.
 - 1. Submittals shall include all test results and/or certificate necessary to show that the item conforms to the standards specified. Such standards shall include ASTM, AASHTO, FAA, PCA, Federal Specifications or any other standard listed in these specifications.

1.03 QUALITY ASSURANCE

- A. Before submission to the Engineer or Owner, the Contractor shall check the submittals of all items furnished directly by him, and the applicable Subcontractor shall check the submittals of all items furnished by the Subcontractor involved, as follows: check the submittal drawings for completeness and compliance with the contract documents; check and verify all dimensions, field conditions certifications relating to the submittals and certify in writing that these checks have been made.
 - 1. The Engineer or Owner will return for resubmission, all submittals without the above specified approval and certification, and all submittals which in the Engineer's or Owner's opinion contain numerous discrepancies and/or have not been checked by the Contractor or Subcontractor.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION**3.01 SUBMITTAL REVIEW**

- A. After the Owner or Engineer has reviewed the submittals, except as otherwise specified below, submittals will be dated, and three sets will be returned to the Contractor. If submittals are rejected, four sets will be returned to the Contractor, with indications of the required corrections and changes made on one of the sets. Make such corrections and changes as indicated. Resubmit

submittals as specified above, as often as required by the Engineer or Owner to complete the review. No correction or change indicated on submittals shall be considered as an order for extra work.

- B. Submittals reviewed by the Owner or Engineer will be a general review only, and acceptance will not relieve Contractor or Subcontractor of responsibility for accuracy of submittals, proper fitting, coordination, construction or work, and furnishing materials and work required by Contract but not indicated on submittals. Review of submittals shall not be construed as accepting departures from Contract requirements.
- C. Any material ordered, or work performed prior to obtaining an approved submittal shall be at the Contractor's risk and subject to rejection.

END OF SECTION 01330

DIVISION 1 – SECTION 01351
STORAGE AND PROTECTION

PART 1 GENERAL

1.01 SUMMARY

- A. Protect products scheduled for use in the Work by all means including, but not necessarily limited to, those described in this Section.
- B. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Division 0, and Division 1 of these Specifications.
 - 2. Additional procedures may also be prescribed in other Sections of these Specifications.

1.02 QUALITY ASSURANCE

- A. Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

1.03 MANUFACTURERS' RECOMMENDATIONS

- A. Except as otherwise approved by the Owner or Engineer, determine and comply with manufacturers' recommendations on product handling, storage, and protection.

1.04 PACKAGING

- A. Deliver products to the job site in their manufacturer's original container, with labels intact and legible.
 - 1. Maintain packaged materials with seals unbroken and labels intact until time of use.
 - 2. Promptly remove damaged material and unsuitable items from the job site, and promptly replace same with material meeting the specified requirements, at no additional cost to the Owner.
- B. The Owner or Engineer may reject as non-complying such material and products as do not bear identification satisfactory to the Owner or Engineer such as manufacturer, grade, quality, and other pertinent information.

1.05 PROTECTION

- A. Protect finished surfaces, materials, trenches, earthwork, etc. from weather, construction operations, etc.
- B. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the Owner.

1.06 REPAIRS AND REPLACEMENTS

- A. In event of damage, promptly make replacements and repairs to the approval of the Owner or Engineer and at no additional cost to the Owner.
- B. Additional time required to secure replacements and to make repairs will not be considered by the Owner or Engineer to justify an extension in the Substantial Completion Date.

END OF SECTION 01351

DIVISION 1 – SECTION 01353**RADIO COMMUNICATIONS****1.01 DESCRIPTION****A. Work Included**

1. Provide radio communication with Airport Control Tower.

B. Documents affecting work of this Section include, but are not necessarily limited to General Provisions, and other Sections of these Specifications.**1.02 RADIO COMMUNICATIONS**

- A.** When required by the Contract Documents, and when work under this Contract is in progress within the Air Operations Area (AOA), the Contractor's job superintendent or other authorized representative of the Contractor on the job site shall coordinate such work with the Program Manager and the Program Manager shall maintain approved 2-way radio communication with the Airport Control Tower, for coordination of work with airport operations in progress.

END OF SECTION 01353

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DIVISION 1 – SECTION 01455**QUALITY CONTROL AND QUALITY ASSURANCE TESTING PROGRAMS****PART 1 GENERAL****1.01 SUMMARY**

- A. This Section describes quality control and quality assurance testing and inspections required to be provided by the Contractor and the Owner.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Division 0, Division 1 and other Sections of these Specifications.
 - 2. Requirements for testing are described in various Sections of these Specifications.

1.02 QUALITY CONTROL and QUALITY ASSURANCE TESTING PROGRAMS

- A. Contractor Quality Control Testing: At his own expense, the Contractor shall make separate arrangements for and be fully responsible for all quality control testing as required by the technical specifications and General Construction Items C-100.
- B. Owner Quality Assurance Testing: At no cost to the Contractor, the Owner will make arrangements for the services of an independent testing laboratory for quality assurance testing of work and materials. This testing is for the Owner's use only and will only be performed after the Contractor's quality control testing program has tested and approved materials and workmanship to be in full compliance with the quality standards of the Specifications. The Owner Quality Assurance testing services shall in no way relieve the Contractor of the responsibility for providing the quality materials, workmanship and testing required for compliance with these specifications.
- C. Determination of Specification Compliance: In all cases of conflicting test results, the Owner's quality assurance test results shall govern. All retesting shall be conducted by Owner's testing laboratory at the Contractor's expense. The amount and location of any retesting shall be as directed by the Owner or Engineer. Unsatisfactory work or materials shall be retested as often as necessary until retests indicate that the failed work or materials have achieved conformity with the Plans and Specifications. The Owner or Engineer shall make the final determination as to whether any work or materials, which do not conform to the Plans and Specifications upon initial testing, are to be removed from the site or reworked. The Owner or Engineer shall also make the final determination as to whether the retesting indicates that work or materials initially rejected have been corrected to meet the requirements of the Plans and Specifications. All removal, replacement, rolling, watering, aeration, reworking, etc. required to bring rejected work or materials into conformance with the Plans and Specifications shall be at the Contractor's expense.
- D. Retesting Expense: The Owner will bear the expense of the initial quality assurance testing of certain items of work or materials as required by the technical specifications. Any retesting of these items of work or materials which upon initial testing fail to meet the standards specified or indicated on the plans shall be at the Contractor's expense.
- E. Laboratory Inspection and Testing: If this contract requires laboratory inspection, testing, and stamping of concrete pipe, concrete fittings, or any other material, the cost of that laboratory inspection, testing, and stamping shall be borne by the Contractor and included in the cost of the work.

- F. Prior to starting concrete operations the Contractor shall name his source of supply for concrete materials and submit representative samples and reports of quality tests for approval.
- G. The Owner shall engage and pay for the services of an independent testing laboratory to perform the following services:
1. Slump test, ASTM C143, shall be taken with every set of cylinders and as often as required to provide the specified consistency of concrete.
 2. Determine air content with every set of cylinders, ASTM C231, or as required.
 3. Cast and test a set of at least 6 cylinders for each day's pour or for each 100 cubic yards or fraction thereof for each class of concrete. Cylinders shall be made and cured, ASTM C31, and tested, ASTM C39, in accordance with ASTM specifications for control tests. Cylinders shall be tested at 7 and 28 days. The Contractor shall provide insulated storage room with heat when necessary to store control cylinders and a protected space for storage of "field" cylinders which approximates the condition of curing of the concrete being sampled. Cylinders designated as "field" cylinders shall be used to determine safe stripping and loading of members. On all pours in excess of 25 cubic yards, continuous laboratory inspection shall be provided at the job site for checking materials, deliveries and concrete consistencies.
- H. The testing laboratory shall observe the materials and the manufacturer of concrete as specified and shall report to the Contractor and Designer the progress thereof. Also, when it appears that the material furnished and the work performed by the Contractor fails to fulfill the specified requirements and Contract, the testing laboratory shall direct the attention of the Contractor and Designer to such failure or infringement. Such observation shall not relieve the Contractor of any obligation to furnish acceptable materials or to provide the concrete quality in the structure that is in strict accordance with plans and specifications. The testing laboratory is not authorized to revoke, alter, relax, enlarge or release the requirements of the specifications, nor to issue instructions contrary to the plans and specifications; nor to approve or accept any portion of the work but in case of any dispute arising between the testing laboratory and the Contractor as to materials furnished or in the manner of performing the work, the testing laboratory shall have the authority to reject materials or suspend the work until the question at issue can be referred to the Designer. The testing laboratory shall not act as foreman or perform other duties for the Contractor. In no case shall any advice or oversight on the part of the testing laboratory relieve the Contractor of responsibility for completing the work in accordance with plans and specifications and the fulfillment of the Contract. The work will be observed as it progresses, but failure to report to the Designer any defective work or materials shall not in any way prevent later rejection when such a defect is discovered or obligate the Owner for final acceptance. Any expense incident to the investigation and determination of actual quality of any questionable material shall be borne by the Contractor.
- I. In the event that concrete tests fail to meet strength requirements of these specifications the designer may require, at no additional cost to the Owner, tests in accordance with the "Standard Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete", ASTM C42, or order load tests in accordance with Chapter 20 of the ACI Building Code 318, to be made on the portions of the structure containing questionable concrete. Suitable appliances and methods of loading the measuring shall be provided by the Contractor under the direction of the testing laboratory. The portions of the structure which are found by the Designer to contain defective concrete shall be removed and reconstructed in a satisfactory manner at the Contractor's expense. Concrete strength tests are to conform to Chapter 5 of the ACI Building Code 318.
- J. The laboratory shall have free access to material stockpiles, batching and mixing plants, and job site. The Contractor shall provide adequate assistance to the laboratory in securing specified samples for tests.

- K. Contractor shall give the Designer and laboratory reasonable notice before beginning any pours (at least 24 hours).
- L. The laboratory shall supply a daily report of concrete and materials testing and inspection to the designer (two copies) and Contractor (one copy).
- M. Concrete batched away from the job and delivered in mixer or agitator trucks shall conform to requirements of ASTM C94.
- N. Sampling and Testing:
1. All materials shall be sampled, tested in accordance with appropriate ASTM Standards, and approved before inclusion in any work on this project.
 2. Samples for testing shall be furnished by the Contractor.
 3. Rejected material shall be immediately removed from the site.
- O. Standards: Comply with the following applicable standards:
1. ACI 211.1R: "Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete."
 2. ACI 211.2 "Standard Practice for Selecting Proportions for Structural Lightweight Concrete."
 3. ACI 301R: "Standard Specifications for Structural Concrete for Buildings".
 4. ACI 304R: "Guide for Measuring, Mixing, Transporting, and Placing Concrete."
 5. ACI 305R: "Hot Weather Concreting."
 6. ACI 306R: "Cold Weather Concreting."
 7. ACI 308R: "Standard Practice for Curing Concrete."
 8. ACI 318: "Building Code Requirements for Structural Concrete and Commentary."
- P. Examine the substrate, formwork, and the conditions under which concrete reinforcement is to be placed, and correct conditions which would prevent proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected.
- Q. Inspection: Before placement of concrete, the Owner's Representative shall observe the placement of all reinforcing and give his approval.

END OF SECTION 01455

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DIVISION 1 – SECTION 01500**CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS****PART 1 GENERAL****1.01 SUMMARY**

- A. This Section describes construction facilities and temporary controls required for the Work.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Division 0 and Division 1 Specifications,

1.02 REQUIREMENTS

- A. Provide construction facilities and temporary controls needed for the Work including, but not necessarily limited to:
 - 1. Sanitary facilities;
 - 2. Temporary fencing of the construction site, if required.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Maintain temporary facilities and controls in proper and safe condition throughout progress of the Work.

PART 2 PRODUCTS**2.01 UTILITIES**

- A. Water:
 - 1. Provide necessary temporary piping and water supply and, upon completion of the Work, remove such temporary facilities.
 - 2. Provide and pay for water used in construction.
- B. Electricity:
 - 1. Provide necessary temporary wiring and, upon completion of the Work, remove such temporary facility.
 - 2. Provide area distribution boxes located so that the individual trades may furnish and use 100 ft maximum length extension cords to obtain power and lighting at points where needed for work, inspection, and safety.
 - 3. Provide and pay for electricity used in construction.
- C. Heating: Provide, maintain and pay for heat necessary for proper conduct of operations needed in the Work.
- D. Telephone:

1. Make necessary arrangements and pay costs for installation and operation of telephone service to the Contractor's office at the site.
2. Make the telephone available to the Program Manager for use in connection with the Work.

2.02 FIELD OFFICES AND SHEDS

A. Sanitary facilities:

1. Provide temporary sanitary facilities in the quantity required for use by all personnel.
2. Maintain in a sanitary condition at all times.

2.03 ENCLOSURES

- A. Provide and maintain for the duration of construction all scaffolds, tarpaulins, canopies, warning signs, steps, platforms, bridges, and other temporary construction necessary for proper completion of the Work in compliance with pertinent safety and other regulations.

2.04 TEMPORARY FENCING

- A. If indicated provide and maintain for the duration of construction a temporary fence of design and type needed to prevent entry onto the Work by the public.

2.05 REMOVING AND REPLACING FENCES, SOD, ETC.

- A. Where required to install the Work, carefully remove and store all interfering fences, mailboxes, culverts, etc. After installation of work and backfilling, reinstall these items and restore them to at least the conditions, which existed prior to the commencement of work, using materials and workmanship to match those of the original construction and installation.
- B. Carefully remove and store all interfering shrubbery, trees, sod, flowers, and other planting, sufficiently in advance of construction. After installation of work and backfilling, reset and restore these items to at least the conditions that existed prior to the commencement of work.

PART 3 EXECUTION

3.01 MAINTENANCE AND REMOVAL

- A. Maintain temporary facilities and controls as long as needed for safe and proper completion of the Work.
- B. Remove such temporary facilities and controls as rapidly as progress of the Work will permit, or as directed by the Owner or Engineer.

3.02 DUST CONTROL

- A. During construction, haul roads and other disturbed construction areas shall be watered as required to prevent dust from damaging and/or becoming a nuisance to the terminal and other buildings, automobiles, aircraft, and residential and other built-up areas surrounding the project site.

END OF SECTION 01500

DIVISION 1 - SECTION 01600**PRODUCT REQUIREMENTS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings, Contract, Division 0 and Division 1 Specification Sections apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements governing Contractor's selection of products for use in Project.
- B. Related Sections: Following Sections contain requirements that relate to this Section:
1. Division 1 Section "Reference Standards and Definitions" specifies the applicability of industry standards to products specified.
 2. Division 1 Section 01320 specifies requirements for submittal of the Contractor's Construction Schedule and the Submittal Schedule.
 3. Division 1 Section "Product Substitution Procedures" specifies administrative procedures for handling requests for substitutions made after award of the Contract.

1.3 DEFINITIONS

- A. Definitions used in this Article are not intended to change meaning of other terms used in Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms such are self-explanatory and have well recognized meanings in construction industry.
1. **"Products"** are items purchased for incorporation in Work, whether purchased for Project or taken from previously purchased stock. Term "product" includes terms "material," "equipment," "system," and terms of similar intent.
 - a. "Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in manufacturer's published product literature, that is current as of date of Contract Documents.
 - b. "Foreign Products," as distinguished from "domestic products," are items substantially manufactured (50% or more of value) outside of United States and its possessions; or produced or supplied by entities substantially owned (more than 50%) by persons who are not citizens of nor living within United States and its possessions.
 2. **"Materials"** are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form part of Work.
 3. **"Equipment"** is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

1.4 SUBMITTALS

- A. **Product List:** Prepare list showing products specified in tabular form acceptable to Program Manager. Include generic names of products required. Include manufacturer's name and proprietary product names for each item listed.
1. Coordinate product list with Contractor's Construction Schedule and Schedule of Submittals.
 2. **Form:** Prepare product list with information on each item tabulated under following column headings:
 - a. Related Specification Section number.
 - b. Generic name used in Contract Documents.
 - c. Proprietary name, model number and similar designations.
 - d. Manufacturer's name and address.
 - e. Supplier's name and address.
 - f. Installer's name and address.
 - g. Projected delivery date, or time span of delivery period.
 3. **Initial Submittal:** Within 30 days after date of commencement of Work, submit 3 copies of an initial product list. Provide written explanation for omissions of data and for known variations from Contract requirements.
 - a. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early in Contract period.
 4. **Completed List:** Within 60 days after date of commencement of Work, submit 3 copies of completed product list. Provide written explanation for omissions of data and for known variations from Contract requirements.
 5. **Engineer's Action:** Engineer will review and the Program Manager will respond in writing to Contractor within 2 wks of receipt of completed product list. No response within this period constitutes no objection to listed manufacturers or products but does not constitute a waiver of the requirement that products comply with Contract Documents. Engineer's review will include a list of unacceptable product selections, containing a brief explanation of reasons for this action.
- B. **Source Limitations:** To fullest extent possible, provide products of same kind, from single source.
1. When specified products are available only from sources that do not or cannot produce quantity adequate to complete project requirements in timely manner, consult with Program Manager for determination by the Engineer of most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When determination has been made, select products from sources that produce products that possess these qualities, to fullest extent possible.
- C. **Compatibility of Options:** When Contractor is given option of selecting between 2 or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
1. Each Contractor is responsible for providing products and construction methods that are compatible with products and construction methods of other separate Contractors.
 2. If dispute arises between Contractors over concurrently selectable, but incompatible products, Engineer will determine which products shall be retained and which are incompatible and must be replaced.
- D. **Foreign Product Limitations:** Except under 1 or more of following conditions, provide domestic products, not foreign products, for inclusion in the Work:

1. No available domestic product complies with Contract Documents.
 2. Domestic products that comply with Contract Document are only available at prices or terms that are substantially higher than foreign products that also comply with Contract Documents.
- E. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view in occupied spaces or on exterior.
- F. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface that is not conspicuous.
- G. Equipment Nameplates: Provide permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface which is inconspicuous in occupied spaces. Nameplate shall contain following information and other essential operating data:
1. Name of product and manufacturer.
 2. Model and serial number.
 3. Capacity.
 4. Speed.
 5. Ratings.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle products according to manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
1. Schedule delivery to minimize long-term storage at site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
 3. Deliver products to site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 4. Inspect products upon delivery to ensure compliance with Contract Documents, and to ensure that products are undamaged and properly protected.
 5. Store products at site in manner that will facilitate inspection and measurement of quantity or counting of units.
 6. Store heavy materials away from Project structure in manner that will not endanger supporting construction.
Store products subject to damage by elements above ground, under cover in weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

- A. General Product Requirements: Provide products that comply with Contract Documents, that are undamaged and, unless otherwise indicated, new at time of installation.
1. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for complete installation and for intended use and effect.
 2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

- B. Product Selection Procedures: Product selection is governed by Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include following:
1. Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide product indicated. No substitutions will be permitted.
 2. Semiproprietary Specification Requirements: Where 2 or more products or manufacturers are named, provide 1 of products indicated. No substitutions will be permitted.
 - a. Where products or manufacturers are specified by name, accompanied by term "or equal," or "or approved equal" comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 3. Compliance with Standards, Codes and Regulations: Where Specifications only require compliance with an imposed code, standard or regulation, select product that complies with standards, codes or regulations specified.
 4. Visual Matching: Where Specifications require matching an established Sample, Engineer's decision will be final on whether proposed product matches satisfactorily.
 - a. Where no product available within specified category matches satisfactorily and complies with other specified requirements, comply with provisions of Contract Documents concerning "substitutions" for selection of matching product in another product category.
 5. Visual Selection: Where specified product requirements include phrase "...as selected from manufacturer's standard colors, patterns, textures..." or similar phrase, select product and manufacturer that complies with other specified requirements. Engineer will select color, pattern and texture from product line selected.
 6. Allowances: Refer to individual Specification Sections and "Allowance" provisions in Division 1 for allowances that control product selection, and for procedures required for processing such selections.

2.2 ASBESTOS-FREE REQUIREMENTS

- A. The Contractor shall not use any asbestos containing material (ACM) at any time during the Project. The Contractor shall verify that all materials used on the Project are asbestos-free materials.
- B. During the course of the Project, the Contractor shall routinely check products utilized on-site to ensure only asbestos-free products are utilized.
- C. If the Owner suspects the presence of asbestos, the Owner will sample the suspect material to verify that no ACM was utilized. This testing shall be performed at the expense of the Owner. If ACM is subsequently found during the sampling, the Contractor shall remove and replace the product or material at his/her sole expense. No adjustment of the Contract Schedule will be provided to account for delays associated with removal and/or replacement of ACM. The Contractor shall reimburse Owner for any and all costs associated with the original testing and/or any re-testing that may be necessary.
- D. Upon completion, a notarized certification statement shall be provided by the Contractor to the Owner certifying that all materials associated with this Project are asbestos free. See Specification 01771 Closeout Documents for certification document. If the Contractor does not submit the required asbestos-free certification, the Authority shall have a complete building survey performed by a qualified testing firm within the Project's location. The cost of the survey and any subsequent removal/replacement of any ACM shall be deducted from the Contractor's final payment at the sole discretion of the Owner.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS:

- A. Comply with manufacturer's instructions and recommendations for installation of products in applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
- 1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration until time of Substantial Completion.

END OF SECTION 01600

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DIVISION 1 - SECTION 01630
PRODUCT SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, Contract, Division 0 and Division 1 Specification Sections apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of Contract.
- B. Contractor's Construction Schedule and Schedule of Submittals are included under Section 01320.
- C. Standards: Refer to Section "Reference Standards and Definitions" for applicability of industry standards to products specified.
- D. Procedural requirements governing Contractor's selection of products and product options are included under Section "Product Requirements."
- E. Program Manager's policy is to reject requests for substitution unless paragraph "Substitutions" under Article "Definitions" applies.

1.3 DEFINITIONS

- A. Definitions used in this Article are not intended to change or modify meaning of other terms used in Contract Documents.
- B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by Contractor after award of Contract are considered requests for "substitutions." Following are not considered substitutions:
 - 1. Revisions to Contract Documents requested by Owner or Program Manager.
 - 2. Specified options of products and construction methods included in Contract Documents.
 - 3. Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

- A. Substitution Request Submittal: Requests for substitution will be considered if received within 30 days after commencement of Work. Requests received more than 30 days after commencement of Work may be considered or rejected at discretion of Program Manager.
 - 1. Submit 3 copies of each request for substitution for consideration. Submit requests on forms included at end of this Section.

2. Identify product, or fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with requirements for substitutions, and the following information, as appropriate:
 - a. Product Data, including Drawings and descriptions of products, fabrication and installation procedures.
 - b. Samples, where applicable or requested.
 - c. Detailed comparison of significant qualities of proposed substitution with those of Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.
 - d. Coordination information, including list of changes or modifications needed to other parts of Work and to construction performed by Owner and separate Contractors, that will become necessary to accommodate proposed substitution.
 - e. Statement indicating substitution's effect on Contractor's Construction Schedule compared to schedule without approval of substitution. Indicate effect of proposed substitution on the overall Substantial Completion of the project.
 - f. Cost information, including proposal of net change, if any in Contract Sum.
 - g. Certification by Contractor that substitution proposed is equal-to or better in every significant respect to that required by Contract Documents, and that it will perform adequately in application indicated. Include Contractor's waiver of rights to additional payment or additional Contract time, that may subsequently become necessary because of failure of substitution to perform adequately.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Conditions: Contractor's substitution request will be received and considered by Program Manager when one or more of following conditions are satisfied, as determined by Program Manager; otherwise requests will be returned without action except to record noncompliance with these requirements.
 1. Extensive revisions to Contract Documents are not required.
 2. Proposed changes are in keeping with general intent of Contract Documents.
 3. Request is timely, fully documented and properly submitted.
 4. Request is directly related to an "or equal" clause or similar language in Contract Documents.
 5. Specified product or method of construction cannot be provided within Contract Time. Request will not be considered if product or method cannot be provided as result of failure to pursue Work promptly or coordinate activities properly.
 6. Specified product or method of construction cannot receive necessary approval by governing authority, and requested substitution can be approved.
 7. Substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities Owner may be required to bear. Additional responsibilities for Owner may include additional compensation to Program Manager and Engineer for redesign and evaluation services, increased cost of other construction by Owner or separate Contractors, and similar considerations.
 8. Specified product or method of construction cannot be provided in manner that is compatible with other materials, and where Contractor certifies that substitution will overcome incompatibility.
 9. Specified product or method of construction cannot be coordinated with other materials, and where Contractor certifies that proposed substitution can be coordinated.
 10. Specified product or method of construction cannot provide warranty required by Contract Documents and where Contractor certifies that proposed substitution provide required warranty.

- B. Contractor's submittal to the Program Manager and Engineer's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.
- C. See next page for "Request for Substitution" form.

REQUEST FOR SUBSTITUTION

To:

Attention:

From:

Name of Company_____
Address_____
City, State, Zip Code_____
Phone

Fully answer all information requested below. Failure to answer any item may cause rejection of request for substitution. If requested by Program Manager, submit information about manufacturer and vendor history, financial stability, distribution and support systems. Use one form for each product requested. Only first product listed will be considered on forms with more than one product listed.

Specification Section Number: _____ Drawing Number: _____

Para Number: _____ Detail Number: _____

Specified Product: _____

Proposed Substitution: _____

Answer the following questions. Attach an explanation sheet on your company's letterhead when required.

Does the proposed substitution affect dimensions indicated on Drawings?

No _____ Yes _____ (If yes, explain below).

Does the proposed substitution require changes in Drawings and/or design or installation changes?

No _____ Yes _____

If yes, is the cost of these changes included in the proposed amount? No ____ Yes ____

Does the proposed substitution affect other trades? No _____ Yes _____

(If yes, explain who and how)

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ISSUED FOR BID

If the proposed product does affect the work of other trades, has the cost impact on their work been included in the price of the proposed substitution?

No _____ Yes _____

Does the proposed product's guarantee differ from that of the specified product's?

No _____ Yes _____ (If yes, explain below).

Why is this proposal for substitution being submitted? List reasons below.

Attach a listing of 3 projects using proposed substitution completed within the past 5 yrs in geographic and climatic region of Project. One of applications shall have been in service for at least 3 yrs.

Attach product data/brochures and Vendor Qualification Form for the specified and substitute product.

Undersigned has examined Construction Documents, is familiar with specified product, understands indicated application of product, and understands design intent of Engineer. Undersigned states that proposed substitution complies with Construction Documents and will perform at least equally to specified product within limitations stated above. Undersigned accepts responsibility for coordinating application and installation of proposed substitution and waives all claims for additional costs resulting from incorporation of proposed substitution into Project or its subsequent failure to perform according to specified requirements.

Submitted By: _____

Typed _____

Signature _____

Date: _____

END OF SECTION 01630

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DIVISION 1 – SECTION 01700**FIELD ENGINEERING****PART 1 GENERAL****1.01 SUMMARY**

- A. Provide such field engineering services as are required for proper completion of the Work including, but not necessarily limited to:

1. Establishing and maintaining lines and levels;
2. Structural design of shores, forms, and similar items provided by the Contractor as part of his means and methods of construction.

All field engineering is incidental to the Item for which it applies. No direct pay will be made for field engineering.

- B. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, Division 0, Division 1 and other Sections of these Specifications.
2. Additional requirements for field engineering may be described in other Sections of these Specifications.

1.02 SUBMITTALS

- A. Upon request of the Owner or Engineer, submit:

1. Data demonstrating qualifications of persons proposed to be engaged for field engineering services.
2. Documentation verifying accuracy of field engineering work.
3. Certification, signed by the Contractor's retained field engineer, certifying that elevations and locations of improvements are in conformance or nonconformance with requirements of the Contract Documents.

1.03 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.04 PROCEDURES

- A. In addition to other procedures directed by the Contractor for proper performance of the Contractor's responsibilities:

1. Locate and protect control points before starting work on the site.
2. Preserve permanent reference points during progress of the Work.
3. Prior to commencing any work requiring location or grades, the Contractor shall establish

temporary bench marks (TBMs) at an interval not to exceed 1000 feet. TBMs are to be located in areas not anticipated to be disturbed by construction. Provide the Owner or Engineer copies of field notes, including peg test of level, and a listing of the adjusted coordinates and elevations of all TBMs.

4. Do not change or relocate reference points or items of the Work without specific approval from the Owner or Engineer.
5. Promptly advise the Owner or Engineer when a reference point is lost or destroyed, or requires relocation because of other changes in the Work.
 - a. Upon direction of the Owner or Engineer, require the field engineer to replace reference stakes or markers.
 - b. Locate such replacements according to the original survey control.

END OF SECTION 01700

DIVISION 1 – SECTION 01720
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. Throughout progress of the Work, maintain an accurate record of changes in the Contract Documents, as described in paragraph 3.01 below and, upon completion of the Work, transfer the recorded changes to a set of Record Documents, as described in paragraph 3.02 below. This shall include Record Drawings.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Provisions and the Technical Sections of these Specifications.
 - 2. Other requirements affecting Project Record Documents may appear in pertinent other Sections of these Specifications.

1.02 SUBMITTALS

- A. The Program Manager's review of the current status of Project Record Documents is a prerequisite to the Program Manager's approval of requests for progress payments and request for final payment under the Contract.
- B. Prior to submitting each Application for Payment, secure the Program Manager's review of the current status of the Project Record Documents.
- C. The final project Record Documents must be submitted to the Program Manager and secure approval before final payment for demobilization can occur.

1.03 QUALITY ASSURANCE

- A. Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff as approved by the Program Manager.
- B. Accuracy of records:
 - 1. Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other Documents where such entry is required to show the change properly.
 - 2. Accuracy of records shall be such that future searches for items shown in the Contract Documents may rely reasonably on information obtained from the approved Project Record Documents.
- C. Make entries within 24 hours after receipt of information that the change has occurred.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Maintain the job set of Record Documents completely protected from deterioration and from loss and damage until completion of the Work and transfer of all recorded data to the final Project Record Documents.

- B. In the event of loss of recorded data, use any means necessary to again secure the data needed to comply with this section.
 - 1. Such means shall include, if necessary in the opinion of the Program Manager, removal and replacement of concealing work or materials by Contractor at Contractor's expense.

PART 2 PRODUCTS

2.01 RECORD DOCUMENTS

- A. Job set: Promptly following the Notice to Proceed, secure from the Program Manager at no charge to the Contractor one complete set of all Documents comprising the Contract.

PART 3 EXECUTION

3.01 MAINTENANCE OF JOB SET

- A. Immediately upon receipt of the job set described in Paragraph 2.01-A above, identify each of the Documents with the title, "RECORD DOCUMENTS - JOB SET."
- B. Preservation:
 - 1. Considering the Contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set to the approval of the Program Manager.
 - 2. Do not use the job set for any purpose except entry of new data and for review by the Program Manager, until start of transfer of data to final Project Record Documents.
 - 3. Maintain the job set at the site of Work or at another site as designated by the Program Manager.
- C. Making entries on Drawings:
 - 1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe the change by graphic line and note as required.
 - 2. Date all entries.
 - 3. Call attention to the entry by a "cloud" drawn around the area or areas affected.
 - 4. In the event of overlapping changes, use different colors for the overlapping changes.
- D. Make entries in the pertinent other Documents as approved by the Program Manager.
- E. Drawings shall clearly show actual installed locations, depth, and sizes of:
 - 1. Pipe work of all descriptions below ground outside of building and structures, including locations of culverts, storm & sewer lines, water lines, cleanouts, manholes, inlets, hydrants, and underground valves.
 - 2. Underground electrical conduits, electrical ducts, and directly buried conductors light cables, FAA cables including locations of pull and junction boxes, electric manholes and handholes, pad mounted electrical equipment, utility poles, electrical outlets, and lighting fixtures.

3. All existing underground facilities unearthed by Contractors operations not accurately shown on the drawing.
- F. Conversion of schematic layouts:
1. In some cases on the Drawings, arrangements of conduits, circuits, piping, ducts, and similar items, is shown schematically and is not intended to portray precise physical layout.
 - a. Final physical arrangement is determined by the Contractor, subject to the Program Manager's review.
 - b. However, design of future modifications of the facility may require accurate information as to the final physical layout of items, which are shown only schematically, on the Drawings. This information will be provided by the Contractor.
 2. Show on the job set of Record Drawings, by dimension accurate to within one half foot, the centerline of each run of items such as are described in subparagraph 3.01-E above.
 - a. Clearly identify the item by accurate note such as "24 inch R.C. pipe drain", "4" conduit" and the like.
 - b. Show, by symbol or note, the vertical location of the item ("36 inches deep"), "exposed," and the like.
 - c. Make all descriptive identification so that it may be related reliably to the Specifications.
 3. The Program Manager may waive the requirements for conversion of schematic layouts where, in the Program Manager's judgment, conversion serves no useful purpose. However, do not rely upon waivers being issued except as specifically issued in writing by the Program Manager.

3.02 FINAL PROJECT RECORD DOCUMENTS

- A. The purpose of the final Project Record Documents is to provide factual information regarding all aspects of the Work, both concealed and visible, to enable future modification of the Work to proceed without lengthy and expensive site measurement, investigation, and examination.
- B. Approval of recorded data prior to transfer to Program Manager:
1. Secure the Program Manager's review of all recorded data.
 2. Make required revisions.
- C. Transfer of data to other Documents:
1. If the Documents other than Drawings have been kept clean during progress of the Work, and if entries thereon have been orderly to the approval of the Program Manager, the job set of those Documents other than Drawings will be accepted as final Record Documents.
 2. If any such Document is not so approved by the Program Manager, secure a new copy of that Document from the Program Manager at the Program Manager's usual charge for reproduction and handling, and carefully transfer the change data to the new copy to the

approval of the Program Manager.

D. Review and submittal:

1. Submit the completed set of Project Record Documents to the Program Manager as described in Paragraph 1.02-C above.
2. Participate in review meetings as required.
3. Make required changes and promptly deliver the final Project Record Documents to the Program Manager.

3.03 CHANGES SUBSEQUENT TO ACCEPTANCE

- A. The Contractor has no responsibility for recording changes in the Work subsequent to Final Completion, except for changes resulting from work performed under Warranty.

END OF SECTION 01720

DIVISION 1 – SECTION 01741**CLEANING****PART 1 GENERAL****1.01 SUMMARY**

- A. Throughout the construction period, maintain the site in a standard of cleanliness including mowing of grass as described in this Section. All demolition or construction debris (FOD) shall be confined within the work site at all times.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, Division 0, Division 1 and other Sections of these Specifications.
 - 2. In addition to the standards described in this Section, comply with requirements for cleaning as described in pertinent other Sections of these Specifications.
 - 3. In addition to the standards described in this Section, comply with pertinent requirements of governmental agencies having jurisdiction.

1.02 QUALITY ASSURANCE

- A. Conduct a daily inspection, and more often if necessary, to verify that cleanliness requirements are being met.
- B. In addition to the standards described in this Section, comply with pertinent requirements of governmental agencies having jurisdiction.

PART 2 PRODUCTS**2.01 CLEANING MATERIALS AND EQUIPMENT**

- A. Provide required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.
- B. In addition to the standards described in this Section, comply with pertinent requirements of governmental agencies having jurisdiction.

2.02 COMPATIBILITY

- A. Use only cleaning materials and equipment compatible with the surface being cleaned and as recommended by the manufacturer of the material.

PART 3 EXECUTION**3.01 PROGRESS CLEANING**

- A. General:
 - 1. Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage, and providing required protection of materials.

2. Do not allow accumulation of scrap, debris, waste material, and other items not required for construction of this Work.
 3. Inspect all haul vehicles leaving the site to make sure no debris can fall from the vehicle during transportation.
 4. Provide adequate storage for all items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.
- B. Site:
1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage. Contractor shall document all daily inspections.
 2. Weekly, and more often if necessary, remove, completely, all accumulated scrap, debris, and waste material from the site.
 3. Maintain the site in a neat and orderly condition at all times.
 4. Mowing of grass within the construction limits is required at a minimum of every two (2) weeks during the active growing season, or as directed by the Engineer or Owner.

3.02 FINAL CLEANING

- A. "Clean," for the purpose of this section, and except as may be specifically provided otherwise, shall be interpreted as meaning the level of cleanliness generally provided by material sweepers and vacuums.
- B. Prior to completion of the Work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste. Conduct final progress cleaning as described in Article 3.01 above.
- C. Site:
1. Unless otherwise specifically directed by the Owner or Engineer, broom clean paved areas on the site and public paved areas adjacent to the site.
 2. Completely remove resultant debris.
- D. Schedule final cleaning as approved by the Owner or Engineer to enable the Owner to accept a completely clean Work.

3.03 CLEANING DURING OWNER'S OCCUPANCY

- A. Should the Owner occupy the Work or any portion thereof, prior to its completion by the Contractor, and acceptance by the Owner, responsibilities for interim and final cleaning shall be as determined by the Engineer or Owner in accordance with the Division 0 and Division 1 Specifications.

3.04 INTERVENTION OF OWNER

- A. If the Contractor fails to clean up any debris which is deposited as a result of construction/demolition operations, or fails to mow grass as stipulated, the Airport Authority will, after attempting one notification, immediately do so and the cost thereof will be charged to the Contractor at the rate of two hundred and fifty dollars (\$250.00) per hour, per machine and per person additively. The Contractor shall assume full responsibility for failure to perform clean up operations required.

END OF SECTION 01741

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DIVISION 1 - SECTION 01770**CONTRACT CLOSEOUT****PART 1 - GENERAL****1.01 SECTION INCLUDES**

- A. Procedures and requirements for closing out the Work.
 - 1. Closeout submittals.
 - 2. Final cleaning.
 - 3. Record Documents.
 - 4. Substantial completion.
 - 5. Final inspection.
 - 6. Final payment.
 - 7. Warranties.

1.02 RELATED REQUIREMENTS AND SECTIONS

- A. Section 01100 - Summary of Work, Sequence of Construction & Liquidated Damages.

1.03 CLOSEOUT SUBMITTALS

- A. Record documents of the constructed work.
- B. Certificate of Occupancy.
- C. Warranties: This Section and applicable Sections of these Specifications.
- D. Contractors Affidavit of Payment of Debts and Claims and Contractors Affidavit of Release of Liens.
- E. Consent of Surety to Final Payment.
- F. As-built drawings.

1.05 FINAL CLEANING

- A. Clean work and storage areas free of trash. Broom clean and hose wash walks and pavements.

1.06 RECORD DOCUMENTS

- A. Definition:
 - 1. Dimensioned drawings showing in-place components and systems measured as accurately as practicable.
 - 2. Product data and other documents clearly identifying proprietary product and equipment incorporated into the Work.
- B. Maintain at job site one record copy of:
 - 1. Contract Drawings and As-built Drawings.
 - 2. Project Manual.

3. Addenda.
 4. Approved shop drawings.
 5. Contract Modifications.
 6. Field test records.
 7. Meeting minutes (notes).
- C. Make documents available at all times for inspection by Engineer and Owner.
- D. Marking Devices:
1. Use colored felt marking pens for marking prints and product data.
- E. Label each document "PROJECT RECORD" in 1" high printed letters.
- F. Record information concurrent with construction progress. Do not conceal any work until required information has been recorded.
- G. Submittal of Record Documents:
1. At completion of the Work, deliver Record Documents to Owner or Engineer with request for Final Payment.
 2. Accompany submittal with transmittal letter indicating:
 - a. Date
 - b. Project title
 - c. Contractor's name and address
 - d. Title and number of each record document
 3. Submit one reproducible copy and one electronic copy of Record Documents, and provide one copy of other Record Documents.
 4. Provide one AutoCAD Diskette

1.07 SUBSTANTIAL COMPLETION

- A. When Contractor considers the Work to be substantially complete as defined in Conditions of the Contract, Contractor shall prepare and submit a list (punch list) of items to be completed or corrected. Upon receipt of Contractor's list, Owner or Engineer will decide if the Work is substantially complete and, if necessary, will prepare a supplemental list (punch list) of items to be completed or corrected.
- B. Failure to include items on the punch list does not alter responsibility of Contractor to complete work according to Contract Documents.
- C. Before Owner or Engineer issues a Certificate of Substantial Completion, Contractor shall provide certificate of Use and Occupancy and evidence of approval from applicable governing authorities.

1.08 FINAL INSPECTION

- A. When Owner or Engineer receives written notice that the Work is ready for final inspection, and when final application for payment is received, Owner or Engineer shall promptly inspect to determine if the Work complies with the Contract Documents.
- B. Provide Owner or Engineer with written status report of each punch list item before final inspection.

1.09 FINAL PAYMENT

- A. Final payment will be made to contractor by Owner within 45 days after:

1. Completion of the Work.
2. Acceptance by Owner and Engineer of all work performed under the Contract.
3. Receipt of Project Record Documents.
4. Receipt of O & M data, manufacturer's instructions, service manual, parts manual, warranties, and other closeout submittals specified. O & M data must include a list of recommended vendors for any non-standard replacement parts and must include a detailed Preventative Maintenance guide with a schedule of suggested efforts.
5. Preparation by Contractor and approval of Owner of final statement of cost of the completed Work. Final statement shall indicate:
 - a. Original Contract Sum.
 - b. Previous Change Orders.
 - c. Deductions for liquidated damages.
 - d. Other applicable adjustments to Contract Sum.
 - e. Total Contract Sum as adjusted.
 - f. Previous Payments.
 - g. Final payment remaining due.
6. Upon completion by Contractor of work covered by Contract Documents, and before final payment to Contractor for work performed, Contractor shall deliver to Owner an affidavit, indicating that all labor and material used on or for execution of the Work has been paid.

1.10 WARRANTIES

- A. Provide duplicate notarized copies of warranties required by Contract Documents. Accumulate executed documents by subcontractors, suppliers, and manufacturers; provide table of contents and assemble in binder with durable plastic cover properly titled.
- B. Warranties are in addition to and not a limitation of other rights Owner may have against Contractor under the Contract Documents.
- C. Contractor shall bear costs of correcting work not complying with warranty requirements.
- D. Duration of warranties required by individual Sections shall indicate minimum times and shall not relieve Contractor of obligations required under applicable statutes or other Conditions of the Contract.
 1. Warranty period begins on date of Substantial Completion, except where modified by Conditions of the Contract.
 2. Warranties are non-prorated unless stated otherwise in these Specifications.
- E. Manufacturer's warranties shall be backed by assets of manufacturer and not a third party.
- F. Warranties shall be transferable.
- G. Submit warranties to Owner or Engineer for verification and submittal to Owner with Contractor's final Application for Payment.
- H. Re-submit warranties that do not comply with Contract Documents.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION (not applicable)

END OF SECTION 01770

DIVISION 1 – SECTION 01771
AFFIDAVIT OF CONTRACTOR

STATE OF _____

COUNTY OF _____

_____, being duly sworn according to Law,
 (Name of Affiant)

deposes and says that he is the _____ of
 (Title)

_____, the Contractor, in a
 (Name of Contractor)

Construction contract entered into between the Contractor and Memphis-Shelby County Airport Authority, the Owner, for the construction of East Parking Lot Expansion - Phase 5 - Construction, MSCAA Project No. 23-1469-03, and that he is authorized to and does make this Affidavit on behalf of said Contractor in order to induce the Owner to make payment to the Contractor, in accordance with the provisions of the said Construction Contract.

Affiant further says that all persons who have furnished materials, labor, and equipment in connection with the construction of the facilities have been paid in full, and that the names of all manufacturers, materialmen, subcontractors and DBE subcontractors that furnished any material and/or services in connection with such construction and the kind of kinds of material and/or services so furnished are as listed hereinafter.

Affiant further certifies that he/she is familiar with the materials used in the construction of and incorporated into, the Project referenced above and attests that no asbestos-containing materials, either friable or otherwise, were used in the process of constructing or incorporated into the construction of the Project.

 (Signature of Affiant)

Sworn to and subscribed before me this _____ day of _____ 20____.

 (Notary Public)

My commission expires: _____

Name of Entity

Kind of Material and/or Service

[illegible]

ISSUED FOR BID

END OF SECTION 01771

DIVISION 1 – SECTION 01772**FINAL LIEN WAIVER AND RELEASE
PRIME CONTRACTOR****STATE OF TENNESSEE
COUNTY OF SHELBY**

The undersigned _____ (hereinafter “Contractor”) has entered into a Contract with the Memphis-Shelby County Airport Authority (“Owner”) for the construction of improvements known as the:

East Parking Lot Expansion - Phase 5 - Construction
Memphis International Airport
MSCAA Project No. 23-1469-03 (hereinafter “the Project”).

Upon the receipt of the sum of \$_____, the undersigned forever waives and releases any and all liens or claims of liens it has upon the foregoing described real property on account of labor, materials, equipment or services furnished for said Project. The undersigned certifies that all payments have been made for all work/materials performed to date for all subcontractors and suppliers with the exception of the amount due as a result of the payment amount shown above; and, that all subcontractors and suppliers will be paid all balances due upon receipt of the payment amount shown above. Further, the undersigned does hereby waive, release and relinquish any and all claims or demands against the Owner and Engineer of the above-described Project, the right to assert a mechanic’s and materialmen’s lien and/or any claim for quantum meruit or unjust enrichment, additional work, verbal agreements, increased cost, scheduling damages, including, but not limited to damages for delay, disruption, acceleration and/or interference, whether existing now or arising in the future.

The undersigned certifies and warrants that it has complied with all federal, state and local tax laws, including Social Security laws and Unemployment Compensation laws and workers’ compensation laws insofar as applicable to the performance of the Project. Further, the undersigned certifies and warrants that it has paid all of its subcontractors, vendors, and materialmen for services rendered in connection with the construction and improvement of the Project and that all labor, materials and equipment are free and clear of claims, security interests, indebtedness or encumbrances. The undersigned agrees to indemnify and hold harmless the Owner and the Engineer from and against any and all claims, damages, losses and expenses, including but not limited to, attorney’s fees, arising out of or resulting from any non-payment by the undersigned to any subcontractor, laborer, vendor or materialman for the Project.

As of this date, no mechanics’ or materialmen’s liens have been filed of record arising out of or related to the work performed by the undersigned.

Given under hand and seal this ____ day of _____, 20_____.

CONTRACTOR

By: _____

Title: _____

**STATE OF TENNESSEE
COUNTY OF SHELBY**

Before me, a notary public of the state and county mentioned, personally appeared _____, with whom I am personally acquainted, and who, upon oath, acknowledged such person to be _____, an officer authorized to execute the instrument, of _____, the within named bargainor, a corporation, and that such officer, as such _____, executed the foregoing instrument for the purposes therein contained, by personally signing the name of the corporation as _____.

Witness my hand and seal, at office, this _____ day of _____, 20_____.

Notary Public

My Commission Expires:

END OF SECTION 01772

DIVISION 1 – SECTION 01774
CONTRACTOR WARRANTY FORM

PROJECT: MSCAA Project No. 23-1469-03, East Parking Lot Expansion - Phase 5 - Construction

LOCATION: Memphis International Airport, Shelby County, Tennessee

OWNER: Memphis-Shelby County Airport Authority

We _____, Contractor
(Company Name)

for the above-reference project, do hereby warrant all labor and materials furnished and work performed are in accordance with the Contract Documents and authorized modifications thereto, and will be free from defects due to defective materials or workmanship for a period of one year.

This warranty commences on _____ and expires on _____.

This warranty covers that portion of the project described below:

ALL MATERIALS, LABOR, AND EQUIPMENT IN CONNECTION WITH THE CONSTRUCTION OF THE FACILITIES OF THE ABOVE REFERENCED CONTRACT.

The Contractor shall promptly correct all defective Work to comply with the Contract Documents whether observed before or after the substantial completion date and whether or not fabricated, installed or completed. The Contractor shall bear all costs of correcting defective Work.

If, within one (1) year after the substantial completion date, or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee or warranty required by the Contract Documents, any of the Work is found to be defective and not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Owner, or the Engineer to do so.

All defective or non-conforming Work shall be removed from the site of the Work if necessary, and the Work shall be corrected to comply with the Contract Documents without cost to the Owner. The Contractor also shall bear the cost of making good all work of other contractors destroyed or damaged by removal or correction of the defective Work of Contractor.

If the Contractor fails to timely and properly correct defective Work, the Owner may correct it and hold the Contractor liable for all costs, expenses and damages, including attorney's fees and litigation costs incurred by Owner in correcting it.

In addition to the foregoing warranty, a warranty period of one (1) year shall apply under the same terms and conditions as the original warranty, to any work, supplied in correction of defective work under warranty pursuant to the provisions of this Section 17.04 and the Contractor shall assign to the Owner any warranties, including extended warranties, which are available in connection with the performance of such correction of defective Work. The warranty period shall commence on the date the Owner accepts the corrective Work of the Contractor.

DATE: _____ FOR: _____
(Company Name)

BY: _____
TITLE: _____

END OF SECTION 01774

ISSUED FOR BID

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Page 1

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DIVISION 1 – SECTION 01775**CONSENT OF SURETY COMPANY TO FINAL PAYMENT**

To: Memphis-Shelby County Airport Authority
2491 Winchester Road, Suite 113
Memphis, TN. 38116-3856

Regarding Contract for: East Parking Lot Expansion - Phase 5 - Construction

Project: 23-1469-03

Dated: _____

CONTRACTOR: _____

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the

(here insert name and address of Surety Company)

_____, SURETY COMPANY,

on bond of _____
(here insert name and address of Contractor)

_____, CONTRACTOR,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of any of its obligations to Memphis-Shelby County Airport Authority, OWNER.

IN WITNESS WHEREOF,
the Surety Company has hereunto set its hand this _____ day of _____, 20____

Surety Company

Signature of Authorized Representative

Attest:
(Seal):

Title

END OF SECTION 01775

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DIVION 1 – SECTION 01783**ELECTRICAL CHARACTERISTICS, CAPACITIES AND WIRING DIAGRAMS****PART 1 GENERAL****1.01 SUMMARY**

- A. This section describes the electrical characteristics, sizes, capacities, ratings and wiring diagrams required of electrically operated equipment.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to Division 0, Division 1 and other Sections of these Specifications.

1.02 SUBMITTALS

- A. Furnish with each item of electrically operated equipment a wiring diagram showing all necessary electrical connections required to operate the equipment properly, in accordance with drawing and specification requirements.
- B. Furnish a composite wiring diagram showing all necessary interlock and related wiring between the various items of electrically operated equipment and their controls, as required to operate interlocked equipment as specified in other sections of these specifications and as indicated.

1.03 CAPACITIES, RATINGS, SIZES, AND OTHER REQUIREMENTS NOT SPECIFIED:

- A. For all items of material and/or equipment, the capacities, ratings, sizes, and other requirements thereof not specified shall be as indicated on the Contract drawings.
- B. Where capacities, ratings, sizes, and other requirements for materials and/or equipment is neither specified nor indicated on the Contract drawings, refer each case to the Owner or Engineer before ordering the materials and/or equipment involved, or proceeding with the work involved. The Owner's or Engineer's decision shall govern.

1.04 ELECTRICAL CHARACTERISTICS AND SIZES OF ELECTRICALLY OPERATED EQUIPMENT

- A. Each electrically operated item furnished under this contract shall operate proper on the electrical supply to which it is to be connected, as indicated on the electrical drawings.
- B. All electrically operated equipment shall operate on a 60 hz alternating current supply, unless otherwise indicated. Prior to delivery to the job site, it shall be the joint responsibility of the Contractor under the applicable section and the equipment supplier to determine from the electrical drawings the characteristics of the electrical supply indicated to each individual electrically operated item, and to furnish each electrically operated item accordingly.
 - 1. Where electrical characteristics are specified hereinafter, verify them from the electrical drawings. In the case of discrepancy between the specifications and the electrical drawings, the Electrical drawings shall govern.
 - 2. Where electrical characteristics cannot be determined from the electrical drawings, refer each case to the Owner or Engineer, and the Owner's or Engineer's decision shall govern.

END OF SECTION 01783**ISSUED FOR BID**01783
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DIVISION 1 – SECTION 01784**MANUFACTURER'S SUPERVISION****1.01 DESCRIPTION****A. Work included:**

1. Furnishing Manufacturer's Supervision

B. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to Division 0, Division 1, and other Sections of these Specifications.

1.02 SERVICES

- A. Furnish the services of authorized qualified manufacturer's representatives as required to supervise the installation, testing, initial starting, adjusting, and initial operation of each equipment item or any other item designated by the Contract Documents and included in this Contract.

END OF SECTION 01784

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TECHNICAL SPECIFICATIONS

**Memphis International Airport (MEM)
Employee Parking Relocation Phase 5**



TECHNICAL SPECIFICATIONS

Item	Description
A-101	TDOT Specification Reference
A-102	Construction Access, Project Safety and Security, and Maintenance of Traffic
A-103	Parking Equipment, Infrastructure, and Access Controls
C-102	Temporary Air and Water Pollution, Soil Erosion, and Siltation Control
C-105	Mobilization
P-101	Preparation/Removal of Existing Pavements
P-605	Joint Sealants for Pavements
P-610	Concrete for Miscellaneous Structures
F-162	Chain-Link Fence
T-904	Sodding
T-905	Topsoil
260100	General Provisions, Electrical
260500	Basic Materials and Methods, Electrical
270528	Pathways for Communications Systems
270543	Underground Pathways and Structures for Communications Systems
270553	Identification for Communications Systems
271323	Communications Optical Fiber Backbone Cabling
271513	Communications Copper Horizontal Cabling
273353	Uninterruptible Power Supply
Attachment 1	Construction Safety Phasing Plan (CSPP)
Attachment 2	Safety Plan Compliance Document (SPCD)

Item A-101 TDOT Specification Reference

DESCRIPTION

101-1.1 General

- A. All references to TDOT specifications shall be from the most current and accepted Tennessee Department of Transportation (TDOT) Standard Specifications for Road and Bridge Construction.
- B. TDOT specifications are included in these contract documents via reference. Payment shall be made at the contract unit price for the bid item as specified within the pay items below and within the corresponding TDOT specification.
- Discrepancies: In the event discrepancies between the information provided within specification A-101 and referenced TDOT specifications arise, discrepancies shall be immediately brought to the attention of the Engineer and specification A-101 shall control unless noted otherwise via addenda.
 - Payments: TDOT specifications which include additional payments, adjusted payments, deductive payments, or incidental payments shall be superseded by specification A-101 language. Modified payments due to constructed quantities versus theoretical quantities must be determined by the Engineer and approved by the Owner.
 - Conformance: The Contractor shall review all TDOT specifications required for the project prior to bidding. Following bidding, any project submittals not conforming to TDOT specification requirements shall be rejected or require substitution request and approval from Engineer and Owner. No modified payments shall be made for non-conforming project submittals requiring incidentals beyond the original bidding documents without approval of the Engineer. Contractor may be subject to liquidated damages for any non-conforming project submittals delaying the project completion date.
 - Salvaged Material: Unless otherwise noted in the project plans and specs, all salvaged materials shall remain property of the Contractor and removed from Owner property.
- C. This price shall be full compensation for all materials, preparation, hauling, placement, labor, equipment, tools, testing, and other incidentals necessary to complete this item(s).

METHOD OF MEASUREMENT

101-2.1 The quantity of crushed aggregate base course will be determined by measurement of the number of square yards of material used and accepted by the RPR as complying with the plans and specifications.

101-2.2 The quantity of concrete wheel stops will be determined by measurement of the number of each placed, and accepted by the RPR as complying with the plans and specifications.

101-2.3 The quantity of pavement markings will be determined by measurement of the number of square feet of material used and accepted by the RPR as complying with the plans and specifications.

BASIS OF PAYMENT

101-3.1 Payment shall be made at the contract unit price per square yard for crushed aggregate base course. This price shall be full compensation for furnishing all materials, for preparing and placing these materials, and for all labor, equipment tools, and incidentals necessary to complete the item.

101-3.2 Payment shall be made at the contract unit price per each concrete wheel stop. This price shall be full compensation for furnishing all materials, for preparing and placing these materials, and for all labor, equipment tools, and incidentals necessary to complete the item.

101-3.3 Payment shall be made at the contract unit price per square foot of pavement markings. This price shall be full compensation for furnishing all materials, for preparing and placing these materials, and for all labor, equipment tools, and incidentals necessary to complete the item.

Payment will be made under:

Item A-101-3.1	Crushed Aggregate Base Course – 8” Thick – per square yard
Item A-101-3.2	Installation of Concrete Wheel Stops – per each
Item A-101-3.3	Pavement Markings (Yellow) – per square foot
Item A-101-3.4	Pavement Markings (White) – per square foot
Item A-101-3.5	Pavement Markings (Blue) – per square foot
Item A-101-3.6	Install New Stop Sign (R1-1) - per each
Item A-101-3.7	Install "Cross Traffic Does Not Stop" Sign (W4-4P) - per each
Item A-101-3.8	Install ADA Parking Signage (R7-8) - per each

END OF ITEM A-101

Item A-102 Construction Access, Project Safety and Security, and Maintenance of Traffic

DESCRIPTION

102-1.1 General

- A. Parts of this project takes place within the Air Operations Area (AOA) of an active airfield; therefore, access to the site must be controlled at all times. The access points are shown in the safety and phasing plans.
- B. All vehicles accessing the project site on behalf of the Contractor shall enter through the access points indicated on the Plans.
- C. The Contractor shall coordinate access and security within the AOA with the RPR.
- D. The security gate shall remain closed and locked except when vehicles are entering or exiting.
- E. Escort personnel, vehicles, and radio equipment shall be trained, badged and subject to approval by MSCAA.
- F. The Contractor shall insure that all AOA pavements, which are open to traffic, are continuously kept clean and free of debris of any kind. Vehicular haul roads shall also be kept clean. All costs shall be considered incidental to the Project.
- G. Contractor must have hand brooms, sweepers, water truck, and vacuum sweeper truck on site at all times to immediately remove any debris from active airfield and haul route pavements that results from construction activity.
- H. The Contractor shall review and make themselves familiar with the Construction Safety and Phasing Plan (CSPP) and shall follow the requirements contained within. The CSPP is incorporated in Attachment 1 in the contract documents.
- I. The Contractor shall review and make themselves familiar with the AC 150/5370-2G Safety Plan Compliance Document (SPCD) worksheet for airport projects and shall follow the requirements contained within. The Contractor shall fill out the SPCD and submit the document 14 days prior to the pre-construction conference. The notice-to-proceed cannot be issued without approval of the document. The Construction Project Daily Safety Inspection Checklist within must be filled out daily. The SPCD is incorporated in Attachment 2 the contract documents.

102-1.2 Gate Operations. Security gates to the AOA shall be closed and locked at all times that there is not a vehicle passing through them. Security gates will have one gate guard controlling the gate at all times. Use of multiple gates, such as during haul operations, requires the use of multiple gate guards. The Contractor shall be responsible for providing all required gate guards during construction activities. A formal gate guard procedure is in place and shall be adhered to by the Contractor at all times. A copy of that procedure and form is attached hereto.

102-1.3 Security and Escorts. The Contractor will provide badged personnel with non-movement area driving privileges and vehicles to escort Contractor, sub-contractor, vendor and delivery vehicles and equipment from the security gate to the project site. All work shall be coordinated with MSCAA Project Engineer. A minimum of 48 hrs notice shall be provided to the MSCAA Project Engineer for site access.

Contractor's vehicles, including Sub-Contractors vehicles must be inspected and receive an airfield access sticker. This will allow these vehicles unrestricted access only on the Project site. Vendors and delivery vehicles (dump trucks, concrete trucks, and materials deliveries) must be escorted to their specific area on the site. Once at the project site, the Contractor shall be responsible to provide badged personnel to assume control of the escorted vehicle and non-badged personnel. Such vehicles may not transit back to the gate without an escort.

The Contractor shall meet all MSCAA security requirements with regard to training and wearing badges, and/or being escorted by authorized personnel approved by the MSCAA Project Engineer.

102-1.4 Fencing. The Contractor shall maintain the existing AOA security fencing and gates surrounding the Contractor Staging Area if applicable until the completion of the Project.

102-1.5 Airfield Low Profile Barricade. Not used.

102-1.6 Airfield Medium Profile Barricade. Not Used.

102-1.7 Maintenance of Traffic. The Contractor shall maintain public roadways in a clean swept condition at all times. Any debris deposited on the public roads by the Contractor, Sub-Contractors or supplier vehicles shall be removed immediately. A water truck, broom truck, vacuum truck or other equipment as approved by the MSCAA Project Engineer shall be made available for this purpose. All costs associated with maintaining clean public roadways shall be considered incidental to the project.

The Contractor shall install signs and traffic control devices meeting the requirements of the Manual of Uniform Traffic Control Devices, TDOT Standards and FAA Publications about construction on Airports when and whereas directed by the MSCAA Project Engineer or the TDOT.

The Contractor shall furnish and install all construction warning signs, barricades, flexible drum channelizing units, temporary pavement markings, and other traffic control devices as shown on the plans or as directed by the Project Engineer

102-1.8 Access Road and Staging Area. The Contractor shall repair and/or re-construct the access road and the staging area to repair any damage during construction. Repair methods shall be approved by the MSCAA Project Engineer prior to completion. All disturbed areas shall be restored to their original condition prior to the completion of the project.

METHOD OF MEASUREMENT

102-2.1 Construction Access, Project Security, and Staging Area. The method of measurement for Construction Access, Project Security, and Staging Area shall be paid for as a lump sum in accordance with paragraph 102-2.5.

102-2.2 Airfield Low Profile Barricade. Not used.

102-2.3 Airfield Medium Profile Barricade. Not used.

102-2.4 Maintenance of Traffic. The method of measurement for Maintenance of Traffic shall be paid for as a lump sum in accordance with paragraph 102-2.5.

102-2.5 Basis of Measurement and Payment. Based upon the contract lump sum price for the items above, 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, the final 10%.

BASIS OF PAYMENT

102-3.1 Construction Access, Project Security, and Staging Area. Basis of payment shall be made at the contract lump sum price for Construction Access, Project Security, and Traffic Control. The price shall be full compensation for staffing gates including inspection of vehicles, escorting vehicles onto the site, badging, vehicle stickers & inspection, labor, materials, tools, and incidentals necessary to complete this item.

102-3.2 Maintenance of Traffic. Basis of payment shall be made at the contract lump sum price for Maintenance of Traffic. The price shall be full compensation for providing all equipment, labor, and materials, and incidentals necessary to complete this item.

Payment will be made under:

Item A-102-3.1	Construction Access, Project Security, and Staging Area – per lump sum
Item A-102.3.2	Maintenance of Traffic – per lump sum

END OF ITEM A-102

Item A-103 Parking Equipment, Infrastructure, and Access Controls

GENERAL DESCRIPTION

The section describes the construction of the project parking equipment, infrastructure, and access controls, including all incidentals, required testing, and warranties for items as specified herein and shown in the Contract documents.

EQUIPMENT

All equipment shall be submitted to the Engineer within the contract allocated timeframe, and subject to Engineer and Owner approval. The Owner shall incur no procurement costs for rejected equipment, which was procured prior to approval. The Contractor shall hold responsibility for verification of compatibility and functionality of Contractor and Owner furnished equipment to be installed on site.

- a. Installation shall include the procurement, delivery, dry condition storage, and proper construction/attachment/securing of proposed equipment.
- b. Relocation shall include disassembly/detachment and storage of existing equipment, materials, and incidental items to be stored in dry conditions. Items shall be stored within the project staging area or an Owner approved location prior to installation.
- c. Removal shall include demolition and proper disposal of existing equipment off Owner property.

103-2.1 Canopy Structure

1. Install Panel Built Inc. Canopy Structure (50'x25') or approved equal.
2. Install Panel Built Inc. Canopy Structure (30'x25') or approved equal.
3. Remove existing entrance canopy structure, accessories, and attachments, including flush cutting metal column at foundation level and backfilling with Engineer approved materials. Remove, protect, and reinstall existing signage on new canopy structure.

103-2.2 Parking Gate Control Arm

1. Install gate control arm equipment as described in E series plan sheets and 26 00 00 specifications or approved equal.
2. Relocate existing parking gate control arms, motorized boxes, accessories, and attachments for full functionality at the new location(s).

103-2.3 Ticketing

1. Install ticketing equipment as described in E series plan sheets and 26 00 00 specifications or approved equal.
2. Salvage existing parking ticketing boxes, accessories, and attachments for full functionality at the

new location(s).

103-2.4 Plate Barrier System

1. Install plate barrier system equipment as described in E series plan sheets and 26 00 00 specifications or approved equal.
2. Relocate existing plate barrier systems, accessories, and attachments for full functionality at the new location(s).

103-2.5 Tiger Teeth System

1. Install tiger teeth system equipment as described in E series plan sheets and 26 00 00 specifications or approved equal.
2. Relocate existing tiger teeth systems, accessories, and attachments for full functionality at the new location(s).

103-2.6 Bus Shelter

1. Install Bus Shelter 5'x15' surface mounted to existing pavement structure.

103-2.7 Electrical

1. Install electrical conduit, cable, and connections as described on the E series plan sheets and the 26 00 00 specifications.
2. Install high mast and surface mounted lighting as described on the E series plan sheets and the 26 00 00 specifications.

103-2.8 Fiber Optic

1. Install fiber optic conduit, cable, and connections as described on the T series plan sheets and the 27 00 00 specifications.

CONSTRUCTION & MATERIALS

The construction and materials as specified shall meet the manufacturers' installation requirements and recommendations. Existing equipment to be relocated shall be documented prior to construction and meet the manufacturer's requirements for installation regardless of the original installation methods. The Contractor shall hold responsibility for any costs associated with damaged equipment, structures, accessories, and attachments of items within the work area; limited to current phasing, hauling, and staging area for responsible damages.

103-3.1 Documentation

The Contractor shall notify the RPR via written documentation of any existing conditions which may cause

deviations from manufacturer requirements prior to installation, relocation, or removal; RPR holds no responsibility or control of Contractor means and methods.

103-3.2 Supplementary Information

Reference A-100, 26 00 00, & 27 00 00 series specifications for access control equipment, electrical supply, and fiber optic supply attachment construction information.

METHOD OF MEASUREMENT

Measurements shall be recorded as items complete, operational, and accepted by the RPR. No separate measurements shall be made for materials, preparation, hauling, placement, labor, equipment, tools, testing, and other incidentals necessary to complete the item(s).

103-4.1 Canopy Structures shall be measured per lump sum installed by the Contractor and accepted by the RPR. Removal and reinstallation of existing canopy signage shall not be measured separately and considered incidental to this item.

103-4.2 Parking Gate Control Arms shall be measured per each installed or relocated by the Contractor and accepted by the RPR.

103-4.3 Ticketing Equipment shall be measured per each installed or relocated by the Contractor and accepted by the RPR.

103-4.4 Plate Barrier System shall be measured per each installed by the Contractor and accepted by the RPR.

103-4.5 Tiger Teeth System shall be measured per each installed by the Contractor and accepted by the RPR.

103-4.6 Bus Shelter shall be measured per each installed by the Contractor and accepted by the RPR.

103-4.7 Electrical Conduit & Cable shall be measured per linear foot installed by the Contractor and accepted by the RPR. Removal of existing conduit and cable required to complete this item shall not be measured separately and considered incidental to this item.

103-4.8 High Mast & Surface Mounted Lighting shall be measured per each installed by the Contractor and accepted by the RPR.

103-4.9 Fiber Optic Conduit & Cable shall be measured per linear foot installed by the Contractor and accepted by the RPR. Removal of existing conduit and cable required to complete this item shall not be measured separately and considered incidental to this item.

BASIS OF PAYMENT

Payments shall be full compensation for items complete, operational, and accepted by the RPR. No separate payments shall be made for materials, preparation, hauling, placement, labor, equipment, tools, testing, and other incidentals necessary to complete the item(s).

103-4.1 Canopy Structures shall be paid at the Contract unit price per lump sum installed by the Contractor and accepted by the RPR. Removal and reinstallation of existing canopy signage shall not be paid for directly but considered incidental to this item.

103-5.2 Parking Gate Control Arms shall be paid at the Contract unit price per each installed or relocated by the Contractor and accepted by the RPR.

103-5.3 Ticketing Equipment shall be paid at the Contract unit price per each installed or relocated by the Contractor and accepted by the RPR.

103-5.4 Plate Barrier System shall be paid at the Contract unit price per each installed by the Contractor and accepted by the RPR.

103-5.5 Tiger Teeth System shall be paid at the Contract unit price per each installed by the Contractor and accepted by the RPR.

103-5.6 Bus Shelter shall be paid at the Contract unit price per each installed by the Contractor and accepted by the RPR.

103-5.7 Electrical Conduit & Cable shall be paid at the Contract unit price per each installed by the Contractor and accepted by the RPR. Removal of existing conduit and cable required to complete this item shall not be paid separately and considered incidental to this item.

103-5.8 High Mast & Surface Mounted Lighting shall be paid at the Contract unit price per each installed by the Contractor and accepted by the RPR.

103-5.9 Fiber Optic Conduit & Cable shall be paid at the Contract unit price per each installed by the Contractor and accepted by the RPR. Removal of existing conduit and cable required to complete this item shall not be paid separately and considered incidental to this item.

Payment will be made under:

Item No. A-103-5.1a Install New Canopy Structure Including Foundations (50'x25') (Panel Built Inc. or

- Approved Equal) – per lump sum
- Item No. A-103-5.1b Install New Canopy Structure Including Foundations (30’x25’) (Panel Built Inc. or Approved Equal) – per lump sum
- Item No. A-103-5.2a Install New Parking Gate Control Arms – per each
- Item No. A-103-5.2b Relocate Existing Parking Gate Control Arms – per each
- Item No. A-103-5.3a Install New Ticketing Equipment – per each
- Item No. A-103-5.3b Relocate Existing Ticketing Equipment – per each
- Item No. A-103-5.4 Install New Plate Barrier System – per each
- Item No. A-103-5.5 Install New Tiger Teeth System – per each
- Item No. A-103-5.6 Install New Surface Mounted Bus Shelter (5’x15’) – per each
- Item No. A-103-5.7 Install Electrical Conduit & Cable In Existing Pavement or Turf (All Sizes) – per linear foot
- Item No. A-103-5.8a Install High Mast Lighting (Incl. Foundations, Poles, Fixtures, and Connections) – per each
- Item No. A-103-5.8b Install Surface Mounted Lighting (Incl. Wiring, Mounting, Fixtures, and Connections – per each
- Item No. A-103-5.9 Install Fiber Optic Conduit & Cable In Existing Pavement or Turf (All Sizes) – per linear foot

END OF ITEM A-103

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Item C-102 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control

DESCRIPTION

102-1. This item shall consist of temporary control measures as shown on the plans or as ordered by the Resident Project Representative (RPR) during the life of a contract to control pollution of air and water, soil erosion, and siltation through the use of silt fences, berms, dikes, dams, sediment basins, fiber mats, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.

Temporary erosion control shall be in accordance with the approved erosion control plan; the approved Construction Safety and Phasing Plan (CSPP) and AC 150/5370-2, *Operational Safety on Airports During Construction*. The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.

Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites.

Temporary control measures shall be designed, installed and maintained to minimize the creation of wildlife attractants that have the potential to attract hazardous wildlife on or near public-use airports.

MATERIALS

102-2.1 Grass. Grass that will not compete with the grasses sown later for permanent cover per Item T-901 shall be a quick-growing species (such as ryegrass, Italian ryegrass, or cereal grasses) suitable to the area providing a temporary cover. Selected grass species shall not create a wildlife attractant.

102-2.2 Mulches. Mulches may be hay, straw, fiber mats, netting, bark, wood chips, or other suitable material reasonably clean and free of noxious weeds and deleterious materials per Item T-908. Mulches shall not create a wildlife attractant.

102-2.3 Fertilizer. Fertilizer shall be a standard commercial grade and shall conform to all federal and state regulations and to the standards of the Association of Official Agricultural Chemists.

102-2.4 Slope drains. Slope drains may be constructed of pipe, fiber mats, rubble, concrete, asphalt, or other materials that will adequately control erosion.

102-2.5 Silt fence. Silt fence shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life. Silt fence shall meet the requirements of ASTM D6461.

102-2.6 Other. All other materials shall meet commercial grade standards and shall be approved by the RPR before being incorporated into the project.

CONSTRUCTION REQUIREMENTS

102-3.1 General. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply.

The RPR shall be responsible for assuring compliance to the extent that construction practices, construction operations, and construction work are involved.

102-3.2 Schedule. Prior to the start of construction, the Contractor shall submit schedules in accordance with the approved Construction Safety and Phasing Plan (CSPP) and the plans for accomplishment of temporary and permanent erosion control work for clearing and grubbing; grading; construction; paving; and structures at watercourses. The Contractor shall also submit a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of waste materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the RPR.

102-3.3 Construction details. The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in the plans and approved CSPP. Except where future construction operations will damage slopes, the Contractor shall perform the permanent seeding and mulching and other specified slope protection work in stages, as soon as substantial areas of exposed slopes can be made available. Temporary erosion and pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

Where erosion may be a problem, schedule and perform clearing and grubbing operations so that grading operations and permanent erosion control features can follow immediately if project conditions permit. Temporary erosion control measures are required if permanent measures cannot immediately follow grading operations. The RPR shall limit the area of clearing and grubbing, excavation, borrow, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent control measures current with the accepted schedule. If seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified as directed by the RPR.

The Contractor shall provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment as directed by the RPR. If temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or directed by the RPR, the work shall be performed by the Contractor and the cost shall be incidental to this item.

The RPR may increase or decrease the area of erodible earth material that can be exposed at any time based on an analysis of project conditions.

The erosion control features installed by the Contractor shall be maintained by the Contractor during the construction period.

Provide temporary structures whenever construction equipment must cross watercourses at frequent intervals. Pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials shall not be discharged into any waterways, impoundments or into natural or manmade channels.

102-3.4 Installation, maintenance and removal of silt fence. Silt fences shall extend a minimum of 16 inches (41 cm) and a maximum of 34 inches (86 cm) above the ground surface. Posts shall be set no more than 10 feet (3 m) on center. Filter fabric shall be cut from a continuous roll to the length required minimizing joints where possible. When joints are necessary, the fabric shall be spliced at a support post with a minimum 12-inch (300-mm) overlap and securely sealed. A trench shall be excavated approximately 4 inches (100 mm) deep by 4 inches (100 mm) wide on the upslope side of the silt fence. The trench shall be backfilled and the soil compacted over the silt fence fabric. The Contractor shall

remove and dispose of silt that accumulates during construction and prior to establishment of permanent erosion control. The fence shall be maintained in good working condition until permanent erosion control is established. Silt fence shall be removed upon approval of the RPR.

METHOD OF MEASUREMENT

102-4.1 Temporary erosion and pollution control work required will be performed as scheduled or directed by the RPR. Completed and accepted work will be measured as follows:

- a. Installation and removal of silt fence will be measured by the linear foot.
- b. Filter sock check dams will be measured per each.
- c. Catch basin protections will be measured per each.
- d. Culvert protections will be measured per each.
- e. Temporary construction exit will be measured per each.

102-4.2 Control work performed for protection of construction areas outside the construction limits, such as borrow and waste areas, haul roads, equipment and material storage sites, and temporary plant sites, will not be measured and paid for directly but shall be considered as a subsidiary obligation of the Contractor.

BASIS OF PAYMENT

102-5.1 Accepted quantities of temporary water pollution, soil erosion, and siltation control work ordered by the RPR and measured as provided in paragraph 102-4.1 will be paid for under:

Item C-102-5.1 Catch basin protection Type D (TDOT EC-STR-19) – per each

Where other directed work falls within the specifications for a work item that has a contract price, the units of work shall be measured and paid for at the contract unit price bid for the various items.

Temporary control features not covered by contract items that are ordered by the RPR will be paid for in accordance with Section 90, paragraph 90-05 *Payment for Extra Work*.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5200-33 *Hazardous Wildlife Attractants on or Near Airports*

AC 150/5370-2 *Operational Safety on Airports During Construction*

ASTM International (ASTM)

ASTM D6461 *Standard Specification for Silt Fence Materials*

United States Department of Agriculture (USDA)

FAA/USDA Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM C-102

Item C-105 Mobilization

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. Prior to commencement of construction activities, the Contractor must post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster “Equal Employment Opportunity is the Law” in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; Davis Bacon Wage Poster (WH 1321) - DOL “Notice to All Employees” Poster; and Applicable Davis-Bacon Wage Rate Determination. These notices must remain posted until final acceptance of the work by the Owner.

105-4 Engineer/RPR field office. 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 Payment will be made under:

Item C-105-5.1	Mobilization – per lump sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Office of Federal Contract Compliance Programs (OFCCP)

Executive Order 11246, as amended

EEOC-P/E-1 – Equal Employment Opportunity is the Law Poster

United States Department of Labor, Wage and Hour Division (WHD)

WH 1321 – Employee Rights under the Davis-Bacon Act Poster

END OF ITEM C-105

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Item P-101 Preparation/Removal of Existing Pavements

DESCRIPTION

101-1 This item shall consist of preparation of existing pavement surfaces for overlay, surface treatments, removal of existing pavement, and other miscellaneous items. The work shall be accomplished in accordance with these specifications and the applicable plans.

EQUIPMENT AND MATERIALS

101-2 All equipment and materials shall be specified here and in the following paragraphs or approved by the Resident Project Representative (RPR). The equipment shall not cause damage to the pavement to remain in place.

CONSTRUCTION

101-3.1 Removal of existing pavement.

The 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 the pavement.

a. Concrete pavement removal. Full depth saw cuts shall be made perpendicular to the slab surface. The Contractor shall saw through the full depth of the slab including any dowels at the joint, removing the pavement and installing new dowels as shown on the plans and per the specifications. Where the perimeter of the removal limits is not located on the joint and there are no dowels present, the perimeter shall be saw cut the full depth of the pavement. The pavement inside the saw cut shall be removed by methods which will not cause distress in the pavement which is to remain in place. If the material is to be wasted on the airport site, it shall be reduced to a maximum size of 1-1/2". Concrete slabs that are damaged by under breaking shall be repaired or removed and replaced as directed by the 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 the plans. Any underlying material that is 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 the Contractor's expense.

b. Asphalt pavement removal. Asphalt pavement to be removed shall be cut to the full depth of the asphalt pavement around the perimeter of the area to be removed. If the material is to be wasted on the airport site it shall be broken to a maximum size of 3/4 inches.

c. Repair or removal of Base, Subbase, and/or Subgrade. All failed material including surface, base course, subbase course, and subgrade shall be removed and repaired as shown on the plans or as directed by the RPR. Materials and methods of construction shall comply with the applicable sections of these specifications. Any damage caused by Contractor's removal process shall be repaired at the Contractor's expense.

101-3.2 Preparation of joints and cracks prior to overlay/surface treatment. Remove all vegetation and debris from cracks to a minimum depth of 1 inch (25 mm). If extensive vegetation exists, treat the specific area with a concentrated solution of a water-based herbicide approved by the RPR. Fill all cracks

greater than 1/4 inch (6 mm) wide) with a crack sealant per ASTM D6690. The crack sealant, preparation, and application shall be compatible with the surface treatment/overlay to be used. To minimize contamination of the asphalt with the crack sealant, underfill the crack sealant a minimum of 1/8 inch (3 mm), not to exceed 1/4 inch (6 mm). Any excess joint or crack sealer shall be removed from the pavement surface.

Wider cracks (over 1-1/2 inch wide (38 mm)), along with soft or sunken spots, indicate that the pavement or the pavement base should be repaired or replaced as stated below.

Cracks and joints may be filled with a mixture of emulsified asphalt and aggregate. The aggregate shall consist of limestone, volcanic ash, sand, or other material that will cure to form a hard substance. The combined gradation shall be as shown in the following table.

Gradation

Sieve Size	Percent Passing
No. 4 (4.75 mm)	100
No. 8 (2.36 mm)	90-100
No. 16 (1.18 mm)	65-90
No. 30 (600 µm)	40-60
No. 50 (300 µm)	25-42
No. 100 (150 µm)	15-30
No. 200 (75 µm)	10-20

Up to 3% cement can be added to accelerate the set time. The mixture shall not contain more than 20% natural sand without approval in writing from the RPR.

The proportions of asphalt emulsion and aggregate shall be determined in the field and may be varied to facilitate construction requirements. Normally, these proportions will be approximately one part asphalt emulsion to five parts aggregate by volume. The material shall be poured or placed into the joints or cracks and compacted to form a voidless mass. The joint or crack shall be filled to within +0 to -1/8 inches (+0 to -3 mm) of the surface. Any material spilled outside the width of the joint shall be removed from the pavement surface prior to constructing the overlay. Where concrete overlays are to be constructed, only the excess joint material on the pavement surface and vegetation in the joints need to be removed.

101-3.3 Removal of Foreign Substances/contaminates prior to overlay. Removal of foreign substances/contaminates from existing pavement that will affect the bond of the new treatment shall consist of removal of rubber, fuel spills, oil, crack sealer, at least 90% of paint, and other foreign substances from the surface of the pavement. Areas that require removal are designated on the plans and as directed by the RPR in the field during construction.

High-pressure water may be used. If chemicals are used, they shall comply with the state's environmental protection regulations. Removal methods used shall not cause major damage to the pavement, or to any structure or utility within or adjacent to the work area. Major damage is defined as changing the properties of the pavement, removal of asphalt causing the aggregate to ravel, or removing pavement over 1/8 inch (3 mm) deep. If it is deemed by the RPR that damage to the existing pavement is caused by operational error, such as permitting the application method to dwell in one location for too long, the Contractor shall repair the damaged area without compensation and as directed by the RPR.

Removal of foreign substances shall not proceed until approved by the RPR. Water used for high-pressure water equipment shall be provided by the Contractor at the Contractor's expense. No material shall be deposited on the pavement shoulders. All wastes shall be disposed of in areas indicated in this specification or shown on the plans.

101-3.4 Concrete spall or failed asphaltic concrete pavement repair.

a. Repair of concrete spalls in areas to be overlaid with asphalt. The Contractor shall repair all spalled concrete as shown on the plans or as directed by the RPR. The perimeter of the repair shall be saw cut a minimum of 2 inches (50 mm) outside the affected area and 2 inches (50 mm) deep. The deteriorated material shall be removed to a depth where the existing material is firm or cannot be easily removed with a geologist pick. The removed area shall be filled with asphalt mixture with aggregate sized appropriately for the depth of the patch. The material shall be compacted with equipment approved by the RPR until the material is dense and no movement or marks are visible. The material shall not be placed in lifts over 4 inches (100 mm) in depth. This method of repair applies only to pavement to be overlaid.

b. Asphalt pavement repair. The Contractor shall repair all spalled concrete as shown on the plans or as directed by the RPR. The failed areas shall be removed as specified in paragraph 101-3.1b. All failed material including surface, base course, subbase course, and subgrade shall be removed. Materials and methods of construction shall comply with the applicable sections of these specifications.

101-3.5 Cold milling. Milling shall be performed with a power-operated milling machine or grinder, capable of producing a uniform finished surface. The milling machine or grinder shall operate without tearing or gouging the underlying surface. The milling machine or grinder shall be equipped with grade and slope controls, and a positive means of dust control. All millings shall be removed and disposed off Airport property. If the Contractor mills or grinds deeper or wider than the plans specify, the Contractor shall replace the material removed with new material at the Contractor's Expense.

a. Patching. The milling machine shall be capable of cutting a vertical edge without chipping or spalling the edges of the remaining pavement and it shall have a positive method of controlling the depth of cut. The RPR shall layout the area to be milled with a straightedge in increments of 1-foot (30 cm) widths. The area to be milled shall cover only the failed area. Any excessive area that is milled because the Contractor doesn't have the appropriate milling machine, or areas that are damaged because of his negligence, shall be repaired by the Contractor at the Contractor's Expense.

b. Profiling, grade correction, or surface correction. The milling machine shall have a minimum width of 7 feet and it shall be equipped with electronic grade control devices that will cut the surface to the grade specified. The tolerances shall be maintained within +0 inch and -1/4 inch (+0 mm and -6mm) of the specified grade. The machine must cut vertical edges and have a positive method of dust control. The machine must have the ability to remove the millings or cuttings from the pavement and load them into a truck. All millings shall be removed and disposed of off the airport.

c. Clean-up. The Contractor shall sweep the milled surface daily and immediately after the milling until all residual materials are removed from the pavement surface. Prior to paving, the Contractor shall wet down the milled pavement and thoroughly sweep and/or blow the surface to remove loose residual material. Waste materials shall be collected and removed from the pavement surface and adjacent areas by sweeping or vacuuming. Waste materials shall be removed and disposed off airport property.

101-3.6. Preparation of asphalt pavement surfaces prior to surface treatment. Existing asphalt pavements to be treated with a surface treatment shall be prepared as follows:

a. Patch asphalt pavement surfaces that have been softened by petroleum derivatives or have failed due to any other cause. Remove damaged pavement to the full depth of the damage and replace with new asphalt pavement similar to that of the existing pavement in accordance with paragraph 101-3.4b.

b. Repair joints and cracks in accordance with paragraph 101-3.2.

c. Remove oil or grease that has not penetrated the asphalt pavement by scrubbing with a detergent and washing thoroughly with clean water. After cleaning, treat these areas with an oil spot primer.

d. Clean pavement surface immediately prior to placing the surface treatment so that it is free of dust, dirt, grease, vegetation, oil or any type of objectionable surface film.

101-3.7 Maintenance. The Contractor shall perform all maintenance work necessary to keep the pavement in a satisfactory condition until the full section is complete and accepted by the RPR. The surface shall be kept clean and free from foreign material. The pavement shall be properly drained at all times. If cleaning is necessary or if the pavement becomes disturbed, any work repairs necessary shall be performed at the Contractor's expense.

101-3.8 Preparation of Joints in Rigid Pavement prior to resealing. Prior to application of sealant material, clean and dry the joints of all scale, dirt, dust, old sealant, curing compound, moisture and other foreign matter. The Contractor shall demonstrate, in the presence of the RPR, that the method used cleans the joint and does not damage the joint.

101-3.8.1 Removal of Existing Joint Sealant. All existing joint sealants will be removed by plowing or use of hand tools. Any remaining sealant and or debris will be removed by use of wire brushes or other tools as necessary. Resaw joints removing no more than 1/16 inch (2 mm) from each joint face. Immediately after sawing, flush out joint with water and other tools as necessary to completely remove the slurry.

101-3.8.2 Cleaning prior to sealing. Immediately before sealing, joints shall be cleaned by removing any remaining laitance and other foreign material. Allow sufficient time to dry out joints prior to sealing. Joint surfaces will be surface-dry prior to installation of sealant.

101-3.8.3 Joint sealant. Joint material and installation will be in accordance with Item P-605.

101-3.9 Preparation of Cracks in Flexible Pavement prior to sealing. Prior to application of sealant material, clean and dry the joints of all scale, dirt, dust, old sealant, curing compound, moisture and other foreign matter. The Contractor shall demonstrate, in the presence of the RPR, that the method used cleans the cracks and does not damage the pavement.

101-3.9.1 Preparation of Crack. Widen crack with router by removing a minimum of 1/16 inch (2 mm) from each side of crack. Immediately before sealing, cracks will be blown out with a hot air lance combined with oil and water-free compressed air.

101-3.9.2 Removal of Existing Crack Sealant. Existing sealants will be removed by routing. Following routing any remaining debris will be removed by use of a hot lance combined with oil and water-free compressed air.

101-3.9.3 Crack Sealant. Crack sealant material and installation will be in accordance with Item P-605.

101-3.9.4 Removal of Pipe and other Buried Structures.

a. Removal of Existing Pipe Material. Remove the types of pipe as indicated on the plans. The pipe material shall be legally disposed of off-site in a timely manner following removal. Trenches shall be backfilled with material equal to or better in quality than adjacent embankment. Trenches under paved areas must be compacted to 95% of ASTM D1557.

b. Removal of Inlets/Manholes. Where indicated on the plans or as directed by the RPR, inlets and/or manholes shall be removed and legally disposed of off-site in a timely fashion after removal. Excavations after removal shall be backfilled with material equal or better in quality than adjacent embankment. Where under paved areas must be compacted to 95% of ASTM D1557, and where outside of paved areas must be compacted to 90% of ASTM D1557.

c. Removal of Existing Fiber Optic Duct Bank Material. Remove the types of pipe and concrete encasement as indicated on the plans. The pipe material shall be legally disposed of off-site in a timely manner following removal. Trenches shall be backfilled with material equal to or better in quality than adjacent embankment. Trenches under paved areas must be compacted to 95% of ASTM D1557, trenches

d. Removal of Fiber Optic Pull Boxes. Where indicated on the plans or as directed by the RPR, pull boxes shall be removed and legally disposed of off-site in a timely fashion after removal. Excavations after removal shall be backfilled with material equal or better in quality than adjacent embankment. Where removals occur under paved areas, soil must be compacted to 95% of ASTM D1557, and where removals occur outside of paved areas, soil must be compacted to 90% of ASTM D1557.

METHOD OF MEASUREMENT

101-4.1 Demolition and Removal of Curbs & Gutters. The unit of measurement for all curb and gutter removal shall be the number of linear feet removed and disposed of by the Contractor at the locations indicated on the plans. Any curb and gutter removed outside the limits of removal because of damage from contractor negligence shall not be included in the measurement for payment. No direct measurement or payment shall be made for saw cutting. Saw cutting shall be incidental to pavement removal. Price shall include all excavation, labor, tools, materials, and disposal necessary to complete this item.

101-4.2 Demolition and Removal Extruded Curb. The unit of measurement for all extruded curb removal shall be the number of linear feet removed and disposed of by the Contractor at the locations indicated on the plans. Any curb and gutter removed outside the limits of removal because of damage from contractor negligence shall not be included in the measurement for payment. No direct measurement or payment shall be made for saw cutting. Saw cutting shall be incidental to pavement removal. Price shall include all excavation, labor, tools, materials, and disposal necessary to complete this item.

101-4.3 Removal of Existing Markings. The unit of measurement for pavement marking removal shall be the number of linear feet removed by the Contractor to the depths indicated. Any pavement removed outside the limits of removal because the pavement was damaged by negligence on the part of the Contractor and needing to be repainted, shall not be included in the measurement for payment. No direct measurement or payment shall be made for saw cutting. Saw cutting shall be incidental to pavement removal. The thickness identified in this bid item is nominal and may vary. No additional measurement or compensation shall be made for pavements that are thicker. Payment for removal of base materials shall be paid under separate P-101 item.

101-4.4 Removal of Existing Marking Symbols. The unit of measurement for pavement marking symbols removal shall be by each entire symbol removed by the Contractor to the depths indicated. Any pavement removed outside the limits of removal because the pavement was damaged by negligence on the part of the Contractor and needing to be repainted, shall not be included in the measurement for payment. No direct measurement or payment shall be made for saw cutting. Saw cutting shall be incidental to pavement removal. The thickness identified in this bid item is nominal and may vary. No additional measurement or compensation shall be made for pavements that are thicker. Payment for removal of base materials shall be paid under separate P-101 item.

101-4.5 Chain Link Fence Demolition – 10' tall. The unit of measure for chain link fence demolition shall be the number of linear feet removed by the Contractor. No direct payment shall be made for removal of fence post footings or mow strip pavement section. Price shall include all excavation, labor, tools, materials, and disposal necessary to complete this item.

101-4.6 Chain Link Fence Demolition – 6' tall. The unit of measure for chain link fence demolition shall be the number of linear feet removed by the Contractor. No direct payment shall be made for

removal of fence post footings or mow strip pavement section. Price shall include all excavation, labor, tools, materials, and disposal necessary to complete this item.

101-4.7 Chain Link Fence Demolition – 24’ tall Vehicle Gate. The unit of measure for chain link fence demolition shall be the number by each entire gate removed by the Contractor. No direct payment shall be made for removal of fence post footings or mow strip pavement section. Price shall include all excavation, labor, tools, materials, and disposal necessary to complete this item.

101-4.8 Bituminous Concrete Pavement Demolition. The unit of measure for bituminous concrete pavement demolition shall be the number of square yards removed by the Contractor. Any pavement removed outside the limits of removal because the pavement was damaged by negligence on the part of the Contractor, shall not be included in the measurement for payment. No direct measurement or payment shall be made for saw cutting. Saw cutting shall be incidental to pavement removal. The thickness identified in this bid item is nominal and may vary. No additional measurement or compensation shall be made for pavements that are less than or equal to 8”. Price shall include all excavation, labor, tools, materials, and disposal necessary to complete this item.

101-4.9 Portland Cement Concrete Pavement Demolition. The unit of measure for bituminous concrete pavement demolition shall be the number of square yards removed by the Contractor. Any pavement removed outside the limits of removal because the pavement was damaged by negligence on the part of the Contractor, shall not be included in the measurement for payment. No direct measurement or payment shall be made for saw cutting. Saw cutting shall be incidental to pavement removal. The thickness identified in this bid item is nominal and may vary. No additional measurement or compensation shall be made for pavements that are thicker. Price shall include all excavation, labor, tools, materials, and disposal necessary to complete this item.

101-4.10 Demolition and Removal of Existing Concrete Wheel Stops. The unit of measurement for the demolition and removal of existing concrete wheel stops shall be made per each concrete wheel stops removed by the Contractor as specified in the plans. Any damages made to wheel stops or pavement outside of the removal limits by negligence on the part of the Contractor, shall not be included in the measurement for payment and is at the expense of the contractor to repair/replace. Price shall include all excavation, labor, tools, materials, and disposal necessary to complete this item.

101-4.11 Removal of Crosswalks and Restoration of Medians. The unit of measure for removing crosswalks and restoring medians shall be the number of each removed by the Contractor identified in the plans. Any damages made beyond the removal limits by negligence on the part of the Contractor, shall not be included in the measurement for payment and is at the expense of the contractor to repair/replace. Price shall include all excavation, labor, tools, materials, and disposal necessary to complete this item.

101-4.12 Demolition of existing sidewalk. The unit of measurement for removal of existing sidewalk shall be per square yard for the sidewalk removed by the Contractor. Any pavement removed outside the limits of removal because the pavement was damaged by negligence on the part of the Contractor, shall not be included in the measurement for payment. No direct measurement or payment shall be made for saw cutting. Saw cutting shall be incidental to pavement removal. Price shall include all excavation, labor, tools, materials, and disposal necessary to complete this item.

101-4.13 Demolition and Removal of Existing Overhead Canopy. The unit of measurement for removal of existing overhead canopy shall be made per each for the number entire canopy unit removed by the Contractor as identified in the plans. Any damages made to property beyond the removal limits shall be the responsibility of the Contractor replace, repair, or compensate damages incurred. Price shall include all excavation, labor, tools, materials, and disposal necessary to complete this item.

BASIS OF PAYMENT

101-5.1 Payment. Payment shall be made at contract unit price for the unit of measurement as specified above. This price shall be full compensation for furnishing all materials and for all preparation, hauling, and placing of the material and for all labor, equipment, tools, and incidentals necessary to complete this item.

Item P-101-5.1	Demolition and Removal of Curb & Gutter (All Sizes) – per linear foot
Item P-101-5.2	Demolition and Removal Extruded Curb – per linear foot
Item P-101-5.3	Removal of Existing Pavement Markings – per linear foot
Item P-101-5.4	Removal of Existing Pavement Marking Symbols – per each
Item P-101-5.5	Chain Link Fence Demolition – 10' Tall AOA Fence – per linear foot
Item P-101-5.6	Chain Link Fence Demolition – 6' Chain Link Fence – per linear foot
Item P-101-5.7	Bituminous Concrete Pavement Demolition – Full Depth – per square yard
Item P-101-5.8	Portland Cement Concrete Pavement Demolition - 8" Thick Full Depth – per square yard
Item P-101-5.9	Demolition and Removal of Existing Concrete Wheel Stops – per each
Item P-101-5.10	Remove Temporary Crosswalk and Restore Medians – per each
Item P-101-5.11	Demolition and Removal of Existing Sidewalk – per square yard
Item P-101-5.12	Demolition and Removal of Existing Overhead Canopy (Entrance Plaza) – per each

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5380-6	Guidelines and Procedures for Maintenance of Airport Pavements.

ASTM International (ASTM)

ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements

END OF ITEM P-101

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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 or ASTM D6690.

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 $25\% \pm 5\%$ 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 a flexible, non-shrinkable, non-absorbing, non-staining, and non-reacting adhesive-backed tape. The material shall have a melting point at least 5°F (3°C) 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 (3 mm) 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°F (10°C) 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, 14 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 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 waterblasting 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. The unit applicators used for heating and installing ASTM D6690 joint sealant materials shall be mobile and shall be equipped with a double-boiler, agitator-type kettle with an oil medium in the outer space for heat transfer; a direct-connected pressure-type extruding device with a nozzle shaped for inserting in the joint to be filled; positive temperature devices for controlling the temperature of the transfer oil and sealant; and a recording type thermometer for indicating the temperature of the sealant. The applicator unit shall be designed so that the sealant will circulate through the delivery hose and return to the inner kettle when not in use.

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, tractor-mounted routing equipment, concrete saw, or waterblaster as specified in paragraph 605-3.2. The newly exposed concrete joint faces and the pavement surface extending a minimum of 1/2 inch (12 mm) 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 (75 mm) 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 (15 m) ahead of the joint sealing operations, perform a final cleaning with compressed air. Fill the joints from the bottom up to 1/4 inch $\pm$ 1/16 inch (2 mm) 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 No measurement shall be made of joint sealing materials required in the construction of new pavements. The cost of furnishing and installing joint materials shall be included in the price for the items which require its use.

BASIS OF PAYMENT

605-5.1 No separate payment will be made for sawing, joint sealing, adhesives, or other materials, equipment, tools, labor, and incidentals required to complete joint sealing for newly constructed pavements. All joint sealing and/or joint sealing filler shall be considered incidental to the items requiring its use. complete the 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
ASTM D7116	Standard Specification for Joint Sealants, Hot Applied, Jet Fuel Resistant Types for Portland Cement Concrete Pavements

Advisory Circulars (AC)

AC 150/5340-30	Design and Installation Details for Airport Visual Aids

END ITEM P-605

Item P-610 Concrete for Miscellaneous Structures

DESCRIPTION

610-1.1 This item shall consist of concrete and reinforcement, as shown on the plans, prepared and constructed in accordance with these specifications. This specification shall be used for all concrete other than airfield pavement which are cast-in-place.

MATERIALS

610-2.1 General. Only approved materials, conforming to the requirements of these specifications, shall be used in the work. Materials may be subject to inspection and tests at any time during their preparation or use. The source of all materials shall be approved by the Resident Project Representative (RPR) before delivery or use in the work. Representative preliminary samples of the materials shall be submitted by the Contractor, when required, for examination and test. Materials shall be stored and handled to ensure preservation of their quality and fitness for use and shall be located to facilitate prompt inspection. All equipment for handling and transporting materials and concrete must be clean before any material or concrete is placed in them.

The use of pit-run aggregates shall not be permitted unless the pit-run aggregate has been screened and washed, and all fine and coarse aggregates stored separately and kept clean. The mixing of different aggregates from different sources in one storage stockpile or alternating batches of different aggregates shall not be permitted.

a. Reactivity. Fine aggregate and coarse aggregates to be used in all concrete shall have been tested separately within six months of the project in accordance with ASTM C1260. Test results shall be submitted to the RPR. The aggregate shall be considered innocuous if the expansion of test specimens, tested in accordance with ASTM C1260, does not exceed 0.08% at 14 days (16 days from casting). If the expansion either or both test specimen is greater than 0.08% at 14 days, but less than 0.20%, a minimum of 25% of Type F fly ash, or between 40% and 55% of slag cement shall be used in the concrete mix.

If the expansion is greater than 0.20%, the aggregates shall not be used, and test results for other aggregates must be submitted for evaluation; or aggregates that meet P-501 reactivity test requirements may be utilized.

610-2.2 Coarse aggregate. The coarse aggregate for concrete shall meet the requirements of ASTM C33 and the requirements of Table 4, Class Designation 5S; and the grading requirements shown below, as required for the project.

Coarse Aggregate Grading Requirements

Maximum Aggregate Size	ASTM C33, Table 3 Grading Requirements (Size No.)
1 1/2 inch (37.5 mm)	467 or 4 and 67
1 inch (25 mm)	57
3/4 inch (19 mm)	67
1/2 inch (12.5 mm)	7

610-2.2.1 Coarse Aggregate susceptibility to durability (D) cracking.

Coarse aggregate may only be accepted from sources that have a 20-year service history for the same gradation to be supplied with no history of D-Cracking. Aggregates that do not have a 20-year record of service free from major repairs (less than 5% of slabs replaced) in similar conditions without D-cracking shall not be used unless the material currently being produced has a durability factor greater than or equal to 95 per ASTM C666. The Contractor shall submit a current certification and test results to verify the aggregate acceptability. Test results will only be accepted from a State Department of Transportation (DOT) materials laboratory or an accredited laboratory. Certification and test results which are not dated or which are over one (1) year old or which are for different gradations will not be accepted.

Crushed granite, calcite cemented sandstone, quartzite, basalt, diabase, rhyolite or trap rock are considered to meet the D-cracking test requirements but must meet all other quality tests specified in Item P-501.

610-2.3 Fine aggregate. The fine aggregate for concrete shall meet all fine aggregate requirements of ASTM C33.

610-2.4 Cement. Cement shall conform to the requirements of ASTM C595 Type IL.

610-2.5 Cementitious materials.

a. Fly ash. Fly ash shall meet the requirements of ASTM C618, with the exception of loss of ignition, where the maximum shall be less than 6%. Fly ash shall have a Calcium Oxide (CaO) content of less than 15% and a total available alkali content less than 3% per ASTM C311. Fly ash produced in furnace operations using liming materials or soda ash (sodium carbonate) as an additive shall not be acceptable. The Contractor shall furnish the previous three most recent, consecutive ASTM C618 reports for each source of fly ash proposed in the concrete mix, and shall furnish each additional report as they become available during the project. The reports can be used for acceptance or the material may be tested independently by the RPR.

b. Slag cement (ground granulated blast furnace (GGBF)). Slag cement shall conform to ASTM C989, Grade 100 or Grade 120. Slag cement shall be used only at a rate between 25% and 55% of the total cementitious material by mass.

610-2.6 Water. Water used in mixing or curing shall be from potable water sources. Other sources shall be tested in accordance with ASTM C1602 prior to use.

610-2.7 Admixtures. The Contractor shall submit certificates indicating that the material to be furnished meets all of the requirements indicated below. In addition, the RPR may require the Contractor to submit complete test data from an approved laboratory showing that the material to be furnished meets all of the requirements of the cited specifications. Subsequent tests may be made of samples taken by the RPR from

the supply of the material being furnished or proposed for use on the work to determine whether the admixture is uniform in quality with that approved.

a. Air-entraining admixtures. Air-entraining admixtures shall meet the requirements of ASTM C260 and shall consistently entrain the air content in the specified ranges under field conditions. The air-entrainment agent and any water reducer admixture shall be compatible.

b. Water-reducing admixtures. Water-reducing admixture shall meet the requirements of ASTM C494, Type A, B, or D. ASTM C494, Type F and G high range water reducing admixtures and ASTM C1017 flowable admixtures shall not be used.

c. Other chemical admixtures. The use of set retarding, and set-accelerating admixtures shall be approved by the RPR. Retarding shall meet the requirements of ASTM C494, Type A, B, or D and set-accelerating shall meet the requirements of ASTM C494, Type C. Calcium chloride and admixtures containing calcium chloride shall not be used.

610-2.8 Premolded joint material. Premolded joint material for expansion joints shall meet the requirements of ASTM D1751.

610-2.9 Joint filler. The filler for joints shall meet the requirements of Item P-605, unless otherwise specified.

610-2.10 Steel reinforcement. Reinforcing shall consist of reinforcing steel bars conforming to the requirements of ASTM A615, ASTM A706, ASTM A775, ASTM A934.

610-2.11 Materials for curing concrete. Curing materials shall conform to ASTM C309.

CONSTRUCTION METHODS

610-3.1 General. The Contractor shall furnish all labor, materials, and services necessary for, and incidental to, the completion of all work as shown on the drawings and specified here. All machinery and equipment used by the Contractor on the work, shall be of sufficient size to meet the requirements of the work. All work shall be subject to the inspection and approval of the RPR.

610-3.2 Concrete Mixture. The concrete shall develop a compressive strength of 4000 psi in 28 days as determined by test cylinders made in accordance with ASTM C31 and tested in accordance with ASTM C39. The concrete shall contain not less than 470 pounds of cementitious material per cubic yard (280 kg per cubic meter). The water cementitious ratio shall not exceed 0.45 by weight. The air content of the concrete shall be 5% +/- 1.2% as determined by ASTM C231 and shall have a slump of not more than 4 inches (100 mm) as determined by ASTM C143.

610-3.3 Mixing. Concrete may be mixed at the construction site, at a central point, or wholly or in part in truck mixers. The concrete shall be mixed and delivered in accordance with the requirements of ASTM C94 or ASTM C685.

The concrete shall be mixed only in quantities required for immediate use. Concrete shall not be mixed while the air temperature is below 40°F (4°C) without the RPRs approval. If approval is granted for mixing under such conditions, aggregates or water, or both, shall be heated and the concrete shall be placed at a temperature not less than 50°F (10°C) nor more than 100°F (38°C). The Contractor shall be held responsible for any defective work, resulting from freezing or injury in any manner during placing and curing, and shall replace such work at his expense.

Retempering of concrete by adding water or any other material is not permitted.

The rate of delivery of concrete to the job shall be sufficient to allow uninterrupted placement of the concrete.

610-3.4 Forms. Concrete shall not be placed until all the forms and reinforcements have been inspected and approved by the RPR. Forms shall be of suitable material and shall be of the type, size, shape, quality, and strength to build the structure as shown on the plans. The forms shall be true to line and grade and shall be mortar-tight and sufficiently rigid to prevent displacement and sagging between supports. The surfaces of forms shall be smooth and free from irregularities, dents, sags, and holes. The Contractor shall be responsible for their adequacy.

The internal form ties shall be arranged so no metal will show in the concrete surface or discolor the surface when exposed to weathering when the forms are removed. All forms shall be wetted with water or with a non-staining mineral oil, which shall be applied immediately before the concrete is placed. Forms shall be constructed so they can be removed without injuring the concrete or concrete surface.

610-3.5 Placing reinforcement. All reinforcement shall be accurately placed, as shown on the plans, and shall be firmly held in position during concrete placement. Bars shall be fastened together at intersections. The reinforcement shall be supported by approved metal chairs. Shop drawings, lists, and bending details shall be supplied by the Contractor when required.

610-3.6 Embedded items. Before placing concrete, all embedded items shall be firmly and securely fastened in place as indicated. All embedded items shall be clean and free from coating, rust, scale, oil, or any foreign matter. The concrete shall be spaded and consolidated around and against embedded items. The embedding of wood shall not be allowed.

610-3.7 Concrete Consistency. The Contractor shall monitor the consistency of the concrete delivered to the project site; collect each batch ticket; check temperature; and perform slump tests on each truck at the project site in accordance with ASTM C143.

610-3.8 Placing concrete. All concrete shall be placed during daylight hours, unless otherwise approved. The concrete shall not be placed until the depth and condition of foundations, the adequacy of forms and falsework, and the placing of the steel reinforcing have been approved by the RPR. Concrete shall be placed as soon as practical after mixing, but in no case later than one (1) hour after water has been added to the mix. The method and manner of placing shall avoid segregation and displacement of the reinforcement. Troughs, pipes, and chutes shall be used as an aid in placing concrete when necessary. The concrete shall not be dropped from a height of more than 5 feet (1.5 m). Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to rehandling or flowing. Do not subject concrete to procedures which cause segregation. Concrete shall be placed on clean, damp surfaces, free from running water, or on a properly consolidated soil foundation.

610-3.9 Vibration. Vibration shall follow the guidelines in American Concrete Institute (ACI) Committee 309R, Guide for Consolidation of Concrete.

610-3.10 Joints. Joints shall be constructed as indicated on the plans.

610-3.11 Finishing. All exposed concrete surfaces shall be true, smooth, and free from open or rough areas, depressions, or projections. All concrete horizontal plane surfaces shall be brought flush to the proper elevation with the finished top surface struck-off with a straightedge and floated.

610-3.12 Curing and protection. All concrete shall be properly cured in accordance with the recommendations in American Concrete Institute (ACI) 308R, Guide to External Curing of Concrete. The concrete shall be protected from damage until project acceptance.

610-3.13 Cold weather placing. When concrete is placed at temperatures below 40°F (4°C), follow the cold weather concreting recommendations found in ACI 306R, Cold Weather Concreting.

610-3.14 Hot weather placing. When concrete is placed in hot weather greater than 85°F (30 °C), follow the hot weather concreting recommendations found in ACI 305R, Hot Weather Concreting.

QUALITY ASSURANCE (QA)

610-4.1 Quality Assurance sampling and testing. Concrete for each day's placement will be accepted on the basis of the compressive strength specified in paragraph 610-3.2. The RPR will sample the concrete in accordance with ASTM C172; test the slump in accordance with ASTM C143; test air content in accordance with ASTM C231; make and cure compressive strength specimens in accordance with ASTM C31; and test in accordance with ASTM C39. The QA testing agency will meet the requirements of ASTM C1077.

The Contractor shall provide adequate facilities for the initial curing of cylinders.

610-4.2 Defective work. Any defective work that cannot be satisfactorily repaired as determined by the RPR, shall be removed and replaced at the Contractor's expense. Defective work includes, but is not limited to, uneven dimensions, honeycombing and other voids on the surface or edges of the concrete.

METHOD OF MEASUREMENT

610-5.1 Concrete for curbs and gutters of all sizes shall be measured by the number of linear feet of concrete complete in place and accepted. Concrete for sidewalks shall be measured by the number of square feet of concrete in place and accepted. Concrete for pedestrian ramps and landings shall be measured per each installed and accepted. Concrete for driveway pavement and concrete islands shall be measured by the square yard of concrete placed and accepted.

BASIS OF PAYMENT

610-6.1 Payment shall be made at the contract unit price for each item in this section. This price shall be full compensation for furnishing all materials including reinforcement and embedded items and for all preparation, delivery, installation, and curing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-610-6.1	Installation of Extruded Curb – per linear foot
Item P-610-6.2	Installation of Concrete Curb and Gutter – per linear foot
Item P-610-6.3	Installation of 4" Sidewalk – per square foot
Item P-610-6.4	Concrete Pedestrian Ramp and Landings – per each
Item P-610-6.5	8" Concrete Driveway Apron Paving – per square yard
Item P-610-6.6	6" Concrete Island for Gate Equipment – per square yard

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM A184	Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement

ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A704	Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement
ASTM A706	Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
ASTM A775	Standard Specification for Epoxy-Coated Steel Reinforcing Bars
ASTM A884	Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement
ASTM A934	Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars
ASTM A1064	Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM C31	Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C33	Standard Specification for Concrete Aggregates
ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C94	Standard Specification for Ready-Mixed Concrete
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C114	Standard Test Methods for Chemical Analysis of Hydraulic Cement
ASTM C136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C143	Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C150	Standard Specification for Portland Cement
ASTM C171	Standard Specification for Sheet Materials for Curing Concrete
ASTM C172	Standard Practice for Sampling Freshly Mixed Concrete
ASTM C231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C260	Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C309	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C311	Standard Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use in Portland-Cement Concrete
ASTM C494	Standard Specification for Chemical Admixtures for Concrete
ASTM C618	Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C666	Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing

ASTM C685	Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing
ASTM C989	Standard Specification for Slag Cement for Use in Concrete and Mortars
ASTM C1017	Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
ASTM C1077	Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM C1157	Standard Performance Specification for Hydraulic Cement
ASTM C1260	Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
ASTM C1365	Standard Test Method for Determination of the Proportion of Phases in Portland Cement and Portland-Cement Clinker Using X-Ray Powder Diffraction Analysis
ASTM C1602	Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
ASTM D1751	Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Asphalt Types)
ASTM D1752	Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction

American Concrete Institute (ACI)

ACI 305R	Hot Weather Concreting
ACI 306R	Cold Weather Concreting
ACI 308R	Guide to External Curing of Concrete
ACI 309R	Guide for Consolidation of Concrete

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Item F-162 Chain-Link Fence

DESCRIPTION

162-1.1 This item shall consist of furnishing and erecting a chain-link fence in accordance with these specifications, the details shown on the plans, and in conformity with the lines and grades shown on the plans or established by the RPR.

MATERIALS

162-2.1 Fabric. The fabric shall be woven with a 9-gauge galvanized steel wire in a 2-inch (50 mm) mesh and shall meet the requirements of ASTM A392, Class 2.

162-2.2 Barbed wire. Barbed wire shall be 2-strand 12-1/2 gauge zinc-coated wire with 4-point barbs and shall conform to the requirements of ASTM A121, Class 3, Chain Link Fence Grade.

162-2.3 Posts, rails, and braces. Line posts, rails, and braces shall conform to the requirements of ASTM F1043 or ASTM F1083 as follows:

- Galvanized tubular steel pipe shall conform to the requirements of Group IA, (Schedule 40) coatings conforming to Type A, or Group IC (High Strength Pipe), External coating Type B, and internal coating Type B or D.
- Posts, rails, and braces furnished for use in conjunction with aluminum alloy fabric shall be aluminum alloy or composite.

Posts, rails, and braces, with the exception of galvanized steel conforming to ASTM F1043 or ASTM F1083, Group 1A, Type A, or aluminum alloy, shall demonstrate the ability to withstand testing in salt spray in accordance with ASTM B117 as follows:

- External: 1,000 hours with a maximum of 5% red rust.
- Internal: 650 hours with a maximum of 5% red rust.

The dimensions of the posts, rails, and braces shall be in accordance with Tables I through VI of Federal Specification RR-F-191/3.

162-2.4 Gates. Gate frames shall consist of galvanized steel pipe and shall conform to the specifications for the same material under paragraph 162-2.3. The fabric shall be of the same type material as used in the fence.

162-2.5 Wire ties and tension wires. Wire ties for use in conjunction with a given type of fabric shall be of the same material and coating weight identified with the fabric type. Tension wire shall be 7-gauge marcelled steel wire with the same coating as the fabric type and shall conform to ASTM A824.

All material shall conform to Federal Specification RR-F-191/4.

162-2.6 Miscellaneous fittings and hardware. Miscellaneous steel fittings and hardware for use with zinc-coated steel fabric shall be of commercial grade steel or better quality, wrought or cast as appropriate to the article, and sufficient in strength to provide a balanced design when used in conjunction with fabric posts, and wires of the quality specified herein. All steel fittings and hardware shall be

protected with a zinc coating applied in conformance with ASTM A153. Barbed wire support arms shall withstand a load of 250 pounds (113 kg) applied vertically to the outermost end of the arm.

162-2.7 Concrete. Concrete shall have a minimum 28-day compressive strength of 3000 psi (2670 kPa).

162-2.8 Marking. Each roll of fabric shall carry a tag showing the kind of base metal (steel, aluminum, or aluminum alloy number), kind of coating, the gauge of the wire, the length of fencing in the roll, and the name of the manufacturer. Posts, wire, and other fittings shall be identified as to manufacturer, kind of base metal (steel, aluminum, or aluminum alloy number), and kind of coating.

CONSTRUCTION METHODS

162-3.1 General. The fence shall be constructed in accordance with the details on the plans and as specified here using new materials. All work shall be performed in a workmanlike manner satisfactory to the RPR. The Contractor shall layout the fence line based on the plans. The Contractor shall span the opening below the fence with barbed wire at all locations where it is not practical to conform the fence to the general contour of the ground surface because of natural or manmade features such as drainage ditches. The new fence shall be permanently tied to the terminals of existing fences as shown on the plans. The Contractor shall stake down the woven wire fence at several points between posts as shown on the plans.

The Contractor shall arrange the work so that construction of the new fence will immediately follow the removal of existing fences. The length of unfenced section at any time shall not exceed 300 feet (90 m). The work shall progress in this manner and at the close of the working day the newly constructed fence shall be tied to the existing fence.

162-3.2 Clearing fence line. Clearing shall consist of the removal of all stumps, brush, rocks, trees, or other obstructions that will interfere with proper construction of the fence. Stumps within the cleared area of the fence shall be grubbed or excavated. The bottom of the fence shall be placed a uniform distance above ground, as specified in the plans. When shown on the plans or as directed by the RPR, the existing fences which interfere with the new fence location shall be removed by the Contractor as a part of the construction work unless such removal is listed as a separate item in the bid schedule. All holes remaining after post and stump removal shall be refilled with suitable soil, gravel, or other suitable material and compacted with tampers.

The cost of removing and disposing of the material shall not constitute a pay item and shall be considered incidental to fence construction.

162-3.3 Installing posts. All posts shall be set in concrete at the required dimension and depth and at the spacing shown on the plans.

The concrete shall be thoroughly compacted around the posts by tamping or vibrating and shall have a smooth finish slightly higher than the ground and sloped to drain away from the posts. All posts shall be set plumb and to the required grade and alignment. No materials shall be installed on the posts, nor shall the posts be disturbed in any manner within seven (7) days after the individual post footing is completed.

Should rock be encountered at a depth less than the planned footing depth, a hole 2 inches (50 mm) larger than the greatest dimension of the posts shall be drilled to a depth of 12 inches (300 mm). After the posts are set, the remainder of the drilled hole shall be filled with grout, composed of one part Portland cement and two parts mortar sand. Any remaining space above the rock shall be filled with concrete in the manner described above.

In lieu of drilling, the rock may be excavated to the required footing depth. No extra compensation shall be made for rock excavation.

162-3.4 Installing top rails. The top rail shall be continuous and shall pass through the post tops. The coupling used to join the top rail lengths shall allow for expansion.

162-3.5 Installing braces. Horizontal brace rails, with diagonal truss rods and turnbuckles, shall be installed at all terminal posts.

162-3.6 Installing fabric. The wire fabric shall be firmly attached to the posts and braced as shown on the plans. All wire shall be stretched taut and shall be installed to the required elevations. The fence shall generally follow the contour of the ground, with the bottom of the fence fabric no less than one inch (25 mm) or more than 4 inches (100 mm) from the ground surface. Grading shall be performed where necessary to provide a neat appearance.

At locations of small natural swales or drainage ditches and where it is not practical to have the fence conform to the general contour of the ground surface, longer posts may be used and multiple strands of barbed wire stretched to span the opening below the fence. The vertical clearance between strands of barbed wire shall be 6 inches (150 mm) or less.

162-3.7 Electrical grounds. Electrical grounds shall be at 500 feet (150 m) intervals. The ground shall be accomplished with a copper clad rod 8 feet (2.4 m) long and a minimum of 5/8 inches (16 mm) in diameter driven vertically until the top is 6 inches (150 mm) below the ground surface. A No. 6 solid copper conductor shall be clamped to the rod and to the fence in such a manner that each element of the fence is grounded. Installation of ground rods shall not constitute a pay item and shall be considered incidental to fence construction. The Contractor shall comply with FAA-STD-019, Lightning and Surge Protection, Grounding, Bonding and Shielding Requirements for Facilities and Electronic Equipment, paragraph 4.2.3.8, Lightning Protection for Fences and Gates, when fencing is adjacent to FAA facilities

162-3.8 Cleaning up. The Contractor shall remove from the vicinity of the completed work all tools, buildings, equipment, etc., used during construction.

162-3.9 Automated Gates. Rolling automatic gate operators shall be commercially/industrially rated and designed for high-security environments. Operators for gates with openings less than 15 feet must operate at a minimum speed of 20" per second. Operators for gates with openings 15 feet or wider must include variable frequency drives and operate at a minimum speed of 36" per second.

Automatic Perimeter Fence Gate Operators shall be manufactured by HySecurity or approved equal.

Pavement Loop wire must meet IMSA Spec 51-7. Lead-in wire, if needed, must meet IMSA Spec 50-2. Loop wire shall be one continuous length with no splices from the junction box or control cabinet and back again. The wire shall be twisted by hand four twists per foot in the lead-in slot. Loops must be cut in a rectangular shape, with each 90degree corner transected with a 45-degree cut to prevent over bending/stressing of the loop wire. Loop saw cuts should be ¼" to 3/8" wide and a minimum of 1½" deep in concrete and 2" deep in asphalt. Loop Lead-in saw cuts should be 3/8" wide and a minimum of 1½" deep in concrete and 2" deep in asphalt. Properly seal the saw cuts with Dow Corning 890 SL self-leveling sealant. All saw cut work must adhere to 29 CFR Part 1926 Subpart Z – 1926.1153 Respirable Crystalline Silica Standard and 29 CFR Part 1910 Subpart Z 1910.1053 Respirable Crystalline Silica Standard.

Card reader and pedestal mount shall be per MSCAA standards and protected by bollards

METHOD OF MEASUREMENT

162-4.1 Bollards will be measured for payment by each installed.

162-4.2 Handrails will be measured for payment by the linear foot (meter). Measurement will be from center to center of the end of the railing posts.

162-4.3 Chain-link fence will be measured for payment by the linear foot (meter). Measurement will be along the top of the fence from center to center of end posts, excluding the length occupied by gate openings.

162-4.6 Ornamental fence will be measured for payment by the linear foot (meter). Measurement will be along the top of the fence from center to center of end posts, excluding the length occupied by gate openings.

162-4.7 Gates will be measured per each as complete units for each gate, installed and accepted by the RPR.

BASIS OF PAYMENT

162-5.1 Payment for bollards will be paid at the contract unit price per each bollard installed and accepted.

162-5.2 Payment for handrails will be paid at the contract unit price per linear foot installed and accepted.

162-5.3-5.5 Payment for chain-link fence will be made at the contract unit price per linear foot (meter). The price shall be full compensation for furnishing all materials, and for all preparation, erection, and installation of these materials, and for all labor equipment, tools, and incidentals necessary to complete the item.

162-5.6 Payment for ornamental fence will be made at the contract unit price per linear foot(meter). The price shall be full compensation for furnishing all materials, and for all preparation, erection, and installation of these materials, and for all labor equipment, tools, and incidentals necessary to complete the item.

162-5.7 Payment for vehicle or pedestrian gates will be made at the contract unit price for each gate. The price shall be full compensation for furnishing all materials, including automation and motorized equipment and for all preparation, erection, and installation of these materials, and for all labor equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item F-162-5.1	Bollards, 8" DIA. – per each
Item F-162-5.2	AOA Compliant Handrails – per linear foot
Item F-162-5.3	Chain Link Fence (Permanent AOA Fence) (10' Tall with Double Arm, 6-Strand Barb Wire & Razor Ribbon) – per linear foot
Item F-162-5.4	Chain Link Fence (Temporary AOA Fence) (6' Tall with 3-Strand Barb Wire & Razor Ribbon) (Mounted on Concrete Barriers) – per linear foot
Item F-162-5.5	Chain Link Fence (Non-AOA Fence) (6' Tall with 3-Strand Barb Wire) (Mounted on Grade) – per linear foot
Item F-162-5.6	Ornamental Fence – per linear foot
Item F-162-5.7	Chain Link Fence Manual Double Swing Gate (AOA) (10' Tall, 24' Total Width) – per each
Item F-162-5.8	Chain Link Fence Automated Double Swing Gate (AOA) (10' Tall, 24' Total Width) – per each

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM A121	Standard Specification for Metallic-Coated Carbon Steel Barbed Wire
ASTM A153	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A392	Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric
ASTM A491	Standard Specification for Aluminum-Coated Steel Chain-Link Fence Fabric
ASTM A824	Standard Specification for Metallic-Coated Steel Marcellled Tension Wire for Use with Chain Link Fence
ASTM B117	Standard Practice for Operating Salt Spray (Fog) Apparatus
ASTM F668	Standard Specification for Polyvinyl Chloride (PVC), Polyolefin and other Organic Polymer Coated Steel Chain-Link Fence Fabric
ASTM F1043	Standard Specification for Strength and Protective Coatings on Steel Industrial Fence Framework
ASTM F1083	Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
ASTM F1183	Standard Specification for Aluminum Alloy Chain Link Fence Fabric
ASTM F1345	Standard Specification for Zinc 5% Aluminum-Mischmetal Alloy Coated Steel Chain-Link Fence Fabric
ASTM G152	Standard Practice for Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
ASTM G153	Standard Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
ASTM G154	Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials
ASTM G155	Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials

Federal Specifications (FED SPEC)

FED SPEC RR-F-191/3 Fencing, Wire and Post, Metal (Chain-Link Fence Posts, Top Rails and Braces)

FED SPEC RR-F-191/4 Fencing, Wire and Post, Metal (Chain-Link Fence Accessories)

FAA Standard

FAA-STD-019 Lightning and Surge Protection, Grounding, Bonding and Shielding Requirements for Facilities and Electronic Equipment

FAA Orders

5300.38 AIP Handbook

END OF ITEM F-162

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Item T-904 Sodding

DESCRIPTION

904-1.1 This item shall consist of furnishing, hauling, and placing approved live sod on prepared areas in accordance with this specification at the locations shown on the plans or as directed by the RPR.

MATERIALS

904-2.1 Sod. Sod furnished by the Contractor shall have a good cover of living or growing grass. This shall be interpreted to include grass that is seasonally dormant during the cold or dry seasons and capable of renewing growth after the dormant period. All sod shall be obtained from areas where the soil is reasonably fertile and contains a high percentage of loamy topsoil. Sod shall be cut or stripped from living, thickly matted turf relatively free of weeds or other undesirable foreign plants, large stones, roots, or other materials that might be detrimental to the development of the sod or to future maintenance. At least 70% of the plants in the cut sod shall be composed of the species stated in the special provisions, and any vegetation more than 6 inches (150 mm) in height shall be mowed to a height of 3 inches (75 mm) or less before sod is lifted. Sod, including the soil containing the roots and the plant growth showing above, shall be cut uniformly to a thickness not less than that stated in the special provisions.

904-2.2 Lime. Lime shall be ground limestone containing not less than 85% of total carbonates, and shall be ground to such fineness that 90% will pass through a No. 20 (850 μ m) mesh sieve and 50% will pass through a No. 100 (150 μ m) mesh sieve. Coarser material will be acceptable, providing the rates of application are increased to provide not less than the minimum quantities and depth specified in the special provisions on the basis of the two sieve requirements above. Dolomitic lime or a high magnesium lime shall contain at least 10% of magnesium oxide. Lime shall be applied at the rate of 4,000 lb/acre. All liming materials shall conform to the requirements of ASTM C602.

904-2.3 Fertilizer. Fertilizer shall be standard commercial fertilizers supplied separately or in mixtures containing the percentages of total nitrogen, available phosphoric acid, and water-soluble potash. They shall be applied at the rate and to the depth specified, and shall meet the requirements of applicable state laws. They shall be furnished in standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon. No cyanamide compounds or hydrated lime shall be permitted in mixed fertilizers.

The fertilizers may be supplied in one of the following forms:

- a. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader;
- b. A finely-ground fertilizer soluble in water, suitable for application by power sprayers; or
- c. A granular or pellet form suitable for application by blower equipment.

Fertilizers shall be commercial fertilizer and shall be spread at the rate of the manufacturer's recommendation.

904-2.4 Water. The water shall be sufficiently free from oil, acid, alkali, salt, or other harmful materials that would inhibit the growth of grass.

904-2.5 Soil for repairs. The soil for fill and topsoiling of areas to be repaired shall be at least of equal quality to that which exists in areas adjacent to the area to be repaired. The soil shall be relatively free

from large stones, roots, stumps, or other materials that will interfere with subsequent sowing of seed, compacting, and establishing turf, and shall be approved by the RPR before being placed.

CONSTRUCTION METHODS

904-3.1 General. Areas to be solid, strip, or spot sodded shall be shown on the plans. Areas requiring special ground surface preparation such as tilling and those areas in a satisfactory condition that are to remain undisturbed shall also be shown on the plans.

Suitable equipment necessary for proper preparation of the ground surface and for the handling and placing of all required materials shall be on hand, in good condition, and shall be approved by the RPR before the various operations are started. The Contractor shall demonstrate to the RPR before starting the various operations that the application of required materials will be made at the specified rates.

904-3.2 Preparing the ground surface. After grading of areas has been completed and before applying fertilizer and limestone, areas to be sodded shall be raked or otherwise cleared of stones larger than 2 inches (50 mm) in any diameter, sticks, stumps, and other debris which might interfere with sodding, growth of grasses, or subsequent maintenance of grass-covered areas. If any damage by erosion or other causes occurs after grading of areas and before beginning the application of fertilizer and ground limestone, the Contractor shall repair such damage. This may include filling gullies, smoothing irregularities, and repairing other incidental damage.

904-3.3 Applying fertilizer and ground limestone. Following ground surface preparation, fertilizer shall be uniformly spread at a rate which will provide not less than the minimum quantity of each fertilizer ingredient, as stated in the special provisions. If use of ground limestone is required, it shall then be spread at a rate that will provide not less than the minimum quantity stated in the special provisions. These materials shall be incorporated into the soil to a depth of not less than 2 inches (50 mm) by discing, raking, or other suitable methods. Any stones larger than 2 inches (50 mm) in any diameter, large clods, roots, and other litter brought to the surface by this operation shall be removed.

904-3.4 Obtaining and delivering sod. After inspection and approval of the source of sod by the RPR, the sod shall be cut with approved sod cutters to such a thickness that after it has been transported and placed on the prepared bed, but before it has been compacted, it shall have a uniform thickness of not less than 2 inches (50 mm). Sod sections or strips shall be cut in uniform widths, not less than 10 inches (250 mm), and in lengths of not less than 18 inches (0.5 m), but of such length as may be readily lifted without breaking, tearing, or loss of soil. Where strips are required, the sod must be rolled without damage with the grass folded inside. The Contractor may be required to mow high grass before cutting sod.

The sod shall be transplanted within 24 hours from the time it is stripped, unless circumstances beyond the Contractor's control make storing necessary. In such cases, sod shall be stacked, kept moist, and protected from exposure to the air and sun and shall be kept from freezing. Sod shall be cut and moved only when the soil moisture conditions are such that favorable results can be expected. Where the soil is too dry, approval to cut sod may be granted only after it has been watered sufficiently to moisten the soil to the depth the sod is to be cut.

904-3.5 Laying sod. Sodding shall be performed only during the seasons when satisfactory results can be expected. Frozen sod shall not be used and sod shall not be placed upon frozen soil. Sod may be transplanted during periods of drought with the approval of the RPR, provided the sod bed is watered to moisten the soil to a depth of at least 4 inches (100 mm) immediately prior to laying the sod.

The sod shall be moist and shall be placed on a moist earth bed. Pitch forks shall not be used to handle sod, and dumping from vehicles shall not be permitted. The sod shall be carefully placed by hand, edge to edge and with staggered joints, in rows at right angles to the slopes, commencing at the base of the area to be sodded and working upward. The sod shall immediately be pressed firmly into contact with the sod

bed by tamping or rolling with approved equipment to provide a true and even surface, and ensure knitting without displacement of the sod or deformation of the surfaces of sodded areas. Where the sod may be displaced during sodding operations, the workmen, when replacing it, shall work from ladders or treaded planks to prevent further displacement. Screened soil of good quality shall be used to fill all cracks between sods. The quantity of the fill soil shall not cause smothering of the grass. Where the grades are such that the flow of water will be from paved surfaces across sodded areas, the surface of the soil in the sod after compaction shall be set approximately one inch (25 mm) below the pavement edge. Where the flow will be over the sodded areas and onto the paved surfaces around manholes and inlets, the surface of the soil in the sod after compaction shall be placed flush with pavement edges.

On slopes steeper than one (1) vertical to 2-1/2 horizontal and in v-shaped or flat-bottom ditches or gutters, the sod shall be pegged with wooden pegs not less than 12 inches (300 mm) in length and have a cross-sectional area of not less than 3/4 sq inch (18 sq mm). The pegs shall be driven flush with the surface of the sod.

904-3.6 Watering. Adequate water and watering equipment must be on hand before sodding begins, and sod shall be kept moist until it has become established and its continued growth assured. In all cases, watering shall be done in a manner that will avoid erosion from the application of excessive quantities and will avoid damage to the finished surface.

904-3.7 Establishing turf. The Contractor shall provide general care for the sodded areas as soon as the sod has been laid and shall continue until final inspection and acceptance of the work. All sodded areas shall be protected against traffic or other use by warning signs or barricades approved by the RPR. The Contractor shall mow the sodded areas with approved mowing equipment, depending upon climatic and growth conditions and the needs for mowing specific areas. Weeds or other undesirable vegetation shall be mowed and the clippings raked and removed from the area.

904-3.8 Repairing. When the surface has become gullied or otherwise damaged during the period covered by this contract, the affected areas shall be repaired to re-establish the grade and the condition of the soil, as directed by the RPR, and shall then be sodded as specified in paragraph 904-3.5.

METHOD OF MEASUREMENT

904-4.1 This item shall be measured on the basis of the area in square yards (square meters) of the surface covered with sod and accepted.

BASIS OF PAYMENT

904-5.1 This item will be paid for on the basis of the contract unit price per square yard (square meter) for sodding, which price shall be full compensation for all labor, equipment, material, staking, and incidentals necessary to satisfactorily complete the items as specified.

Payment will be made under:

Item T-904-5.1	Sodding - per square yard

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 C602	Standard Specification for Agricultural Liming Materials

Advisory Circulars (AC)

AC 150/5200-33 Hazardous Wildlife Attractants on or Near Airports

FAA/United States Department of Agriculture

Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM T-904

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Item T-905 Topsoil

DESCRIPTION

905-1.1 This item shall consist of preparing the ground surface for topsoil application, removing topsoil from designated stockpiles or areas to be stripped on the site or from approved sources off the site, and placing and spreading the topsoil on prepared areas in accordance with this specification at the locations shown on the plans or as directed by the RPR.

MATERIALS

905-2.1 Topsoil. Topsoil shall be the surface layer of soil with no admixture of refuse or any material toxic to plant growth, and it shall be reasonably free from subsoil and stumps, roots, brush, stones (2 inches (50 mm) or more in diameter), and clay lumps or similar objects. Brush and other vegetation that will not be incorporated with the soil during handling operations shall be cut and removed. Ordinary sod and herbaceous growth such as grass and weeds are not to be removed, but shall be thoroughly broken up and intermixed with the soil during handling operations. Heavy sod or other cover, which cannot be incorporated into the topsoil by discing or other means, shall be removed. The topsoil or soil mixture, unless otherwise specified or approved, shall have a pH range of approximately 5.5 pH to 7.6 pH, when tested in accordance with the methods of testing of the Association of Official Agricultural Chemists in effect on the date of invitation of bids. The organic content shall be not less than 3% nor more than 20% as determined by the wet-combustion method (chromic acid reduction). There shall be not less than 20% nor more than 80% of the material passing the 200 mesh (75 μ m) sieve as determined by the wash test in accordance with ASTM C117.

Natural topsoil may be amended by the Contractor with approved materials and methods to meet the above specifications.

905-2.2 Inspection and tests. Within 10 days following acceptance of the bid, the RPR shall be notified of the source of topsoil to be furnished by the Contractor. The topsoil shall be inspected to determine if the selected soil meets the requirements specified and to determine the depth to which stripping will be permitted. At this time, the Contractor may be required to take representative soil samples from several locations within the area under consideration and to the proposed stripping depths, for testing purposes as specified in paragraph 905-2.1.

CONSTRUCTION METHODS

905-3.1 General. Areas to be topsoiled shall be shown on the plans. If topsoil is available on the site, the location of the stockpiles or areas to be stripped of topsoil and the stripping depths shall be shown on the plans.

Suitable equipment necessary for proper preparation and treatment of the ground surface, stripping of topsoil, and for the handling and placing of all required materials shall be on hand, in good condition, and approved by the RPR before the various operations are started.

905-3.2 Preparing the ground surface. Immediately prior to dumping and spreading the topsoil on any area, the surface shall be loosened by discs or spike-tooth harrows, or by other means approved by the RPR, to a minimum depth of 2 inches (50 mm) to facilitate bonding of the topsoil to the covered subgrade

soil. The surface of the area to be topsoiled shall be cleared of all stones larger than 2 inches (50 mm) in any diameter and all litter or other material which may be detrimental to proper bonding, the rise of capillary moisture, or the proper growth of the desired planting. Limited areas, as shown on the plans, which are too compact to respond to these operations shall receive special scarification.

Grades on the area to be topsoiled, which have been established by others as shown on the plans, shall be maintained in a true and even condition. Where grades have not been established, the areas shall be smooth-graded and the surface left at the prescribed grades in an even and compacted condition to prevent the formation of low places or pockets where water will stand.

905-3.3 Obtaining topsoil. Prior to the stripping of topsoil from designated areas, any vegetation, briars, stumps and large roots, rubbish or stones found on such areas, which may interfere with subsequent operations, shall be removed using methods approved by the RPR. Heavy sod or other cover, which cannot be incorporated into the topsoil by discing or other means shall be removed.

When suitable topsoil is available on the site, the Contractor shall remove this material from the designated areas and to the depth as directed by the RPR. The topsoil shall be spread on areas already tilled and smooth-graded, or stockpiled in areas approved by the RPR. Any topsoil stockpiled by the Contractor shall be rehandled and placed without additional compensation. Any topsoil that has been stockpiled on the site by others, and is required for topsoil purposes, shall be removed and placed by the Contractor. The sites of all stockpiles and areas adjacent thereto which have been disturbed by the Contractor shall be graded if required and put into a condition acceptable for seeding.

When suitable topsoil is secured off the airport site, the Contractor shall locate and obtain the supply, subject to the approval of the RPR. The Contractor shall notify the RPR sufficiently in advance of operations in order that necessary measurements and tests can be made. The Contractor shall remove the topsoil from approved areas and to the depth as directed. The topsoil shall be hauled to the site of the work and placed for spreading, or spread as required. Any topsoil hauled to the site of the work and stockpiled shall be rehandled and placed without additional compensation.

905-3.4 Placing topsoil. The topsoil shall be evenly spread on the prepared areas to a uniform depth of 2 inches (50 mm) after compaction, unless otherwise shown on the plans or stated in the special provisions. Spreading shall not be done when the ground or topsoil is frozen, excessively wet, or otherwise in a condition detrimental to the work. Spreading shall be carried on so that turving operations can proceed with a minimum of soil preparation or tilling.

After spreading, any large, stiff clods and hard lumps shall be broken with a pulverizer or by other effective means, and all stones or rocks (2 inches (50 mm) or more in diameter), roots, litter, or any foreign matter shall be raked up and disposed of by the Contractor. After spreading is completed, the topsoil shall be satisfactorily compacted by rolling with a cultipacker or by other means approved by the RPR. The compacted topsoil surface shall conform to the required lines, grades, and cross-sections. Any topsoil or other dirt falling upon pavements as a result of hauling or handling of topsoil shall be promptly removed.

METHOD OF MEASUREMENT

905-4.1 Topsoil obtained on the site shall be measured by the number of square yard (square meters) of topsoil measured in its original position and stripped or excavated.

905-4.2 Topsoil obtained off the site shall be measured by the number of square yards (square meters) of topsoil measured in its original position and stripped or excavated. Topsoil shall be measured by square yards (square meters).

BASIS OF PAYMENT

905-5.1 Payment will be made at the contract unit price per square yard (square meter) for topsoil (obtained on the site). This price shall be full compensation for furnishing all materials and for all preparation, placing, and spreading of the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

905-5.2 Payment will be made at the contract unit price per square yard (square meter) for topsoil (obtained off the site). This price shall be full compensation for furnishing all materials and for all preparation, placing, and spreading of the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item T-905-5.1	Topsoil – per square yard

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 C117	Materials Finer than 75 μm (No. 200) Sieve in Mineral Aggregates by Washing

Advisory Circulars (AC)

AC 150/5200-33	Hazardous Wildlife Attractants on or Near Airports

FAA/United States Department of Agriculture

Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM T-905

SECTION 26 0100

GENERAL PROVISIONS, ELECTRICAL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Basic Electrical requirements specifically applicable to Division 26 Sections, in addition to Division 01 - General Requirements.
- B. General and procedural requirements for work specified under Sections of Division 26 shall be as required herein.

1.2 RELATED SECTIONS

- A. DIVISION 26 - ELECTRICAL.
- B. Section 260500 - BASIC MATERIALS AND METHODS, ELECTRICAL.

1.3 CONTRACTOR'S RESPONSIBILITY

- A. Contractor agrees to assume responsibility for liability, workmanship, and quality of materials concerning work sublet to others. Before contract is sublet, submit in writing the names of proposed subcontractor and obtain written approval therefor.

1.4 CODES AND FEES

- A. All work shall be installed in accordance with the applicable provisions of the local codes, the National Electrical Code, and the National Electrical Safety Code.
- B. All electrical materials shall have Underwriters' approval where applicable, and shall be so labeled where UL labeling is customary.
- C. All electrical equipment shall conform to applicable NEMA Standards whether specified hereinafter or not, and to other applicable Standards which may be specified hereinafter.
- D. Make all arrangements with electric utility company for their services and metering work, PAY ALL CHARGES THEREFORE, AND INCLUDE THE COST THEREOF IN CONTRACT PRICE.
- E. The Contractor shall be responsible for obtaining local permits, payment of fees and notification for inspection by code authorities consistent with the schedule of work.

1.5 ACCURACY OF DATA AND DRAWINGS

- A. Drawings and Data: Electrical drawings are generally diagrammatic, and where not dimensioned or detailed, indicate approximate locations and general arrangements of electrical work. All electrical work offsets, rises, and fittings are not necessarily shown; however, provide these as required by the conditions involved.

- B. Building and structure dimensions: TAKE THESE FROM ACTUAL MEASUREMENTS MADE BY ELECTRICAL SECTION OF EACH EXISTING SITE AND EACH EXISTING STRUCTURE INVOLVED.
- C. Equipment NOT furnished by Electrical Section but requiring electrical connections: from other Sections and others furnishing this equipment, determine exact electrical connection requirements therefore; locations and arrangements of electrical connections indicated for this equipment are APPROXIMATE ONLY.

1.6 EQUIPMENT LISTS, SHOP DRAWINGS, SAMPLES AND SUBMITTALS

- A. Submit to the Engineer for approval, within 30 days after receipt of Notice to Proceed with the work, a complete list of materials, equipment and accessories proposed for use, including complete descriptions and specifications of any proposed substitutions, manufacturer's shop drawings, and roughing-in work. Submit five (5) copies of all items for approval and furnish additional copies if required for installation purposes.
- B. Submission material and all shop drawings for the various items of equipment shall be marked with the respective mark number or identification of the equipment shown on the drawings or specified. The shop drawings shall list all ratings, capacities, accessories, and other pertinent data to show that the proposed item is as called for and as specified.
- C. Shop drawings shall show sizes and details of required concrete and steel machine foundation, locations of anchor bolts, physical dimensions of equipment, capacity characteristics of equipment, and all other work pertinent to details.

1.7 QUALITY CONTROL

- A. Comply with Section 007200 GENERAL CONDITIONS.
- B. Qualifications: Where specific qualifications are specified in individual specification section, provide required data with Subcontractor list.

1.8 GUARANTEE

- A. Comply with Section 007200 GENERAL CONDITIONS.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 EQUIPMENT INSTALLATION

- A. Install all equipment in accordance with applicable manufacturer's drawings and recommendations.
- B. Identification of circuits and equipment: Identification designations shall correspond to those indicated on electrical drawings and as specified in corresponding articles describing the equipment.

3.2 ALTERATIONS AND ADDITIONS TO EXISTING ELECTRICAL WORK

- A. Make alterations and additions to existing electrical work as indicated, and as required to accommodate new construction and to clear all interferences therewith. This includes disconnecting, removing, relocating, rerouting, extending, reworking, reconnecting, or otherwise altering existing electrical work as required, whether indicated on the drawings or not.
- B. Remove all accessible existing above ground conduits and all other accessible existing electrical items which are not required for operation of the completed project; and remove all conductors from inaccessible existing conduits which are not required for operation of the completed project; all unless otherwise indicated or otherwise approved.

3.3 CONTINUITY OF EXISTING ELECTRICAL SERVICE, AND SALVAGED EXISTING ELECTRICAL MATERIALS

- A. Arrange all electrical work to interfere as little as possible with Owner's normal operations. Do not interrupt existing electrical service at any time without Owner's prior approval. After an electrical service interruption has been made, make all necessary connections and alterations, and restore electrical service as quickly as possible. At no extra cost to Owner, provide temporary electrical connections and other electrical work as required to maintain continuity of electrical service. This paragraph applies only to those areas which will be occupied or otherwise used by Owner prior to project completion.
- B. Promptly haul away from Owner's premises all electrical materials and electrical equipment which are removed from existing electrical system and are neither indicated not required to be reused in the completed project, EXCEPT as otherwise specified below.
 - 1. Owner may select certain removed existing electrical materials and electrical equipment and retain them for his future use. Before removing any existing electrical materials and electrical equipment, determine from Owner which of these materials and equipment (if any) he desires to retain. Remove all Owner-selected electrical materials and electrical equipment without unnecessary damage thereto, and safely store them at locations designated by Owner.

3.4 TEST, INSPECTIONS, ADJUSTMENTS, AND CLEANUP

- A. Wiring, 600 volts and less: Make insulation tests with a "Megger", demonstrate that neither short circuits nor ground faults exist, and that wiring complies with NEC.
- B. Furnish suitable testing equipment, give the Engineer and all applicable authorities ample advance notice of all proposed tests and readiness of work for inspections, and conduct each test in their presence, as approved. Do not conceal electrical work until all necessary inspections have been made and all required tests have been approved by the Owner's Representative and all applicable authorities.
- C. Put entire electrical system in operation, test all equipment, remedy all defects, and make all necessary adjustments. Demonstrate that the entire system functions satisfactorily, as specified, as indicated, and as approved.
- D. After electrical system has been tested and before any field painting is commenced, clean up all electrical work thoroughly. Remove all foreign matter which has accumulated in all fixtures, equipment, and enclosures. Clean all fixture glassware and reflectors, and clean and polish all other surfaces that are not to be painted so that they present a new and acceptable appearance.

3.5 PROTECTION AND CLEANING

- A. Work shall be protected at all times. Conduit openings shall be closed with caps or plugs until permanent connections are made. Fixtures and equipment shall be covered, if necessary, to protect against dirt, water, chemical or mechanical damage or defacement. The installation of fixtures liable to damage shall be coordinated with installing UL fire protective barriers and ceiling systems.
- B. Electrical equipment rooms shall be cleaned up prior to energizing equipment and shall not be used for storage or other purposes after power is applied to the electrical equipment.

3.6 OPERATING INSTRUCTIONS

- A. Furnish the services of a competent man (or men) to instruct the Owner's personnel in the proper operation and maintenance of all equipment, for a period of not less than five working days.
- B. Furnish and deliver to the Owner three sets of operating instructions for all equipment installed under this contract, including shop drawings, piping diagrams, wiring diagrams, maintenance recommendations and information concerning replacement parts.

END OF SECTION

SECTION 26 0500

BASIC MATERIALS AND METHODS, ELECTRICAL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Equipment and materials used in the work shall be in accordance with the contract documents; of the best quality and grade for the use intended; shall be new and unused; and shall be the manufacturer's latest standard or current model for which replacement parts are readily available.
- B. Work shall be installed under the constant supervision of a qualified superintendent and by skilled and qualified electricians.
- C. All apparatus and equipment shall be installed and connected in accordance with the best engineering practices and in accordance with the manufacturer's recommendations. All auxiliary wiring, relays, contactors, controllers, and electrical connections of any description recommended by the manufacturer and required for the proper operation of all items of equipment furnished under this contract shall be furnished and installed complete.
- D. Basic Electrical Requirements specifically applicable to Division 26 Sections, in addition to Division 01 - General Requirements.

1.2 RELATED SECTIONS

- A. DIVISION 26 - ELECTRICAL.
- B. Section 260100 - GENERAL PROVISIONS, ELECTRICAL.

1.3 SUBMITTALS

- A. Submit under provisions of Section 013300.

PART 2 PRODUCTS

2.1 CONDUIT AND FITTINGS, EXCEPT UNDERGROUND DUCTS

- A. Conduits: These shall be zinc coated rigid steel, zinc coated steel electrical metallic tubing (hereinafter referred to as "thin wall conduit"), ANSI Specification C80.5 rigid aluminum, Carlon Schedule 40 Certainteed PVC Schedule 40 or Cantex PVC Schedule 40 as approved UL listed heavy wall rigid PVC, as applicable. In each case where the conduit type is indicated, specified, or required by the Codes, install only the indicated, specified, or Code required type; OTHERWISE, conduit usage shall be as follows:
 - 1. Embedded in concrete: rigid steel coated with bituminous compound or PVC coated.
 - 2. In contact with ground: rigid steel coated with bituminous compound or PVC Schedule 40 conduit.

3. For supporting boxes, and other devices and equipment which are directly anchored to the structure: rigid steel or rigid aluminum conduit, with all joints and connections threaded.
 4. Flexible connections: flexible steel conduit ("Greenfield"), in short lengths only, at each motor connection and other location requiring flexibility; of liquid tight type where exposed to weather or excessive moisture.
 5. Rigid metal conduit shall be used for service conductors above ground.
 6. All other locations: thin wall, rigid steel, rigid aluminum, or PVC conduit, as applicable.
 7. **DO NOT INSTALL ALUMINUM CONDUIT UNDERGROUND, IN CONTACT WITH GROUND, OR EMBEDDED IN CONCRETE.**
- B. Conduit Fittings: For metallic conduit, fittings shall be zinc coated steel, cast aluminum, or cast zinc. For PVC conduit, fittings shall be of the same materials and make as those of the conduit. All fittings exposed to weather shall be weatherproof type.
- C. Installation:
1. General: ream ends of all conduits after cutting. Prior to wire pulling, keep all open conduit ends plugged, and swab out all trapped conduits in which water or moisture has collected. Where conduits are concealed in walls, install these conduits so that the exposed wall faces will not be marred.
 2. PVC conduits: solvent weld all joints between PVC materials, with cement furnished by the conduit manufacturer. Provide suitable adapters where PVC conduits are coupled to metallic conduits. Provide a rigid steel elbow at the base of each exposed riser from below ground and below floor to above ground and above floor.
 3. Conduit routing, general: see TYPE OF SYSTEM, METHOD OF WIRING hereinbefore for locations where concealed and exposed conduits are required and/or permitted. Where conduit routings are detailed or dimensioned install conduits accordingly; OTHERWISE, install concealed conduits with the shortest practicable path, and install all exposed conduits in straight, level, and plumb lines, parallel with or at right angles with beams, walls, ceilings, and other building lines.
 4. Branch circuit conduit routings: except where detailed or dimensioned, the indicated branch circuit conduit routings are generally diagrammatic, and are intended to show the required circuitry from panelboards to outlets. However, if necessitated by job conditions, deviations from the indicated routings may be made, provided that regardless of the actual installed arrangement of the conduits: each outlet marked with the same circuit number is connected to the same corresponding numbered circuit; outlets are switched and controlled as indicated; and no home run is brought into any switch box unless otherwise indicated.
 5. Thin wall conduit: Use compression type fittings with proper tools for all joints and terminations. Point screw type fittings are not permitted.

2.2 PULL BOXES AND JUNCTION BOXES

- A. General: Pull boxes and junction boxes shall be of the types and minimum sizes indicated, or as required for the conditions involved where types and sizes are not indicated. Before installation, check proposed locations of boxes and gutters with the architectural, structural, and mechanical drawings, and locate each box and gutter so that it will be accessible in the finished project.

2.3 OUTLET BOXES

- A. General: Outlet boxes and covers therefor shall be steel or cast ferrous metal with zinc or other suitable metallic rustproof coating, or cast aluminum, all of the proper sizes and types to accommodate the conduits, conductors, connections, devices, fixtures, architectural conditions, and structural conditions involved.
- B. Special Box Requirements:
 - 1. Exposed-to-weather outlet boxes shall be cast metal, with threaded hubs and gasketed covers, all strictly weatherproof.
- C. Installation:
 - 1. Before installation, check proposed location of each outlet box locate so that it will be accessible and interference free in the finished project.

2.4 WIRE, JOINTS, AND SPLICES, 600 VOLTS AND LESS

- A. Lighting and power wire shall be copper only: Types shall be as follows:
 - 1. Where type is indicated: indicated type only.
 - 2. High temperature and other special conditions: types NEC approved for the conditions involved.
 - 3. All other lighting and power wire: No. 8 and larger, Type THWN stranded; No. 10 and smaller, Type THWN/THHN solid.
- B. Wire Sizes: Where sizes are neither indicated nor otherwise specified wire sizes shall be:
 - 1. Branch circuit wire: No. 12.
 - 2. Control wire: No. 14, or as recommended by the control manufacturer.
 - 3. Special system wire: as recommended by the manufacturer of the equipment involved.
- C. Identification:
 - 1. General: All wires shall be identified as required by NEC.
- D. Joints and Splices: Make these with suitable solderless connectors, in the various boxes and similar locations, but not in any conduit. Leave enough wire slack to permit at least one splice or joint to be remade in case of fault.
 - 1. Branch circuit system wire joints: use Ideal, Buchanan, 3M, or similar tool-applied to twist-on type connectors.
 - 2. All other wire joints: use IlSCO tin plated aluminum type pressure connectors, or suitable brass, bronze, or copper pressure type connectors.
 - 3. Insulate all joints and splices with suitable insulating sleeves or caps integral with the connectors or separate therefrom, or with vinyl plastic insulating tape.

2.5 PANELBOARDS

- A. General: Panelboards shall be Eaton, Square D, Siemens or as approved, circuit breaker type as specified below. Capacities, quantities of overcurrent protective devices, mounting type (surface or flush), and special requirements (if any) for each panelboard shall be as indicated on drawings. Each panelboard shall have a lockable door with a circuit directory card and card holder. All panelboards shall be keyed alike; furnish one key for each lock; deliver these to the Owner's authorized representative, and obtain his signed receipt therefor. Where two or more flush panelboards are mounted side-by-side, boxes and trims of all panelboards in each individual group shall be same size and type.

- B. Types of Panelboards: Each panelboard shall be of type required to accommodate application involved, and indicated for available fault current listed at panelboard. Overcurrent protective device type shall be fully rated at 40E C ambient, other requirements are:
 - 1. Branch circuit panelboard: Bolt on molded case circuit breakers. Where indicated or required, circuit breakers shall have ground fault tripping devices.
 - 2. Distribution panelboards: molded case circuit breakers as indicated.
 - 3. Busses shall be copper with alloy conductor terminations.
 - 4. Breakers for lighting circuits shall carry SWD or UL equivalent rating.
 - 5. Breakers shall be quick make, quick break type with trip indications shown and with common trip handle on all multiple breakers.
 - 6. All terminals for breakers shall be rated and marked for 75 degrees C terminations. The panelboard assembly shall be rated and marked for 75 degrees C terminations.
- C. Identification of Panelboards:
 - 1. Clearly typewrite on each panelboard directory card the designations of the fixtures, outlets, and equipment served by each device in the panelboard.
 - 2. Identify each entire panelboard assembly with a one inch minimum height laminated plastic nameplate engraved with 1/2 inch minimum height characters showing panelboard designation, and securely attach to the inside of panelboard door over directory card.

2.6 DEVICES

- A. General:
 - 1. Wiring devices shall be Bryant, Hubbell, Arrow-Hart, Sierra, Eagle Specification Line or other makes as approved or as specified below. Type of wiring devices required for this project shall be as indicated on the drawings, or suitable for the application involved if type is not indicated; qualities, ratings, and other requirements of wiring devices shall be as specified below. All wiring device types specified below may not necessarily be required for this project. Disregard specifications for devices which are neither indicated nor required for this project.
 - 2. Receptacle configurations shall conform to NEMA standards.
 - 3. Exposed finish shall be: for each device with a plastic plate, same color as that of plate; for devices with stainless steel plates, white; and for all other devices, black.
- B. Devices: Qualities, ratings, and other requirements shall be:
 - 1. Duplex receptacles: (Commercial) 20A 125 volt, 2 pole, 3 wire grounding; Bryant 5362; Hubbell 5362; A-H 5362. Where indicated as WEATHERPROOF the above specified duplex receptacle with Bryant 868, Hubbell 5206WO, A-H 4500 FS double lift spring door cover.
 - 2. Ground fault circuit interrupter receptacles: (Commercial) 20A 125 volt feed through duplex 5ma sensitivity type with test and reset buttons; A-H GF 5342, Bryant GFR53FT, Hubbell GF5362. Where indicated as WEATHERPROOF, the above specified receptacle with Bryant GFRWPH, Hubbell CWP26H, A-H 4501 or approved equal spring door cover.
 - 3. Other devices not specified above; as indicated on the drawings.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Run exposed conduit and other wireways parallel to the principal parts of the service rack. Wireways shall be run exposed. Fire stop all openings around conduit which penetrates floors and walls with approved non-combustible materials, slabs on grade are excepted.
- B. Conduits and other raceways shall be installed in such an orderly manner as to take up a minimum of space.
- C. Circuiting: Circuit numbers shown on drawings indicate specific panelboard to which each branch circuit shall be connected, and specific outlets which shall be connected to each branch circuit, and unless otherwise indicated these circuit numbers do not necessarily indicate actual number of circuit breaker in each panel to which each branch circuit shall be connected. Connect each outlet marked with same circuit number to same numbered branch circuit, and connect each branch circuit to indicated panelboard. In each individual panelboard:
 - 1. Balance active circuits on panelboard busses, and leave spare circuit breakers equally divided among panelboard busses, as nearly as practicable.
 - 2. Connect each ungrounded wire of each 3 and 4 wire common neutral circuit to a different panelboard bus.
 - 3. Group conveniently at top of panelboard all breakers used for switching lights not having wall or other switches, and neatly paint handles of all such breakers with white durable quick drying automobile touch up or other similar type lacquer for each identification as light switches. This does not apply to any panelboard in which ALL circuit breakers serve as lighting switches.
- D. Provide templates, layouts drawings, and supervision to ensure correct placement of anchors and conduit projecting in concrete.
- E. Painting shall be done to repair scratches to surfaces, electrical equipment nameplates shall be protected from paint.
- F. Qualifications: Where specific qualifications are specified in individual specification section, provide required data with Subcontractor list.

3.2 TYPE OF SYSTEM, WIRING METHOD

- A. Electrical system characteristics: These shall be as indicated. In addition, whether indicated or not, provide low voltage (less than 120 volts) wiring for controls and other purposes, as required for the complete electrical system.
- B. Enclosures: Regardless of voltage or use, install wiring in conduits and metal or other enclosures, unless otherwise indicated or otherwise specified.

3.3 GROUNDING

- A. Ground electrical equipment and conductors as required by NEC and other applicable electrical codes.
 - 1. Panelboards served by individual transformers: ground panelboard neutral busses to a ground rod per NEC.

2. All metallic cable sheaths, cable shields, metal conduit, transformer cases, cabinets and pedestals shall be made electrically secure to form a continuous system and shall be grounded.
3. The neutral shall only be grounded at the panelboard or service grounding device. Grounding conductors shall be continuous between the service and the driven grounding electrode or other grounding electrode as permitted in Part H of NEC Article 250.
4. All conduits shall have code sized green equipment grounding conductors with diameter based on the largest circuit in each conduit.

3.4 EXCAVATION AND BACKFILL

- A. Excavate and backfill as required for the electrical work. Cut bottoms of trenches to the proper lines and grades to provide firm and continuous support for the underground electrical work, and to provide 24 inch MINIMUM depth from finished grade to tops of all exterior underground electrical work. Sheet and brace excavations as required to protect personnel and adjacent structures.
- B. After the underground electrical work has been installed and approved, place all backfill in 8 inch maximum thickness loose layers, and compact each layer to at least the density of the adjacent undisturbed site soil, using pneumatic or other suitable power tampers. Mass backfilling (backfilling without tamping) is prohibited.
- C. Warning tape for buried electrical work: install detectable warning tape directly over every device by burying tape as close to the surface as possible but no less than six inches beneath finished grade. Tape shall be Reef Industries, Inc., "Terra Tape D", or equal as approved, composition metallized foil-plastic film laminate bearing imprint describing the type of buried electrical work. All materials shall be specifically formulated for prolonged use underground.
- D. The intent and requirement of the above is to obtain a coordinated electrical system and all of the above shall be done by Electrical Section as part of the contract, at no extra cost to the Owner.

END OF SECTION

SECTION 270528 - PATHWAYS FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Provide work specified but not shown on Drawings, and work shown on Drawings but not specified, as though expressly required by both.
- C. Related Sections:
 - 1. 270543 – Underground Pathways and Structures for Communications Systems

1.02 SUMMARY

- A. Section Includes:
 - 1. Metal conduits and fittings.
 - 2. Boxes, enclosures, and cabinets.

1.03 DEFINITIONS

- A. GRC: Galvanized rigid conduit.

1.04 ACTION SUBMITTALS

- A. Product data: For each type of product.

PART 2 - PRODUCTS

2.01 METAL CONDUITS AND FITTINGS

- A. Description: Metal raceway of circular cross section with manufacturer-fabricated fittings.
- B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. AFC Cable Systems; a part of Atkore International.
 - 2. Allied Tube & Conduit; a part of Atkore International.
 - 3. Alpha Wire.
 - 4. Anamet Electrical, Inc.

5. Electri-Flex Company.
 6. O-Z/Gedney; a brand of Emerson Industrial Automation.
 7. Picoma Industries, Inc.
 8. Plasti-Bond.
 9. Republic Conduit.
 10. Southwire Company.
 11. Thomas & Betts Corporation; A Member of the ABB Group.
 12. Western Tube and Conduit Corporation.
 13. Equal
- C. General Requirements for Metal Conduits and Fittings:
1. Listed and labeled as defined in NFPA 70, by a nationally recognized testing laboratory, and marked for intended location and application.
 2. Comply with TIA-569-D.
- D. GRC: Comply with ANSI C80.1 and UL 6.
- E. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.
1. Fittings for GRC:
 - a. Material: Steel.
 - b. Type: Threaded.
- F. Joint Compound for GRC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.02 BOXES, ENCLOSURES, AND CABINETS

- A. Description: Enclosures for communications.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Adalet.
 2. Crouse-Hinds, an Eaton business.
 3. EGS/Appleton Electric.
 4. Erickson Electrical Equipment Company.
 5. FSR Inc.
 6. Nvent/Hoffman.
 7. Milbank Manufacturing Co.
 8. Molex Industrial Products Group; Woodhead Brand.
 9. MonoSystems, Inc.
 10. O-Z/Gedney; a brand of Emerson Industrial Automation.
 11. Randl
 12. Siemon
 13. Steel City
 14. Equal
- C. General Requirements for Boxes, Enclosures, and Cabinets:

1. Comply with TIA-569-D.
2. Boxes, enclosures, and cabinets installed in wet locations shall be listed and labeled as defined in NFPA 70, by an NRTL, and marked for use in wet locations.

PART 3 - EXECUTION

3.01 PATHWAY APPLICATION

- A. Outdoors: Apply pathway products as specified below unless otherwise indicated:
 1. Exposed Conduit: GRC.
 2. Boxes and Enclosures, Above ground: NEMA Type 4X Stainless Steel with features described on drawings.
- B. Minimum Pathway Size: 1 1/4 inch trade size for copper and optical-fiber cables, unless noted otherwise on drawings.
- C. Pathway Fittings: Compatible with pathways and suitable for use and location.
 1. Rigid Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
- D. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.

3.02 INSTALLATION

- A. Comply with the following standards for installation requirements except where requirements on Drawings or in this Section are stricter:
 1. NECA 1.
 2. NECA/BICSI 568.
 3. TIA-569-D.
 4. NECA 101
 5. NECA 102.
 6. NECA 105.
 7. NECA 111.
- B. Cabling shall be concealed where possible and shall be installed as follows
 1. Cables installed outdoors shall be installed in conduit.
 2. Route conduit and cables to suit field conditions.
- C. Complete pathway installation before starting conductor installation.
- D. Install no more than the equivalent of two 90-degree bends in any pathway run. Utilize long radius ells for all optical-fiber cables.
- E. Support conduit within 12 inches (300 mm) of enclosures to which attached.

- F. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of pathway and fittings before making up joints. Follow compound manufacturer's written instructions.
- G. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install insulated bushings on conduits terminated with locknuts.
- H. Install pathways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus one additional quarter-turn.
- I. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure, to assure a continuous ground path.
- J. Cut conduit perpendicular to the length. For conduits of 2-inch (50-mm) trade size and larger, use roll cutter or a guide to ensure cut is straight and perpendicular to the length.
- K. Install pull wires in empty pathways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire. Secure pull wire, so it cannot fall into conduit. Cap pathways are designated as spare alongside pathways in use.
- L. Pathways for Optical-Fiber and Communications Cable: Install pathways, metal and nonmetallic, rigid and flexible, as follows:
 - 1. 1 1/4 Inch Trade Size and Larger: Install pathways at maximum lengths of 100 feet.
 - 2. Install with a maximum of two 90-degree bends or equivalent for each length of pathway unless Drawings show stricter requirements. Separate lengths with pull or junction boxes or terminations at distribution frames or cabinets where necessary to comply with these requirements.

3.03 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage or deterioration.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.

END OF SECTION 270528

SECTION 270543 - UNDERGROUND PATHWAYS AND STRUCTURES FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- A. Provide work specified but not shown on Drawings, and work shown on Drawings but not specified, as though expressly required by both.

1.2 SUMMARY

- A. Section Includes:
 - 1. Metal conduit and fittings.
 - 2. Rigid nonmetallic duct.
 - 3. Duct accessories.

1.3 DEFINITIONS

- A. Direct-Buried: Duct or a duct bank that is buried in the ground, without any additional casing materials, such as concrete.
- B. Duct: A single duct or multiple ducts. Duct may be either installed singly or as component of a duct bank.
- C. Duct Bank:
 - 1. Two or more ducts installed in parallel, with or without additional casing materials.
 - 2. Multiple duct banks.
- D. GRC: Galvanized rigid conduit.
- E. RNC: Rigid nonmetallic conduit.
- F. Trafficways: Locations where vehicular or pedestrian traffic is a normal course of events.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.5 FIELD CONDITIONS

- A. Interruption of Existing Communications Service: Do not interrupt communications service to facilities occupied by Owner or others unless permitted under the following conditions:
 - 1. Notify Owner no fewer than 14 days in advance of proposed interruption of communications service.
 - 2. Do not proceed with interruption of communications service without Owner's written permission.

PART 2 - PRODUCTS

2.1 METAL CONDUITS AND FITTINGS

- A. GRC: Comply with ANSI C80.1 and UL 6.
 - 1. Provide GRC conduit with threaded fittings.
 - 2. Compression fittings not allowed.
- B. General Requirements for Metal Conduits and Fittings:
 - 1. Listed and labeled as defined in NFPA 70, by a nationally recognized testing laboratory, and marked for intended location and application.
 - 2. Comply with TIA-569-C and TIA-758-C.

2.2 RIGID NONMETALLIC DUCTS

- A. Underground Plastic Utilities Duct: Type EPC-40-PVC RNC, complying with NEMA TC 2 and UL 651, with matching fittings complying with NEMA TC 3 by same manufacturer as duct.
 - 1. For use in direct-buried duct bank.
- B. Continuous HDPE: Smoothwall, SDR-11 minimum, complying with UL 651B.
 - 1. For use with directional boring.
- C. General Requirements for Nonmetallic Ducts and Fittings:
 - 1. Listed and labeled as defined in NFPA 70, by a nationally recognized testing laboratory, and marked for intended location and application.
 - 2. Comply with TIA-569-C and TIA-758-C.
- D. Solvents and Adhesives: As recommended by duct manufacturer.

2.3 DUCT ACCESSORIES

- A. Underground-Line Warning Tape: 6” wide, continuous, 4.0-mil thick, polyethylene tape with black lettering on orange background indicating “CAUTION BURIED CABLE LINE BELOW”.

2.4 SOURCE QUALITY CONTROL

- A. Test and inspect precast concrete utility structures according to ASTM C1037.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate layout and installation of duct, duct bank, manholes, handholes, and boxes with final arrangement of other utilities, site grading, and surface features as determined in the field.
- B. Coordinate elevations of duct and duct-bank entrances into manholes, handholes, and boxes with final locations and profiles of duct and duct banks, as determined by coordination with other utilities, underground obstructions, and surface features. Revise locations and elevations as required to suit field conditions.

3.2 UNDERGROUND DUCT APPLICATION

- A. Duct for Communications:
 - 1. Type EPC-40-PVC RNC, in direct-buried duct bank.
 - 2. Continuous HDPE RNC, for use with directional boring.
- B. Stub-Ups for Communications: GRC.
 - 1. Install manufactured GRC elbows with threaded fittings for stub-ups, at cabinet entrances.
 - 2. Couple GRC to RNC or HDPE with adapters designed for this purpose.
 - 3. Transition from RNC or HDPE to GRC shall be made below grade.
 - 4. Above grade RNC or HDPE shall not be allowed.

3.3 EARTHWORK

- A. Excavation and Backfill: Do not use heavy-duty, hydraulic-operated, compaction equipment.
- B. Restoration: Replace area immediately after backfilling is completed or after construction in immediate area is complete.
- C. Restore surface features at areas disturbed by excavation, and re-establish original grades unless otherwise indicated.

- D. Cut and patch existing pavement in the path of underground duct, duct bank, and utility structures.

3.4 DUCT AND DUCT-BANK INSTALLATION

- A. Install duct and duct bank according to NEMA TCB 2 and TIA-758-C.
- B. Curves and Bends: Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep, both horizontally and vertically, at other locations unless otherwise indicated.
 - 1. Duct and duct banks shall have maximum of two 90-degree bends, or the total of all bends shall be no more 180 degrees between pull points.
- C. Joints: Use solvent-cemented joints in duct and fittings, and make watertight according to manufacturer's written instructions. Stagger couplings, so those of adjacent ducts do not lie in same plane.
- D. Conduit Stub-Ups: Make a transition from underground RNC or HDPE duct to GRC below grade. Use fittings manufactured for RNC or HDPE duct-to-GRC conduit transition.
- E. Sealing: Provide temporary closure at terminations of duct that has cables pulled. Seal spare ducts at terminations. Use sealing compound and plugs to withstand at least 15-psig hydrostatic pressure.
- F. Pulling Cord: Install 200-lbftest nylon cord in empty duct.
- G. Direct-Buried Duct and Duct Banks:
 - 1. Excavate trench bottom to provide firm and uniform support for duct and duct bank.
 - 2. Install duct with a minimum of 3 inches between duct for like services and 6 inches between power and signal duct.
 - 3. Width: Excavate trench 3 inches wider than duct or duct bank on each side.
 - 4. Depth: Install bottom of duct or duct bank at least 36 inches below finished grade unless otherwise indicated.
 - 5. Set elevation of bottom of duct or duct bank below frost line.
 - 6. Install manufactured GRC elbows for stub-ups, at cabinet entrances.
 - a. Couple GRC to duct with adapters designed for this purpose.
 - 7. After installing first tier of duct, backfill and compact. Start at tie-in point and work toward end of duct run, leaving duct at end of run free to move with expansion and contraction, as temperature changes during this process. Repeat procedure after placing each tier. After placing last tier, hand place backfill to 4 inches over duct and hand tamp. Firmly tamp backfill around duct to provide maximum supporting strength. Use hand tamper only. After placing controlled backfill over final tier, make final duct connections at end of run and complete backfilling with normal compaction.
 - a. Place minimum of 3 inches of sand as a bed for duct and duct bank. Place sand to a minimum of 6 inches above top level of duct and duct bank.

- H. Underground-Line Warning Tape: Bury underground-line warning tape no less than 12 inches above all ducts and duct banks and approximately 12 inches below grade. Align tape parallel to and within 3 inches of centerline of duct bank. Provide an additional warning tape for each 12-inch increment of duct-bank width over a nominal 18 inches. Space additional tapes 12 inches apart, horizontally.

3.5 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections and prepare test reports:
 - 1. Demonstrate capability and compliance with requirements on completion of installation of underground duct, duct bank, and hand holes.
 - 2. Pull solid aluminum or wood test mandrel through duct to prove joint integrity and adequate bend radii, and test for out-of-round duct. Provide a minimum 12-inch-long mandrel equal to duct size minus 1/4 inch. If obstructions are indicated, remove obstructions and retest.
- B. Correct deficiencies and retest as specified above to demonstrate compliance.

3.6 CLEANING

- A. Pull leather-washer-type duct cleaner, with graduated washer sizes, through full length of duct until duct cleaner indicates that duct is clear of dirt and debris.

END OF SECTION 270543

SECTION 270553 - IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Provide work specified but not shown on Drawings, and work shown on Drawings but not specified, as though expressly required by both.

1.02 SUMMARY

- A. This section specifies identification products, product application and installation requirements that shall apply to the communication and security work on the project.
- B. Section Includes:
 - 1. Color and legend requirements for labels.
 - 2. Labels.

PART 2 - PRODUCTS

2.01 COLOR AND LEGEND REQUIREMENTS

- A. Equipment Identification Labels:
 - 1. Black letters on a white field.

2.02 MANUFACTURERS:

- A. Brady or Equal

2.03 LABELS

- A. Vinyl Wraparound Labels: Preprinted, flexible labels laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.

- B. Self-Adhesive Labels: Vinyl, thermal, transfer-printed, 3-mil-thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for intended use and location.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Self-Adhesive Identification Products: Before applying communications identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

3.02 INSTALLATION

- A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.
- B. Verify identity of each item before installing identification products.
- C. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.
- D. Apply identification devices to surfaces that require finish after completing finish work.
- E. Vinyl Wraparound Labels:
 - 1. Secure tight to surface of raceway or cable at a location with high visibility and accessibility.
 - 2. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to the location and substrate.
 - 3. Provide label 6 inches from cable end.
- F. Self-Adhesive Labels:
 - 1. On each item, install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
 - 2. Unless otherwise indicated, provide a single line of text with 1/2-inch-high letters on 1-1/2-inch-high label; where two lines of text are required, use labels 2 inches high.

3.03 IDENTIFICATION SCHEDULE

- A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations with high visibility. Identify by system and circuit designation.

- C. Backbone Cables: Label each cable with a vinyl-wraparound label indicating the location of the far or other end of the backbone cable. Patch panel or punch down block where cable is terminated should be labeled identically.
- D. Horizontal Cables: Label each cable with a vinyl-wraparound label indicating the following, in the order listed:
 - 1. Camera number and location description.
 - 2. Device number and location description.

END OF SECTION 270553

SECTION 271323 - COMMUNICATIONS OPTICAL FIBER BACKBONE CABLING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Provide work specified but not shown on Drawings, and work shown on Drawings but not specified, as though expressly required by both.

1.02 SUMMARY

- A. Section Includes:
 - 1. Single-mode (OS2), indoor/outdoor, plenum rated optical fiber cable.
 - 2. Optical fiber cable connecting hardware, patch panels, and patch cords.
 - 3. Cabling identification products.

1.03 DEFINITIONS

- A. BICSI: Building Industry Consulting Service International.
- B. Cross-Connect: A facility enabling the termination of cable elements and their interconnection or cross-connection.
- C. LAN: Local area network.
- D. RCDD: Registered Communications Distribution Designer.
- E. UPC: Ultra Physical Contact

1.04 OPTICAL FIBER BACKBONE CABLING DESCRIPTION

- A. Optical fiber backbone cabling system shall provide interconnections between communications equipment rooms and equipment cabinets in the telecommunications cabling system structure. Cabling system consists of backbone cables, patch panels, connectors, and patch cords or jumpers used for backbone-to-backbone cross-connection.

1.05 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.06 INFORMATIONAL SUBMITTALS

- A. Qualification Data:
 - 1. Cable installers certification from cable manufacturer for extended warranty.
 - 2. BICSI certified RCDD certification.
 - 3. On-site foreman experience.
 - 4. Minimum of (2) BICSI certified installer certifications.

1.07 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For optical fiber cable and connectors to include in maintenance manuals.

1.08 WARRANTY

- A. Period: The Contractor shall warranty all labor, workmanship, and materials for a period of one (1) year from the date of final Owner acceptance. Should a failure occur within this warranty period, the Contractor shall provide all labor and materials necessary to restore the system to the condition required for the final test and acceptance for this contract, at no cost to the Owner.
- B. Extended Warranty: The manufacturer shall guarantee in writing that the optical fiber backbone cable channels as installed by this contract are free from defects in materials and workmanship and will meet the applicable ANSI/TIA/EIA and ISO/IEC channel transmission requirements in effect at the time of installation and will support any current or future application ratified by IEEE, ANSI, or ISO designed to operate over the applicable ANSI/TIA/EIA-568-B and ISO/IEC 11801 standards in effect at the time of installation. The duration of this warranty shall be for a period of 25 years from date of final Owner acceptance. Defective products shall be repaired or replaced by the manufacturer, at no cost to the Owner.
- C. All product warranties shall list Memphis-Shelby County Airport Authority as the Owner upon Final Acceptance of the project.

1.09 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Cabling installer must be a certified installer meeting all requirements for the cable manufacturer's 25-year warranty program.

2. Cabling installer shall have a BICSI certified RCDD on staff with a minimum of (5) years' experience in managing similar projects.
 3. Cable installation team shall include an experienced on-site foreman with a minimum of running (5) successful installation projects.
 4. Cabling installer must have a minimum of (2) BICSI certified installers on the installation team.
- B. Layout Responsibility: By an RCDD.
- C. Installation Supervision: Installation shall be under the direct supervision of Registered Technician, who shall be present at all times when Work of this Section is performed at Project site.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Test cables upon receipt at Project site.
1. Test optical fiber cable to determine the continuity of the strand end to end. Use optical loss test set.

1.11 COORDINATION

- A. Coordinate layout and installation of telecommunications pathways and cabling with all other trades and service providers, if applicable.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. General Performance: Backbone cabling system shall comply with transmission standards in TIA-568-C.1, when tested according to test procedures of this standard.
- B. Telecommunications Pathways and Spaces: Comply with TIA-569-D.

2.02 SINGLE-MODE (OS2), INDOOR/OUTDOOR, PLENUM RATED OPTICAL FIBER CABLE

- A. Description: Single mode, loose tube, indoor/outdoor, plenum rated optical fiber cable. Refer to drawings for strand count.
- B. Application: Where installed in underground and above grade conduits.

- C. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1. Corning Cable Systems.
 2. General Cable; General Cable Corporation.
 3. Mohawk; a division of Belden Networking, Inc.
 4. Superior Essex Inc.
 5. Berk-Tek; a division of Leviton Company
 6. Equal.
- D. Standards:
1. Comply with TIA-492CAAB for detailed specifications.
 2. Comply with TIA-568-C.3 for performance specifications.
 3. Comply with ICEA S-83-596 for mechanical properties.
- E. General: Fiber optic cable construction shall consist of 8.3 μm single mode optical fibers typically formed in groups of six (6) or twelve (12) fibers each. Size, strand count and routing of fiber optic cables shall be as indicated on the drawings. These groups and individual fibers shall exceed all requirements for ANSI/TIA/EIA-568-B.3 and support high speed communication network applications. These groups assembled to form a single compact core, which is covered by a protective sheath.
- F. Optical Fiber Requirements and Performance:
1. Core Diameter: 8.3 μm
 2. Cladding Diameter: 125 $\mu\text{m} \pm 1\mu\text{m}$
 3. Cladding Non-Circularity: $\leq 1\%$
 4. Core/Cladding Concentricity Error: 0.5 μm
 5. Colored Fiber Diameter: 254 $\mu\text{m} \pm 7\mu\text{m}$
 6. Minimum Bandwidth: 20GHz
 7. Maximum Attenuation:
 - a. 1310nm ≤ 0.65 dB/km
 - b. 1550nm ≤ 0.50 dB/km
- G. Design Specifications: Provide cable suitable for installation in outdoor underground environments with loose tube, gel-free cables. Cable jacket shall meet the following specification:
1. Jacket Color: Black.
 2. Cable cordage jacket, fiber, unit, and group color shall be according to TIA-598-D.
 3. Imprinted with fiber count, fiber type, and aggregate length at regular intervals not to exceed 40 inches (1000 mm).
 4. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444, UL 1651, and NFPA 70.
 5. Maximum Overall Outside Diameter:
 - a. 12-Strand: 0.41" O.D.

- H. Single-mode (Dispersion Un-shifted): All single-mode fiber shall support 10 Gigabit Ethernet (10 Gbps) to distances of up to 10,000 meters @ 1310 nm and 40,000 meters @ 1550 nm per IEEE 802.3 performance. The single-mode fiber utilized in the optical fiber cable shall meet TIA-492CAAB, "Detail Specification for Class Iva Dispersion-Unshifted Single-Mode Optical Fibers with Low Water Peak," and ITU recommendation G.652 "Characteristics of a single-mode optical fiber cable."
- I. Identification: The individual fibers shall be color coded for identification. The optical fiber color coding shall be in accordance with EIA/TIA-598, "Optical Fiber Cable Color Coding." When buffered fibers are grouped into individual subunits, each subunit jacket shall be numbered for identification, with the exception of filler subunits where used. The outer jacket shall be marked with the manufacturer's name or ETL file number, date of manufacture, fiber count, fiber type, flame rating, listing symbol, and sequential length markings every two feet.

2.03 OPTICAL FIBER CABLE CONNECTING HARDWARE, PATCH PANELS AND PATCH CORDS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Corning Cable Systems.
 - 2. General Cable; General Cable Corporation.
 - 3. Mohawk; a division of Belden Networking, Inc.
 - 4. Superior Essex Inc.
 - 5. Berk-Tek; a division of Leviton Company
 - 6. Equal.
- B. Rack Mount Fiber Optic Patch Panel Connector Housings
 - 1. Basis of Design: Corning CCH series or equal.
 - 2. Fiber Optic housings shall provide a means for securing, strain-relieving, protecting, and labeling of fiber optic splice cassettes/connector panels.
 - 3. Rack-Mount Housing Specifications
 - a. Housings shall be designed for rack-mounted or frame-mounted applications that support conventional cross-connection and interconnection schemes as well as splicing applications.
 - b. Housings shall be available in 1U, 2U, 3U and 4U. See drawings for exact size of housings.
 - 4. The housings shall meet the design requirements of ANSI/TIA/EIA-598 and the plastics flammability requirements of UL 94 V-0.
 - 5. The connector housings shall have a labeling scheme that complies with ANSI/TIA/EIA- 606.
 - 6. The housings shall support cross-connection, inter-connection and/or splicing applications and routing schemes in the same housing.

7. The housing shall contain a front compartment whose function is to protect and manage jumpers that interface with the main housing behind it. The front jumper assembly compartment shall be removable and accessible via a translucent door.
8. The front compartment shall contain jumper egress openings on both sides that are edged with protective pass-through grommets that provide bend radius support for optical fiber jumpers.
9. The rear assembly housing shall be accessible via a hinged door. The door shall contain a routing and cable sub-unit slack storage bracket for interior management of cable sub-units and buffer tubes.
10. The housing shall contain a brushed entry on both sides of the rear of the housing.
11. The housing shall provide means for strain-relieving fiber optic cables both interior to and exterior on the rear assembly housing.
12. The rear of the housing shall contain provisions for routing and maintaining fiber optic cable components, including cable sub-units and buffer tubes, 900 um optical fiber, and buffer tube transition kits.
13. The floor/base of the rear of the housing shall provide holes or slots for the installation (and removal) of fiber retention or slack management clips.
14. The floor/base of the rear assembly housing shall provide holes or slots for the installation (and removal) of transitional strain-relief clips.

C. Fiber Optic Pigtailed Splice Cassettes

1. Rack mountable housings shall accept an interchangeable splice cassette.
2. The splice cassette shall consist of a base constructed from injection-molded black plastic and a removable hinged lid or cover constructed from injection-molded translucent plastic.
3. The splice cassette shall be available with pre-installed connector pigtails and panels.
4. The splice cassette shall allow one connector panel to be installed into the base.
5. The splice cassette shall be able to hold and contain at least one meter of pigtail fiber slack on the interior floor of the base.
6. The splice cassette shall be able to hold and contain up to one meter of 2.0-3.0 mm buffer tube slack or jacketed pigtail slack (up to 24 fiber) on the exterior bottom of the base.
7. The splice cassette shall contain a pivoting (and removable) splice tray above the base in a horizontal position that rotates up into a vertical position at least 90 degrees relative to the base allowing access to the base.
8. The splice tray shall contain one interchangeable splice organizer capable of holding up to twenty-four (24) splice heat-shrinks, routing tabs and provisions for holding a total of 2 meters of 250- or 900-micron fiber slack and contain slots and provisions for installing cable ties for securing incoming and outgoing buffer tubes and/or jacketed optical fibers.
9. The splice cassette shall contain relief slots for holding up to two buffer tube transition ("fan-out") kits on either side of the base.
10. The splice cassette shall contain two fiber retention tabs behind the connector panel location to maintain fiber below the connections and adapters in an installed connector panel.
11. Refer to drawings for required Fiber Optic Splice Cassette types.

D. Wall Mount Single-Panel Housing with Pigtailed Connector Panel

1. Basis of Design: Corning model no. SPH-CS12-A9-P00RE or equal.
2. Fiber Optic housing shall provide a means for securing, strain-relieving, protecting, and labeling of a single fiber optic pigtailed splice cassette.
3. The single-panel housing shall provide a base enclosure with a front (main) door, and back-plate, as well as top and bottom cable entries.
4. The housing shall provide necessary protection from incidental contact, dust and debris.
5. The housing shall be fully accessible from the front and sides (either left or right depending on mounting orientation of the housing).
6. The housing shall be capable of holding up to one (1) pigtailed connector panel.
7. The front or main entry of the housing and interior shall be accessible via a solid metal door. The rear or base of the housing shall be accessible via a solid metal back-plate.
8. The housing shall contain openings on both the top and bottom sides of it that allow fiber optic cables to enter the housing in either a through or mid-span configuration. The housing shall provide means for strain-relieving fiber optic cables inside the housing.
9. The housing shall include a stacking feature to allow up to three independent housings to be stacked and function as one wall-mount unit.

E. Fiber Optic Pigtailed Connector Panels

1. The connector panel shall utilize a single mounting footprint and shall be interchangeable between the rack and wall mountable hardware used.
2. The connector panel shall be attached with two push-pull latches to allow quick installation and removal.
3. The connector panel shall be available with industry standard single fiber and small form factor multi-fiber adapters, including the SC duplex, LC duplex and MPO.
4. Pigtailed connector panel shall consist of a connector panel as described above, factory-loaded with factory-terminated pigtails, 3 m in length.

F. UPC Fiber Optic Patch Cords:

1. Single-mode, duplex fiber patch cord shall be LC-LC, yellow.
2. The single-mode, duplex fiber patch cord shall consist of 9-micron core and a 125-micron cladding. The fiber cladding shall be covered by aramid yarn and OFNR rated, unless otherwise indicated on the drawings.
3. Contractor shall field verify the lengths of patch cords, prior to placing order.
4. Contractor shall provide all patch cords required to perform the patching as designated on the contract drawings and specifications. Provide one (1) patch cord for each terminated fiber port at both ends. All slack in the patch cords shall be appropriately dressed using vertical and horizontal patch cord organizers to maintain a neat appearance.

G. UPC Fiber Optic Connector:

1. LC, Single-mode, UPC, ceramic ferrule, field installable, blue housing, blue boot, pre-polished connector.

2. Comply with Optical Fiber Connector Intermateability Standards (FOCIS) specifications of TIA-604-2-B for Type LC connectors. Comply with TIA-568-C.3.
3. Quick-connect, duplex, Type LC connectors. Insertion loss not more than 0.25 dB.

2.04 IDENTIFICATION PRODUCTS

- A. Comply with TIA-606-B and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.
- B. Refer to spec section 27 05 53 "Identification for Communications Systems".

2.05 SOURCE QUALITY CONTROL

- A. Factory test optical fiber cables according to TIA-526-14-B and TIA-568-C.3.
- B. Factory test pre-terminated optical fiber cable assemblies according to TIA-526-14-B and TIA-568-C.3.
- C. Cable will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.

PART 3 - EXECUTION

3.01 WIRING METHODS

- A. Wiring Method: Install cables in underground conduit.
 1. Comply with requirements for pathways specified in Section 270543 "Underground Pathways and Structures for Communications Systems."
- B. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to termination points without exceeding manufacturer's limitations on bending radii.

3.02 INSTALLATION OF OPTICAL FIBER BACKBONE CABLES

- A. Comply with NECA 301.
- B. General Requirements for Cabling:
 1. Comply with TIA-568-C.1 and TIA-568-C.3.
 2. Comply with BICSI ITSIMM, Ch. 6, "Cable Termination Practices."

3. Terminate and test all cables; no cable shall contain unterminated elements. Make terminations only at indicated patch panels.
4. Cables may not be spliced, unless noted otherwise on drawings. Secure and support cables not more than 6 inches (150 mm) from patch panels, cabinets, boxes, fittings, outlets, racks, frames, and terminals.
5. Install lacing bars to restrain cables, to prevent straining connections, and to prevent bending cables to smaller radii than minimums recommended by manufacturer.
6. Secure end of cable to outside of fiber patch panel housing with factory provided hardware to provide strain relief prior to cable entering patch panel housing.
7. Buffer tubes and fiber strands shall not be routed outside of fiber patch panel housings.
8. Bundle, lace, and train cable to termination points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIMM, "Cabling Termination Practices" Chapter. Use lacing bars and distribution spools.
9. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination points. Remove and discard cable if damaged during installation and replace it with new cable.
10. In the communications equipment rooms, pull boxes, cabinets, enclosures and hand holes, install a 10-foot-long service loop on each end of cable.
11. Pulling Cable: Comply with BICSI ITSIMM, Ch. 4, "Pulling Cable." Monitor cable pull tensions.
12. Cable may be terminated on connecting hardware that is rack or cabinet mounted.
13. All cables shall be bundled with Velcro tie-wraps. The use of plastic tie-wraps shall not be allowed.

3.03 IDENTIFICATION

- A. Identify system components, wiring, and cabling complying with TIA-606-B. Comply with requirements for identification specified in Section 270553 "Identification for Communications Systems."
- B. Cable and Wire Identification:
 1. Label each cable within 4 inches (100 mm) of each termination, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
 2. Label each unit and field within distribution racks and frames.
 3. Identification within patch panels: Label each connector and each discrete unit of cable-terminating and connecting hardware.
- C. Labels shall be preprinted or computer-printed type with printing area and font color that contrasts with cable jacket color but still complies with requirements in TIA 606-B, for the following:
 1. Cables use flexible vinyl or polyester that flexes as cables are bent.

3.04 FIELD QUALITY CONTROL AND TESTING

A. General:

1. This Section includes the minimum requirements for the test certification, identification and administration of backbone and horizontal optical fiber cabling.
2. This Section includes minimum requirements for:
 - a. Fiber optic test instruments
 - b. Fiber optic testing
 - c. Administration
 - d. Test results documentation
3. Testing shall be carried out in accordance with this document. This includes testing the attenuation and polarity of the installed cable plant with an optical loss test set (OLTS). In addition to OLTS testing the optical fiber cabling shall require bi-directional testing with an optical time domain reflectometer (OTDR).
4. All tests shall be documented including OLTS dual wavelength attenuation measurements and OTDR traces with event tables as well as OTDR maps.

B. Requirements:

1. All testing procedures and field-test instruments shall comply with the latest version and applicable requirements of ANSI/TIA/EIA standards addressing the testing and administration of optical fiber cabling.
2. Trained technicians who have successfully attended an appropriate training program, which includes testing with an OLTS and an OTDR and have obtained a certificate as proof thereof shall execute the tests.
3. The Owner or the Owner's representative shall be invited to witness field-testing.
 - a. The Owner or the Owner's representative shall be notified of the start date of the testing phase five (5) business days before testing commences.
4. Manufacturers catalog sheets and specifications for fiber optic field-test instruments including optical loss test sets (OLTS; power meter and source) and optical time domain reflectometer (OTDR).
5. A schedule (list) of all optical fibers to be tested.
6. Sample test reports.

C. Test Limits and Parameters

1. Unless otherwise specified by the Owner or the Owners representative, each cabling link shall be in compliance with the following test limits:
 - a. Optical Loss Testing
 - 1) Multimode and Singlemode links: The link attenuation shall be calculated by the following formulas as specified in ANSI/TIA-568-C.0.
 - a) $\text{Link Attenuation (dB)} = \text{Cable\_Attn (dB)} + \text{Connector\_Attn (dB)} + \text{Splice\_Attn (dB)}$
 - b) $\text{Cable\_Attn (dB)} = \text{Attenuation\_Coefficient (dB/km)} * \text{Length (Km)}$
 - c) $\text{Connector\_Attn (dB)} = \text{number\_of\_connector\_pairs} * \text{connector\_loss (dB)}$
 - d) Maximum allowable connector_loss = 0.75 dB
 - e) $\text{Splice\_Attn (dB)} = \text{number\_of\_splices} * \text{splice\_loss (dB)}$
 - f) Maximum allowable splice_loss = 0.3 dB
 - g) The values for the Attenuation_Coefficient (dB/km) are listed in the table below:

Type of Optical Fiber	Wavelength (nm)	Attenuation coefficient (dB/km)	Wavelength (nm)	Attenuation coefficient (dB/km)
Multimode 62.5/125 μm	850	3.5	1300	1.5
Multimode 50/125 μm	850	3.5	1300	1.5
Single-mode (Inside plant)	1310	1.0	1550	1.0
Single-mode (Outside plant)	1310	0.5	1550	0.5

2. OTDR Testing
 - a. In addition to OLTS testing, OTDR bi-directional testing shall be required for optical fiber cabling.
 - b. Reflective events (connections) shall not exceed:
 - 1) 0.75 dB in optical loss when bi-directionally averaged
 - 2) -35 dB Reflectance for multimode connections
 - 3) -40 dB reflectance for UPC singlemode connections
 - 4) -55 dB reflectance for APC singlemode connections
 - c. Non-reflective events (splices) shall not exceed 0.3 dB.

3. All installed cabling links and channels shall be field-tested and pass the test requirements and analysis as described under Optical Fiber Cable Testing section of this specification. Any link or channel that fails these requirements shall be diagnosed and corrected. Any corrective action that must take place shall be documented and followed with a new test to prove that the corrected link or channel meets performance requirements. The final and passing result of the tests for all links and channels shall be provided in the test results documentation in accordance with the Optical Fiber Cable Testing section of this specification.
4. Acceptance of the test results shall be given in writing after the project is fully completed and tested in accordance with Contract Documents and to the satisfaction of the Owner.

D. Testing Equipment:

1. The field-test instrument shall be within the calibration period recommended by the manufacturer and a copy of the calibration certificate made available.
2. Acceptable manufacturers
 - a. Fluke Networks
 - b. Tektronix
 - c. Engineer Approved Equal

E. Test Records:

1. Administration of the documentation shall include test results of each fiber link and channel.
2. The test result information for each link shall be recorded in the memory of the field-test instrument upon completion of the test.
3. The test result records saved within the field-test instrument shall be transferred into a Windows™-based database utility that allows for the maintenance, inspection and archiving of these test records.

F. Optical Fiber Testing

1. Field-test instruments shall have the latest software and firmware installed.
2. Testing shall be performed on each cabling link (connector to connector).
3. Testing shall be performed on each cabling channel (equipment to equipment) as identified in the contract documents.
 - a. Testing shall not include any active devices or passive devices within the link or channel other than cable, connectors, and splices, i.e., link attenuation does not include such devices as optical bypass switches, couplers, repeaters, or optical amplifiers.
4. Testing of the cabling shall be performed using high-quality test reference cords of the same core size as the cabling under test, terminated with reference grade connectors. Reference grade connectors are defined as having a loss not exceeding 0.1 dB for multimode and 0.2 dB for singlemode.

5. OLTS Testing
 - a. Horizontal/Backbone link
 - 1) Multimode links shall be tested in one direction at 850 nm and 1300 nm in accordance with ANSI/TIA-526-14-B, one-cord reference method, with an Encircled Flux compliant launch.
 - 2) Singlemode backbone links shall be tested in one direction at 1310 nm and 1550 nm in accordance with ANSI/TIA/EIA-526-7, Method A.1 (One-cord reference method).
 - 3) Link attenuation does not include any active devices or passive devices other than cable, connectors, and splices, i.e. link attenuation does not include such devices as optical bypass switches, couplers, repeaters, or optical amplifiers.
6. OTDR Testing
 - a. Fiber links shall be tested at these wavelengths for anomalies and to ensure uniformity of cable attenuation, connector insertion loss and reflectance.
 - 1) Multimode: 850 nm and 1300 nm.
 - 2) Singlemode: 1310 nm and 1550 nm.
 - b. Each fiber link and channel shall be tested in both directions.
 - 1) The launch and tail fibers shall remain in place for the measurement in the opposite direction – failing to do so will result in an increase in measurement uncertainty.
 - 2) The use of a loop back fiber at the far end with a tail fiber at the near end on the adjacent fiber is permitted for bi-directional testing, so long as the OTDR is able to split the trace automatically into two traces for the two fibers under test.
 - c. A launch cable shall be installed between the OTDR and the first link connection.
 - d. A tail cable shall be installed after the last link connection.
7. Length Measurement
 - a. The optical length of each fiber shall be recorded using an OLTS or OTDR.
8. Polarity Testing
 - a. Paired duplex fibers in multi-fiber cables shall be tested to verify polarity in accordance with Clause E.5.3 of ANSI/TIA 568 C.0. The polarity of the paired duplex fibers shall be verified using an OLTS.

G. Administration

1. Test results documentation

- a. The test results documentation shall be available for inspection by the Owner or the Owner's representative during the installation period and shall be passed to the Owner's representative within 5 working days of completion of tests.
- b. The database for the complete project shall be stored and delivered on CD/DVD prior to Owner acceptance of the building in the original format used by the cabling vendors' software.
- c. Circuit IDs reported by the test instrument should match the cable label ID.
- d. The detailed test results documentation data is to be provided in an electronic database for each tested optical fiber and shall contain the following information
 - 1) The identification of the customer site as specified by the end-user.
 - 2) The name of the test limit selected to execute the stored test results.
 - 3) The name of the personnel performing the test.
 - 4) The date and time the test results were saved in the memory of the tester.
 - 5) The manufacturer, model and serial number of the field-test instrument.
 - 6) The version of the test software and the version of the test limit database held within the test instrument.
 - 7) The fiber identification number.
 - 8) The length for each optical fiber.
 - 9) The index of refraction used for length calculation when using length capable OLTS.
 - 10) The backscatter coefficient of the fiber under test when using an OTDR.
 - 11) Test results to include OLTS attenuation link and channel measurements at the appropriate wavelength(s) and the margin (difference between the measured attenuation and the test limit value).
 - 12) Test results to include OTDR link and channel traces, event tables at the appropriate wavelength(s) and a map of the link tested.
 - 13) The length for each optical fiber as calculated by the OTDR.
 - 14) The overall Pass/Fail evaluation of the link-under-test for OLTS and OTDR measurements

END OF SECTION 271323

SECTION 271513 - COMMUNICATIONS COPPER HORIZONTAL CABLING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Provide work specified but not shown on Drawings, and work shown on Drawings but not specified, as though expressly required by both.

1.02 SUMMARY

- A. This section specifies structured twisted pair telecommunications horizontal cabling, including cable termination, cross-connects, patch panels, and telecommunication outlets and connectors.
- B. Section Includes:
 - 1. Category 6A outdoor rated U/UTP twisted pair cable.
 - 2. Twisted pair cable hardware, including plugs and jacks.
 - 3. Cabling identification products.
 - 4. Grounding provisions for twisted pair cable.
 - 5. Source quality control requirements for twisted pair cable.
- C. Related Requirements:
 - 1. Section 270553 "Identification for Communication Systems."

1.03 DEFINITIONS

- A. Cross-Connect: A facility enabling the termination of cable elements and their interconnection or cross-connection.
- B. EMI: Electromagnetic interference.
- C. IDC: Insulation displacement connector.
- D. Jack: Also commonly called an "outlet," it is the fixed, female connector.
- E. LAN: Local area network.
- F. Plug: Also commonly called a "connector," it is the removable, male telecommunications connector.
- G. RCDD: Registered Communications Distribution Designer.
- H. S/UTP: Shield/Screen (overall shield) surrounding Unshielded Twisted Pair conductors.

- I. U/UTP: Unscreened (unshielded) twisted pair.

1.04 COPPER HORIZONTAL CABLING DESCRIPTION

- A. Copper horizontal cabling system shall provide interconnections between communications equipment room and the equipment outlet. Cabling system consists of horizontal cables, intermediate and main cross-connects, mechanical terminations, and patch cords used for horizontal-to-horizontal cross-connection.
 - 1. Horizontal cabling shall contain no more than one transition point or consolidation point between the horizontal cross-connect and the telecommunications equipment outlet.
 - 2. Bridged taps and splices shall not be installed in the horizontal cabling.
- B. The maximum allowable horizontal permanent link cable length is 295 feet. This maximum allowable length does not include an allowance for the length of 16 feet to the workstation equipment or in the horizontal cross-connect.

1.05 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.06 INFORMATIONAL SUBMITTALS

- A. Qualification Data:
 - 1. Cable installers certification from cable manufacturer for extended warranty.
 - 2. BICSI certified RCDD certification.
 - 3. On-site foreman experience.
 - 4. Minimum of (2) BICSI certified installer certifications.

1.07 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For patch panels and connectors to include in maintenance manuals.
- B. Testing results of every installed horizontal cable.

1.08 WARRANTY

- A. Period: The Contractor shall warranty all labor, workmanship, and materials for a period of one (1) year from the date of final Owner acceptance. Should a failure occur within this warranty period, the Contractor shall provide all labor and materials necessary to restore the system to the condition required for the final test and acceptance for this contract, at no cost to the Owner.
- B. Extended Warranty: The manufacturer shall guarantee in writing that the copper horizontal cable channels as installed by this contract are free from defects in materials and workmanship and will meet the applicable ANSI/TIA/EIA and ISO/IEC channel

transmission requirements in effect at the time of installation and will support any current or future application ratified by IEEE, ANSI, or ISO designed to operate over the applicable ANSI/TIA/EIA-568-B and ISO/IEC 11801 standards in effect at the time of installation. The duration of this warranty shall be for a period of 20 years from date of final Owner acceptance. Defective products shall be repaired or replaced by the manufacturer, at no cost to the Owner.

- C. All product warranties shall list Memphis-Shelby County Airport Authority as the Owner upon Final Acceptance of the project.

1.09 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Cabling installer must be a certified installer meeting all requirements for the cable manufacturer's 25-year warranty program.
 - 2. Cabling installer shall have a BICSI certified RCDD on staff with a minimum of (5) years' experience in managing similar projects.
 - 3. Cable installation team shall include an experienced on-site foreman with a minimum of running (5) successful installation projects.
 - 4. Cabling installer must have a minimum of (2) BICSI certified installers on the installation team.
- B. Installation Supervision: Installation shall be under the direct supervision of Registered Technician, who shall be present at all times when Work of this Section is performed at Project site.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Test cables upon receipt at Project site.
 - 1. Test each pair of twisted pair cable for open and short circuits.

1.11 COORDINATION

- A. Coordinate layout and installation of telecommunications pathways and cabling with all other trades.

PART 2 - PRODUCTS

2.01 GENERAL CABLE CHARACTERISTICS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with the applicable standard and NFPA 70 for the following types:
 - 1. Cabling installed outdoors, exterior to building shall have jacket that is UV and weather resistant Polyethylene OSP rated.

- B. RoHS compliant.

2.02 CATEGORY 6A OUTDOOR RATED U/UTP TWISTED PAIR CABLE

- A. Description: Four-pair, balanced-twisted pair cable, with internal spline, certified to meet transmission characteristics of Category 6A U/UTP cable at frequencies up to 500MHz.
- B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Belden.
 - 2. Berk-Tek.
 - 3. CommScope.
 - 4. Mohawk.
 - 5. Paige Datacom.
 - 6. Panduit.
 - 7. Prysmian Group.
 - 8. Superior Essex.
 - 9. Simon.
- C. General Performance Specifications: The minimum requirements for Category 6A U/UTP cables shall conform to TIA/EIA 568B Commercial Building Telecommunications Cabling Standard, Horizontal Cable Section. Application standards supported should include, but not limited to:
 - 1. 10Base-T through 10GBase-T Ethernet.
 - 2. Power over Ethernet (Poe & PoE+) - IEEE 802.3af/at Type 1 & 2.
 - 3. 4PPoE+ - IEEE 802.3bt Type 3 and 4 draft D1.2.
 - 4. 155Mb/s ATM and token ring.
 - 5. HDBaseT Class A & B.
 - 6. 550MHz Broadband Video.
 - 7. Backwards compatible to legacy protocols and applications.
- D. General Design Specifications: Outdoor rated horizontal cable shall be, Category 6A, U/UTP composed of 23 AWG bare solid-copper conductors, insulated (FEP). The insulated conductors are twisted into pairs and shall be surrounded by a filling compound to prevent water ingress. The outer core shall be a sunlight and abrasion resistant black polyethylene outer jacket. Cable shall be classified Category 6A cable meeting the following minimum design specifications:
 - 1. Overall Diameter: ≤ 0.355 inches.
 - 2. Pair Count: Four (4).
 - 3. Conductor: Solid annealed copper 23 AWG.
 - 4. Insulation: FEP.
 - 5. Separator: Full Cross-web.
 - 6. Jacket: Outdoor rated polyethelene, black in color unless noted otherwise.
 - 7. Impedance: $100\Omega \pm 15$.
 - 8. Velocity of Propagation : CMP: 71 percent.
 - 9. Performance Compliance: UL 444, UL 1666, NFPA 262, ANSI/TIA-568-C.2, Article 800, NEC (NFPA 70).

10. NRTL Programs: UL Verified CAT 6A, UL Listed CMP-LP (0.6).
 11. Standard: Comply with TIA-568-C.2 for Category 6A cables.
- E. Category 6A patch cords shall be provided for network switch connections.

2.03 CATEGORY 6A TWISTED PAIR CABLE HARDWARE

- A. Description: Hardware designed to connect, splice, and terminate twisted pair copper communications cable.
- B. Manufacturers: Subject to compliance with requirements, Category 6A hardware shall be provided by:
1. Legrand.
 2. Belden.
 3. Berk-Tek.
 4. CommScope.
 5. Mohawk.
 6. Paige Datacom.
 7. Panduit.
 8. Prysmian Group.
 9. Superior Essex.
 10. Simon.
- C. General Requirements for Twisted Pair Cable Hardware:
1. Comply with the performance requirements of Category 6A.
 2. Comply with TIA-568-C.2, IDC type, with modules designed for punchdown caps or tools.
 3. Cables shall be terminated with connecting hardware of same category or higher.
- D. Source Limitations:
1. Category 6A cabling and connecting hardware shall be from the same manufacturer.
- E. Plugs and Plug Assemblies:
1. Male; eight position (8P8C); color-coded modular telecommunications connector designed for termination of a single four-pair, 100-ohm, Category 6A U/UTP cable. Terminate all four cable pairs per jack unless noted otherwise on drawings.
 2. Standard: Comply with TIA-568-C.2.
 3. Marked to indicate transmission performance.
- F. Patch Cords: Factory-made, four-pair cables; terminated with an eight-position modular plug at each end. Contractor shall confirm required lengths prior to placing order.
1. Patch cords shall have bend-relief-compliant boots and color-coded icons to ensure performance. Patch cords shall have latch guards to protect against snagging.
 2. Patch cords shall be manufactured and certified by the same manufacturer of the permanent link cabling.

2.04 IDENTIFICATION PRODUCTS

- A. Comply with TIA-606-B and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.
- B. Refer to spec section 27 05 53 "Identification for Communications Systems".

2.05 GROUNDING

- A. Comply with TIA-607-B.

2.06 SOURCE QUALITY CONTROL

- A. Factory test cables on reels according to TIA-568-C.1.
- B. Factory test twisted pair cables according to TIA-568-C.2.
- C. Cable will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.

PART 3 - EXECUTION

3.01 WIRING METHODS

- A. Wiring Method: Install cables in raceways.
 - 1. Comply with requirements for raceways and boxes specified in Section 27 05 28 "Pathways for Communications Systems."
- B. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to termination points without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools. Secure cabling to enclosure using hook-and-loop fastening straps, nylon tie-wraps around cabling bundles are not acceptable.

3.02 INSTALLATION OF PATHWAYS

- A. Comply with Section 270528 "Pathways for Communications Systems."

3.03 INSTALLATION OF TWISTED-PAIR HORIZONTAL CABLES

- A. Comply with NECA 1 and NECA/BICSI 568.
- B. General Requirements for Cabling:

1. Comply with TIA-568-C.0, TIA-568-C.1, and TIA-568-C.2.
 2. Comply with BICSI ITSIMM, Ch. 5, "Copper Structured Cabling Systems," "Cable Termination Practices" Section.
 3. Do not untwist twisted pair cables more than 1/2 inch from the point of termination to maintain cable geometry.
 4. Terminate all conductors; no cable shall contain unterminated elements.
 5. Cables may not be spliced.
 6. Secure and support cables at intervals not exceeding 36 inches, not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
 7. Install lacing bars to restrain cables, prevent straining connections, and prevent bending cables to smaller radii than minimums recommended by manufacturer.
 8. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIMM, Ch. 5, "Copper Structured Cabling Systems," "Cable Termination Practices" Section. Use lacing bars and distribution spools.
 9. Cabling within cable tray or ladder rack pathways shall lay loose within the pathway.
 10. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
 11. Cold-Weather Installation: Bring cable to room temperature before de-reeling. Heat lamps shall not be used for heating.
 12. In the communications equipment room, install a 10-foot-long service loop on each end of cable.
 13. Pulling Cable: Comply with BICSI ITSIMM, Ch. 5, "Copper Structured Cabling Systems," "Pulling and Installing Cable" Section. Monitor cable pull tensions.
- C. Cable Installation:
1. Comply with TIA-568-C.0 and TIA-568-C.2.
 2. Install cabling with horizontal and vertical cable guides in communications equipment rooms with terminating hardware and interconnection equipment.
 3. Cable shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items.
- D. Group connecting hardware for cables into separate logical fields.
- E. Separation from EMI Sources:
1. Comply with recommendations from BICSI's "Telecommunications Distribution Methods Manual" and TIA-569-D for separating unshielded copper communication cable from potential EMI sources, including electrical power lines and equipment.
 2. Separation between open communications cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:
 - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 inches.
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches.
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches.

3. Separation between communications cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:
 - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 2-1/2 inches.
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches.
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches.
4. Separation between communications cables in grounded metallic raceways, power lines, and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:
 - a. Electrical Equipment Rating Less Than 2 kVA: No requirement.
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 3 inches.
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches.
5. Separation between Communications Cables and Electrical Motors and Transformers, 5 kVA or HP and Larger: A minimum of 48 inches.
6. Separation between Communications Cables and Fluorescent Fixtures: A minimum of 5 inches.

3.04 GROUNDING

- A. Install grounding according to the "Grounding, Bonding, and Electrical Protection" chapter in BICSI's "Telecommunications Distribution Methods Manual."
- B. Comply with TIA-607-B and NECA/BICSI-607.

3.05 IDENTIFICATION

- A. Identify system components, wiring, and cabling complying with TIA-606-B. Comply with requirements for identification specified in Section 27 05 53 "Identification for Communications Systems."
- B. Paint and label colors for equipment identification shall comply with TIA-606-B for Class 2 level of administration.
- C. Cable and Wire Identification:
 1. Label each cable within 4 inches of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
- D. Labels shall be preprinted or computer-printed type, with a printing area and font color that contrast with cable jacket color but still comply with TIA-606-B requirements for the following:
 1. Cables use flexible vinyl or polyester that flexes as cables are bent.

3.06 FIELD QUALITY CONTROL AND TESTING

A. General:

1. This Section includes the minimum requirements for the test certification, identification, and administration of horizontal balanced twisted pair cabling.
2. This Section includes minimum requirements for:
 - a. Copper cabling test instruments.
 - b. Copper cabling testing.
 - c. Administration.
 - d. Test results documentation.
3. Testing shall be carried out in accordance with this document.
4. Testing shall be performed on each cabling link. (100 percent testing).
5. All tests shall be documented.

B. Requirements:

1. All testing procedures and field-test instruments shall comply with the latest version and applicable requirements of ANSI/TIA/EIA standards addressing the testing and administration of Category 6A copper horizontal cabling.
2. Trained technicians who have successfully attended an appropriate training program and have obtained a certificate as proof thereof shall execute the tests.
3. The Owner or the Owner's representative shall be invited to witness field-testing.
 - a. The Owner or the Owner's representative shall be notified of the start date of the testing phase five (5) business days before testing commences.
4. Manufacturers catalog sheets and specifications for the test equipment.
5. A schedule (list) of all balanced twisted-pair copper links to be tested.
6. Sample test reports.

C. Test Limits and Parameters:

1. Unless otherwise specified by the Owner or the Owner's representative, each cabling link shall be tested for:
 - a. Wire Map.
 - b. Length.
 - c. Propagation Delay.
 - d. Delay Skew.
 - e. DC Loop Resistance .
 - f. DC Resistance Unbalance within a pair.
 - g. DC Resistance Unbalance between pairs.
 - h. Insertion Loss.
 - i. NEXT (Near-End Crosstalk).
 - j. PS NEXT (Power Sum Near-End Crosstalk).
 - k. ACR-N (Attenuation to Crosstalk Ratio Near-End).
 - l. PS ACR-N (Power Sum Attenuation to Crosstalk Ratio Near-End).
 - m. ACR-F (Attenuation to Crosstalk Ratio Far-End).
 - n. PS ACR-F (Power Sum Attenuation to Crosstalk Ratio Far-End).
 - o. Return Loss.

- p. TCL (Transverse Conversion Loss).
 - q. ELTCTL (Equal Level Transverse Conversion Transfer Loss).
 - r. PS ANEXT (Power Sum Alien Near-End Crosstalk).
 - s. Average PS ANEXT (Average Power Sum Alien Near-End Crosstalk).
 - t. PS AACR-F (Power Sum Alien Attenuation to Crosstalk Ratio Far-End).
 - u. Average PS AACR-F (Average Power Sum Alien Attenuation to Crosstalk Ratio Far-End).
 - 2. All installed cabling Permanent Links shall be field-tested and pass the test requirements and analysis as described in the Copper Horizontal Cable Testing section. Any Permanent Link that fails these requirements shall be diagnosed and corrected. Any corrective action that must take place shall be documented and followed with a new test to prove that the corrected Permanent Link meets performance requirements. The final and passing result of the tests for all Permanent Links shall be provided in the test results documentation in accordance with the Copper Horizontal Cable Testing section of this specification.
 - 3. Acceptance of the test results shall be given in writing after the project is fully completed and tested in accordance with Contract Documents and to the satisfaction of the Owner.
- D. Testing Equipment:
- 1. The field-test instrument shall be within the calibration period recommended by the manufacturer and a copy of the calibration certificate made available.
 - 2. Acceptable manufacturers:
 - a. Fluke Networks.
 - b. Tektronix.
 - c. Engineer Approved Equal.
- E. Administration:
- 1. Administration of the documentation shall include test results of each Permanent Link.
 - 2. The test result information for each link shall be recorded in the memory of the field-test instrument upon completion of the test.
 - 3. The test result records saved within the field-test instrument shall be transferred into a Windows™-based database utility that allows for the maintenance, inspection and archiving of these test records.
- F. Copper Horizontal Cable Testing:
- 1. All outlets, cables, patch panels and associated components shall be fully assembled and labeled prior to field-testing. Any testing performed on incomplete systems shall be redone on completion of the work.
 - 2. Field-test instruments shall have the latest firmware installed.
 - 3. Permanent Link test results, including the individual frequency measurements from the tester, shall be recorded in the test instrument upon completion of each test for subsequent uploading to a Windows™-based database utility in which the administrative documentation (reports) may be generated.

4. Permanent Link testing shall be performed on each cabling segment (connector to connector). Sampling is not acceptable.
5. Alien Crosstalk testing shall be performed using a sampling plan. An acceptance quality level (AQL) of 0, 4 percent, normal inspection, general inspection level I as defined in ISO 2859-1 for populations of up to 500,000 links shall be used. The following table represents this sampling level:

Total number of links (N)	Sample size (No. of links to test)
3 – 33	3 or 0.1 x N (whichever is greatest)
34 – 3,200	33
3,201 – 35,000	126
35,001 – 150,000	201
150,001 – 500,000	315

6. Disturbed (Victim) links chosen for Alien Crosstalk testing shall be an equal combination of short, medium, and long links.
7. Provide test results for each parameter listed under paragraph 3.07-C.1, this section. All tests shall meet or exceed the limits found in ANSI/EIA-568-C.2, 6.3.

G. Administration:

1. Test Results Documentation:
 - a. The test results documentation shall be available for inspection by the Owner or the Owner's representative during the installation period and shall be passed to the Owner's representative within five (5) working days of completion of tests.
 - b. The database for the complete project shall be stored and delivered on USB drive prior to Owner acceptance of the building in the original format used by the cabling vendors' software.
 - c. Circuit IDs reported by the test instrument should match the cable label ID.
 - d. The detailed test results documentation data is to be provided in an electronic database for each tested optical fiber and shall contain the following information:
 - 1) The overall Pass/Fail evaluation of the link-under-test.
 - 2) The date and time the test results were saved in the memory of the tester.
 - 3) The identification of the customer site as specified by the end-user.
 - 4) The name of the test limit selected to execute the stored test results.
 - 5) The name of the personnel performing the test.
 - 6) The version of the test firmware and the version of the test limit database held within the test instrument.
 - 7) The manufacturer, model, and serial number of the field-test instrument.
 - 8) The adapters used.

- 9) The factory calibration date.
 - 10) Provide test results for each parameter listed under paragraph 3.07-C.1, this section.
- e. For Alien Crosstalk testing, the detailed test results documentation data is to be provided for each tested balance twisted pair and shall contain the following information:
- 1) The overall Pass/Fail evaluation of the link-under-test.
 - 2) The date and time the measurements were made.
 - 3) The identification of the customer site as specified by the end-user.
 - 4) The name of the test limit selected to execute the stored test results.
 - 5) The name of the personnel performing the test.
 - 6) The version of the test software.
 - 7) PS ANEXT, worst case margin for all four (4) pairs.
 - 8) Average PS ANEXT, worst case margin.
 - 9) PS AACR-F, worst case margin for all four (4) pairs.
 - 10) Average PS AACR-F, worst case margin.

END OF SECTION 272513

SECTION 273353 - UNINTERRUPTIBLE POWER SUPPLY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Provide work specified but not shown on Drawings, and work shown on Drawings but not specified, as though expressly required by both.
- C. Refer to “Uninterruptible Power Supply (UPS) Schedule” on the contract drawings for UPS requirements and additional information.

1.02 SUMMARY

- A. Section Includes:
 - 1. Single-phase UPS units with the following features:
 - a. Surge suppression.
 - b. Inverter.
 - c. Rectifier and charger.
 - d. Controls and indications.
 - e. Static bypass transfer switch.
 - f. Output distribution.
 - g. Battery and battery disconnect device.
 - h. Battery monitoring.

1.03 DEFINITIONS

- A. UPS: Uninterruptible power supply.

1.04 ACTION SUBMITTALS

- A. Product Data: For each type of UPS.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles for UPS.
 - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Warranties: Manufacturer's standard warranties.

1.05 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For UPS units to include in emergency, operation, and maintenance manuals.

1.06 WARRANTY

- A. Battery Warranties: Manufacturer and Installer agree to repair or replace UPS system storage batteries that fail in materials or workmanship within specified warranty period.
- B. UPS Warranties: Manufacturer and Installer agree to repair or replace components that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 OPERATIONAL REQUIREMENTS

- A. Automatic operation includes the following:
 - 1. Normal Conditions: Load is supplied with power flowing from the normal power input terminals, through the rectifier-charger and inverter, maintaining a full battery charge while AC line voltage is present.
 - 2. Abnormal Supply Conditions: If normal supply deviates from specified and adjustable voltage, voltage waveform, or frequency limits, the battery supplies energy to maintain constant, regulated inverter power output to the load without switching or disturbance.
 - 3. Power Failure: If normal power fails, energy supplied by the battery through the inverter continues to supply-regulated power to the load without switching or disturbance.
 - 4. When power is restored at the normal supply terminals of the system, controls shall automatically synchronize the inverter with the external source before transferring the load. Power will be supplied to the load through the inverter and simultaneously recharge the battery.
 - 5. If the battery becomes discharged and normal supply is available, the rectifier-charger shall charge the battery. The rectifier-charger shall automatically shift to float-charge mode on reaching full charge.
 - 6. If any element of the UPS system fails and power is available at the normal supply terminals of the system, the static bypass transfer switch shall switch the load to the normal ac supply circuit without disturbance or interruption.

2.02 PERFORMANCE REQUIREMENTS

- A. UL Compliance: Listed and labeled by an NRTL to comply with UL 1778.
- B. NFPA Compliance: UPS components shall be listed and labeled by an NRTL as suitable for installation in computer rooms according to NFPA 75.

- C. Minimum Duration of Supply: If battery is sole energy source supplying rated full-load UPS current at 80 percent power factor, duration of supply is five minutes minimum.
- D. Input Voltage: Refer to “Uninterruptible Power Supply (UPS) Schedule” on the contract drawings for required input voltage.
- E. Output Voltage: Refer to “Uninterruptible Power Supply (UPS) Schedule” on the contract drawings for required output voltage.

2.03 UPS SYSTEMS

- A. Description: Self-contained battery backup device and accessories that provides single-phase electrical power in the event of failure or sag in the normal power system.
- B. Refer to “Uninterruptible Power Supply (UPS) Schedule” on the contract drawings for UPS manufactures and capacities.
- C. Electronic Equipment: Solid-state devices using hermetically sealed, semiconductor elements. Devices include rectifier-charger, inverter, static bypass transfer switch, and system controls.
- D. Enclosures: Comply with NEMA 250, Type 1, unless otherwise indicated.
- E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- F. UPS Cabinet Ventilation: Integral to unit.

2.04 SURGE SUPPRESSION

- A. Protect internal UPS components from surges that enter at each ac power input connection. Protect rectifier-charger, inverter, controls, and output components.
 - 1. Use factory-installed surge suppressors tested according to IEEE C62.41.1 and IEEE C62.41.2.

2.05 STATIC BYPASS TRANSFER SWITCH

- A. Description: Integral switching device providing uninterrupted transfer to automatically provide electrical isolation for the UPS.
- B. Switch Rating: Continuous duty at the rated full-load UPS current, minimum.

2.06 BATTERY

- A. Description: Maintenance-free sealed lead-acid battery, factory assembled in a leakproof compartment.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for conditions affecting performance of the UPS.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Comply with NECA 1.
- B. Equipment Mounting: Mount as indicated on the “Uninterruptible Power Supply (UPS) Schedule” on the contract document drawings.
- C. Maintain minimum clearances and workspace at equipment according to manufacturer's written instructions and NFPA 70.

3.03 FIELD QUALITY CONTROL

- A. Perform tests and inspections per the manufacturer’s installation and start-up instructions.

END OF SECTION 273353

SECTION 272100 - LOCAL AREA NETWORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Provide work specified but not shown on Drawings, and work shown on Drawings but not specified, as though expressly required by both.
- C. All sections of Division 27 of these specifications also apply to this section.

1.02 SCOPE

- A. The scope of work for this project includes all materials, equipment, hardware, software, and labor to install and make ready for Local Area Network and related Information Technology equipment. The Contractor shall provide all products required to ensure a fully operative system and provide proper installation of all equipment.
- B. The Contractor shall procure, furnish, and install new network equipment to extend the existing three-tier MEM network into the yellow parking lot.
- C. The equipment in this specification shall be installed in the identified remote network cabinet and telecommunications rooms indicated in the contract drawings.
- D. The contractors shall integrate and test the network equipment in accordance with all applicable manufacturer and industry best practices. The contractor shall also furnish and provide training for both administrator and end users of the systems provided under this specification. System Operability and proper installation shall be verified through a comprehensive Quality Control Program that includes scheduled inspections and successful completion of acceptance and endurance testing.
- E. It is the responsibility of the Contractor to perform the necessary coordination with MEM IT representative to ensure all networking requirements are met with the installed LAN. This coordination is required and shall be included in the price of the contract.
- F. Final configurations of new LAN equipment shall be configured by MEM IT.

1.03 SUMMARY

- A. This document is for the design, construction, and installation of the new Local Area Network equipment at Memphis International Airport. It includes all required active components, as needed to facilitate the many services which rely on connectivity.

- B. The Contractor will procure, furnish and install a new network switch to provide network connectivity to endpoints and services within the cell phone parking lot. The equipment, software and services in this section shall be provided by a qualified vendor who is authorized and certified by the manufacturer for resale, configuration and maintenance.
- C. Newly installed hardened POE+ access layer switches shall provide network connectivity to (6) new parking lot ticket machines and (6) new cameras.
- D. The Contractor shall provide new 10G SMF transceivers to support redundant uplinks to existing distribution layer switches. The Contractor shall provide transceivers for new hardened POE+ access layer switches and existing distribution layer switches.

1.04 DEFINITIONS

- A. LAN – Local Area Network
- B. SMF - Single Mode Fiber

1.05 ACTION SUBMITTALS

- A. Narrative of Operation of System
- B. Manufacturer's Data and Product Cutsheets for the proposed equipment (hardware) and licensing (software) models.
- C. Proof of certification by the manufacturer. The contractor will be an authorized partner and reseller for the hardware, software and services included in this specification. Personnel providing services will have proof of certification for the skills listed in the Quality Assurance section
- D. Pre-installation Shop Drawings or system block diagram.

1.06 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For all network systems to include operation and maintenance manuals.
- B. Overall Physical and Logical Network Topology Diagrams:
- C. Provide system block diagrams including major system components, network protocols, ports, and interrelationships of each system component.
- D. As-built high-level and low-level network architecture design drawings.

1.07 SHOP DRAWINGS

- A. Logical and Physical Network Topology Diagrams: Provide system block diagrams noting major system components, network protocols, ports, and interrelationships of each component.

1.08 SEQUENCE AND SCHEDULING PLAN

- A. Provide installation-scheduling plan for review and approval. Coordinate scheduling of with the airport.

1.09 WARRANTY

- A. The warranty period for all equipment, devices, software, and hardware installed by the Contractor will start on the date of beneficial occupancy by MEM IT at MEM facilities. The Contract will include in the based bid the cost to assure coverage of all 3rd party equipment, hardware, devices, software, and licenses installed to be covered through the full first year of operation.
- B. The manufacturer shall provide a Standard Warranty for all products to be free of defects in material and workmanship subject to license agreement terms and conditions.
- C. The minimum warranty period is one (1) year from beneficial occupancy unless the standard manufactures warranty exceeds this period.
- D. All Software upgrades and patches required in the first year of warranty shall be included in the cost of the initial warranty period.
- E. The contractor shall guarantee and warranty all equipment, materials, workmanship, and installation, for a period of one (1) year.

1.10 QUALITY ASSURANCE

- A. Standards:
 - 1. BICSI is an industry trade association. See "Communications Copper Horizontal Cabling" Article in the Evaluations for summaries of qualifications for registration.
- B. Installer Requirements:
 - 1. Network equipment installer must be a certified professional meeting all requirements for the equipment manufacturer's reseller and warranty programs. Proof of such certifications must be provided with bid response.
 - 2. The Contractor must provide documentation as part of their bid response to indicate that they have a minimum of 10 years project experience within the last five years in Commercial Airports.
- C. Certifications:

1. Cisco Certified Network Professional (CCNP) The Contractor providing the LAN equipment shall assign a project manager that directly reports to the Construction Manager to support the specific coordination requirements associated with the installation of the LAN equipment.
- D. Qualifications:
 1. Installer:
 - a. Factory certified dealer specializing in data networks installation. Installer shall be capable of performing the work specified in this section with minimum 10 years documented experience in the field, while being authorized and approved by the manufacturer to resell, configure, and support systems described in this specification.
 2. Service Facility:
 - a. Network systems integrator shall have service facilities within one hundred (100) miles of Memphis International Airport.

1.11 DELIVERY, STORAGE, AND HANDLING

- A. Network switches and related equipment must be tested by the Contractor upon receipt at the Project site.
- B. The Contractor will verify that equipment received from the manufacturer is not Dead on Arrival (DoA) and parts match what was ordered.

PART 2 - PRODUCTS

2.01 GENERAL DESCRIPTION

- A. The Contractor shall provide all equipment, materials, labor, and coordination services necessary to complete or perfect all parts of the Data Communications Network Equipment, and to ensure that they follow requirements stated or reasonably inferred by this Specification. Wherever here in the term provide or provided is used it shall be defined as procure, install and program as required for a fully functional and correctly operational System. All equipment under this Section shall be provided, maintained, and operated during the construction and implementation period, tested, and commissioned by the Contractor.
- B. Network switch quantities shown on all Contract Network Architecture drawings are intended to be representative, in effort to show physical and logical high-level network topologies.
- C. The Contractor shall perform all required coordination with the MEM IT Representative and stakeholders to finalize all functional, operational, and performance requirements of the network design.

2.02 APPROVED MANUFACTURERS

- A. Enterprise Network Equipment:
 - 1. Cisco Systems

2.03 GENERAL REQUIREMENTS

- A. This section includes the minimum requirements for Data Communications Network Equipment.
- B. All hardware requirements given are the minimum requirements. The Contractor's product shall meet or exceed these requirements. Additionally, the hardware selected shall meet the operational, functional, and performance requirements specified herein.
- C. The Contractor shall be responsible for the supply, installation, and initial testing of the LAN equipment, meeting or exceeding the requirements of the functional specifications provided in this document and the associated drawings.
- D. The scope of work for this project includes all materials, equipment, hardware, software, and labor to install and make ready for use Local Area Network equipment. It is the responsibility of the Contractor to perform the necessary coordination with the Construction Manager or MEM IT Representative and other contractors performing work associated with this project to ensure all networking requirements are met by the installed LAN equipment.
- E. The Contractor shall verify system operability and proper installation via completion of all required test plans.

2.04 HARDENED ACCESS LAYER SWITCHES

- A. Contractor shall provide all Hardware and Professional Services. The network equipment shall be deployed in the identified existing entry drive sign enclosure in the contract drawings.
- B. Hardened, 24-Port, PoE+, Network Access Layer Switch:
 - 1. Cisco Catalyst 8-port switch (IE-3300-8U2X-E)
 - 2. Cisco Catalyst 16-port, GE PoE/PoE+ Copper, Expansion Module (IEM-3300-16P)
 - 3. Cisco dual power supplies (Redundant PWR-IE480W-PCAC-L)
 - 4. Cisco 10G SMF Transceivers (SFP-10G-LR-S)
 - 5. Power Cables
- C. All equipment licensing shall be procured and assigned to the designated MEM IT Representative. License duration and requirements are as follows:
 - 1. IEM-3300-16P-E 3Y (Cisco Network Essentials)
 - 2. Software Support Service (SWSS 3Y)
 - 3. Cisco Smart Net Total Care (SNTC), 8x5xNBD Extended Warranty

2.05 IDENTIFICATION PRODUCTS

- A. Comply with TIA-606-B and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

2.06 GROUNDING

- A. Comply with TIA-607-B.

2.07 SOURCE QUALITY CONTROL

- A. Prepare test and inspection reports.

PART 3 - EXECUTION

3.01 GENERAL

- A. System installation and construction methods shall conform to the requirements as stated in General and Special Conditions of the Contract Documents.
- B. The Contractor shall install all system components including furnished equipment, and appurtenances in accordance with the manufacturer's instructions, NFPA 70, ANSI-C2 and as shown, and shall furnish all cables, connectors, terminators, interconnections, services, and adjustments required for a complete and operable system.
- C. Interconnection wiring between components mounted in the same rack or cabinet does not need to be installed in conduits.
- D. Grounding shall be installed as necessary to preclude ground loops, noise, and surges from adversely affecting system operation.
- E. The Contractor's Quality Assurance Inspector shall conduct a visual inspection of all installations to verify that the installations are in accordance with the MEM's and manufacturer's specifications. Records of the inspections signed and dated by the Quality Assurance Inspector shall be provided to the MEM IT Representative. The MEM IT Representative shall be notified by the Contractor of any inspection(s) and the MEM IT Representative may elect to participate in any inspection(s).
- F. All software/firmware/support information must be issued and held in the name of the Owner, not the Contractor.

3.02 HARDWARE INSTALLATION

- A. Design plans for hardware selection, installation location, and installation details shall be provided for MEM IT Representative's approval.

- B. Installation of hardware shall be coordinated with the MEM IT Representative.
- C. The Contractor shall install and inspect all hardware required to fully meet the functional, operational, and performance requirements of this Section. The installation of the hardware shall be in accordance with the manufacturer's installation instructions.

3.03 GROUNDING

- A. Install grounding according to the "Grounding, Bonding, and Electrical Protection" chapter in BICSI's "Telecommunications Distribution Methods Manual."
- B. Comply with TIA-607-B and NECA/BICSI-607.

3.04 IDENTIFICATION

- A. Labels shall be preprinted or computer-printed type, with a printing area and font color that contrast with equipment exterior color but still comply with TIA-606-B requirements.

3.05 QUALITY CONTROL

- A. Test Plan/Procedure: The Contractor shall develop and submit a comprehensive Network Test Plan that has been coordinated with the MEM IT Department for testing of the network to the Project Manager or Representative for review and approval 30 days prior to the beginning of any testing activities. The test plan shall detail the objectives of all tests. The tests shall clearly demonstrate that the system and its components fully comply with the requirements specified herein.
- B. The contractor shall provide full staff and equipment support to the MEM IT staff during testing of the network. This support shall include failover testing for all uplinks, preemptive fail back and testing of uplink bandwidth utilization. Support shall include provision of two (2) network technicians with Professional and/or Expert Level certifications for a period of at least two weeks.
- C. Test Reports: The Contractor shall submit for each test, a test report document that shall certify successful completion of that test. Submit for review and acceptance within seven (7) days following each test. The test report shall contain, at a minimum:
 - 1. Commentary on test results.
 - 2. A listing and discussion of all discrepancies between expected and actual results and of all failures encountered during the test and their resolution.
 - 3. Complete copy of test procedures and test data sheets with annotations showing dates, times, initials, and any other annotations entered during execution of the test.
 - 4. Signatures of persons who performed and witnessed the test.
 - 5. Test Resolution: Any discrepancies or problems discovered during these tests shall be corrected by the Contractor at no cost to the Owner. The problems identified in each phase shall be corrected and the percentage of the entire system

re-tested determined by the Design Consultant, before any subsequent testing phase is performed.

D. Termination

1. Performance verification test shall be terminated when:
 - a. Individual components, subsystems, or the integrated system fail to perform as specified
 - b. It is determined that system is missing components or installation is not complete.
2. Upon termination, corrective work shall be performed, and performance verification test rescheduled with MEM IT Department.
3. Retesting shall be performed by Contractor at no additional expense.
4. The Contractor shall continue to perform corrective actions and retest until the system passes all tests to satisfaction of the MEM IT Department and the Project Manager or Representative.

E. Final Inspection and Acceptance

1. After testing is complete, review tabulated records with the MEM IT Department.
2. The Contractor will not be responsible for failures caused by:
 - a. Outage of main power in excess of backup power capability provided that automatic initiation of all backup sources was accomplished, and automatic shutdowns and restarts of systems performed as specified.
 - b. Failure of any Airport furnished power, communications, and control circuits provided failure was not due to Contractor furnished equipment, installation, or software.

END OF SECTION 272100

ATTACHMENT 1



CONSTRUCTION SAFETY AND PHASING PLAN (CSPP)



MSCAA Project No.: 22-1459-05
Foth Infrastructure and Environment, LLC Project No.: 0023M301.02

Employee Parking Relocation (East Parking Lot)

March 10, 2026

FINAL

Prepared for:
Memphis-Shelby County Airport Authority (MSCAA)
Memphis International Airport
Memphis, Tennessee

Prepared by:
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Purpose

Careful planning, scheduling, and coordination of construction activities can minimize disruption of normal aircraft operations and avoid situations that compromise the airport's operational safety. The CSPP is the culmination of that planning effort during the design of the project. MSCAA staff, the FAA, and critical stakeholders have provided input on this CSPP. It has been developed from guidance set forth in the FAA Advisory Circular 150/5370-2G, Operations Safety on Airports During Construction. It is imperative that the provisions set forth in this plan be reviewed by the Contractor prior to mobilizing to the site and the document be followed without alteration.

Prior to mobilization, the Contractor must submit a Safety Plan Compliance Document (SPCD) describing how the Contractor will comply with the requirements set forth in this CSPP. An example SPCD is provided as an appendix to this document.

If the Contractor sees a need to alter the CSPP in any way, a request must be submitted to MSCAA, in writing, prior to the start of construction. Please note that changes to the CSPP may require coordination with all impacted parties and, potentially, a resubmittal to the FAA. This can be a 90–120 day process. If the change is accepted, it will be treated the same as any other change to the contract documents.

If the Contractor's activities do not comply with the provisions of this CSPP, the Contractor will be issued a written request to immediately cease the non-compliant action until a meeting can be held to discuss the issues and all necessary corrective actions, to be performed by the Contractor, are in place. Delays for non-compliance with the CSPP will not result in an extension of the allotted contract time for any phase of work or the total contract. All liquidated damage provisions set forth in the contract will still apply.

Scope of Work

The primary goal for this project is to perform site preparation activities for the construction of a future new snow removal equipment building. The proposed project site is located south of the existing Mission Support Center (MSC) which currently houses all the Airfield Maintenance Department's snow removal equipment. The primary scopes of work will be earthwork, hauling, and Portland cement concrete and crushed aggregate base paving. Also included will be site demolition and removals, drainage infrastructure installation, erosion prevention and sedimentation control, and temporary and permanent fence and gate construction.

Coordination

Airport operational safety during construction will be discussed at the pre-design, pre-bid, and pre-construction conferences. Construction progress meetings and meetings with the FAA Air Traffic Organization (ATO) will be coordinated as required throughout the contract.

The Contractor must provide contact information for key construction personnel prior to the start of the project. MSCAA will add engineering staff and key airport personnel to this list and it will be distributed to all relevant parties. Updated and current contact lists must be submitted if personnel change.

1. Prebid Conference

A pre-bid conference will be held for prospective bidders to ask questions and visit the site.

2. Preconstruction Conference

A pre-construction conference will be held prior to issuance of Notice to Proceed. Attendees will include MSCAA Engineering Staff, MSCAA Operations Staff, local air traffic control management (if necessary),

MSCAA Maintenance Staff, Engineer of Record, Engineer Field Staff (RPR), Contractor Project Superintendent, and Contractor Foreman, as well as the project foreman for each subcontractor employed by the prime Contractor. The agenda for this preconstruction conference will include a review of this CSPP.

3. Construction Progress Meetings

Construction progress meetings will be held throughout the duration of the project. Attendees will include MSCAA Engineering Staff, MSCAA Operations Staff, Prime Contractor, Project Superintendent and/or Foreman, and Engineer of Record and/or Engineer Field Staff (RPR). Local air traffic control management as well as airport tenants will be invited as needed, based on the project work impacting their operations on a week-to-week basis. Construction phasing and safety will be a standing agenda item at the weekly construction progress meetings.

4. Daily Coordination

At all times when construction activities are being performed on this project, the prime Contractor must have a foreman on-site who is authorized to make decisions regarding the operations and safety of all personnel employed by the Contractor and Subcontractors. The designated foreman will meet with Airport Operations Staff as work items being performed require.

5. ATCT Coordination

Coordination with ATCT will be as needed during the project. Only properly badged personnel with Class 3 driving privileges, Engineer Field Staff (RPR), or MSCAA will contact the ATCT during the project. The MEM Ground frequency is 121.9 MHz and MEM UNICOM frequency is 122.95 MHz.

6. CSPP Modifications

Proposed changes and substantial delays will require additional coordination with the airport and the FAA for the purpose of evaluating possible revisions to the CSPP. FAA shall approve of all proposed CSPP changes prior to execution.

Phasing

1. Locations, Durations, and Sequence of the Work

All work for each phase shall be completed in accordance with the project phasing plans, the project technical specifications, this CSPP, and the Contractor submitted SPCD.

The project has a duration of 140 calendar days and consists of one primary work area on the east side of East Cargo Road in and around existing the existing access controlled parking lot. A calendar day is defined as any day on the calendar. It includes Saturdays, Sundays, Holidays, and non-workdays. Refer to the project plans for graphical depictions of the phases along with notes on phase-specific sequencing and operational requirements. In general, the phases are as follows:

a. Phase 1

Phase 1 has a duration of 40 Calendar Days and includes closures of east lane of terminal – baggage claim, RON aircraft gates, and pedestrian crosswalks. Phase 1 work generally consists of installation of AOA, security, & barricaded fences, concrete patching, sidewalks, curbs, medians, wheel stops, and miscellaneous structures. Also included is installation of pavement

markings, lighting and electrical and communications infrastructure, entrance gate canopies, gate arms, equipment, signs, and security devices.

b. Phase 2

Phase 2 has a duration of 10 Calendar Day and includes a closure of the employee parking lot. Phase 2 work generally consists of installation of barricaded fences, concrete wheel stops, pavement markings, electrical, and communications infrastructure.

c. Phase 3

Phase 3 has a duration of 20 Calendar Days and includes a closure of the North Passenger Parking Lot. Phase 3 work generally consists of installation of barricaded fences, concrete wheel stops, pavement markings, electrical, and communications infrastructure.

d. Phase 4

Phase 4 has a duration of 20 Calendar Days and includes a closure of Cargo Road, which will require a flagger for vehicular traffic. Phase 4 work generally consists of installation of AOA, security, & barricaded fences, concrete patching, sidewalks, curbs, medians, wheel stops, and miscellaneous structures. Also included is installation of pavement markings, lighting and electrical and communications infrastructure, entrance gate canopies, gate arms, equipment, signs, and security devices.

e. Phase 5

Phase 5 has a duration of 20 Calendar Days and includes a closure of the Passenger Parking Lot Entrance and Exit. Phase 5 work generally consists of installation of AOA, security, & barricaded fences, concrete patching, sidewalks, curbs, medians, wheel stops, and miscellaneous structures. Also included is installation of pavement markings, lighting and electrical and communications infrastructure, entrance gate canopies, gate arms, equipment, signs, and security devices.

f. Phase 6

Phase 6 has a duration of 20 Calendar Days and includes a closure of the Passenger Parking Lot. Phase 6 work generally consists of installation of barricaded fences, concrete wheel stops, pavement markings, electrical, and communications infrastructure.

Affected Areas of Operations

1. Operational Affect Table

Operational Requiremen	Normal	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Runway 18R/36L	9,320' length ADG D-V	Open	Open	Open	Open	Open	Open

Runway 18C/36C	11,120' length ADG D-V	Open	Open	Open	Open	Open	Open
Runway 18L/36R	9000' length	Open	Open	Open	Open	Open	Open
Runway 9/27	9000' length	Open	Open	Open	Open	Open	Open
All other Taxiways	Varies	Open	Open	Open	Open	Open	Open

Navigational Aid (NAVAID) Facilities

Aircraft Navigational Aids provide visual and electronic information that is used by pilots who operate and land aircraft at the airport. Construction activities can have negative impacts on the functionality and serviceability of NAVAIDS.

There are no anticipated impacts to NAVAIDS associated with this project.

Contractor Access

1. Stockpiled Materials/Staging Location

Stockpiled materials and equipment storage are not permitted within active Safety Areas (RSA/TSA), Object Free Zones (OFZ), and Object Free Areas (OFA) of an operational runway or taxiway. Staging and stockpile location(s) are shown in the plans and may be located within the AOA.

There is one staging area for this project: Located within project limits.

Stockpiles are limited to maintain a clear line of sight from the Air Traffic Control Tower to all active taxiways and runways. Stockpile locations shall not be located over any MSCAA or FAA electrical/communications infrastructure.

a. Height

Stockpile height limits for material will be 20 feet.

b. Wildlife Attractant

The Contractor must manage stockpiles so that they do not attract wildlife (Refer to Wildlife Management Section below).

c. Foreign Object Debris (FOD)

The Contractor must manage stockpiles so that they do not create FOD (Refer to Foreign Object Debris (FOD) Management section below).

2. Vehicle and Personnel Operations

a. Access to Airport Operations Area (AOA)

The airport operations area is defined by the perimeter fence surrounding the airfield. Access onto the AOA is through any number of gates along the fence or doors through buildings. Contractor access onto the AOA is limited to Gate CD-5.

No person shall enter upon the Air Operations Area (AOA) or any other restricted area except Contractors that have been authorized and have completed security badge training and have been assigned to duty therein, or personnel escorted by an appropriately badged escort.

b. Mechanisms to Prevent Improper Movement

Contractor operations within the AOA are limited to the areas shown on the project phasing plans. A visual boundary will be installed by the Contractor around the work area. The boundary will consist of lighted low-profile barricades on pavement surfaces (when closed) at the perimeter of the work area and/or orange traffic cones, generally aligning with Object Free Area limits of adjacent operational pavement. Additionally, the boundary will consist of high-visibility orange safety fence on turfed surfaces, installed as shown on detail in project plans. The project phasing plans show the location of the work area boundary. Construction vehicles and personnel shall not cross barricades without an approved escort.

c. Parking Areas for Personal Vehicles and Equipment

Contractor employee personal vehicles shall be parked outside of the AOA. Employee parking shall be as shown on the plans. Contractor employee personal vehicles shall not be driven inside the AOA. Contractor vehicles and equipment are allowed inside of the project work area within the AOA. Equipment staging/parking areas are shown on the project phasing plans and must be approved in advance by the MSCAA.

d. Haul Routes

The phasing plan sheets depict haul routes from adjacent public roadways to the individual phase work areas through the airport perimeter fence. Contractor access and hauling operations are strictly limited to the haul route shown. Prior to the start of construction, the Contractor, Engineer and Owner will review haul routes and document existing condition. Following completion of construction, the Contractor, Engineer, and Owner will review haul routes and document condition. The Contractor is required to restore haul routes to original condition.

e. Contractor Vehicle Marking and Lighting

Each Contractor licensed vehicle must display a company logo on both sides of sufficient size to be recognizable to personnel in the control tower. Signs must be a minimum of 200 square inches and be approved by the airport. Specialized construction equipment does not require signs. Each Contractor licensed vehicle must have a yellow/amber rotating beacon affixed to the uppermost part of the vehicle. Lights must be visible from any direction, including the air. Construction equipment does not require rotating beacon lights during day operations, provided an aircraft warning flag is displayed at the highest point of the equipment. Contractor vehicle marking and lighting is the sole responsibility of the Contractor. The airport will not provide markings, flags, or lights.

3. Radio Communications

a. Two-Way Radios

Contractors may utilize two-way radios on the project provided that they do not interfere with existing Airport and FAA communication equipment and frequencies.

b. **Air Traffic Control (ATC) Radio Communication**

For this project, when the Contractor requires access to the movement area, staff with Class 3 driving privileges or the Engineer Field Staff (RPR) will communicate with ATCT.

4. Airport Security

- a. The Memphis-Shelby County Airport Authority (MSCAA) conducts its security operations in a serious manner and incorporates its mandated security directives to the letter. The management of the Airport fully expects all Tenants and Contractors to help enforce security regulations. The MSCAA strictly enforces the requirements on issuance and use of Airport identification/access media. Companies and individuals found to be in non-compliance with rules and regulations outlined in this manual may face revocation of access privileges and/or prosecution. The Contractor shall comply with all security requirements as outlined in the contract documents.
- b. The Contractor shall provide security at entry points, staging/storage locations, employee parking areas, and the work areas.

5. TSA Requirements

The Transportation Security Administration (TSA) through several Transportation Security Regulations (TSR) has the regulatory power to assess fines for breaches of airport security. The TSA will test the Contractors security means and methods for compliance with applicable security codes and regulations throughout the course of the project. Accordingly, if the Contractor is found culpable for security breaches, fines assessed to the Airport will be collected from the Contractor.

6. Security Badging Requirements

The Contractor will be required to obtain security badging in accordance with the requirements in the Specification.

7. Contractor Access

The Contractor shall be responsible for controlled access to the work site. The Contractor shall provide and manage security/badged personnel at proposed access locations.

Wildlife Management

1. Trash

Food scraps must be collected from construction personnel activity continuously.

2. Standing Water

Any activity taking place that creates a standing body of water must be remedied within 24 hours.

3. Tall Grass and Seeds

If needed within the project area, the contractor shall be responsible for mowing the grass within their work areas. Mowing schedules have been established to maintain, when possible, a height of 6 to 10

inches to help prevent large flocks of starlings, crows, and other species from becoming a hazard. It will be the responsibility of the Contractor to establish and maintain a schedule that allows a maximum grass height of 10 inches within the construction work area.

4. Poorly Maintained Fencing and Gates

Periodic perimeter fence inspections are required by the Contractor to ensure the fence is secured. Fence inspections performed by the contractor shall be within the vicinity of the project area, staging area, and site access points. Any issues shall be reported to MSCAA Operations or the MSCAA Project Engineer. These inspections also include identifying any animal digs that are located under the fence and ensuring that perimeter gates and drainage grates are tightly secured to prevent animal access. In addition, Contractors will take appropriate actions to reduce any other observed wildlife activity.

5. Disruption of Existing Wildlife Habitat

While this will frequently be unavoidable due to the nature of the project, Contractor personnel should immediately notify airport operations of a wildlife sighting.

Foreign Object Debris (FOD) Management

1. Description of FOD

Foreign object debris at airports includes any object found in an inappropriate location that can damage aircraft, equipment, or airport personnel. On construction sites, FOD typically is comprised of loose gravel, blowing sand, dust, wire bristles from sweeper heads, food wrappers, and material packaging. The presence of FOD on an airport's air operations area (AOA) poses a significant threat to the safety of air travel. FOD has the potential to damage aircrafts during critical phases of flight, which can lead to catastrophic loss of life and airframe, and at the very least increased maintenance and operating costs.

2. Methods of FOD Control

a. Training

The Contractor shall provide training to all employees working within the AOA on effective FOD management. Training shall include description and consequences of FOD, FOD awareness, and housekeeping procedures.

b. Housekeeping

Preventing FOD from occurring is the most effective form of FOD management. The Contractor must monitor construction activities and proactively develop a plan to prevent FOD from occurring. Typical FOD prevention measures include the use of covered trash containers, covered loads, zero tolerance of littering, and tying down items which may be easily wind-blown.

c. Ground Vehicle Tire Inspections

Prior to entering active airfield pavement, the Contractor must perform a vehicle tire check for any loose rocks that may be in the tread. Tires covered in mud must be cleaned prior to entering active airfield pavement in order to prevent tracking of dirt.

d. Pavement Inspections

Prior to opening completed portions of pavement work to airport operations, the Contractor shall keep the entire pavement surface clean and to the satisfaction of the Owner. Work areas will be inspected and approved by the MSCAA prior to opening the area to aircraft operations. This includes conducting a FOD walk with the RPR and MSCAA operations staff prior to opening.

e. FOD Inspections

Refer to Inspection Requirements section for FOD inspection requirements. The Contractor shall keep the project site and vehicles clean, employing a "clean as you go" approach throughout the project.

Hazardous Material Management

1. Haz-Mat Procedures

Haz-Mat Procedures are to be developed by the Contractor and submitted to the Engineer for review and Owner's records, including but not limited to:

- a. Fuel Storage Locations
- b. Spill Procedures
- c. MSDS

All temporary fuel storage tanks brought to the site must be double walled and placed in secondary containment. In addition, the tanks must be permitted by the fire marshal prior to use.

Notification of Construction Activities

1. List of Responsible Representatives

Persons who have questions concerning policies, procedures, or requirements of the Airport Security Program, should contact Airport Administration. Persons who observe a security violation, suspicious act, or any serious act that may endanger persons or property should immediately contact Airport Public Safety.

a. Emergency	(901) 922-8333
b. MSCAA Emergencies	(901) 922-8333
c. MSCAA Operations Center	(901) 922-8117
d. MSCAA Communication Center	(901) 922-8298
e. NAVAID Emergency Contract	1-866-432-2622

2. NOTAMs

Contractor shall coordinate with the Engineer Field Staff (RPR) and Airport Operations personnel for the issuance of all NOTAMs related to the project construction. Airport Operations and FAA shall generate and issue NOTAMs based on Contractor construction schedules and facility impacts.

3. Emergency Notification Procedures

In the case of a life-threatening situation, dial 911 and Airport Public Safety immediately thereafter. Airport Public Safety will coordinate any emergency response.

4. Aircraft Emergencies

In the event of an aircraft emergency, the Engineer Field Staff (RPR) will coordinate with Aircraft Rescue and Fire Fighting (ARFF) and the FAA and all construction personnel shall stop work and wait for direction from Airport Public Safety. In the event evacuation is requested, personnel shall immediately vacate the work site, secure construction access gate(s), and return when cleared by Airport Public Safety.

5. Coordination with ARFF Personnel

The Contractor must coordinate, through the RPR, with ARFF personnel, mutual aid providers, and other emergency services if construction requires the following:

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

Inspection Requirements

1. FOD Inspection

During construction, the Contractor shall continuously monitor for FOD and remove immediately.

2. Contractor Inspection

- a. Prior to opening completed work areas and pavement to aircraft operations, the contractor shall coordinate with Airport Operations for inspection of the work area. Pavements must be free of all dirt, sand, gravel, wire bristles, or any other objects that could cause damage to aircraft engines. All soil areas must be free of dirt clods, ruts, or surface irregularities that could damage an aircraft should it leave the pavement.
- b. Daily inspections shall be completed to assure all traffic control devices are in proper locations and working order.

3. Airport Operations Inspection

The MSCAA staff will conduct pavement inspections prior to opening any pavement to aircraft operations.

4. Final Inspections

Before re-opening closed sections of the airport to operations, the Contractor, Airport Operator, and Engineer Field Staff (RPR) shall inspect the area. Upon their concurrence that the area is safe to operate aircraft, the area will re-open.

Underground Utilities

Special attention shall be given to preventing unscheduled interruption of utility services and facilities. It is the Contractor's responsibility to locate all existing utilities and underground airport facilities that may be affected by this project and to verify their exact location and elevation prior to commencing work.

Electrical cables, telecommunication lines, overhead electrical lines, FAA communication lines, jet fuel lines, sanitary sewer lines, storm water lines, gas lines, and water lines may be located in the limits or vicinity of work limits. Utilities interfering with construction shall be reset or relocated by the Contractor or utility company concerned, unless noted otherwise. The Contractor shall give proper notice to all utility companies and facility owners regarding removal/relocation or when working in the vicinity of utility lines and airport facilities.

The Contractor shall call Tennessee 811 and submit a completed MSCAA On Airport Utility Locate Request form to the Engineer Field Staff (RPR) 72 hours prior to digging on site. The Contractor will verify with all parties the location of all utilities before digging begins. Prior to digging near a utility, the contractor shall pothole the utility to physically verify its location and depth. The Contractor shall use extreme care in digging around the utility so as not to cause any damage to the utility. All subcontractors performing excavation activities shall follow the same procedures as outlined above.

Penalties

The following penalties will be administered by the Airport, FAA, and Transportation Security Administration (TSA) as allowed per the requirements of the Construction Safety and Phasing Plan.

1. Escort Violation and Piggybacking, Wearing of Security Badge, Challenging Penalties

The following penalties apply for all persons: who do not properly display their security badge on the upper body (waist level or above) on the outermost garment; who do not challenge another person in their area who is not properly displaying their security badge; who allow another person to piggyback on their card through an entry; or who allow unauthorized access to the SIDA through an entry. It is necessary for each employee entering the SIDA/AOA to enter their PIN along with having their badge read by the appropriate device.

- a. 1st Offense Penalty—Airport badge for each employee involved will be suspended for a minimum of seven (7) days, at the discretion of the Airport Security Coordinator (ASC) depending on the severity of the security infraction. The employee must attend MSCAA security training.
- b. 2nd Offense Penalty—Airport badge for each employee involved will be suspended for a minimum of thirty (30) days, at the discretion of the ASC depending on the severity of the infraction. The employee(s) and their supervisors(s) must attend security training.
- c. 3rd Offense Penalty—Airport badge for each employee will be suspended for one (1) year. The employee(s) and their supervisors(s) must attend security training. Reinstatement is at the sole discretion of the MSCAA ASC.

2. Runway Incursions

A runway incursion is any unauthorized intrusion onto a runway, regardless of whether or not an aircraft presents a potential conflict. See runway incursion penalty table below:

Runway Incursion Category	Description	Penalty

Category A	A serious incident in which a collision was narrowly avoided.	\$1500 and Rescission of Access to the AOA
Category B	An incident in which separation decreases and there is a significant potential for collision, which may result in a time critical corrective/evasive response to avoid a collision.	\$500 and Rescission of Access to the AOA
Category C	An incident characterized by ample time and/or distance to avoid a collision.	Rescission of Driving Privileges
Category D	An incident that meets the definition of runway incursion such as incorrect presence of a single vehicle/person/aircraft on the protected area of a surface designated for the landing and take-off of aircraft but with no immediate safety consequences.	Written Warning

Violations of the CSPP outside of runway incursions will be assessed a written warning for the first violation and then \$500 per violation thereafter.

3. Returning Airport Badge

All security badges issued by the MSCAA Identification Office are the property of the Memphis-Shelby County Airport Authority and must be returned upon expiration, separation of employment (for any reason), when job function no longer requires an airport-issued security badge, and/or upon demand from the MSCAA. Retainage will not be related until all badges have been returned at the end of the project. Any misuse or willful failure to return a security badge is punishable by criminal prosecution. Security badges are non-transferable and must be used only by the person to whom they are issued. The security badge must be returned to the Company manager/supervisor at the end of employment and, in turn, by the Company to the MSCAA Identification Office.

4. Driver—Restricted Areas

All restricted area (SIDA/AOA) drivers shall possess and carry a valid US driver's license while driving on MSCAA restricted area roadways. Each driver is required to receive behind the wheel driver's training on the SIDA/AOA by their Employer and must take and successfully pass the written examination administered by the MSCAA at the security training class.

5. Releasing Airport Security Information

No person issued a security badge may divulge any information concerning an act of unlawful interference with civil aviation if such information is likely to jeopardize the safety of domestic or international aviation, or regarding any airport or airport tenant's security system to unauthorized persons.

6. Lost, Stolen, or Misplaced Security Badges

Immediately report to the Airport Authority by all means available NO EXCEPTIONS. Report to the ID Office 901-922-8788; if outside normal business hours, report to the MSCAA Communication Center at 901-922-8298. You must speak with Airport Security Personnel to report the unaccounted-for Security Badge.

7. Authority and Legal Action

The airport public safety department and designated airport security coordinators can issue violations resulting from poor or improper driving or security procedures. It is also the responsibility of all badge holders to notify public safety immediately when a possible breach in security has occurred.

8. FOD

The airport has a zero-tolerance approach to FOD, and the Contractor may be subject to fines from the Airport, FAA, or other agencies for failure to properly manage FOD during construction activities.

Special Conditions

In the case of an aircraft in distress or an accident, all Contractor personnel must remove all equipment from the project site and return to the staging area. The project will be suspended until clearance is given from the Engineer Field Staff (RPR) and the Airport Operator. In the event of a V/PD, the project will be suspended until a safety meeting and de-briefing of the incident occurs. In the event of a declared severe weather event, including an event requiring low-visibility operations/surface movement guidance and control system (LVO/MGCS) procedures, airport operations personnel may request the Contractor to temporarily suspend operations and vacate the premise until the event is over.

Runway and Taxiway Visual Aids—Marking, Lighting, Signs, and Visual Aids

Areas where aircraft will be operating are clearly and visibly separated from construction areas. Throughout the duration of the construction project, verify that these areas remain clearly marked and visible at all times.

1. General

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

2. Markings

Markings must be in compliance with the standards of AC 150/5340-1, Standards for Airport Markings. Runway and exit taxiways closed to aircraft operations are marked with a yellow X.

a. Temporary Closed Runways

For runways that have been temporarily closed, place an X at each end of the runway directly on or as near as practicable to the runway designation numbers.

b. Temporary Closed Taxiways

Place barricades outside the safety area of intersecting taxiways. For runway/taxiway intersections, place an X at the entrance to the closed taxiway from the runway.

c. Temporary Closure X

Construct the temporary closure X from any of the following materials: fabric, colored plastic, painted sheets of plywood, snow fence, or similar materials. They must be yellow and properly

configured and appropriately secured to prevent movement by prop wash, jet blast, or other wind currents.

d. **Temporary Markings**

The application rate of paint to mark a short-term temporary runway and taxiway marking may deviate from the standard, but the dimensions must meet the existing standards.

3. Lighting and Visual NAVAIDs

Lighting must be in conformance with AC 150/5340-30, Design and Installation Details for Airport Visual Aids, and AC 150/5345-50, Specifications for Portable Runway and Taxiway Lights. When disconnecting runway and taxiway lighting fixtures, disconnect the associated isolation transformers. Alternatively, cover the light fixture in such a way as to prevent light leakage. Avoid removing the lamp from energized fixtures because an excessive number of isolation transformers with open secondaries may damage the regulators and/or increase the current above its normal value. Secure, identify, and place any aboveground temporary wiring in rigid conduit to prevent electrocution and fire ignition sources. Where possible, avoid allowing equipment and vehicles to drive over the conduit. If this cannot be avoided, the Contractor must protect the conduit from movement and damage with ramps that distribute the load away from the conduit. All temporary protection measures must be submitted to the Engineer Field Staff (RPR) prior to use.

4. Temporarily Closed Runways

If available, use a lighted X, both at night and during the day, placed at each end of the runway facing the approach. For runways that have been temporarily closed, but for an extended period, and for those with pilot-controlled lighting, disconnect the lighting circuits or secure switches to prevent inadvertent activation.

5. Partially Closed Runways and Displaced Thresholds (not used)

6. Temporarily Closed Taxiways

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

7. Temporary Signs

Orange construction signs comprise a message in black on an orange background. Orange construction signs may help pilots be aware of changed conditions. The airport operator may choose to introduce these signs as part of a movement area construction project to increase situational awareness when needed. Locate signs outside the taxiway safety limits and ahead of construction areas so pilots can take timely action. Use temporary signs judiciously, striking a balance between the need for information and the increase in pilot workload. When there is a concern of pilot "information overload," the applicability of mandatory hold signs must take precedence over orange construction signs recommended during construction. To the extent possible, signs must be in conformance with AC 150/5345-44, Specifications for Runway and Taxiway Signs and AC 150/5340-18, Standard for Airport Sign Systems. At any time, if a sign does not serve its normal function, it must be covered or removed to prevent misdirecting pilots.

Marking and Signs for Access Routes

Pavement markings and signs for construction personnel will conform to AC 150/5340-18 and, to the extent practicable, with the Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) and/or state highway specifications.

Hazard Marking, Lighting, and Signing

- a. Low profile barricades with flashing red lights will be used at the perimeter of all pavement closures. Barricade spacing shall be as shown on the plans. Refer to the phasing plans for exact locations of low-profile barricades. Barricade placement and operation of flashing red lights shall be checked daily, at a minimum, for proper placement and operation and fixed immediately upon discovery of any deficiencies.
- b. All construction vehicles shall have an amber rotating beacon and signage.
- c. All construction equipment shall have an orange and white aircraft warning flag.
- d. All tall construction equipment shall have a red obstruction light in addition to an orange and white aircraft warning flag.
- e. The Contractor shall provide a representative on-call 24-hours a day for emergency maintenance of hazard marking, barricades, lighting and signage.

Work Zone Lighting

All work is anticipated to be constructed during daytime hours. If a need for night work arises, the Contractor must submit a work zone lighting plan to the RPR.

Protection of Runway and Taxiway Safety Areas

Runway Safety Areas (RSA), Taxiway Safety Areas (TSA), Obstacle Free Zones (OFZ), Object Free Areas (OFA), and approach surfaces must be protected during construction and are shown on the plan sheets. Protection of these areas includes limitations on the locations and height of equipment and stockpiled material. See the plan sheets of the CSPP for locations and dimensions of the protected areas.

1. Runway Safety Area (RSA) and Taxiway Safety Area (TSA)

A runway safety area is the defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. A taxiway safety area is a defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway. Construction activities within the existing RSA and TSA are subject to the following conditions:

- a. No construction may occur within the existing RSA or TSA while the corresponding runway or taxiway is open for aircraft operations.
- b. Open trenches or excavations are not permitted within the RSA or TSA while the corresponding runway or taxiway is open. If possible, backfill trenches before the runway or taxiway is opened. If the runway or taxiway must be opened before the excavations are backfilled, cover the excavations appropriately. Covering for open trenches must allow safe operation of the heaviest aircraft operating on the runway or taxiway across the trench without damage to the aircraft. Construction Contractors must prominently mark open trenches and excavations at the site with red or orange flags, as approved by the airport operator, and light them with red lights during hours of restricted visibility or darkness.

- c. Soil erosion must be controlled to maintain RSA and TSA standards. The RSA and TSA must be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations, and capable, under dry conditions of supporting the occasional passage of aircraft without causing structural damage to the aircraft.

2. Runway Object Free Area (ROFA)

Construction, including excavations, may be permitted in the ROFA. However, equipment must be removed from the ROFA when not in use, and material should not be stockpiled in the ROFA if not necessary.

3. Taxiway Object Free Area (TOFA)

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

- a. Construction activity may be accomplished within the TOFA subject to the following restrictions:
 - 1. Appropriate NOTAMs are issued.
 - 2. Marking and lighting meeting the provisions of this CSPP are implemented.
 - 3. Five-foot clearance is maintained between equipment and materials and any part of an aircraft (includes wingtip overhang). In these situations, flaggers must be used to direct construction equipment and wing walkers will be necessary to guide aircraft. Wing walkers should be airline/aviation personnel rather than construction workers.

4. Obstacle Free Zone (OFZ)

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

5. Runway Approach/Departure Areas and Clearways

All personnel, materials, and/or equipment must remain clear of the applicable threshold siting surfaces as shown on the plan sheets of the CSPP. Objects that do not penetrate these surfaces may still be obstructions to air navigation.

Other Limitations on Construction

- a. Tall equipment used by the Contractor requires airport approval and a 7460-1 determination letter issued by the FAA for such equipment.
- b. All Contractor's construction equipment shall require an orange and white flag.
- c. The use of open flame welding or torches is prohibited unless fire safety precautions are provided and airport operations has approved their use. A hot work permit must be obtained and the airport's Hot Work Program followed.
- d. The use of electrical blasting caps is prohibited on or within 1,000 feet of airport property.

ATTACHMENT 2

**ATTACHMENT 2 : AC 150/5370-2G SAFETY COMPLIANCE DOCUMENT (SPCD)
WORKSHEET FOR AIRPORT PROJECTS**

Contractor's Responsibility

Following Federal Aviation Administration Advisory Circular 150/5370-2G, this SPCD shall be submitted to the Engineer and to the airport operator for review and approval. This should be submitted 14 days prior to the preconstruction conference. The notice-to-proceed cannot be issued without approval of this document.

The SPCD shall be prepared in a detailed, written and pictorial format (if needed) that identifies the timing and methodology for the contractor's compliance with the project's Construction Safety and Phasing Plan (CSPP) located in the construction plans & specifications. Any analysis and determination can be made of the proposed modification.

Project Information

Project ID: _____ Airport: _____
Description of Project: _____
Type of Work: _____
Prime Contractor: _____
Address: _____
Contractor Contact: _____ Phone: _____
BOA Project Manager: _____ Phone: _____
Airport Operations Contact: _____ Phone: _____

The following shall be complement the safety plan compliance document:

1. Contractor shall have copies of the CSPP and SPCD available at all times for reference by the airport operator and its representatives, and by subcontractors and contractor employees.

Location (s) of CSPP and SPCD:

2. Provide a point of contact who will coordinate an immediate response to correct any construction-related activity that may adversely affect the operational safety of the airport. Project will require a 24-hour coverage.

Point of Contact: _____ Phone: _____

3. Contractor's on-site employees responsible for monitoring compliance with the CSPP and SPCD whenever active construction is taking place.

Contact Person: _____ Phone: _____
Contact Person: _____ Phone: _____

4. The contractor shall list all proposed deviations or modifications to the CSPP. For each alteration, the contractor shall provide:
 - a. The reason why the alteration is desired
 - b. Provide a sufficient narrative description and/or pictorial descriptions of the proposed change so a complete review of the proposal can be made.
 - c. If no alterations are to be made to the CSPP, clearly state; **“No alterations to the CSPP are proposed.”**

The following are proposed deviations or modifications to the CSPP:

(Attach additional sheets as needed)

5. The contractor shall provide a list of the specific hazard equipment and lighting that will be employed to ensure compliance.

The following are proposed hazard equipment and lighting for the project:

(Attach additional sheets as needed)

6. The contractor shall describe the frequency of inspections to ensure construction personnel comply with the CSPP and SPCD and that there are no altered construction activities that could create potential safety hazards. Inspections shall ensure that all proper safety devices, signs, demarcations etc. are in place and in proper working order in accordance with the approved CSPP & SPCD. A Construction Project Daily Safety Checklist is attached to aid in making a thorough inspection.

The inspection frequency will be _____.

7. Provide a description and schedule for any anticipated supplemental submittal through the airport operator of Form 7460-1 for the purpose of conducting aeronautical study of contractor, equipment such as tall equipment (cranes, concrete pumps, and other equipment), stock piles, and haul routes when difference from cases previously filed as part of the CSPP.

An additional Form 7460-1 will/will not (circle one) be required. If additional Form 7460-1 will be required, they will be submitted by _____.

8. Provide a description of the contractor's plan to ensure that the construction personnel are familiar with the safety procedures and regulations on the airport, the CSPP, and the SPCD.

(Attach additional sheets as needed)

SPCD Amendment

The SPCD shall be amended anytime there is a construction practice proposed by the contractor that does not conform to the CSPP and SPCD and may impact the airport's operational safety. This will require a revision to the CSPP and SPCD and re-coordination with the airport operation and the FAA in advance.

Certification

I certify that we understand the operational safety requirements of the CSPP and assert that we will not deviate from the approved CSPP and SPCD unless written approval is granted by the airport operator.

Print Name: _____ Title: _____

Signature: _____ Date: _____

Note to Contractor: Please provide copies of your company's general safety policy as an attachment.

Appendix D. AC 150/5370-2G – December 13, 2017

Construction Project Daily Safety Inspection Checklist

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

Table D-1. Potentially Hazardous Conditions

Item	Action Required (Describe)	Or	None
Excavation adjacent to runways, taxiways, and apron improperly backfilled.			☐
Mounds of earth, construction materials, temporary structures, and other obstacle near any open runway, taxiway, or taxi lane; in the related Object Free area and aircraft approach or departure areas/zones; or obstructing any signs or marking.			☐
Runway resurfacing projects resulting in lips exceeding 3 in (7.6 cm) from pavement edges and ends.			☐
Heavy equipment (stationary or mobile) operating or idle near AOA, in runway approaches and departures areas, or in OFZ.			☐
Equipment or material near NAVAIDS that may degrade or impair radiated signals and/or the monitoring of navigation and visual aids. Unauthorized or improper vehicle operations in localizer or glide slope critical areas, resulting in electronic interference and/or facility shutdown.			☐
Tall and especially relatively low visibility units) that is, equipment with slim profiles) – cranes, drills, and similar objects – located in			☐

critical areas, such as OFZ and approach zones.		
Improperly positioned or malfunctioning lights or unlighted airport hazards, such as holes or excavations, or any, apron, open taxiway, or open taxi lane or in a related safety, approach, or departure area.		☐
Obstacles, loose pavement, trash and other debris on or near AOA. Construction debris (gravel, sand mud, and paving materials) on airport pavements may result in aircraft propeller, turbine engine, or tire damage. Also, loose materials may blow about, potentially causing personal injury or equipment damage.		☐
Inappropriate or poorly maintained fencing during construction intended to deter human and animal intrusions into the AOA. Fencing and other markings that are inadequate to separate construction areas from open AOA create aviation hazards.		☐
Improper or inadequate marking or lighting of runways (especially thresholds that have been displaced or runways that have been closed) and taxiways that could cause pilot confusion and provide a potential for a runway incursion. Inadequate or improper methods of marking, barricading, and lighting of temporarily closed portions of AOA create aviation hazards.		☐
Wildlife attractants – such as trash (food scraps not collected from the construction personnel activity), grass seeds, tall grass, or standing water – or any near airports.		☐
Obliterated or faded temporary markings on active operational areas.		☐
Misleading or malfunctioning obstruction lights. Unlighted or unmarked obstructions in the		☐

approach to any open runway pose aviation hazards.		

Failure to issue, update, or cancel NOTAMs about airport or runway closures or other construction airport conditions.		☐
Failure to mark and identify utilities or power cables. Damage to utilities and power cables during construction activity can result in the loss of runway/taxiway lighting; loss of navigation, visual, or approach aids; disruption of weather reporting services and/or loss of communications.		☐
Restrictions on ARFF access from fire stations to the runway/taxiway system or airport buildings.		☐
Lack of radio communications with construction vehicles in airport movement areas.		☐
Objects, regardless of whether they are marked or flagged, or activities anywhere on or near an airport that could be distracting, confusing, or alarming to pilots during aircrafts operations.		☐
Water, snow, dirt, debris, or other contaminants that temporarily obscure or derogate the visibility of runway/taxiway marking, lighting, and pavement edges. Any condition or factor that obscures or diminishes the visibility of areas under construction.		☐

Spillage from vehicles (gasoline, diesel fuel, oil) on active pavement areas, such as runways, taxiways, aprons, and airport roadways.		☐

Failure to maintain drainage system integrity during construction (for example, no temporary drainage provided when working on a drainage system).		☐
Failure to provide for proper electrical lockout and tagging procedures. At larger airports with multiple maintenance shifts/works, construction contractors should make provisions for coordinating work on circuits.		☐
Failure to control dust. Consider limiting the amount of area from which contractor is allowed to strip turf.		☐
Exposed wiring that created an electrocution or fire ignition hazard. Identify and secure wiring, and place it in conduit or bury it.		☐
Site burning, which can cause possible obscuration.		☐
Construction work taking place outside of designated work areas and out of phase.		☐

- e. Construction suspension may be required during specific airport operations. The Airport Operator will notify the Contractor and Engineer if this is required.
- f. Emergency Aircraft Rescue and Firefighting (ARFF) access in and around the site must be maintained by the Contractor at all times. Any hazards, open trenches, or excavations near the ARFF access must be clearly marked and lighted with red lights during hours of restricted visibility or darkness.

**MSCAA
DESIGN GUIDE and CONSTRUCTION STANDARDS**

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Airfield Construction Standards

A. Joints and Joint Sealants

1. All joints to be beveled on new construction and reseal projects.
2. All concrete joint sealants to be a non-sag silicone or preformed material. Silicone is preferred on reseal projects.
3. FAA P-605 will be used for airfield projects with the use of ASTM 5893 for both airfield and landside projects.

B. Stabilization/Grassed Areas

1. All safety areas are to be 100% sod.
2. All areas that have had earth disturbed shall be sodded and fertilized.
3. Any sodded area within 2' of an apron, pad or drainage structure shall be compacted to a minimum of 95% (Modified Proctor).
4. The type of grass used within the perimeter fence and between the runways should produce small or no seeds but still be able to generate new growth or re-seed itself to provide a thick, monotypic stand and prevent erosion. The selected ground cover should withstand drought, flooding, and other normal climatic conditions, and be somewhat unpalatable to grazers such as geese, wild ducks, and deer. The grass should also harbor relatively few insects and rodents that may attract hawks, owls, starlings, kestrels, and other hazardous wildlife species.
5. Several varieties of tall fescue (*Festuca arundinacea*), if allowed to grow to a height of 8-14 inches, have been found to be unattractive to Canada geese because of a fungus harbored by the plant. Fescue will also generally preclude other more attractive grass species from invading the airfield.
6. Bermuda grass (*Cynodon dactylon*) is also acceptable for planting at MEM. Whenever possible, Bermuda sod or Bermuda/Fescue mixtures will be used when replanting as part of the final stage of a construction or mitigation project. On non-final stage projects and for temporary soil stabilization, seeding may be acceptable after approval from the Wildlife Coordinator and WS Biologist on a case-by-case basis. Certain requirements will need to be met such as a watering schedule, specific binding agents used, time of year implemented, etc.

C. Drainage

1. Concrete down drains should be installed on any area that is sloped for drainage.
2. Any drainpipes that travel outside the SIDA fence should have proper security grates installed to prevent wildlife and human entry.
3. Outlets should have a runoff pad; concrete if preferred but asphalt is acceptable for aprons or run-off pads.
4. The sub-base for concrete down drains, drain inlets or outlets should be compacted to a minimum of 95% (Modified Proctor).
5. All drain and under drain joints or connections should be properly grouted or sealed. All

drain inlets and manholes boxes entries shall be properly grouted or sealed inside and outside junction structure per FAA Spec D-701.

D. Concrete Aprons

1. All sign bases, junction boxes and manholes on new construction are to have a minimum of a 6 ft. apron around the sign or structure, sloped away from the sign or structure.
2. Aprons should have a minimum thickness of 4”.
3. Aprons should be flush with the structure bases and sloped to be flush with soil. The slope shall not exceed the FAA Runway Safety Area (RSA) and Taxiway Safety Area (TSA) maximums as detailed in FAA AC 150/5300-13, latest version.
4. The sub bases should be compacted for the structure bases and aprons to a minimum of 95% (Modified Proctor).

E. Perimeter Fence

1. Perimeter fence shall be a minimum of 10’ tall fabric and shall include three-stand, double-sided barbed wire and 18” diameter concentric razor wire secured at 12” spacing.
2. Perimeter fence shall include a 6' paved lane under the fence. This will eliminate washouts, animal intrusions, reduce maintenance, and allow easy inspections by Airport Police.
3. Rolling, automatic gate operators shall be commercially/industrially rated and designed for high-security environments. Operators for gates with openings less than 15 feet must operate at a minimum speed of 20” per second. Operators for gates with openings 15 feet or wider must include variable frequency drives and operate at a minimum speed of 36” per second.
4. Automatic Perimeter Fence Gate Operators shall be HySecurity

F. Construction Standards

1. The Contractor shall maintain all sodded areas through the duration of the contract per T-901. The Contractor shall be responsible for the upkeep of contracted areas including grass cutting, rut repair and maintaining proper drainage ditches.
2. Security grates that are installed must be maintained and in good working order by the contractor for the duration of the contract.
3. All areas that were used by the contractor must be left in conditions that will not hinder the normal routine maintenance of the Airfield; this includes, but is not limited to debris removal, grading, drainage, and re-seeding or sod.

Airfield Electrical Construction Standards

A. General

1. Work performed shall be accomplished by crews with a minimum of one licensed journeyman per three apprentices.
2. All temporary cable installations shall be protected either by burying cable in grass areas or by installation in conduit for above ground applications. Other methods may be used for short term or emergency situations if approved by the Airfield Maintenance Electrical Supervisor. Location of temporary cables shall be marked sufficiently to prevent damage from construction and maintenance equipment.
3. In all circumstances enough cable shall be provided at light cans, junction cans and hand holes to allow a minimum of 3 feet extending above ground for maintenance purposes. The exception to this is in the installation of taxiway centerline lights on SMGCS routes where two interleaved circuits are present in the same light can. In this instance only the circuit that is attached to the transformer in an individual light can, should have the extra length of conductor provided. This prevents the can from becoming cluttered unnecessarily.
4. Constant current series circuits shall be limited in capacity to a maximum of 20kW. Preferred capacity is 15kW or less. All electrical work must have the capability to prevent the unintentional release of hazardous energy/lockout-tagout (LOTO). It must consist of an energy control procedure and employee training to ensure that before any employee performed any servicing or maintenance on a machine or equipment where the unexpected energizing, start up or release of stored energy could occur and cause injury, the machine or equipment would be isolated, and rendered inoperative in accordance with 29 CFR 1910.147(c)(4).

B. Testing

1. The contractor shall furnish all necessary equipment and appliances for testing the underground cable circuits after installation.
2. The contractor shall demonstrate that all lighting power and control circuits are continuous and free from short circuits and unspecified grounds.
3. The insulation resistance to ground of all non-grounded series circuits shall be not less than 500 MΩ and shall be maintained at the required level by the contractor during the term of the warranty period.
4. Each new series circuit, or new part of existing circuits being extended or replaced, shall be tested as follows:
 - i. Low voltage megger tests shall be performed to comply with (c.) above daily, before and after work.
 - ii. Circuits shall then be subjected to a Hi-Pot test in accordance with engineer's specifications.
5. All new fixture installations may, at the owner's request, be subjected to photometric testing to certify performance in accordance with FAA specifications.

C. Constant Current Regulators

1. The constant current regulators shall be magnetic designs; the susceptibility to extraneous signals of solid-state designs is not acceptable. The regulators shall not have solid-state controls in the series circuit and shall be designed to prohibit radio communications interference. The regulators shall limit transient current peaks without the use of solid-state series circuit controls with soft-on feature.
2. Each regulator shall include a true RMS ammeter, and ON/OFF/REMOTE switch and brightness controls.
3. In addition, the regulators shall be provided with SPDT contacts rated 2 amperes at 120 volts to indicate the following functions for remote monitoring:
4. REMOTE/LOCAL selected at control switch. Primary Power ON.
5. Constant current regulators, including standby regulators furnished or installed by the contractor shall be provided with seismic restraints and include all necessary equipment including control and monitoring equipment (Crouse-Hinds/Transtech digitrac units) to make the regulators operational.

D. Marking and Labeling

1. Each service, feeder, and branch circuit, at its disconnecting means or overcurrent device, must be legibly marked to indicate its purpose and located and arranged so the purpose is evident. All electrical disconnects must be labeled with the electrical path identified in accordance with 29 CFR 1910.303(f)(2).
2. Wire identification. The contractor shall furnish and install self-sticking wire labels or identifying tags on all control wires at the point where they connect to the control equipment or to the terminal blocks.
3. Series circuit cables shall be identified with Thomas and Betts ty-rap #TY546MT or approved equivalent suitable for wet environments. Metal tags secured by tie wire or other means shall not be acceptable. All marking means shall be approved by the Airfield Maintenance Electrical Supervisor.
4. All conductors of series circuit conductors shall be marked with their circuit designation at all points where the conductor is accessible.
5. The contractor shall furnish and install engraved plastic labels on the cases of regulators, breakers, and distribution and control relay cases. All circuit breakers or other disconnecting means shall be marked and identified with their circuit designation.
6. Underground electrical warning tape shall be installed above all underground conduit installations not concrete encased in unpaved areas. Warning tape shall be located as shown on the plans above the counterpoise wire.

E. Lighting Cans, Junction Cans, Junction Can Plazas and Hand Holes

1. Except in extreme cases where other means are not practical, manholes or hand holes larger than 4 feet x 4 feet x 4 feet deep shall not be used.
2. Hand holes shall be equipped with spring loaded/assisted hinged covers of a design easily opened by one person.

3. The preferred method of connectivity shall be by use of junction can plazas consisting of FAA L-868 cans installed in concrete plazas.
 - a. Each can shall contain a single circuit with the designation of the circuit imprinted in a brass marker embedded in the concrete adjacent to the can.
 - b. If deemed necessary, and at the approval of the Airfield Maintenance Electrical Supervisor, more than one circuit may be installed in a conduit/can.
 - c. Can lids shall be ½” galvanized steel plate, flush with concrete plazas, with dam rings on the cans and counter bore holes with opposing ½” tapped holes and a neoprene gasket.
4. All ducts installed under paved areas shall be encased in concrete.
5. All unused conduits shall have the open ends plugged with removable tapered plugs and be provided with a pull rope equivalent to IDEAL Power-Fish pull line (200 lb strength)
6. Drain lines shall be installed to provide positive drainage to eliminate standing water in airfield lighting bases, junction cans, and hand holes in locations determined by the designer.
7. L-868 cans used for the installation of in-pavement lights shall be of a two-piece design with the top section including a multi-hole ring (VEGA #2419MEM) as manufactured by Jaquith Industries.
8. Fixture hold down bolts shall be all-thread stainless steel, type 304 or as recommended by the fixture manufacturer.
9. Fixture hold down bolts for in-pavement lights shall be tightened to the proper torque per fixture manufacture’s specifications. All bolt holes shall be cleaned using a source of compressed air prior to installation of any bolts. Threads on all bolts shall not be coated with anti-seize compound approved for use on stainless steel and with no Loctite on the threads, torqued to manufacturer’s specification. Bolts shall not extend past the threaded adapter ring or into the can. Final tightening of the bolts shall be done using a properly calibrated torque wrench of the required range and verified by the engineer. Electrically or pneumatically operated wrenches shall not be used to achieve the final torque on bolts.
10. Lock washers installed on hold down bolts for all fixtures shall be two piece 316 or 316L stainless steel washer. CRC type washers shall not be acceptable.
11. All cans shall have factory-installed hubs. Grommet cans are **not** acceptable unless approved for the application by the Airfield Maintenance Electrical Supervisor. Stub-in connections into existing light bases shall be Meyers hub installation.

F. Connectors

1. L-823 connectors used to splice L-824 type C #8 AWG cables shall be Elastimold style 54-D4-D4 or equivalent. L-823 connectors shall be made waterproof by a double layer of ¾” wide rubber tape (scotch 23 or equal) covered by a double layer of 1-½” plastic tape (scotch 88 or equal). Heat shrink, is not allowable. One-piece shrink kits that encapsulate the entire splice shall not be used. Provide Scotch 23/Scotch 88 waterproofing at center connection to extend 1-1/2” each side of break and at each end of splice kit.

G. Fixtures

1. Runway and taxiway elevated light fixtures shall use a quartz bi-pin type lamp of the minimum wattage required for the application unless LED fixtures are approved by Airfield Maintenance Electrical Supervisor.
2. In-pavement fixtures should be manufactured of aluminum and utilize no more than two lamps with a maximum total wattage of 100 watts per fixture. L-850C edge lights and fixtures used for stop bars and runway guard lights may exceed this wattage, however.

H. Signs

1. Lumacurve signs are preferred.
2. Signs should be re-lampable without the use of tools.
3. Concrete foundations for signs shall contain separate housings for transformers. Transformers shall not be housed under a leg of the sign or any portion of the sign. Sign power should be fed through the sign leg.
4. Where practical, signs should be style 5, size 3, and be installed on a dedicated circuit.
5. All signs installed on the airfield should be marked on each end with 4" vinyl reflective labels with the sign's designation as shown on the plans.

Facilities Construction Standards

A. General

1. All facilities must be designed and constructed in accordance with 29 CFR Part 1910 & 1926 Subpart D – Walking-Working Surfaces to design out hazards for the end users of the facilities. This must include surface conditions, loads, access-egress, inspection/maintenance/repair, ladders, stairways, scaffolds and rope decent systems, duty to have fall protection and falling object protection, and training.
2. All work shall comply with the applicable construction codes and MSCAA standards. The contractor shall be responsible for construction code permits and shall arrange for all code required inspections. Copies of permits shall be supplied to the Manager of Building Maintenance.
3. Utilities will not be interrupted without prior coordination and approval from the MSCAA Building Maintenance Manager, telephone number (901) 922-8615 or the Maintenance Service Desk at (901) 922-8040. Approval is required for each and every interruption. A minimum of a 72-hour notice is required for utility interruptions.
4. All salvaged equipment shall be returned to MSCAA at their designated location for their use or disposed of off-site as directed by MSCAA.
5. Asbestos Containing Materials (ACMs) are specifically prohibited without specific written approval from MSCAA. Any installation of ACMs without prior written approval must be removed immediately by the installer in accordance with local ACM removal regulations.

B. Penetrations

1. All concrete and/or masonry penetration work must adhere to 29 CFR Part 1926 Subpart Z – 1926.1153 Respirable Crystalline Silica Standard and 29 CFR Part 1910 Subpart Z 1910.1053 Respirable Crystalline Silica Standard.
2. All concrete floor and roof penetrations must be accomplished by core drilling. Use of rotary hammer or other impact tools for this purpose is prohibited. Core drilling efforts must be coordinated with MSCAA and tenants occupying space below the cored floor slab. The contractor will be responsible for any damage resulting from core drilling.
3. Sealing of new and pre-existing floor penetrations must be filled full depth with hydraulic cement and sealed with epoxy or polyurethane caulk as noted under the Preferred Brands heading (pages 17 & 18). The installation shall be inspected by the MSCAA Development Division. Contractor shall coordinate with MSCAA Development Division for any x-ray or ultra-sound requirements for concrete floor/roof penetrations. No drilling through concrete beams unless approved by Development.
4. When drilling or core drilling through floors, walls, ceilings etc., the contractor is responsible for inspecting electrical, plumbing, etc. and is fully responsible for all repairs to anything damaged.
5. No drilling or ramset fastening is allowed in pan sections of the concrete structure. Any attachments installed above the ceiling will be suspended from the joist structure only.

6. No holes shall be drilled, and no anchors shall be attached to the glazed brick, glazed wall tiles, or metal wall panels. Attachments shall be anchored in the mortar joints exclusively.
7. Penetrations through the roof are typically prohibited. When unavoidable, roof penetrations shall be coordinated with MSCAA and will be the responsibility of the contractor to restore the roof to such a condition as not to invalidate the roof warranty.
8. Hydraulic cement and core drill sealant shall be installed full depth. After curing, epoxy or polyurethane caulk shall be applied at the bottom of the plug and polyurethane caulk shall be applied at the top surface.
9. Joint Seals and Floor Penetration Seals: Evazote 380 E. S. P. with Hindered Amine Light Stabilizer

C. Signage

1. Signage shall comply with the standards established by MSCAA and final approval shall be the responsibility of MSCAA Development Division.

D. Architectural Finishes

1. Non-shrink grout shall be used with all tile work, up to four (4) feet in height, laid on top of an approved waterproofing membrane.
2. All 12" X 12" spline ceiling tile shall be installed with the arrow on the back of the tile pointing south.
3. 90° brushed stainless steel corner protectors shall be installed on all new interior wall construction. The protectors shall be type 304 grade stainless, 22 gauge, 44" tall, 1.5" wings with a 3/8" wall grip edge, and a 1" radius at the top. Protectors shall be installed on top of the cove base and be adhered to the wall with F-26 construction adhesive.
4. Cove Base
 - i. Terminal Building: Armstrong or Roppe
 - ii. Administration Building: Johnsonite Rubber 700 Series; 4" high; #24 Grey Haze
 - iii. Offices: Flexco Floors Rubber Wallflowers series; 4" high; #03 Charcoal
5. 4" Rubber Wall Base
 - iv. Manufacturer: Roppe
 - v. Color: 123 Charcoal
6. 3/8" Epoxy Terrazzo TZ-3
 - vi. Manufacturer: Key Resin
 - vii. Color: KEY 100-1779 Gull Wing Grey
 - viii. Location: Concourse B
7. 3/8" Epoxy Terrazzo TZ-1
 - ix. Manufacturer: Key Resin
 - x. Color: KEY 001-563 White Diamond

- xi. Location: Concourse B
- 8. 3/8" Epoxy Terrazzo TZ-2
 - xii. Manufacturer: Key Resin
 - xiii. Color: Key 28-27 Hearthstone
 - xiv. Location: Concourse B
- 9. 3/8" Epoxy Terrazzo TZ-4
 - xv. Manufacturer: Key Resin
 - xvi. Color: KEY 100-675 Pewter
 - xvii. Location: Concourse B
- 10. 3/8" Epoxy Terrazzo TZ-5
 - xviii. Manufacturer: Key Resin
 - xix. Color: KEY 100-2018 Whale Gray
 - xx. Location: Concourse B
- 11. 3/8" Epoxy Terrazzo TZ-6
 - xxi. Manufacturer: Key Resin
 - xxii. Color: KEY 001-563 White Diamond
 - xxiii. Location: Concourse B
- 12. 3/8" Epoxy Terrazzo TZ-7
 - xxiv. Manufacturer: Key Resin
 - xxv. Color: KEY 001-754 Whiteish
 - xxvi. Location: Concourse A, B, & C Terminals
- 13. 3/8" Epoxy Terrazzo TZ-8
 - xxvii. Manufacturer: Key Resin
 - xxviii. Color: KEY 012 Black
 - xxix. Location: Concourse B
- 14. 3/8" Epoxy Terrazzo TZ-9
 - xxx. Manufacturer: Key Resin
 - xxxi. Color: KEY 001-753 White Glass
 - xxxii. Location: Concourse B
- 15. Accent Wall Tile T-1A
 - xxxiii. Manufacturer: Fireclay
 - xxxiv. Product: Glazed Wall Tile White Clay Body (3"X12")
 - xxxv. Color: White Wash (V1)

- xxxvi. Grout Color: Laticrete #89 Smoke Grey
- xxxvii. Location: Concourse B
- 16. Accent Wall Tile T-1B
 - xxxviii. Manufacturer: Fireclay
 - xxxix. Product: Glazed Wall Tile White Clay Body (3”X12”)
 - xl. Color: Foggy Morning
 - xli. Grout Color: Laticrete #89 Smoke Grey
 - xlii. Location: Concourse B
- 17. Accent Wall Tile T-1C
 - xlili. Manufacturer: Fireclay
 - xliv. Product: Glazed Wall Tile White Clay Body (3”X12”)
 - xlvi. Color: Powder Blue
 - xlvi. Grout Color: Laticrete #89 Smoke Grey
 - xlvi. Location: Concourse B
- 18. Accent Wall Tile T-1D
 - xlvi. Manufacturer: Fireclay
 - xlix. Product: Glazed Wall Tile White Clay Body (3”X12”)
 - l. Color: Mayan Blue
 - li. Grout Color: Laticrete #89 Smoke Grey
 - lii. Location: Concourse B
- 19. Accent Wall Tile T-1E
 - liii. Manufacturer: Fireclay
 - liv. Product: Glazed Wall Tile White Clay Body (3”X12”)
 - lv. Color: Martinique
 - lvi. Grout Color: Laticrete #89 Smoke Grey
 - lvii. Location: Concourse B
- 20. Porcelain Tile T-2 (restroom Floor)
 - lviii. Manufacturer: Casalgrande Padana
 - lix. Product: Balsaltina 18”X18” Naturale Finish
 - lx. Color: Linosa
 - lxi. Grout Color: Laticrete #45 Raven
 - lxii. Location: Concourse B
- 21. Ceiling Tile

- lxiii. Armstrong 2' x 2', Cortega Angled Tegular 704A (2' x 2' x 5/8")
- lxiv. Armstrong 2' x 2', Fissured Square Lay-in 756A (2' x 2' x 5/8")
- lxv. Armstrong 2' x 4', Cortega Second Look 2765 (2' x 4' x 3/4")
- lxvi. Armstrong 44"X 48", Optima Techzone
- lxvii. Armstrong 2' X 2', Ultima
- 22. Ceiling Grid: Armstrong Prelude
 - lxviii. Mains: 7300
 - lxix. 4' Ts: XL7348
 - lxx. 2' Ts: XL7328
 - lxxi. Wall mold: 7800
- 23. Ceiling Grid: Armstrong Suprafine XL
 - lxxii. Location: Concourse B
- 24. Ceiling Metal Panel:
 - lxxiii. Accent Ceilings & Walls
 - lxxiv. Perforated Aluminum Acoustic Backing Torsion Spring Hinged Pans
 - lxxv. Color: Ultra White
 - lxxvi. Location: Concourse B
- 25. Ceiling Linear Metal
 - lxxvii. Accent Ceilings & Walls
 - lxxviii. Pattern: Barcode
 - lxxix. Color: 8424 Walnut
 - lxxx. Location: Concourse B
- 26. Carpet (Hold Rooms)
 - lxxxi. Style Name: Resonance
 - lxxxii. Style Number: J0118
 - lxxxiii. Color: 00406 Saddle
 - lxxxiv. Vendor: Continental Flooring (800-825-1221 Ext 206)
 - lxxxv. The pattern for the carpet is to run perpendicular to the concourse for hold room installations.
- 27. Carpet (Offices)
 - lxxxvi. Style Name: Live Wire
 - lxxxvii. Style Number: 54733
 - lxxxviii. Color: 33506 Animated

- lxxxix. Vendor: Continental Flooring (800-825-1221 Ext 206)
- 28. Carpet (MEM Executive Offices)
 - xc. Style Name: Ripple Effect
 - xc. Style Number: J0116
 - xcii. Color: 00501 Laughs & Yawns
 - xciii. Vendor: Continental Flooring (800-825-1221 Ext 206)
- 29. Carpet CPT-1 (Concourse B)
 - xciv. Manufacturer: Interface
 - xcv. Product: Custom Soundwave Verse Sample
 - xcvi. No: 265317-005
- 30. Carpet Tile CPT-1A (Concourse B)
 - xcvii. Manufacturer: Interface
 - xcviii. Product: Custom Groundwaves Verse Samples
 - xcix. No: 265317-008
- 31. Carpet Tile CPT-1B (Concourse B)
 - c. Manufacturer: Interface
 - ci. Product: Custom Off Line Collection
 - cii. No: 265317-007
- 32. Carpet Tile CPT-1 (Concourse B)
 - ciii. Manufacturer: Interface
 - civ. Product: Custom Off Line Collection
 - cv. No: 265317-002
- 33. Carpet Tile CPT-1D (Concourse B)
 - cvi. Manufacturer: Interface
 - cvii. Product: Custom SL910 Sample
 - cviii. No: 265317-013
- 34. Wood Paneling (Concourse B)
 - cix. Strait Grain
 - cx. Species: White Oak
 - cxi. Color: Custom
- 35. Quartz QZ-1 (Concourse B)
 - cxii. Manufacturer: Silestone
 - cxiii. Color: Blanco Maple

- 36. Quartz QZ-2 (Concourse B)
 - cxiv. Manufacturer: Silestone
 - cxv. Color: Cemento Spa. Polished Finish
- 37. Quartz QZ-3 (Concourse B)
 - cxvi. Manufacturer: Cambria
 - cxvii. Color: Berwyn
- 38. Quartz QZ-4 (Concourse B)
 - cxviii. Manufacturer: Cambria
 - cxix. Color: Whitehall
- 39. Quartz QZ-5 (Concourse B)
 - cxx. Manufacturer: Silestone
 - cxxi. Color: Cemento Spa. Polished Finish
- 40. Quartz QZ-6 (Concourse B)
 - cxxii. Manufacturer: Silestone
 - cxxiii. Color: Whitehall
- 41. Quartz QZ-7 (Concourse B)
 - cxxiv. Manufacturer: Silestone
 - cxxv. Color: Whitehall
- 42. Curtain Wall (Concourse B)
 - cxxvi. Manufacturer: Kawneer
 - cxxvii. Product: 1600 System 2
 - cxxviii. Color: Interior Valspar Super Special White / Exterior Clear Anodized
- 43. Epoxy Flooring (Concourse B)
 - cxxix. Manufacturer: BASF Building Systems
 - cxix. Product: BASF Masterdeal 2500 LT Duty
 - cxix. Color: Gray
- 44. Epoxy Flooring (Concourse B)
 - cxix. Manufacturer: Dex-O-Tex
 - cxix. Product: Color Flake L
 - cxix. Color: BX 520
- 45. Exterior Aluminum Composite Metal Paneling (Concourse B)
 - cxix. Manufacturer: Alucobond
 - cxix. Product: Alucobond Plus – fire rated core

xxxxvii. Colors:

1. Type 1: Titanium Metallic II
2. Type 3A: Southwest Gold Metallic
3. Type 3B: Harvest Gold Mica
4. Type 3C: Driftwood Mica

E. Doors

1. Exterior: Steelcraft Door; 16-gauge metal, galvanized; fully reinforced for door closer and continuous gear hinge; with 24" x 32" window prep (if specified)
 - a. Standard doors shall be 3.0' x 7.0'.
 - b. Jet Bridge doors shall be 4.0' x 7.0'.
2. Interior: 3070 (3.0' x 7.0') solid core wooden door with prep for continuous gear hinge; with 24" x 32" window prep (if specified)
3. Window Kits (if specified): Anemostat #LOPRO Visionlite 24"x32" with Tempered Glass
4. Metal Frames: Fit door openings to frame for a Steelcraft door or solid core wooden door with fully reinforced frame for door closer and continuous gear hinge
5. Threshold: Aluminum to fit door frame
6. Drip Caps: 16A, if outside door
7. Closers:
 - a. Standard Doors: LCN model 4041, arm RW/ PA, finish to match existing areas adjustment size 1-6 PC 23
 - b. Loading Bridge Doors: Dorma 1816HT Series with smoke detector
8. Hinges:
 - a. New doors shall have reinforcement on the hinge side and hinges shall be continuous geared hinges by National Guard Products, Stanley, or PBB. Minimum 0.120-inch-thick hinge leaves with minimum overall width of 4 inches; fabricated to full height of door and frame. Fabricate hinges non-handed and to template screw locations. Continuous hinges guaranteed for the life of the opening.
 1. At electrified hardware locations provide electric transfer continuous hinges with a 12" removable hinge modification accessible without de-mounting door from the frame and Molex standardized plug connectors to accommodate up to 12 wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number of concealed wires to accommodate electric function of specified hardware. Preferred hardware is Von Duprin EPT10.
 - b. Existing doors without reinforcement on the hinge side shall use hinges by Stanley FBB 179-4.5 x 4.5 x USP x NRP

9. Lock Prep: Yale 6-pin lockset-PB5407LN 694X497 Finish – US 10B
10. Keyways: 6-pin LFIC Cores with SA keyway
11. Panic Hardware: Dorma 9000 Series or Von Duprin RX QEL 98NL-F
12. Flush Bolts: Trimco, Burns, or Ives. Provide manual flush bolts with top rod of sufficient length to allow bolt location approximately six feet from the floor. Furnish dust proof strikes for bottom bolts. Surface bolts to be 8” in length and U.L. listed for labeled fire doors.
13. Low voltage door operators: Dorma ED900 Series or LCN 9000 Series

F. Electrical

1. Electric work shall comply with the National Electric Code.
2. Permits shall be pulled and work inspected by Memphis-Shelby County Code Enforcement.
3. Rigid conduit shall be used in high traffic areas (bag belt and tug traffic areas) below 10’.
4. All electrical components to include, panels, switchgear, and receptacles, shall be marked showing the panel and circuit in a typed font. Format of marking shall be submittal for approval.
5. MC shall not be used; all wiring shall be in conduit.
6. Heat trace shall have an end of line visual indicator showing the heat trace is energized.
7. Physical light fixtures shall be submitted to Building Maintenance Electric Shop for review.
8. Drivers and dimmer packages shall be accessible on a ladder no taller than 6’ and shall be accessible above fixed ceilings via an access panel and within arm’s reach. Shop drawings shall be submitted for review showing the location of all drivers and dimmer packages.
9. All electrical conductors will be installed in conduit and use of flex conduit is limited to runs of 6 feet or less. Conduit couplings and connectors utilizing setscrew fasteners are prohibited. Conduit shall be concealed from public view wherever possible. All conduits and electrical raceways shall contain an equipment grounding conductor.
10. All electrical conductors #14 AWG & larger shall be stranded copper wire unless otherwise approved in writing by MSCAA.
11. All emergency devices including emergency lights, exit lights, etc., shall be connected to emergency circuits. MSCAA does not allow battery packs.
12. MSCAA does not allow Bodine ballasts in fluorescent lighting fixtures. LED is preferred in all lay-in fixtures. Prior approval by Development Division must be received for use of fluorescent lay-in fixtures and the lamps shall be T8.
13. All use of cable trays is subject to MSCAA review and approval. Conduit installation must be independently supported and shall not be strapped to cable trays or any of the cable trays’ support systems, including hangers and braces.
14. All equipment shall meet the appropriate UL listing for its intended purpose.
15. All electrical work must conform to National Fire Protection Association (NFPA) National Electric Code (NEC) 70.

16. 23-kV rated cable shall conform to MLG&W standards. This requires cable having an aluminum or copper conductor, extruded conductor shield, ethylene propylene rubber insulation, extruded semi-conducting insulation shield, copper concentric neutral, and polyethylene jacket. The cable shall be suitable for direct burial, conduit/duct and aerial installations. All designers should re-verify MLG&W standards prior to publication of construction documents.

17. Preferred Equipment & Materials

- a. Wire: THHN or equal for insulation
- b. VFDs: PowerFlex 400 by Allen-Bradley including latest harmonic distortion units w/ Metasys board
- c. High Voltage Substations: General Electrical, Cutler Hammer
- d. Panels, breakers, and contactors: Westinghouse, ITE (Siemens), Square D, Allen Bradley, Cutler Hammer
- e. Devices: Leviton, Bryant, P&S, Hubbell
- f. Device Covers: Stainless Steel
- g. Lighting: G.E, Phillips, Sylvania, Lithonia
- h. Fittings (no Set screws, couplings, or connectors): Raco, Steel City
- i. Conduit/Wire: No MC or BX cable other than 6' or less to be used as whips from junction box to item being fed

G. Mechanical

- 1. The use of flex duct shall not exceed more than four (4) feet and banded with metal straps, no tape. Use of flex duct other than at the end of a line or connected to air diffusers must be approved by MSCAA.
- 2. Hard duct shall be used on the high-pressure side.
- 3. Controls for the HVAC system shall be open architecture and compatible with the JCI Metasys Extended Architecture System.
- 4. VAV Boxes shall be pressure dependent, electronic controls with no auxiliary fan or local filter.
- 5. A copy of the test and balance report shall be submitted to MSCAA Development Division. An independent contractor shall perform the testing and complete the report.
- 6. The contractor shall align all motors to the associated pump, gearbox, fan, etc. MSCAA Development and Maintenance shall inspect alignment prior to acceptance. Maximum allowable angular and parallel misalignment is 0.003.
- 7. Heat trace cables shall have indicator lights installed in a visible location that illuminate when the cables are in operation.
- 8. Preferred Equipment
 - a. Heaters: Trane, and Modine

- b. Electronic Controls: Johnson Controls (FEC, NAE, BACnet MS/TP)
 - c. Valves, Hot/Chill Water: Johnson Controls, and Honeywell
 - d. AHUs: Trane, and York
 - e. Boilers: Cleaver Brooks
 - f. Chillers: Trane
 - g. Pumps: Peerless, Bell & Gossett, Aurora, Ingersoll Rand, Pyramid Pump, Grundfos
 - h. VAV Boxes (All VAVs shall be pressure dependent with electronic controls): Environmental Tech, VariTrane Systems, and Tuttle & Bailey
 - i. Electronic Thermostats: TE-6700, BACnet MS/TP, N2, Johnson Control
 - j. Cooling Towers: BAC
9. UV lighting in HVAC and HEPA (MERV-14 Rating) filtration systems.
10. All mechanical parts that may create hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips, and sparks must affix guards to the machine where possible and secured elsewhere if for any reason attachment to the machine is not possible. The guard shall be such that it does not offer an accident hazard in itself to protect the operator and other employees in the machine area in accordance with 29 CFR 1910 Subpart O 1910.212 Machinery and Machine Guarding.

H. Plumbing & Restrooms

1. Brass ball valves shall be installed at the water supply point of origin and in the ceiling directly above any retrofit installed plumbing fixture. At all other locations, brass ball valves shall be no more than five (5) feet above finished floor for all mechanical and plumbing systems and within visual sight and within 20' of the system served. There shall be no more than 4 plumbing fixtures on one ball valve. Brass valve tags shall be placed on all newly installed valves clearly identifying the origin and destination.
2. Preferred Equipment
 - a. Flush valves: Zurn or Sloan Royal
 - b. Electronic plug-in electrically fed flush valves with valve mounted sensor:
 - i. Urinals: Sloan Royal 186 ESS-0.5 or Zurn equivalent
 - ii. Water Closets: Sloan Royal 111 ESS-1.6 or Zurn equivalent
 - c. Plumbing fixtures: Crane, American Standard, Kohler
 - d. Partitions: US made Stainless Steel, No sight design, overhead braced, Continuous, Hinge type-Integral, Hinge In-swing/out-swing standard closed position, Floor mounted
 - e. Sinks: American Standard, 0355.012 Lucerne wall mounted Lav. sink w/4" centers
 - f. Service Sinks: 8" centers w/ ZURN Z841M1 Faucet
 - g. Urinals: 6501.010 wash brook urinal American Standard white.

- h. Water Closets
 - i. Wall-mounted: American Standard 2257.103 automatic wall toilet 4 bolt wall mount, white
 - ii. Floor-mounted: Kohler K-4368
 - i. Lavatories
 - i. Non-ADA: American Standard, vandal resistant lavatory faucet with grid drain 2385.130 polished chrome
 - ii. ADA: Delta – 511-WFHDF
 - j. Faucets: Sloan Optima EBF-85M infrared or Zurn equivalent
 - k. Water closet gaskets: Wade Part # M-8 for wall hung closets
 - l. Backflow devices: Watts or Apollo
 - m. Water coolers: Elkay – model VRCGRNTL8WSK wall-mounted bottle filling station & bi-level water cooler Toilet Accessories: Bradley
 - i. Recessed towel dispenser and waste receptacle: B-3961
 - ii. Surface mounted toilet tissue dispenser: B-2888
 - iii. Sanitary napkin disposal: B-270
 - iv. Heavy duty robe hook: B-2116
 - v. Handicap tilt mirror: B-293 (24” x 36”)
 - vi. Grab bars: stainless steel with Snap Flange
 - n. Toilet Accessories: Non-Bradley
 - i. Foam Dispenser – Spartan Chemical Company 975700
 - ii. Toilet paper dispenser: Shoreline 830 from Memphis Chemical (not for use in public restrooms)
 - iii. Toilet Seat Cover Cabinet: Franklin Brass #1988 (Stainless Steel)
 - o. Eye Wash Station: Bradley S19314F
 - p. Angle Stops: Brasscraft
3. Sewer Modification Requirements

I. Fire Alarm and Suppression Systems

1. The fire suppression system shall interface with the airport’s Simplex Fire Alarm System.
2. All dry sprinkler pipe and fittings must be galvanized. All grooves in piping shall be the correct depth per industry standards.
3. See section Facilities Construction Standards – Construction Contractors for additional requirements.

J. Antennae

1. Antenna installation on airport rooftops will require submitting for a rooftop permit with the Airport Safety Program Manager. Most antenna installations on airport rooftops require contractor provided fall protection training and contractor provided fall protection systems & temporary mobile anchorage that does not penetrate the rooftop.
2. All work shall comply with the applicable construction codes and MSCAA standards.
3. No antennas are permitted directly on the roof; they must be installed within the infrastructure on one of the antenna farms or roof mounted antenna racks or in very limited cases with prior approval parapet mounted. Proposed antenna locations must be approved by MSCAA Development.
4. Cables are not allowed on the roof or to run bare down a wall. A conduit from the parapet location down the wall with an LB connector into the wall below the spandrel beam is required. The parapet mount must be properly sealed to prevent leaks through the concrete. Any wall penetration must also be sealed. Cables from antennas mounted on racks must utilize the conduit pathway at the rack location.
5. Cables above the ceiling must be independently supported from the roof structure and run by a licensed low voltage contractor, or a licensed electrical contractor, in accordance with applicable codes.
6. The installer shall be responsible for construction code permits and shall arrange for all code required inspections. Copies of permits shall be supplied to the Manager of Building Maintenance.
7. MSCAA Maintenance will not provide the escort for antenna work; either installer or Operator must be badged, or tenant will have to escort antenna personnel.

K. Fiber/Data Lines

1. Design and installation (including labeling) of fiber and data lines will meet Building Industry Consulting Services International (BICSI) standards.
2. Fiber optic runs should include #10 THHN stranded yellow tracer wire for locating purposes and connected in its entirety as a continuous conductor. Alternatively, armored fiber optic cables will be considered in lieu of tracer wire.

L. Miscellaneous

46. Relocation and/or removal of any security device including CCTV cameras, access control equipment, etc. must be approved by MSCAA Development Division.
47. All 12" X 12" spline ceiling tile shall be installed with the arrow on the back of the tile pointing south.
48. All flammable gas and liquid systems that are piped into buildings shall be properly equipped with seismic shutoff valves. Seismic shutoff valves shall be designed and installed to comply with all governing code requirements, insurance requirements, and MSCAA Construction Standard requirements. In the case of conflict between the listed requirements, the most stringent shall apply.

49. All flammable gas and liquid systems that are piped into buildings shall be properly marked in accordance with ANSI/ASME 13.1. Scheme for the Identification of Piping Systems.
50. For in-pavement loop installations, loop wire must meet IMSA Spec 51-7. Lead-in wire, if needed, must meet IMSA Spec 50-2. Loop wire shall be one continuous length with no splices from the junction box or control cabinet and back again. The wire shall be twisted by hand four twists per foot in the lead-in slot. Loops must be cut in a rectangular shape, with each 90-degree corner transected with a 45-degree cut to prevent over bending/stressing of the loop wire. Loop saw cuts should be 1/4" to 3/8" wide and a minimum of 1 1/2" deep in concrete and 2" deep in asphalt. Loop Lead-in saw cuts should be 3/8" wide and a minimum of 1 1/2" deep in concrete and 2" deep in asphalt. Properly seal the saw cuts with Dow Corning 890 SL self-leveling sealant. All saw cut work must adhere to 29 CFR Part 1926 Subpart Z – 1926.1153 Respirable Crystalline Silica Standard and 29 CFR Part 1910 Subpart Z 1910.1053 Respirable Crystalline Silica Standard.
51. The terrazzo floor shall be protected during construction. The removal, cutting, disfigurement or covering of the Terrazzo floor shall be reviewed and approved by MSCAA Development. All terrazzo floor cutting work must adhere to 29 CFR Part 1926 Subpart Z – 1926.1153 Respirable Crystalline Silica Standard and 29 CFR Part 1910 Subpart Z 1910.1053 Respirable Crystalline Silica Standard.
52. Only black steel pipe is permitted for use on systems containing diesel fuel, including tank vent stack piping, tank fill piping, and tank drain piping. No other material, including galvanized pipe, is allowed.
53. Fire rated solid wood blocking that extends from wall stud to wall stud shall be installed for support of framed openings, wall mounted cabinets, wall mounted door hardware, wall mounted monitors, plumbing fixtures, toilet partitions, toilet accessories, mirrors, etc. on all new construction walls or remodels, excluding brick or block walls.
54. All fryers in kitchens must include automated in-line used cooking oil containment systems for proper collection and disposal. Tenants will be responsible for installation, maintenance, and used cooking oil recycling. In accordance with the International Fire Code, appliances used for cooking or heating food, and which produce grease vapors, steam, fumes, smoke, or odors that are required to be removed must use a local exhaust ventilation system. Such appliances include deep fat fryers, upright broilers, griddles, steam jacketed kettles, hot-top ranges, under-fired broilers, charbroilers, ovens, barbeques, rotisseries, and similar appliances.

M. Construction Contractors

3. Electrical work performed shall be accomplished by crews with a minimum of one licensed journeyman per three apprentices.
4. The Contractor shall be responsible for maintaining a clean construction site and any space used for the removal of debris. The contractor shall be responsible for repair of any damage caused by construction to as good or better condition.
5. If directed by Development the Contractor shall erect a temporary wall around the construction site. All temporary walls shall be constructed of metal studs; anchored on bottom with double stick tape and anchored to the roof deck on top (attachment to ceiling tiles or grid is prohibited). The outside (public side) of the wall shall be finished floor to

ceiling with 5/8" drywall with 2 coats of flat off white latex paint. The bottom of the wall shall be trimmed with 4" black cove base. A 2"x6" chair rail, blocked 2" off the wall, shall be installed 36" to center above finished floor. The chair rail shall be sanded and painted with two coats of bronze paint (PPG Pitt-Tech Acrylic High Gloss DTM Industrial Enamel – Bronze Tone). The Contractor shall retain responsibility during construction to maintain the wall for aesthetic and security issues. MSCAA Development Division shall approve its location, any attachments to terrazzo floors and all signage and/or graphics. For short durations and in areas of limited public visibility, temporary walls may consist of metal studs and BC grade plywood with a high build primer and premium latex paint; use of these materials is allowed only with specific approval from MSCAA Development Division.

6. Walk-off mats shall be used at all access points to the construction area to prevent tracking of dust and debris and is responsible for cleanup if any dirt, dust and/or debris gets outside their construction limits. Walk-off mats must not create a slip/trip/fall hazard for construction/airport employees or the traveling public.
7. When accessible to the public, the schedule of construction efforts and removal of debris shall be coordinated so as not to disrupt other tenants or endanger the safety of the public. Final approval shall be the responsibility of MSCAA Development Division. Unless directed otherwise, working at MEM requires a badge; coordinate with MSCAA Operations Division for specific project requirements. For badging information, the Identification Office telephone number is (901) 922-8005.
8. The contractor shall inform MSCAA Development Division, telephone number (901) 922-8033 at least 48 hours prior to startup of construction.
9. A set of completed as-built drawings shall be supplied to Development upon completion of the project.
10. Fire Alarm System – the Contractor shall contact Simplex to verify that the designer worked with Simplex during the design. If design is the responsibility of the Contractor, the Contractor shall contact Simplex to design the installation. In all cases, MSCAA shall approve the final plan prior to installation.
11. A pre-test of the modifications to the fire alarm system shall be conducted with Simplex and the Contractor. This pre-test must be scheduled and successfully completed at least 24 hours in advance of any test with the Memphis Fire Department. MSCAA's Development Maintenance and Communications will participate in the pre-test, so close coordination is required. A minimum of 72 hours advanced notification is required to both Simplex and MSCAA to schedule the pre-test. The pre-test must be performed after hours. Upon completion of the pre-test, Simplex will provide written confirmation of the successful completion of the pre-test, a copy of which is to be provided to the MFD fire marshal, and a copy is to be provided to MSCAA.
12. The test with the Memphis Fire Department for occupancy must be performed after hours and closely coordinated with MSCAA Development, Maintenance and Communications. Provide MSCAA with a copy of any documentation from MFD, including deficiencies noted with the fire system, or approval of the system.
13. Rooftop Permits
 - a. Rooftop permits need to be coordinated with Airport Safety, Development, and

Building MX.

- i. If Contractors are building something on a rooftop, they first need to use PtD (Prevention Through Design) to engineer out any fall hazards (move 15 feet or more from the leading edge) so employees do not need fall protection PPE. If they can't design out the fall hazard, then they need to install fall protection mitigations/engineering controls such as guardrails or parapets (OSHA-compliant) to prevent falls. If these are not possible, they need to install some type of anchoring system for fall protection PPE.

14. Hotwork permits

Painting Standards

A. Airfield

1. Airfield painting shall comply with the latest revision of Advisory Circular 150/5340-1 and P-620 specification. Thermoplastic markings are not acceptable.

B. Roads

1. Road painting shall comply with the latest revision of the Manual on Uniform Traffic Control Devices (MUTCD) and the TTP-1952 specification. Thermoplastic markings are not acceptable.

C. Paint Suppliers

1. This vendor list is provided for reference only in regard to the specific products listed in the following paragraphs. The list is not exhaustive or exclusive as equivalent vendors will be considered by MSCAA Paint Shop. The colors listed are for the manufacturer shown. The colors may be matched and submitted for approval with equivalent quality of paint.
2. PPG Architectural Finishes, Inc. (1525 Three Place, Memphis, TN, 38116)
3. Sherwin-Williams (3850 Lamar Avenue, Suite 1, Memphis, TN)
4. Farrell-Calhoun (3185 Millbranch Avenue, Memphis, TN)

D. Terminal, Concourses, and Parking Garages

1. Exterior White Fasciae, Cargo Docks, Ramp, Walls, and Columns
 - i. Sherwin-Williams Universal Primer (or equivalent)
 - ii. PPG Pitt-Tech Acrylic Satin – Off-white
 - iii. Sherwin-Williams A-100 Acrylic Satin – Off-white
2. Exterior CMU Walls
 - i. Block Filler
 - ii. PPG Pitt-Tech Acrylic Satin – Off-white
 - iii. Sherwin-Williams A-100 Acrylic Satin – Off-white
3. Terminal Lobby Columns
 - i. To a height of 6' - Farrell-Calhoun Acrylic Interior Semi-Gloss Latex Enamel 650 – Carriage House
 - ii. Above 6'
 1. PPG Pitt-Tech Acrylic Satin – Off-white
 2. Sherwin-Williams A-100 Acrylic Satin – Off-white
4. Interior Walls
 - i. Sherwin-Williams B31W4400 Promar 400 Interior Latex Semi-Gloss – White

- ii. Offices (including Airport Police, most of Building Maintenance, and Cargo Building Offices): Farrell-Calhoun Acrylic Interior Semi-Gloss Latex Enamel 650 – Snowglory
 - iii. Offices (Mezzanine & Apron level concourse B): Farrell-Calhoun Interior Premium Eggshell Latex Enamel 370 – Snowglory
 - iv. Gypsum Ceilings/Walls: Pittsburgh Paints PPG 1006-1 Color: Gypsum Various Sheens
 - v. Aluminum Curtainwall: Valspar Sherwin Williams Fluorpon Special Color: Special White 391B495
5. Doors and Frames
- i. Brown Doors: Sherwin Williams Pro Industrial Acrylic Semi-Gloss – Kodiak Olive
 - ii. Green Doors: Sherwin Williams Pro Industrial Acrylic Semi-Gloss – Blarney Stone
 - iii. Brown Frames: Sherwin Williams Pro Industrial Acrylic Semi-Gloss – Bronze Tone
 - iv. Grey Frames and doors: Farrell-Calhoun DTM Industrial Enamel Gloss (or approved equivalent) – Zen Retreat
 - v. White Frames and doors (Concourse B): Farrell-Calhoun Interior Alkyd Enamel Semi-Gloss - Gypsum
6. Window Bases
- i. Farrell-Calhoun Acrylic Interior Semi-Gloss Latex Enamel 650 – Carriage House
7. Exterior Metal Structures
- i. Alkyd Industrial Gloss Enamel – Off-white
 - ii. Alkyd Industrial Gloss Enamel – Farrell-Calhoun DTM Industrial Enamel Gloss (or approved equivalent) – Zen Retreat
8. Interior Metal Structure (Concourse B)
- a. Sherwin Williams Pro Industrial Acrylic Semi-Gloss Off White
9. Rotunda Columns (located in the “Y” of the B Concourse)
- a. Sherwin Williams Pro Industrial Acrylic Semi-Gloss Off White
10. ID Office
- i. Walls: Farrell-Calhoun Interior Premium Eggshell Latex Enamel 0 – Snowglory
 - ii. Doors and Frames: match Terminal & Concourses doors and frames
11. Management Work Room
- i. Walls: Farrell-Calhoun Interior Premium Eggshell Latex Enamel 370 – Snowglory
 - ii. Doors and Frames: match Terminal & Concourses doors and frames
12. FIS
- i. Walls: Farrell-Calhoun Acrylic Interior Semi-Gloss Latex Enamel 650 – Carriage House
 - ii. Doors: PPG Pitt-Tech Acrylic Satin DTM Industrial Enamel 90-475 – Quick Silver

- iii. Frames: PPG Pitt-Tech Acrylic Satin DTM Industrial Enamel 90-709/05 – Dark Silver

13. Painted Floors (Building Maintenance areas)

- i. Farrell-Calhoun Floor and Deck Enamel 702 – Medium Gray

E. Airport Authority Offices

1. Walls

- i. Ceilings: Farrell-Calhoun Interior Premium Eggshell Latex Enamel 370 – Zurich White
- ii. Walls: Farrell-Calhoun Interior Premium Eggshell Latex Enamel 370 – Snowglory

2. Interior Doors and Frames

- i. Farrell-Calhoun DTM Industrial Enamel Gloss (or approved equivalent) – Zen Retreat

F. Mission Support Center

1. Walls

- i. Walls: Farrell-Calhoun Acrylic Interior Semi-Gloss Latex Enamel 650 – Snowglory

2. Doors and Frames

- i. Farrell-Calhoun DTM Industrial Enamel Gloss (or approved equivalent) – Zen Retreat

G. Miscellaneous

1. De-Ice Tanks

- i. Farrell-Calhoun Premium Acrylic Semi-Gloss DTM Industrial Enamel 800 – Off-white

2. Exterior Light, Sign Pole, Sign Bases, and Bollards

- i. PPG Acrylic Semi-Gloss DTM Industrial Enamel Z-Line – Bronze Tone

3. Ticket Spitters and Bollards

- i. Farrell-Calhoun Premium Acrylic Semi-Gloss DTM Industrial Enamel 800 – Safety Zone Yellow

4. Colored Metal Surfaces

- i. Red: Farrell-Calhoun Premium Acrylic Semi-Gloss DTM Industrial Enamel 800 – International Red
- ii. Orange: Farrell-Calhoun Premium Acrylic Semi-Gloss DTM Industrial Enamel 800 – International Orange
- iii. Yellow: Farrell-Calhoun Premium Acrylic Semi-Gloss DTM Industrial Enamel 800 – Safety Zone Yellow



Memphis-Shelby County Airport Authority COMPREHENSIVE STORM WATER POLLUTION PREVENTION PLAN

**For Contractors Performing
Construction Activities at the
Memphis International Airport
Under Permits TNR10-0000 and TNR15-0091**

Comprehensive Storm Water Pollution Prevention Plan

Appendix A: Figures

Appendix B: Permit and Forms

Appendix C: Best Management Practices

Appendix D: Spill Response Notification

Appendix E: Site Specific Information

**Prepared By:
Lori Morris, P.E.
Manager of Environmental Services, MSCAA**

**Version 5
June 2022**

Comprehensive Storm Water Pollution Prevention Plan

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Appendix E	Site Specific Information

**COMPREHENSIVE STORM WATER POLLUTION PREVENTION PLAN
CERTIFICATION PAGE**

Name of Construction Project: All Construction Projects at Memphis International Airport
(Oct. 2021 – Sept. 2026)

Location of Facility: Memphis International Airport (MEM)
2491 Winchester Road, Suite 113
Memphis, Tennessee 38116-3856

MANAGEMENT CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16- 702(a)(4), this declaration is made under penalty of perjury."

Terry Blue

Terry Blue (Jun 8, 2022 14:44 PDT)

Signature: Mr. Terry Blue
Memphis-Shelby County Airport Authority
Vice-President, Operations

Jun 8, 2022

Date

CONTRACTOR CERTIFICATION

"I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on- site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and for failure to comply with these permit requirements. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury."

Signature

Date

Printed Name

Title

Company Name

Phone Number

Company Address

Signature Page for MEM Construction SWPPP

Final Audit Report

2022-06-08

Created:	2022-06-08
By:	Lori Morris (lmorris@flymemphis.com)
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1.0 INTRODUCTION

The State of Tennessee Department of Environment and Conservation (TDEC) has authorized the discharges of storm water from all construction sites at the Memphis International Airport (MEM) under the Tennessee General Permit Number TNR10-0000 and the MEM Permit Tracking Number TNR15-0091, provided that the permit provisions are adhered to and the State of Tennessee (the State) receives formal application 30 days before groundbreaking from the parties responsible for a construction project at MEM. Under TNR10-0000 and TNR15-0091, both the Memphis-Shelby County Airport Authority (MSCAA) and the contractors performing the construction activities are responsible for complying with the permits. MSCAA has developed this Comprehensive Storm Water Pollution Prevention Plan (SWPPP) to assist contractors in complying with the provisions of TNR10-0000 and TNR15-0091 and to coordinate the compliance responsibilities of the contractors and subcontractors engaged in construction activities on properties owned or managed by MSCAA.

MSCAA originally obtained permit coverage and prepared a SWPPP under TNR10-0000 in 2001. On June 16, 2005, MSCAA obtained coverage under a new general permit and prepared a revised SWPPP (Version 2) dated June 2006. On May 24, 2011, MSCAA obtained coverage under a new general permit and prepared a revised SWPPP (Version 3) dated November 2011. On October 1, 2016, MSCAA received automatic coverage under the general permit and has prepared this revised SWPPP (Version 4) dated February 2017. On October 1, 2021, MSCAA received automatic coverage under the new general permit and has prepared this revised SWPPP (Version 5) dated June 2022. This SWPPP must be updated no later than 12 months following any new permit effective date.

1.1 Construction Activities at MEM

MEM is an onshore air transportation facility located in the south-central area of the City of Memphis, Tennessee. Construction of taxiways, runways, parking areas, and terminals is ongoing. MEM is a full-scale air transportation facility with tenants that provide commercial passenger and freight service, aircraft maintenance, fueling, de-icing, storage for private aircraft, and executive flight services.

Of the 4,800 acres at MEM, up to 350 acres are expected to be disturbed by construction during the term of this permit. A significant portion of the construction will take place on currently impervious airport facilities being retrofitted. However, a net loss of pervious area at the airport is expected over the next 5 years.

1.2 Areas Covered Under TNR15-0091

Construction projects covered under this permit include, but are not limited to, Reconstruction of Taxiway Alpha, Tree Clearing Project, south of Airfield, Demolition of south end of Concourse C, and site preparation for MRO Hangar west of the MEM Fuel Farm. Equipment staging areas, materials storage areas, excavated materials holding and/or disposal areas and borrow areas are also covered, and are subject to all of the provisions of TNR15-0091, whether the areas are contiguous to the main construction area or at remote locations. These areas, the activities to be conducted in these areas, and the storm water pollution control measures to be implemented must be incorporated into the site-specific Erosion Prevention and Sediment Control Plan (EPSCP). When one or more of these areas are operated by and/or utilized by more than one contractor, the pollution control provisions for that area shall be coordinated so the effectiveness of the pollution control provisions are not compromised.

The following figures are incorporated as Appendix A of this SWPPP to adequately address the areas and projects covered under TNR15-0091. Both MSCAA construction projects and tenant construction projects are included.

- The first map in Appendix A is the *MEM Storm Drainage* map that shows storm drainage basins, outfalls, storm drainage features, tenants, and industrial National Pollutant Discharge Elimination System (NPDES) permit information.
- The second map in Appendix A is the *Airport Property Map* that depicts each parcel owned by the airport to ensure that any construction projects on MEM parcels outside the main airport activity area are covered under TNR15-0091. This map additionally serves as a site location map with roads and streams depicted.

1.3 Tennessee General Permit for Construction Activities Requirements

TNR10-0000, included as Appendix B, authorizes the discharge of storm water from sites that are under construction, provided that the permit provisions are adhered to and TDEC receives formal application from the parties responsible for the construction. Under this general permit, both the owner/developer of the property and the contractors performing the construction activities are responsible for complying with the permit. MSCAA has developed this SWPPP to comply with the provisions of TNR10-0000 and to coordinate the compliance responsibilities of the contractors and subcontractors engaged in construction activities on properties owned or managed by MSCAA. MEM drains into water with Unavailable Parameters (Days Creek,

Hurricane Creek and Nonconnah Creek); therefore, all construction at MEM is subject to more stringent permit requirements for erosion and sediment control. These requirements are incorporated into this SWPPP.

The parties subject to this permit include the owner/developer of the construction site (MSCAA) and all contractors and subcontractors who have either the authority to make or modify the plans and specifications or the day-to-day responsibility for execution of the plans and/or compliance with the specifications. Table 1-1 summarizes TNR10-0000 permit requirements at MEM:

**Table 1-1
Permitted Storm Water Discharges**

Permit #/ Tracking #	Permit Required Activities
TNR10-0000/ TNR15-0091	Contractors must conduct all activities in compliance with the CGP, including but not limited to: • Sign Notice of Intent and Storm Water Pollution Prevention Plan (SWPPP), keep SWPPP onsite, and update SWPPP as needed; • Hire a qualified person to conduct biweekly erosion prevention and sediment control inspections (72 hours apart) and keep site inspector's certification onsite; • Make corrections to site before next rain event but in no case more than 7 days after the need is identified; • Update SWPPP within 14 days of correction to site; • Document twice-weekly inspections on Tennessee Department of Environment and Conservation form and maintain inspection file and SWPPP at the construction site or Memphis-Shelby County Airport Authority (MSCAA); • A quality assurance site assessment of erosion prevention and sediment controls must be conducted by a Professional Engineer or other qualified individual at each outfall involving drainage totaling 5 or more acres within 30 days of construction commencing at each portion of the site that drains the 5 or more acres; • Stabilize soils (temporary or permanent) 14 days after construction ceases; • Post a copy of the notice of permit coverage, contact information, project description and location of the SWPPP at the job site; • Install and maintain a rain gauge at the site; and • Maintain a form onsite that tracks the acreage of disturbed area each day (no more than 50 acres may be disturbed at one time unless linear project).

2.0 ACQUIRING PERMIT COVERAGE AT MEM

To acquire permit coverage under TNR15-0091, owner must:

Submit a complete sub-project Notice of Intent (NOI) using the TNR15-0091 tracking number, along with a construction site map and site specific EPSCP (provided by project designer) with drawings:

Construction Site map: excerpt (8 ½" by 11" or 11" by 17") from the appropriate 7.5 minute United States Geological Survey (USGS) topographic map, with the proposed construction site centered. For additional information, see Section 3.1.

- The entire proposed construction area must be clearly identified (outlined in red) on this map.
- The total area to be disturbed (in acres) should be included on the map.
- Outline the boundaries of projects, developments and the construction site in relation to major roads, streams or other landmarks.
- Identify all outfalls where runoff will leave the property
- Identify stream(s) receiving the discharge, and storm sewer system(s) conveying the discharge from all site outfalls

Site-specific EPSCP: The plan showing the approximate location of each control measure along with a description of the timing during the construction process for implementing each measure (e.g., prior to the start of earth disturbance, as the slopes are altered and after major grading is finished). The different stages of construction (initial/major grading, installation of infrastructure, final contours, etc.) and the erosion preventions and sediment control measures that will be utilized during each stage should be depicted on multiple plan sheets (see Section 3.0).

- have a full understanding of this SWPPP and the requirements of TNR10-0000 and have the ability to be in compliance with permit terms and conditions.

2.1 Notice of Intent

To become an authorized party to this permit, owners wishing coverage must first develop an EPSCP specific to the construction activities being contracted and submit the site plan and a properly signed NOI to the State and the City via MSCAA. The project designer will submit

EPSCP drawings to MSCAA for review prior to TDEC submittal. An NOI is included at the end of Appendix B with the permit forms.

Contractors performing construction activities at MEM are required to be signatories on the NOI under TNR10-0000 and TNR15-0091 if they have either the authority to make or modify the plans and specifications or have the day-to-day responsibility for execution of the plans and/or compliance with the specifications. The MSCAA requires the following responsibilities of these signatories.

The MSCAA must:

- Ensure the project specifications the contractors develop meet the minimum requirements of Section 3.0 of this SWPPP and all other applicable conditions.
- Ensure that the site plan for the contracted project indicates the areas of the project where contractor has design control (including the ability to make modifications in specifications).
- Ensure all other permittees implementing portions of the SWPPP for their part of the project that will be impacted by any changes signatories make to the SWPPP are notified of such modifications in a timely manner.
- Ensure that all common facilities (e.g., sediment treatment basin and drainage structures) that are necessary for the prevention of erosion or control of sediment are maintained and effective until all construction is complete and all disturbed areas in the entire project are stabilized.
- If parties with day-to-day operational control of the construction site have not been identified at the time the SWPPP is initially developed, the MSCAA shall be considered to be the responsible party until such time the supplemental NOI is submitted, identifying the new operator(s). These new operators (e.g., general contractor, utilities contractors, subcontractors, erosion control contractors, hired commercial builders) are considered secondary permittees. The EPSCP must be updated to reflect the addition of new operators as needed to reflect operational or design control.
- Ensure that all operators on site have permit coverage and are complying with the SWPPP.

Tenants and contractors with day-to-day operational control must:

- Ensure that the SWPPP for portions of the project where they are operators meets the minimum requirements of Section 3.0 of the SWPPP and identify the parties responsible for implementation of control measures identified in the plan.
- Ensure that measures in the SWPPP are adequate to prevent erosion and control sediment that may result from their earth-disturbing activity.
- Permittees with operational control over only a portion of a larger construction project are responsible for compliance with all applicable terms and conditions of this permit as it relates to their activities on their portion of the construction site. This includes, but is not limited to, implementation of Best Management Practices (BMPs) and other controls required by the SWPPP.
- NOIs must be filed at least 30 days prior to the start of the construction project activities or the addition of a new party to the permit. If there is a change in contractor responsibilities, a NOI must be filed at least 48 hours before responsibilities are transferred from one contractor to another. To the extent possible, all contractors filing NOIs for a scope of work should be joint signatories to a single NOI.

A NOI submitted for authorization to discharge under TNR10-0000 and TNR15-0091 shall be submitted by the contractor to MSCAA Manager of Environmental Services or MSCAA's construction management team (Parsons). MSCAA will review the NOI and site plan for completeness and, if they are found to be complete, forward original copies of the NOI and site plan to TDEC via email (DWR.MEFO.Permits@tn.gov).

A copy of the NOI will also be forwarded to the City of Memphis Department of Public Works Storm Water Program for notification purposes. TDEC will issue Notice of Coverage within 30 days of NOI submittal, unless the division has responded to the operator within that time requesting additional information.

MSCAA and contractor shall retain a copy of both the NOI and BOC on project site.

2.2 Storm Water Pollution Prevention Plan

Owners and Contractors wishing to obtain coverage under a NPDES permit must develop and submit a site-specific EPSCP with their NOI. The project designer will submit the EPSCP for review and approval prior to submittal to TDEC. This SWPPP constitutes the comprehensive SWPPP addressing all construction-related activities from the date construction commences at MEM to the date of termination of permit coverage. The SWPPP was developed, implemented, and updated according to the requirements in TNR10-0000. The SWPPP has been an effective tool since 2001 when coverage under TNR10-0000 was obtained at MEM. Because there is more than one operator at MEM, preparation and implementation of the SWPPP has been a cooperative effort. New operators with design and operational control of their portion of the construction site are required to adopt and implement this comprehensive SWPPP.

2.3 Permit Application Fees

MSCAA has paid the permit application fee for all construction projects at MEM by submittal of a one-time maximum fee of \$7,500.00 for the maximum acreage permitted. Contractors and tenants do not need to pay permit application fees. No annual maintenance fee apply to this permit since it was obtained in 2006, prior to the establishment of Tennessee Rule, Chapter 0400-40-11-.2(12)(i) in 2016.

2.4 Notice of Coverage

TDEC will review the NOI for completeness and will issue a Notice of Coverage (NOC) to the MSCAA for each project identified on the NOI form. Each project will be independently tracked by TDEC with a project tracking number. Before initiation of construction activities, copies of the NOI, this SWPPP, the EPSCP, and the NOC must be located at each construction site management office. The NOC must be posted along with the following information:

- Name, company name, e-mail address (if available), telephone number, and address of the project site owner or a local contact person;
- A brief description of the project; and
- The location of the SWPPP if the site is inactive or does not have an onsite location to store the plan.

Necessary copies of the NOC and the project-specific EPSCP will be distributed by MSCAA to all parties assigned responsibility for oversight of the construction project.

2.5 Notice of Termination

Individual contractors who have completed their responsibilities must submit a Notice of Termination (NOT) to be relieved of their responsibilities under the permit. Upon completion of the project, MSCAA, in conjunction with the contractors covered by the permit, is to submit a NOT. NOT forms are included at the end of Appendix B with the permit forms. NOTs are to be submitted to the contracting official at MSCAA. MSCAA or Parsons will forward the NOTs to TDEC via email (DWR.MEFO.Permits@tn.gov).

The following requirements for submitting an NOT are listed below.

- All earth-disturbing activities and, if applicable, construction support activities permitted under Section 1.2.2 at the site are complete;
- All requirements for permanent vegetation or non-vegetation stabilization are met and groundcover has achieved stabilization;
- All construction materials, as well as waste and waste hauling devices have been removed;
- All equipment and vehicles that were used during construction, unless they are intended for long-term use following termination of permit coverage, have been removed;
- All stormwater controls, except those that are intended for long-term use, have been removed;
- The permittee has transferred control of all areas of the site for which he is responsible under this permit to another operator, and that operator has submitted an NOI and obtained coverage under this permit.
- The permittee obtains coverage under an individual or alternative general NPDES permit

TDEC will notify MSCAA of the final decision within 30 days from receipt of a complete NOT and may require a site visit by the TDEC permit writer before permit is terminated. TDEC may also deny termination of coverage if there are any existing deficiencies.

2.6 Permitted Discharges

TNR10-0000 and TNR15-0091 authorize discharges of storm water from construction activities such as clearing, grading, filling, and excavation activities in preparation for paving or construction activities on projects sized 1-acre or greater. It also authorizes storm water discharges from support activities (e.g., equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided that:

- The support activity is primarily related to a construction site that is covered under this permit;
- That the owner/contractor of the support activity is the same as the owner/contractor of the construction site;
- The support activity is not a commercial operation serving multiple unrelated construction projects by different contractors; and
- Support activities are identified in the NOI and the SWPPP and appropriate controls and measures are identified in the SWPPP covering the discharges from the support activity areas.

The following non-storm water discharges from active construction sites are authorized by TNR10-0000 and TNR15-0091, provided the non-storm water component of the discharge is in compliance with the permit:

- dewatering of work areas of collected storm water and groundwater;
- waters used to wash dust and oil from vehicles where detergents are not used and detention and/or filtering is provided before the water leaves the site (wash removal of oil, asphalt, or concrete is not authorized);
- water used to control dust;

- potable water sources including waterline flushings; from which chlorine has been removed to the maximum extent practicable
- routine external building wash-down that does not use detergents or other chemicals;
- uncontaminated groundwater or spring water; and
- foundation or footing drains where flows are not contaminated with process materials such as solvents.
- Discharges from emergency fire-fighting activities.
- Fire hydrant flushings.
- Landscape irrigation.
- Pavement wash waters, provided spills or leaks of toxic or hazardous substances have not occurred (unless all spill material has been removed) and where soaps, solvents, and detergents are not used.
- Uncontaminated air conditioning or compressor condensate.

Discharges of storm water or wastewater authorized by and in compliance with a different NPDES permit (other than this permit) may be mixed with discharges authorized by this permit. All non-storm water discharges authorized by this permit must be free of sediment or other solids and must not cause erosion of soil or the stream bank or result in sediment impacts to the receiving stream.

TNR10-0000 does not authorize storm water or other discharges that would result in a violation of State water quality standards (TDEC Rules, Chapters 0400-40-03, 0400-40-04). Such discharges constitute a violation of this TNR10-0000. Where a discharge is already authorized under the permit and the division determines the discharge to cause or contribute to the violation of applicable state water quality standards, the permitting authority will notify the operator of such violation(s). The permittee shall take all necessary actions to ensure future

discharges do not cause or contribute to the violation of a water quality standard and shall document these actions in the SWPPP.

The construction activity shall be carried out in such a manner as to prevent violations of water quality criteria as stated in the TDEC Rules, Chapter 0400-40-03-.03. This includes but is not limited to the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of waters of the state for any of the uses designated for that water body by TDEC Rules, Chapter 0400-40-04. There shall be no distinctly visible floating scum, oil, or other matter contained in the storm water discharge. The storm water discharge must not cause an objectionable color contrast in the receiving stream. The storm water discharge must result in no materials in concentrations sufficient to be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream. Solids or other materials removed by any sediment control treatment devices must be disposed of in a manner that prevents its entrance into or pollution of any surface or subsurface waters

3.0 POLLUTION PREVENTION SITE PLAN DEVELOPMENT

The grading, drainage, and erosion prevention and sediment control plans for each project at MEM are considered to be part of the overall site plan and must accompany the individual project's NOI submittal. Each construction project must calculate its post-construction runoff coefficient and, where appropriate, send a Geotechnical Report for the site with the site plans to the TDEC office with the job-specific NOI via the MSCAA.

Storm water leaving construction sites at MEM enters the MSCAA's storm sewer system going to either Days Creek or Hurricane Creek, which then enters Nonconnah Creek. In general, construction projects at MEM have an estimated post-construction runoff coefficient of 0.70.

The EPSCP must be prepared in accordance with good engineering practices and the latest edition of the Tennessee Erosion and Sediment Control Handbook. The handbook is designed to provide information to planners, developers, engineers, and contractors on the proper selection, installation, and maintenance of BMPs. In addition, tenants and contractors must consult the City of Memphis Storm Water Management Manual (SWMM) to ensure compliance with local storm water requirements. Appendix C of this SWPPP provides the current web site address to the TDEC Erosion and Sediment Control Handbook, as well as the SWMM. Because the receiving streams for MEM storm water discharges are water with unavailable parameters, beginning May 24, 2013, the EPSCP must be prepared by a person who, at a minimum, has completed the TDEC's *Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites* course. A copy of the certification or training record for inspector certification should be included with the EPSCP.

The EPSCP must:

- Identify all potential sources of pollution that are likely to affect the quality of storm water discharges from the construction site.
- Describe practices to be used to reduce pollutants in storm water discharges from the construction site.
- Assure compliance with the terms and conditions of this permit.

Once a definable portion of a project has been finally stabilized, the co-permittee and MSCAA may identify the stabilized area on the EPSCP. At that time, no further SWPPP or inspection requirements apply to that portion of the site (e.g., earth-disturbing activities around one of three buildings in a complex are done and the area is finally stabilized; 1 mile of a roadway or pipeline project is done and finally stabilized, etc.).

Plans and specifications for any building or structure, including the design of sediment basins or other sediment controls involving structural, hydraulic, hydrologic or other engineering calculations shall be prepared by a licensed professional engineer or landscape architect and stamped and certified in accordance with the Tennessee Code Annotated, Title 62, Chapter 2 and the rules of the Tennessee Board of Architectural and Engineering Examiners. Engineering design of sediment basins and other sediment controls must be included in SWPPPs for construction sites involving drainage to an outfall totaling 5 acres or more due to the receiving water having unavailable parameters status.

3.1 Site Description

The EPSCP must provide a description of pollutant sources and other information as indicated:

- A description of all construction activities at the site (not just grading and street construction)
- The intended sequence of major activities that disturb soils for major portions of the site (e.g., grubbing, excavation, grading, utilities, and infrastructure installation, etc.)
- Estimates of the total area of the site and the total area that is expected to be disturbed by excavation, grading, filling, or other construction activities
- A description of the topography of the site including an estimation of the percent slope and the variation in percent slope found on the site; such estimation should be on the basis of a drainage area serving each outfall, rather than an entire project.
- Any data describing the soil (data may be referenced or summarized) and how the soil type will dictate the needed control measures and the expected quality of any discharge from the site.

An estimate of the runoff coefficient of the site after construction activities are completed and how the runoff will be handled to prevent erosion at the permanent outfall and receiving stream.

An erosion prevention and sediment control map of the site with the proposed construction area clearly outlined. The map should indicate:

- the boundaries of the permitted area;
- drainage patterns and approximate slopes anticipated after major grading activities;
- areas of soil disturbance;
- an outline of areas that are not to be disturbed;
- the location of major structural and nonstructural controls identified in the SWPPP;
- the location of areas where stabilization practices are expected to occur;
- surface waters including wetlands;
- streams and sinkholes;
- and careful identification of outfall points intended for coverage under the general permit for storm water discharges from the site.
- A description of any discharge associated with industrial activity other than construction storm water that originates onsite and the location of that activity and its permit number.
- Identification of any stream or wetland on or adjacent to the project, a description of any anticipated alteration of these waters, and the permit number or the tracking number of the Aquatic Resources Alteration Permit or Section 401 Certification issued for the alteration.
- The name of the receiving water(s) and approximate size and location of affected wetland acreage at the site.

- If applicable, identify and outline the buffer zones established to protect waters of the state located within the boundaries of the project.
- For projects of more than 50-acres, the construction phases must be described. (No more than 50 acres may be disturbed at any one time.)
- If only a portion of the total acreage of the construction site is to be disturbed, then the protections employed to limit the disturbance must be discussed (i.e., caution fence, stream side buffer zones, etc.)
- Limits of disturbance shall be clearly marked in the SWPPP and areas to be undisturbed clearly marked in the field before construction activities begin.

3.2 Description of Storm Water Runoff Controls

The EPSCP must include a description of appropriate erosion prevention and sediment controls and other BMPs that will be implemented at the construction site. The plan must clearly describe each major activity that disturbs soils for major portions of the site (e.g., grubbing, excavation, grading, utilities, and infrastructure installation, etc.) and indicate the following:

- Appropriate control measures and the general timing for the measures to be implemented during construction activities
- Which permittee is responsible for implementation of which controls

The EPSC plans must show the approximate location of each control measure along with a description of the timing during the construction process for implementing each measure (e.g., prior to the start of earth disturbance, as the slopes are altered and after major grading is finished). The different stages of construction (initial/major grading, installation of infrastructure, final contours, etc.) and the erosion prevention and sediment control measures that will be utilized during each stage should be depicted on multiple plan sheets (see following paragraphs). Half sheets are acceptable. One sheet showing all EPSCs that will be used during the life of the multi-phase project implementing different EPSC controls at each stage will not be considered complete.

For site disturbances less than 5-acres, at least two separate EPSC plan sheets must be developed. At least two stages must be identified, with associated EPSC measures addressed. The plan stages must be addressed separately in plan sheets, with each stage reflecting the conditions and EPSC measures necessary to manage storm water runoff, erosion and sediment during the initial land disturbance (initial grading) and the conditions and EPSC measures necessary to manage storm water, erosion and sediment at final grading.

For site disturbances more than 5-acres, at least three separate EPSC plan sheets must be developed. Three stages must be identified. The first plan sheet should reflect the conditions and EPSC measures necessary to manage storm water runoff, erosion, and sediment during the initial land disturbance (initial grading). The second plan sheet shall reflect the conditions and the EPSC measures necessary to manage storm water runoff, erosion and sediment from interim land disturbance activities. The third plan sheet shall reflect the conditions and EPSC measures necessary to manage storm water runoff, erosion and sediment at final grading while permanent site stabilization is being achieved.

3.3 Construction Sequencing

In general, the construction sequence to be followed in order to reduce erosion and prevent sediment from leaving the construction site is:

- Install erosion control devices (i.e., ditch blocks, silt fencing).
- Remove existing topsoil (if re-grading site) to a minimum of 6 inches to a stockpile with erosion controls.
- Remove existing pavement.
- Grade and prepare subgrade for new building slab and/or paving.
- Construct new building and/or paving.
- Place earthen fill for side slopes from shoulder to existing grade.
- Clean out any ditch blocks/ponds.
- Sod areas of soil disturbance.

3.4 Erosion Prevention and Sediment Controls

The following are the general TNR10-0000 and TNR15-0091 criteria that will be required for the development of the EPSCP:

- The construction-phase erosion prevention controls shall be designed to eliminate (or minimize if complete elimination is not possible) the dislodging and suspension of soil in water. Sediment controls shall be designed to retain mobilized sediment on site to the maximum extent practicable.
- The design, inspection and maintenance of BMPs described in this SWPPP must be prepared in accordance with good engineering practices and at a minimum, must be consistent with the requirements and recommendations contained in the current edition of the Tennessee Erosion and Sediment Control Handbook. In addition, all control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications (where applicable). All control measures selected must be able to slow runoff so that rill and gully formation is prevented. When steep slopes and/or fine particle soils are present at the site, additional physical or chemical treatment of storm water runoff may be required. Proposed physical and/or chemical treatment must be researched and applied according to the manufacturer's guidelines and fully described in the SWPPP. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, the permittee must replace or modify the control for relevant site situations.
- If permanent or temporary vegetation is to be used as a control measure, then the timing of the planting of the vegetation cover must be discussed in the SWPPP. Planning for planting cover vegetation during winter months or dry months should be avoided.
- If you plan to add treatment chemicals to stormwater and/or authorized non-stormwater prior to discharge, you may not submit your Notice of Intent (NOI) until you notify an appropriate EFO in advance and the EFO authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of treatment chemicals will not lead to discharges that cause an exceedance of water quality standards.

- Chemicals used for treating stormwater runoff must be shown to be non-toxic to sensitive aquatic species through a 48-hour or 96-hour acute toxicity test as reported in the product's Safety Data Sheets. The chemical feed rate shall be such that the effluent concentration of the product is lower than the LC50 toxicity value for sensitive aquatic species as reported in the products Safety Data Sheets. Calculations used to determine the chemical feed rate so that runoff or effluent is not toxic to sensitive aquatic species shall also be included in the SWPPP. Chemicals used for treating stormwater runoff shall be applied in accordance with manufacturer specifications and securely stored on-site within the contractor's staging and storage area if not stored off-site or provided by others. Chemicals shall not be applied directly to any stream.
- If sediment escapes the permitted area, offsite accumulations of sediment that have not reached a stream must be removed at a frequency sufficient to minimize offsite impacts (e.g., fugitive sediment that has escaped the construction site and has collected in a street must be removed so that it is not subsequently washed into storm sewers and streams by the next rain and/or so that it does not pose a safety hazard to users of public streets). Permittees shall not initiate remediation/restoration of a stream without consulting the TDEC first. TNR100000 does not authorize access to private property. Arrangements concerning removal of sediment on adjoining property must be settled by the permittee with the adjoining landowner.
- Sediment should be removed from sediment traps, silt fences, sedimentation ponds, and other sediment controls as recommended in the Tennessee Erosion and Sediment Control Handbook and must be removed when design capacity has been reduced by 50 percent.
- Litter, construction debris, and construction chemicals exposed to storm water shall be picked up prior to anticipated storm events or before being carried offsite by wind (e.g., forecasted by local weather reports), or otherwise prevented from becoming a pollutant source for storm water discharges (e.g., screening outfalls, daily pick-up, etc.). After use, materials used for erosion prevention and sediment control (such as silt fence) should be removed or otherwise prevented from becoming a pollutant source for storm water discharges.

- Erodible material storage areas (including but not limited to overburden and stockpiles of soil etc.) and borrow pits used primarily for the permitted project and which are contiguous to the site are considered a part of the site and shall be identified on the NOI, addressed in the SWPPP and included in the fee calculation.
- Pre-construction vegetative ground cover shall not be destroyed, removed or disturbed more than 14 days prior to grading or earth moving activities unless the area is seeded and/subsequently temporarily or mulched or other temporary cover is permanently stabilized.
- Clearing and grubbing must be held to the minimum necessary for grading and equipment operation. Existing vegetation at the site should be preserved to the maximum extent practicable.
- Construction must be sequenced to minimize the exposure time of graded or denuded areas.
- Construction phasing is recommended on all projects regardless of size as a major practice for minimizing erosion and limiting sedimentation. Construction should be phased to keep the total disturbed area less than 50-acres at any one time. Areas of the completed phase must be stabilized within 14 days. No more than 50-acres of active soil disturbance should be planned at any time during the construction project. This includes offsite borrow or disposal areas that meet the conditions previously listed. However, the MSCAA historically negotiated an exception with TDEC because many MEM projects require more than 50 acres to be disturbed at one time. In the new permit, this exception has become standardized for linear projects, like those at MEM; therefore, the use of this exception has new requirements as shown in the following list. Even with this exception, MSCAA encourages tenants and contractors to make every effort to phase all projects at MEM.
- The 50-acre limitation does not apply to linear construction projects (such as roadway, pipeline, and other infrastructure construction activities at MEM) if the following conditions are met:
 - o Where no one area of active soil disturbance is greater than 50-acres and the various areas of disturbance have distinct receiving waters; or

- o Where contiguous disturbances amount to greater than 50-acres, but no one distinct water is receiving runoff from more than 50 disturbed acres; or
 - o With the MSCAA's written concurrence, where more than 50 acres of disturbance is to occur and where one receiving water will receive runoff from more than 50 acres; or
 - o Where no one area of active soil disturbance is greater than 50-acres and the various areas of disturbance are more than 5 miles apart.
 - o In order for a linear project at MEM to take advantage of the 50-acre rule exemption outlined in this paragraph, the contractor shall conduct monthly site assessments as described in Section 4.3 of this SWPPP until the site is permanently stabilized.
- Erosion prevention and sediment control measures must be in place and functional before earth moving operations begin and must be constructed and maintained throughout the construction period. Temporary measures may be removed at the beginning of the workday but must be replaced at the end of the workday.
- The following records shall be maintained on or near site: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; the dates when stabilization measures are initiated; inspection records and rainfall records. MSCAA maintains daily logbooks with this information; information is collected by the MSCAA contracted inspectors, via Parsons.
- Offsite vehicle tracking of sediments and the generation of dust shall be minimized. A stabilized construction access (a point of entrance/exit to a construction site) shall be described and implemented, as needed, to reduce the tracking of mud and dirt onto public roads by construction vehicles.
- Permittees shall maintain a rain gauge and daily rainfall records at the site or use a reference site for a record of daily amount of precipitation.

3.4.1 General Permit Requirements for Stabilization Practices

The EPSCP shall include a description of interim and post-construction stabilization practices, including site-specific scheduling of the implementation of the practices. Site plans should ensure that existing vegetation is preserved where attainable and that disturbed portions of the site are stabilized. Site plans should comply with buffer zone requirements (for new construction only) for any projects in which construction activities, borrow, and/or fill are prohibited. Stabilization practices may include temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Use of impervious surfaces for final stabilization in lieu of a permanent vegetative cover should be avoided where practicable. No stabilization, erosion control, or sediment treatment measures are to be installed in a stream without obtaining a Section 404 Permit and an Aquatic Resource Alteration Permit, if such permits are required and appropriate.

Stabilization measures shall be initiated as soon as possible in portions of the site where construction activities have temporarily or permanently ceased. Temporary or permanent soil stabilization at the construction site (or a phase of the project) must be completed no later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. In the following situations, temporary stabilization measures are not required:

- Where the initiation of stabilization measures is precluded by snow cover or frozen ground conditions or adverse soggy ground conditions. In this situation, stabilization measures shall be initiated as soon as practicable.
- Where construction activity on a portion of the site is temporarily ceased and earth disturbing activities will be resumed within 14 days.
- Steep slopes (natural or created slope of 35 percent grade or greater) shall be temporarily stabilized no later than 7 days after construction activity on the slope has temporarily or permanently ceased.
- Permanent stabilization with perennial vegetation (using native herbaceous and woody plants where practicable) or other permanently stable, non-eroding surface shall replace

any temporary measures as soon as practicable. Unpacked gravel containing fines (silt and clay sized particles) or crusher runs will not be considered a non-eroding surface.

3.4.2 General Permit Requirements for Structural Practices

The EPSCP shall include a description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and discharge of pollutants from exposed areas of the site. Such practices may include silt fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil-retaining systems, gabions, and temporary or permanent sediment basins. Structural controls shall not be placed in streams or wetlands except as authorized by a Section 404 Permit and/or Aquatic Resource Alteration Permit.

Erosion prevention and sediment control measures must be prepared in accordance with good engineering practices and the latest edition of the Tennessee Erosion and Sediment Control Handbook. In addition, erosion prevention and sediment controls shall be designed to minimize erosion and maximize sediment removal resulting from a 5-year, 24-hour storm due to the receiving stream being water with unavailable parameters (the design storm — see definition in text box to right), as a minimum, either from total rainfall in the designated period or the equivalent intensity. When clay and other fine particle soils or highly erodible soils are present at the construction site, chemical treatment of the stormwater runoff may be necessary to minimize the amount of sediment being discharged. However, the use of cationic polymers for treatment is prohibited.

“5-year design storm depths and intensities” means the estimated design rainfall amounts, for any return period interval (i.e., 2-year, 5-year, 25-year, etc.) in terms of either 24-hour depths or intensities for any duration, can be found by accessing the following NOAA National Weather Service Atlas 14 data for Tennessee: http://hdsc.nws.noaa.gov/hdsc/pfds/orb/tn_pfds.html.

Other data sources may be acceptable with prior written approval by TDEC Water Pollution Control.

For an onsite outfall which receives drainage from 10 or more acres, a minimum sediment basin volume that will provide treatment for a calculated volume of runoff from a 5-year, 24-hour storm and runoff from each acre drained, or equivalent control measures as specified in the Tennessee Erosion and Sediment Control Handbook, shall be provided until final stabilization of the site. A drainage area of 10 acres or more includes both disturbed and undisturbed portions of the site or areas adjacent to the site, all draining through the common outfall. Where an equivalent control measure is substituted for a sediment retention basin, the equivalency must be justified to the division. Runoff from any undisturbed acreage should be

diverted around the disturbed area and the sediment basin. Diverted runoff can be omitted from the volume calculation. Sediment storage expected from the disturbed areas must be included. Discharges from basins and impoundments shall utilize outlet structures that only withdraw water from near the surface of the basin or impoundment, unless infeasible.

All calculations of drainage areas, runoff coefficients and basin volumes must be provided as a part of the EPSCP submittal. The discharge structure from a sediment basin must be designed to retain sediment during the lower flows. Muddy water to be pumped from excavation and work areas must be held in settling basins or filtered or chemically treated prior to its discharge into surface waters. Water must be discharged through a pipe, well-grassed or lined channel, or other equivalent means so that the discharge does not cause erosion and sedimentation. Discharged water must not cause an objectionable color contrast with the receiving stream.

3.5 Storm Water Management

The EPSCP must be developed to ensure that measures have been completed that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. The plan should also consider measures that will be installed during the construction process to control pollutants and any increase in the volume of storm water discharges that will occur after construction operations have been completed. For steep slope sites, the plan will also consider measures that will be installed to dissipate the volume and energy of the storm water runoff to predevelopment levels. This permit only addresses the installation of storm water management measures and not the ultimate operation and maintenance of such structures after the construction activities have been completed, the site has undergone final stabilization, and the permit coverage has been terminated. Permittees are only responsible for the installation and maintenance of storm water management measures prior to final stabilization of the site and are not responsible for maintenance after storm water discharges associated with construction activity have been eliminated from the site. All construction at MEM must comply with the city of Memphis SWMM, available at <https://www.memphistn.gov/government/engineering/roadway-drainage-design/drainage-manual/>, regarding requirements to limit the amount of post-construction runoff in order to minimize in-stream channel erosion in the receiving stream.

Construction storm water runoff management practices may include storm water detention structures (including ponds with a permanent pool); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff onsite; and sequential systems (that combine several practices). Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (no significant changes in the hydrological regime of the receiving water). The EPSCP must include an explanation of the technical basis used to select the practices to control pollution where flows exceed predevelopment levels. The Tennessee Erosion and Sediment Control Handbook provides measures that can be incorporated into the design or implemented onsite to decrease erosive velocities. The link for the handbook can be found at the link below: https://tnepsc.org/TDEC_EandS_Handbook_2012_Edition4/TDEC%20EandS%20Handbook%204th%20Edition.pdf An Aquatic Resources Alteration Permit may be required if such velocity dissipation devices installed would alter the receiving stream and/or its banks.

The following factors must be accounted for in the design of all stormwater controls:

- The nature of stormwater runoff and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features. Stormwater controls must be designed to control stormwater volume, velocity, and peak flow rates to minimize discharges of pollutants in stormwater, as well as minimizing channel and streambank erosion at discharge points.
- The soil type and range of soil particle sizes expected to be present on the site.
- Description of any measures that will be installed during the construction process to control pollutants in stormwater discharges that will occur after construction operations have been completed, including a brief description of applicable State or local erosion and sediment control requirements.

3.6 Other Items Needing Control

The EPSCP must also consider and describe the following other items potentially needing controls at the site:

- No solid materials, including building materials, shall be placed in waters of the state, except as authorized by a Section 404 permit and/or Aquatic Resources Alteration Permit (ARAP). Litter, construction debris and construction chemicals exposed to stormwater shall be picked up prior to storm events or before being carried off the site by wind so that they do not become a pollutant source for stormwater discharges. EPSC materials shall be prevented from becoming a pollutant source for stormwater discharges.
- The SWPPP shall identify and provide the necessary EPSC measures for the installation of any waste disposal system, sanitary sewer or septic system. Contractor must also comply with applicable state and local waste disposal, sanitary sewer or septic system regulations as necessary.
- The SWPPP shall include a description of construction and waste materials expected to be stored on-site. The SWPPP shall also include a description of controls used to reduce pollution from materials stored on site. Controls may include storage practices to minimize exposure of the materials to stormwater or spill prevention and response.

3.7 Best Management Practices

All construction at MEM must comply with the most current TDEC Erosion and Sediment Control Handbook and City of Memphis Storm water Control Manual. See Appendix C for website address. MSCAA encourages implementation of a series of BMPs and recommends that storm water controls be designed to limit the discharge of storm water pollutants offsite to predevelopment levels to the maximum extent practicable (MEP). Due to colloidal clay soils in the Memphis area, sediment removal BMPs may not yield clear storm water.

Additionally, erosion prevention and sediment control measures must be maintained in good and effective operating condition. Maintenance needs identified by inspections or other means shall be addressed before the next storm event, but in no case more than 7 days after the need is identified. The EPSCP must provide maintenance requirements for BMPs. As a reference, the maintenance of typical measures is included in Appendix C.

4.0 INSPECTIONS

Inspections of erosion controls must be performed to ensure proper maintenance and effectiveness of the devices. Initial inspections shall also indicate if all EPSCs have been installed as designed in the submitted SWPPP and EPSC plans; and, if not, measures that need to be taken so those EPSCs meet the design specifications in the field SWPPP and EPSC plans.

4.1 Inspector Training and Certification

Inspectors performing the required twice-weekly inspections must have at least 1 of the following credentials:

- a person with a valid certification from the “Fundamentals of Erosion Prevention and Sediment Control Level I” course,
- a licensed professional engineer or landscape architect,
- a Certified Professional in Erosion and Sediment Control (CPESC), or
- a person who has successfully completed the “Level II Design Principles for Erosion

A copy of the certification or training record for inspector certification must be maintained on the construction site or with our MSCAA staff or construction management team (Parsons).

An integral part of improving water quality at the airport is the training of those requesting coverage under TNR15-0091. To meet this need, MSCAA recommends the *Fundamentals of Erosion Prevention and Sediment Control Level I* course for its contractors. The Level I Fundamentals workshop is a one-day foundation-building course for individuals involved in land-disturbing activities and is intended for contractors, developers, plan preparers, reviewers, designers, engineers, and inspection and enforcement personnel from all levels of government. The fundamentals course aims to build a solid working knowledge of erosion and sedimentation processes and practices. Topics include Construction General Permit and related SWPPP requirements; function, installation, limitations, inspection, and maintenance of BMPs; roles of local officials and state government agencies involved in the permitting process; and basic hydrologic and erosion processes. The Level I Fundamentals workshop provides a Certificate of Completion with 7 hours of Professional Development Hours (PDH) credit upon successful completion of the short Course Certification Exam.

4.2 Schedule of Inspections

Inspections must be performed at least twice every calendar week. Inspections must be performed at least 72 hours apart. Where sites or portions of construction sites have been temporarily stabilized or where runoff is unlikely due to winter conditions (e.g., site covered with snow or ice), or due to extreme drought, such inspection only has to be conducted once per month until thawing or participation results in runoff or construction activity resumes. Inspections requirements do not apply to definable areas that have been finally stabilized. Written notification of the intent to change the inspection frequency and the justification for such request must be submitted to the local Environmental Field Office.

4.3 Inspection Items

- Qualified personnel, as defined in section 5.5.3.10 of the Permit (provided by the permittee or cooperatively by multiple permittees) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, locations where vehicles enter or exit the site, and each outfall.
- Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the site's drainage system. Erosion prevention and sediment control measures shall be observed to ensure that they are operating correctly.
- Outfall points (where discharges leave the site and/or enter waters of the state) shall be inspected to determine whether erosion prevention and sediment control measures are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

4.4 Schedule for Corrections

Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced or modified, or repaired as necessary, before the next rain event if possible, but in no case more than 7 days after the need is identified.

Based on the results of the inspection, the site description and pollution prevention measures identified in the SWPPP shall be revised as appropriate, but in no case later than 7 days following the inspection. Such modifications shall provide for timely implementation of any changes to the SWPPP, but in no case later than 14 days following the inspection.

4.5 Inspection Documentation

All inspections shall be documented on this Construction Stormwater Inspection Certification form. Alternative inspection forms may be used as long as the form contents and the inspection certification language are, at a minimum, equivalent to the division's form and the permittee has obtained a written approval from the division to use the alternative form. The form must contain the printed name and signature of the inspector and the certification must be executed by a person who meets the signatory requirements of the permit. Inspection documentation will be maintained on site and made available to the division upon request. Inspection reports must be submitted to the division within 10 days of the request.

Trained certified inspectors shall complete inspection documentation to the best of their ability. Falsifying inspection records or other documentation or failure to complete inspection documentation shall result in a violation of this permit and any other applicable acts or rules.

4.6 Site Assessment

A site assessment must be conducted at each outfall involving drainage totaling 5 acres or more when discharging to waters with unavailable parameters or Exceptional Tennessee Waters (all MEM stormwater discharges to Exceptional Tennessee Waters). The site assessment must be conducted within 30 days of construction commencing at each portion of the site that drains the qualifying acreage of such portion of the site. The site assessment can take the place of one of the twice-weekly inspections.

The site assessment must be performed by individuals with following qualifications:

- A licensed professional engineer or landscape architect;
- A Certified Professional in Erosion and Sediment Control; or

- A person that has successfully completed the *Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites* course.

The site assessment will be performed to verify the installation, functionality and performance of the erosion protection and sediment control measures described in this Plan. Following the site assessment, a thorough review and update (if applicable) of the SWPPP will be conducted; modifications of plans and specifications for any building or structure, including the design of sediment basins or other sediment controls shall be prepared by a licensed Professional Engineer or landscape architect.

The site assessment findings shall be documented, and the documentation kept with the SWPPP at the site. At a minimum, the documentation shall include information included in the inspection form provided in Appendix B of this permit. The documented site assessments shall indicate if all EPSC(s) have been installed as designed in the submitted SWPPP and EPSC plans. If structural BMPs (or equivalent EPSC measures) are not constructed or not installed per design specifications, follow-up monthly assessment(s) will be required until the BMPs are constructed per the SWPPP. The documentation must contain the printed name and signature of the individual performing the site assessment and the following certification:

“I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16- 702(a)(4), this declaration is made under penalty of perjury.”

The site assessment can take the place of one of the twice-weekly inspections. Additional site assessments may be required if TDEC observes site conditions that have potential of causing pollution to the waters of the state.

5.0 POLLUTION PREVENTION

5.1 Non-Storm Water Discharges

Construction projects at MEM may have some occasional non-storm water discharges that are authorized by the permit. The following non-storm water discharges from active construction sites are authorized by TNR00000 provided the non-storm water component of the discharge is combined with storm water discharges associated with construction activity, identified in the EPSCP with appropriate pollution prevention measures and discharged through stable discharge structures. The estimated volume of the non-storm water component(s) of the discharge must be included in the design of all impacted control measures.

- Dewatering of work areas of collected storm water and ground water (filtering or chemical treatment may be necessary prior to discharge) Additional controls may be needed such as weir tanks, dewatering tanks, gravity bag filters, sand media particulate filters, pressurized bag filters, cartridge filters, or other control units providing the level of treatment necessary to comply with permit requirements;
- Waters used to wash vehicles (of dust and soil, not process materials such as oils, asphalt or concrete) where detergents are not used and detention and/or filtering is provided before the water leaves site;
- Water used to control dust;
- Potable water sources including waterline flushings from which chlorine has been removed to the maximum extent practicable;
- Routine external building washdown that does not use detergents or other chemicals;
- Uncontaminated groundwater or spring water; and
- Foundation or footing drains where flows are not contaminated with pollutants (process materials such as solvents, heavy metals, etc.).

All non-storm water discharges authorized by this permit must be free of sediment or other solids and must not cause erosion of soil or the stream bank, or result in sediment impacts to the receiving stream.

There will be no pumping of any water standing on the outside of the erosion control structures. The water will be allowed to drain down naturally. One or more of the following will be used for dust control at the site:

- Exposing the minimum area possible of erodible earth
- Using water sprinkler trucks
- Using covered haul trucks
- Using dust palliatives or penetration asphalt on haul roads
- Storing construction materials and waste materials at an offsite location

5.1.2 Prohibited Discharges

The following discharges are prohibited:

- Wastewater from washout of concrete, unless managed by an appropriate control
- Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials
- Fuels oils or other potential pollutants used in vehicle and equipment operation and maintenance
- Soaps or solvents used in vehicle and equipment washing

5.2 Description of the Support Areas

All support areas for construction projects at MEM will be included in the site plan. The support areas may be used to stockpile soils and construction debris, park construction equipment, stage construction materials, and house the construction offices of the contractors. In addition, the support areas may also be used to conduct routine maintenance of construction equipment during the project. Using the Memphis-Shelby County BMP Manual at <https://www.memphistn.gov/wp-content/uploads/2020/09/003->

[Volume3_BestManagementPracticesManual.pdf](#) (August 2006), BMPs will be identified for each of the activities at the support areas to reduce the pollution from the support activities.

5.2.1 Soil Stockpiles

Designated stockpile areas and other construction and waste materials to be stored onsite or in support areas will have erosion controls in place to prevent pollution. BMPs will be selected for each area.

5.2.2 Construction Debris

Designated stockpile areas and other construction and waste materials to be stored onsite or in support areas will have erosion controls in place to prevent pollution. No solid materials will be discharged directly into storm water conveyance systems from support areas. BMPs will be selected for each area.

5.2.3 Hauling

Offsite vehicle tracking of sediments will be minimized. Dust control is mandated by MSCAA and frequent sprinkling of traffic areas is required. BMPs will be selected for each area and activity.

5.2.4 Construction Equipment Storage and Maintenance

Construction equipment and contractor vehicles may be stored at the support areas. Inspections for leaking vehicles will be made periodically (weekly) and repairs will be made promptly. Routine maintenance, such as oil changes, filter changes, greasing, and minor repairs may be conducted at support areas. Equipment is to be taken offsite for major repairs. No oil containers or other liquids are stored at the support area. Any spills of oils or other liquids at the support area will be promptly cleaned up and disposed of properly. Fuel stored onsite will be contained in certified fuel tanks equipped with self-contained secondary containment. BMPs will be selected for each area and activity.

5.2.5 Onsite Waste Disposal Systems, Sanitary Sewer, or Septic Systems

Portable restrooms will be used at the support areas for the construction sites. No onsite waste disposal systems, sanitary sewer or septic systems, or other systems requiring sediment controls or any permits are to be installed.

5.2.6 Fertilizer Application

Soil analysis should be performed prior to the application of fertilizer to any portion of the site. Soil analysis shall include soil pH, buffer value, phosphorus, potassium, calcium, magnesium, calculated cation exchange capacity (CEC) and base saturation at a minimum. Soil samples should be representative of the area for which fertilizer will be applied. Soil analysis results shall be used to determine correct fertilizer application rates to prevent the over-application of fertilizer to the site.

6.0 SENSITIVE ENVIRONMENTAL FEATURES

6.1 Wetlands

The only wetlands on MEM are located south of Shelby Drive at the former McKeller Park. There are currently no construction projects planned in the wetland areas. If construction activities are ever planned in the areas south of Shelby Drive, wetland issues will be addressed in detail.

6.2 Threatened and Endangered Species

Threatened, and endangered species that are found throughout Shelby County include the Indiana bat — *Myotis sodalis* (Endangered), bald eagle— *Haliaeetus leucocephalus* (Threatened), wood stork — *Mycteria americana* (Endangered-single bird observed feeding 1988), turgid-blossom pearly mussel — *Epioblasma turgidula* (Endangered), and the Least tern — *Sterna antillarum* (Endangered). However, MEM does not support any of these state- or federally-listed threatened or endangered species or their critical habitat. Should habitat for any of these species be encountered, MSCAA will follow all TDEC requirements and the site plan will be modified to include protective measures acceptable to TDEC, MSCAA, and the contractor(s).

6.3 Total Maximum Daily Loads

The SWPPP must include documentation supporting a determination of permit eligibility with regard to waters that have an approved total maximum daily load (TMDL) for a pollutant of concern, including:

- Identification of whether the discharge is identified, either specifically or generally, in an approved TMDL and any associated allocations, requirements, and assumptions identified for the discharge
- Summaries of consultation with TDEC on consistency of SWPPP conditions with the approved TMDL
- Measures taken to ensure that the discharge of pollutants from the site is consistent with the assumptions and requirements of the approved TMDL, including any specific wasteload allocation that has been established that would apply to the construction storm water discharge

The approved 2010 303(d) list includes TMDLs for pathogens in Hurricane Creek, Days Creek and Nonconnah Creek TN080121100711-2000 (all three are listed as water with unavailable parameters for *Escherichia coli*). No TMDLs for siltation have been developed for these three receiving water bodies, although Nonconnah is listed as water with unavailable parameters for loss of biological integrity due to siltation. Hurricane Creek is listed as water with unavailable parameters for low dissolved oxygen, total phosphorus, and other anthropogenic substrate alterations. All three receiving waters are listed as water with unavailable parameters for total phosphorus and other anthropogenic substrate alterations.

Because there is no current TMDL for any of the receiving streams that would apply construction storm water discharges from MEM, there are no additional requirements at this time.

6.4 Discharges to Water with Unavailable Parameters or Exceptional Tennessee Waters

Discharges that would cause measurable degradation of waters with unavailable parameters or that would cause more than de minimis degradation of Exceptional Tennessee Waters are not authorized by this permit. Because the discharges from MEM flow to receiving streams which are impaired for loss of biological integrity due to siltation, low dissolved oxygen, total phosphorus, and other anthropogenic substrate alterations, the following SWPPP requirements must be met per Section 6.4 of the permit, in addition to the other requirements mentioned throughout this SWPPP:

- SWPPP must certify that EPSC measure used at the site are designed to control stormwater runoff generated by a 5-year, 24-hour storm event
- SWPPP must be prepared by a qualifying by individuals with following qualifications:
 - o A licensed professional engineer or landscape architect;
 - o A Certified Professional in Erosion and Sediment Control; or
 - o A person that has successfully completed the *Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites* course.

For an on-site outfall in a drainage area totaling five or more acres, a minimum sediment basin volume that will provide treatment for a calculated volume of runoff from a 5-year, 24 hour storm and runoff from each acre drained; or equivalent control measures as specified in the

Tennessee Erosion and Sediment Control Handbook, shall be provided until final stabilization of the site. The drainage area includes both disturbed and undisturbed portions of the site and areas adjacent to the site, all draining through a common outfall. Where an equivalent control measure is substituted for a sediment retention basin, the equivalency must be justified in the SWPPP narrative. Runoff from any undisturbed acreage should be diverted around the disturbed area and the sediment basin. Diverted runoff can be omitted from the volume calculation. Sediment storage expected from the disturbed areas must be included and a marker installed signifying when sediment accumulation has reduced the wet storage volume by 50%. In a case that sediment marker is damaged by the volume of water or sediment, a best professional judgement should be used in evaluating sediment basin capacity.

For an on-site outfall in a drainage area totaling 3.5 - 4.9 acres, a minimum sediment trap volume that will provide treatment for a calculated volume of runoff from a 5-year, 24-hour storm and runoff from each acre drained, is recommended until final stabilization of the site. A drainage area of 3.5 - 4.9 acres includes both disturbed and undisturbed portions of the site or areas adjacent to the site, all draining through the common outfall. Runoff from any undisturbed acreage should be diverted around the disturbed area and the sediment trap. Diverted runoff can be omitted from the volume calculation. Sediment storage expected from the disturbed areas must be included and a marker installed signifying when sediment accumulation has reduced the wet storage volume by 50%.

In the event TDEC finds that a discharger is complying with the SWPPP but contributing to the impairment of a receiving stream, the director will notify the discharger in writing that the discharge is no longer eligible for coverage under the general permit. The permittee may update the SWPPP and implement the changes designed to eliminate further impairment of the receiving stream. If the permittee does not implement the SWPPP changes within 7 days of receipt of notification, the permittee will be notified in writing that continued discharges must be covered by an individual permit. To obtain the individual permit, the operator must file an individual permit application. The project must be stabilized until such time as the SWPPP is redeveloped and the individual permit is issued. No earth-disturbing activities, except those necessary for stabilization, are authorized to continue until the individual permit is issued.

6.5 Water Quality Riparian Buffer Zone Requirements for Discharges into Waters With Unavailable Parameters or Exceptional Waters

A 60-foot natural riparian buffer zone adjacent to the receiving stream designated as waters with unavailable parameters shall be preserved, to the maximum extent practicable, during construction activities at the site. All three receiving streams are listed as waters with unavailable parameters for one or more reasons; however, the buffer zone requirement only applies to new construction sites.

For projects that could arise in the future that would be considered new construction, the water quality riparian buffer zone is required to protect waters of the state that are not wet weather conveyances (e.g., perennial and intermittent streams, rivers, lakes, wetlands) located within or immediately adjacent to the boundaries of the project, as identified using methodology from Tennessee's standard operating procedures for hydrologic determinations. Because of heavy sediment load associated with construction site runoff, water quality riparian buffers are not primary sediment control measures and should not be relied on as such. However, the primary purpose of water quality riparian buffers is additional pollutant removal. Stormwater discharges must enter the water quality riparian buffer zone as sheet flow, not as concentrated flow, where site conditions allow. Rehabilitation and enhancement of a natural buffer zone is allowed, if necessary, for improvement of to improve its effectiveness of protection of the waters of the state.

The water quality riparian buffer zone should be established between the top of stream bank and the disturbed construction area. The 60-foot criterion for the width of the buffer zone can be established on an average width basis at a project, as long as the minimum width of the buffer zone is more than 30-feet at any measured location.

Every attempt should be made for construction activities not to take place within the water quality riparian buffer zone and for any existing forested areas to be preserved. Where it is not practicable to maintain a full water quality riparian buffer, BMPs providing equivalent protection to a receiving stream as a natural water quality riparian buffer zone may be used at a construction site. Such equivalent BMPs shall be designed to be as effective in reduction of sediment in storm water runoff as a natural buffer zone. Such equivalent BMPs are expected to be routinely used at construction projects typically located adjacent to surface waters. These

projects include, but are not limited to sewer line construction, roadway construction, utility line or equipment installation, greenway construction, construction of a permanent outfall, or a velocity dissipating structure, etc.

This requirement does not apply to any valid Aquatic Resource Alteration Permits or equivalent permits issued by federal authorities. Memphis and Shelby County have established a 25-foot buffer zone from the top of bank for impoundments, pools, lakes, and wetlands.

7.0 SPILLS AND LEAKS

The discharge of hazardous substances or oil in the storm water discharge(s) from the site will be prevented or minimized. Appendix D includes spill response notification and response resources. TNR10-0000 and TNR15-0091 do not relieve the contractor of the reporting requirements of Title 40 of the Code of Federal Regulations (CFR) Part 117 and 40 CFR 302. Where a release containing a hazardous substance, fuel, or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR 117 or 40 CFR 302 occurs during a 24-hour period:

1. The contractor is required to notify the National Response Center (NRC) ([800] 424-8802) and the Tennessee Emergency Management Agency (emergencies: [800] 262-3300; non-emergencies: [800] 262-3400) in accordance with the requirements of 40 CFR 117 and 40 CFR 302 as soon as he or she has knowledge of the discharge.
2. The contractor shall submit to the TDEC Memphis Field Office, 8383 Wolf Lake Drive, Bartlett, Tennessee, 38133, within 14 calendar days of knowledge of the release a written description of the release (including the type and estimate of the amount of material released), the date that such release occurred, the circumstances leading to the release, what actions were taken to mitigate effects of the release, and steps to be taken to minimize the chance of future occurrences.
3. This SWPPP must be modified within 14 calendar days of knowledge of the release to incorporate a description of the release, the circumstances leading to the release, and the date of the release. In addition, the plan must be reviewed to identify measures to prevent the reoccurrence of such releases and to respond to such releases, and the plan must be modified where appropriate.

Any spills or leaks of oils or other liquids will be promptly cleaned up and disposed properly regardless of their potential to be carried offsite by a storm event.

It should be noted that a reportable quantity of a fuel or other petroleum product is the quantity that will form a visible sheen (e.g., a very small quantity).

MSCAA's Manager of Environmental Services must be kept fully informed in a timely manner of all spills or leaks and the actions taken in response to them.

Airport Spill Response Procedures

The general procedure for cleaning up spills or releases of potential pollutants at the MEM is as follows:

All spills and releases of potential pollutants that might contaminate storm water are to be completely contained upon discovery and the source of the spill is to be identified and halted immediately. The spilled material is to be cleaned up immediately. Personnel involved in the cleanup shall take precautions to protect personal health and safety, as outlined in the Safety Data Sheet (SDS) for the spilled substance. The spilled material and all disposable, contaminated cleanup equipment shall be disposed in the appropriate containers. Non-disposable cleanup equipment shall be thoroughly cleaned, with precautions taken to not spread contamination.

Responsible personnel must be informed of any spills or releases that occur at the facility. It is their responsibility to see that the release reporting requirements, detailed in Appendix D of this SWPPP, are followed, as applicable. Following a spill or release, the responsible personnel also have the responsibility for evaluating whether changes are needed in pollution prevention plans for the construction site and for implementing necessary modifications.

8.0 RISK IDENTIFICATION AND SUMMARY OF POTENTIAL POLLUTANT SOURCES

8.1 Construction Activity

All outfalls will be protected with erosion control devices to prevent sediment from leaving the construction site. Additionally, there will be upstream structural controls, such as ditch blocks, and nonstructural controls, such as sodding, in place.

8.2 Spills and Leaks

Any spills or leaks of oils or other liquids on the construction site will be promptly cleaned up and disposed properly.

Construction site plans will denote the locations of all known underground fuel lines, storage tanks, and other utilities at the site. Previous ruptures of fuel lines have occurred during construction due to unknown, unmarked fuel line and vent pipe locations. Work has been conducted to mark all fuel line locations; however, if construction encounters a suspect stand pipe, possibly denoting the location of a vent pipe for an unmarked underground fuel line, work will stop in the immediate area until the pipe can be investigated and measures taken to ensure that any potential for a spill or leak has been mitigated.

8.3 Soil Stockpiles

Designated stockpile areas and other construction and waste materials to be stored onsite or in support areas will have erosion controls in place to prevent pollution. BMPs will be implemented for each site.

8.4 Construction Debris

Designated stockpile areas and other construction and waste materials to be stored onsite or in support areas will have erosion controls in place to prevent pollution. BMPs will be implemented for each site.

8.5 Hauling

Offsite vehicle tracking of sediments will be minimized. Dust control is mandated by the MSCAA and frequent sprinkling of traffic areas is required. Airport roads, taxiways, ramps, and runways that become tracked with soil or sediment are promptly cleaned with mechanical sweepers. BMPs will be implemented for each site.

8.6 Construction Equipment Storage and Maintenance

Construction equipment and contractor vehicles may be stored at the support areas. Inspections for leaking vehicles will be made periodically (weekly) and repairs will be made promptly. Routine maintenance, such as oil changes, filter changes, greasing, and minor repair may be conducted at support areas. Equipment is to be taken offsite for major repairs. No oil containers or other liquids are to be stored at the support area. Any spills of oils or other liquids at the support area will be promptly cleaned up and disposed of properly. Fuel stored onsite will be contained in certified fuel tanks equipped with self-contained secondary containment. BMPs will be implemented for each site.

8.7 Onsite Waste Disposal

No wastes will be disposed at the construction site or the support area. All wastes will be transported offsite for proper disposal.

9.0 MANAGEMENT OF POST-CONSTRUCTION RUNOFF

Due to the adequacy of the existing storm water management (collection and transport) systems, additional storm water management practices are not necessarily due to the new construction at this site.

The MSCAA and its construction project engineers will review the construction plans for each construction project to assess the necessity for additional storm water management practices related to increased impervious area.

10.0 RECORD KEEPING AND INTERNAL REPORTING PROCEDURES

The contractor responsible for each construction site will keep records of incidents such as spills or other discharges, along with other information describing the quality and quantity of storm water discharges. Records of spills, inspections, and maintenance activities will be maintained with the SWPPP.

MSCAA shall retain copies of the SWPPP and all reports required by this permit and records of all data used to complete the NOI for each construction site to be covered by TNR10-0000 and TNR15-0091, for a period of at least 3 years from the date the NOT is filed. This period may be extended by written request of TDEC.

Each contractor must retain a copy of the SWPPP (which includes TNR10-000 as Appendix B) at the construction site or other local location accessible to TDEC from the date construction commences to the date of final stabilization and submission of the NOT. The contractors with day-to-day operational control over pollution prevention plan implementation shall have a copy of the site plan available at a central location onsite for the use of all contractors and those identified as having responsibilities under the site plan whenever they are on the construction site. Once coverage is terminated, the permittee must maintain a copy of all records for a period of 3 years.

The contractor shall post a notice at the MSCAA Project Center with the following information:

- A copy of the NOC with the NPDES permit tracking number for the construction project;
- Name, company name, e-mail address (if available), telephone number and address of the project site owner/operator or a local contact person;
- A brief description of the project; and
- The location of the SWPPP.

The notice must be maintained in a legible condition. If posting this information near a main entrance is infeasible due to safety concerns, or not accessible to the public, the notice shall be posted in a local public building.

The contractor shall also retain following items/information in an appropriate location onsite:

- A rain gauge;
- A copy of twice-weekly inspection reports;
- A documentation of site assessments; and
- A copy of the site inspector's Fundamentals of Erosion Prevention and Sediment Control Level 1 certification.
- Records of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated

11.0 STORM WATER POLLUTION PREVENTION PLAN ADMINISTRATION

11.1 Signature Requirements

All NOIs shall be signed as follows:

For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a federal agency includes (1) the chief executive officer of the agency, or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of the U.S. Environmental Protection Agency [USEPA]).

Storm water pollution prevention plans, reports, certifications or other information submittals shall be signed by a person described above or by a duly authorized representative of that person.

A person is a duly authorized representative only if:

- The authorization is made in writing by a person described in the previous paragraphs and submitted to TDEC.
- The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, contractor, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).
- If an authorization under this section is no longer accurate because a different contractor has responsibility for the overall operation of the construction site, a new NOI satisfying the requirements of this section must be submitted to the state prior to, or together with, any reports, information, or applications to be signed by an authorized representative.

11.2 Availability, State Review, and Modification of the SWPPP

This SWPPP will be maintained by the contractor at the construction site trailer. A copy of the SWPPP has been submitted to the state for review and approval, as required by TNR10-0000 and TNR15-0091. This SWPPP shall be modified, if required by TDEC.

11.3 Storm Water Pollution Prevention Plan Update

This SWPPP applies to specific construction projects at MEM and will be modified whenever:

- There is a change in the scope of the project that would be expected to have a significant effect on the discharge of pollutants to the waters of the state and that has not otherwise been addressed in the SWPPP.
- Inspections or investigations by site operators, local, state, or federal officials indicate the SWPPP is proving ineffective in eliminating or significantly minimizing pollutants, or is otherwise not achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity.
- Any new operator (typically contractor and/or subcontractor) has been identified as needed to reflect operational or design control that will implement a measure of the SWPPP.
- Measures need to be included to prevent a negative impact to legally protected federal or state-listed fauna or flora (or species proposed for such protection).

Amendments to the SWPPP may be reviewed by the TDEC, the City of Memphis, or an authorized regulatory agency. In the event that a release of a reportable quantity of hazardous substances or oil occurs, this SWPPP will be reviewed. The review will identify measures to prevent the recurrence of such releases, and the SWPPP will be modified where appropriate to include these measures. In accordance with state regulations, all revisions and/or modifications to the SWPPP will be reviewed and certified by an official of MSCAA who meets the signatory requirements as previously described.



Memphis-Shelby County Airport Authority COMPREHENSIVE STORM WATER POLLUTION PREVENTION PLAN

**For Contractors Performing
Construction Activities at the
Memphis International Airport
Under Permits TNR10-0000 and TNR15-0091**

Comprehensive Storm Water Pollution Prevention Plan

Appendix A: Figures

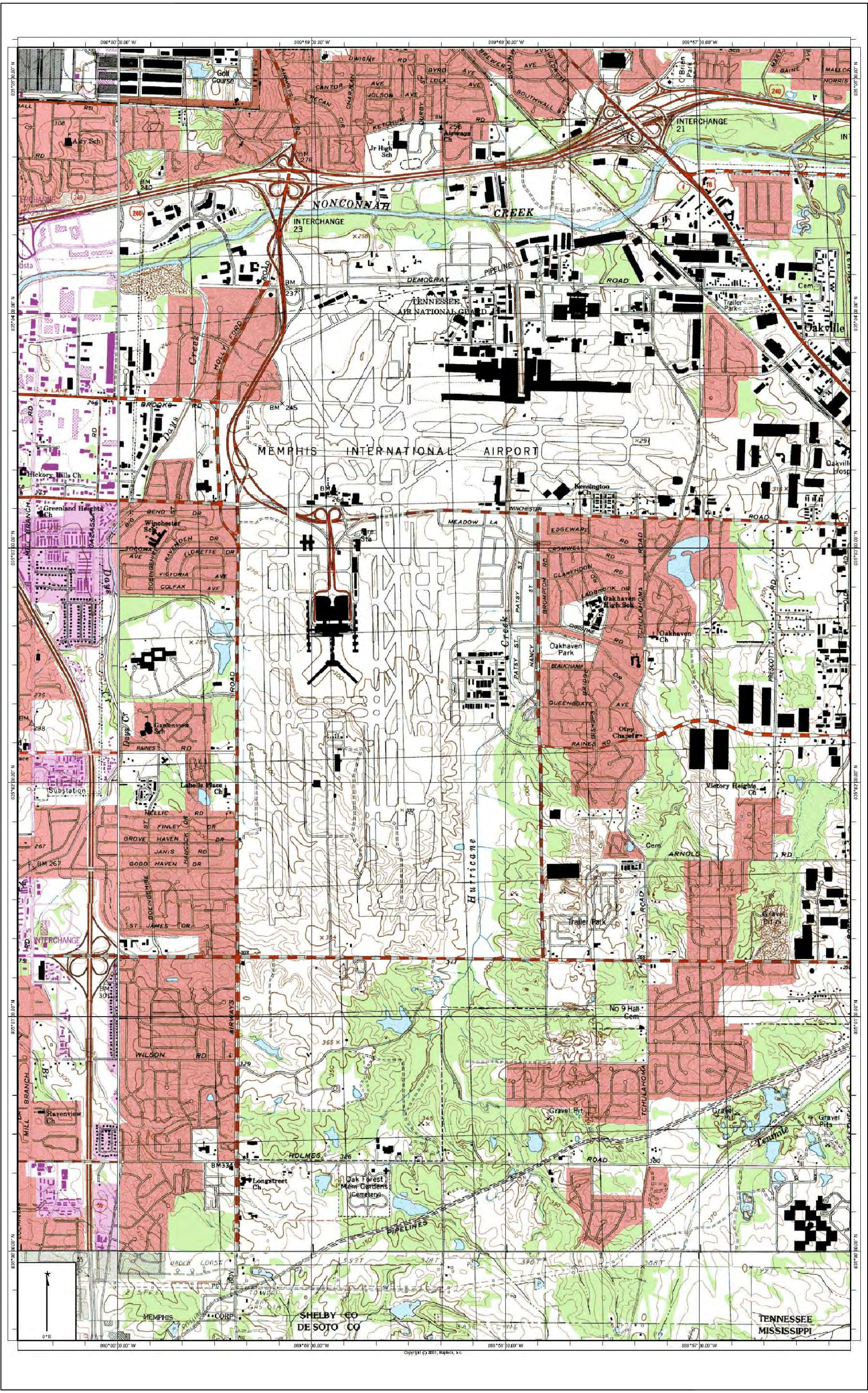
Appendix B: Permit and Forms

Appendix C: Best Management Practices

Appendix D: Spill Response Notification

Appendix E: Site Specific Information

**Version 5
June 2022**

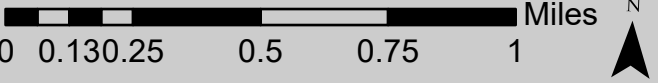




Legend

 MEM Owned Property

MEM 2019 Aerial





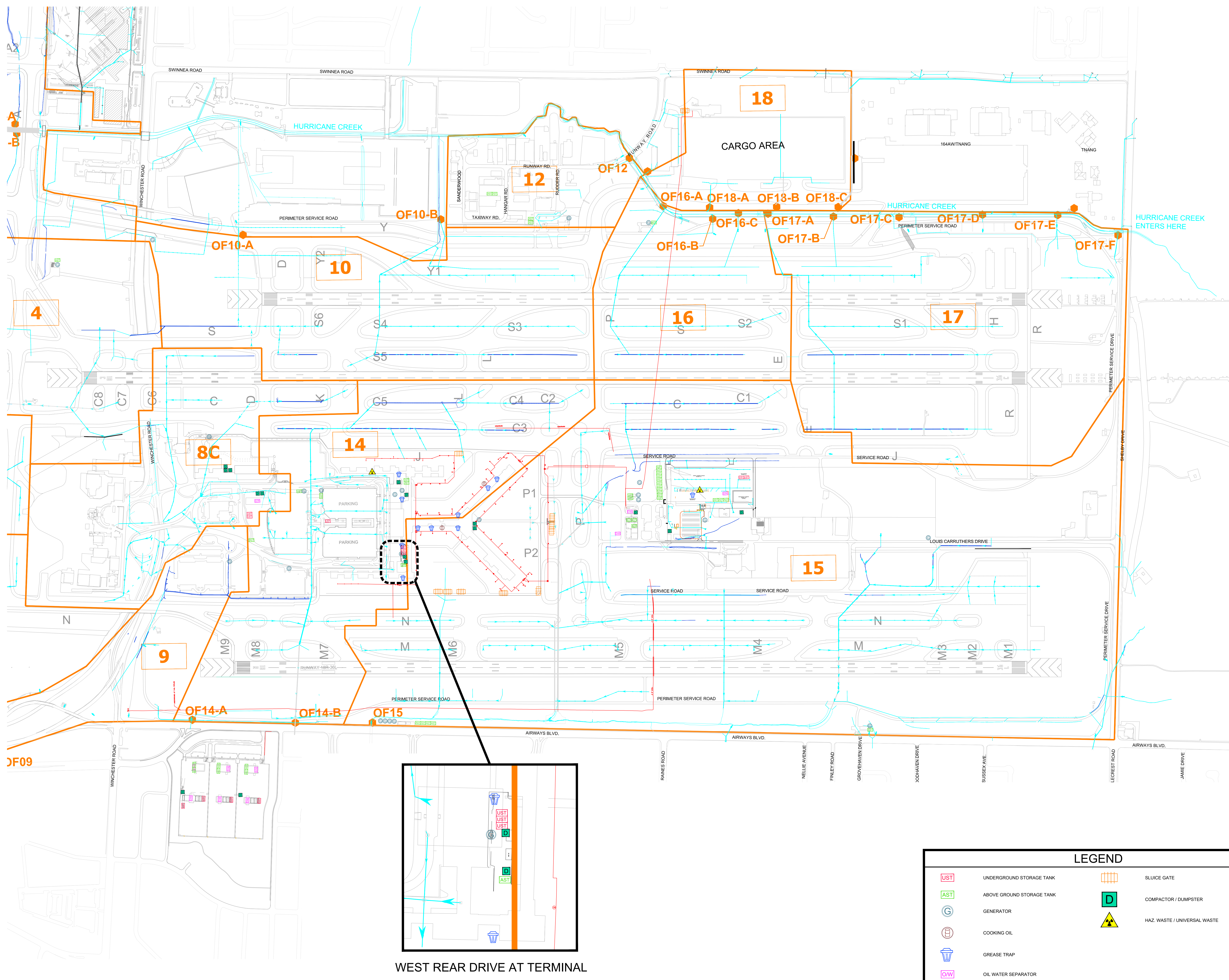
REVISIONS		
MARK	DATE	DESCRIPTION

WSPCA PROJ. NO. **NOT ASSIGNED**

PROJECT: **SWPP AND SPCC MAP**

SHEET TITLE: **FIGURE 3 AIRPORT AEA**

WSPCA FILE NAME: 2020 SWPP - Figure 3-new
REQUESTED BY: DEVILM DRAWN BY: CS
DATE: 7/10/20 SHEET NO. **1**
SCALE: 1" = 600'



TAKE OFF WITH US

Memphis

INTERNATIONAL AIRPORT

REVISIONS	
MARK	DESCRIPTION

MSCAA PROJ. NO. **NOT ASSIGNED**

PROJECT: **MEMPHIS INTERNATIONAL AIRPORT**

SHEET TITLE: **FIGURE 4 DRAINAGE BASINS AND POTENTIAL POLLUTANT SOURCES**

WMA FILE NAME: 2020 SWPP - Figure 4 2022
REQUESTED BY: DEVLIN & HE
DATE: 6/8/21
SCALE: 1" = 400'

DRAWN BY: CS
SHEET NO.: **4**



Memphis-Shelby County Airport Authority COMPREHENSIVE STORM WATER POLLUTION PREVENTION PLAN

**For Contractors Performing
Construction Activities at the
Memphis International Airport
Under Permits TNR10-0000 and TNR15-0091**

Comprehensive Storm Water Pollution Prevention Plan

Appendix A: Figures

Appendix B: Permit and Forms

Appendix C: Best Management Practices

Appendix D: Spill Response Notification

**Version 5
June 2022**



National Pollutant Discharge Elimination System (NPDES)

General Permit for Discharges of Stormwater Associated with Construction Activities

Permit Number TNR100000

Issued by
**Department of Environment and Conservation
Division of Water Resources
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102**

Under authority of the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.) and the authorization by the United States Environmental Protection Agency under the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (33 U.S.C. 1251, et seq.) and the Water Quality Act of 1987, P.L. 100-4, including special requirements as provided in Subpart 6.4 of this general permit, operators of point source discharges of stormwater associated with construction activities into waters of the State of Tennessee, are authorized to discharge stormwater associated with construction activities in accordance with the following permit monitoring and reporting requirements, effluent limitations, and other provisions as set forth in parts 1 through 10 herein, from the subject outfalls to waters of the State of Tennessee.

This permit is issued on: **September 27, 2021**

This permit is effective on: **October 1, 2021**

This permit expires on: **September 30, 2026**

for Jennifer Dodd
Director

Tennessee General Permit No. TNR100000
Stormwater Discharges Associated with Construction Activities

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APPENDIX C – INSPECTION REPORT FORM



PART 1

1. COVERAGE UNDER THIS GENERAL PERMIT

1.1. PERMIT AREA

The construction general permit (CGP) covers all areas of the State of Tennessee.

1.2. DISCHARGES COVERED BY THIS PERMIT

1.2.1. Stormwater Discharges Associated with Construction Activities

Discharge of stormwater associated with construction activity, as used in this permit, refers to stormwater point source discharges from areas where soil disturbing activities, or associated construction support activities (see Section 1.2.2) are located. Soil disturbing activities include but are not limited to clearing, grading, grubbing, filling and excavation.

This permit authorizes stormwater point source discharges from construction activities that result in soil disturbances of one or more acres. Soil disturbances of less than one acre are required to obtain authorization under this permit if construction activities are part of a larger common plan of development or sale that comprises at least one acre of cumulative land disturbance. One or more site operators must maintain coverage under this permit for all portions of a site that have not been permanently stabilized.

Projects of less than one acre of total land disturbance require authorization under this permit if:

- a) the director has determined that the stormwater discharge from a site is causing, contributing to, or is likely to contribute to a violation of a state water quality standard;
- b) the director has determined that the stormwater discharge is, or is likely to be a significant contributor of pollutants to waters of the state¹; or
- c) changes in state or federal rules require sites of less than one acre that are not part of a larger common plan of development or sale to obtain a stormwater discharge permit.

¹ *"Significant contributor of pollutants to waters of the state"* means any discharge containing pollutants that are reasonably expected to cause or contribute to a violation of a water quality criteria or receiving stream designated uses.



1.2.2. Stormwater Discharges Associated with Construction Support Activities

This permit also authorizes stormwater discharges from support activities associated with a permitted construction activity. Support activities may include concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas and borrow areas. Support activities are authorized provided all of the following conditions are met:

- a) The support activity is related to a construction activity that is covered under this general permit.
- b) The operator of the support activity is the same as the operator of the construction activity.
- c) The support activity is not a commercial operation serving multiple unrelated construction projects by different operators.
- d) The support activity does not operate beyond the completion of the construction activity of the last construction project it supports.
- e) Support activities are identified in the Notice of Intent (NOI) and the Stormwater Pollution Prevention Plan (SWPPP). The appropriate erosion prevention and sediment controls and measures applicable to the support activity shall be described in a site-wide SWPPP covering all discharges from the support activity areas.

This permit does not authorize any process (dry weather) wastewater discharges from support activities. Process (dry weather) wastewater discharges from support activities must be authorized by an individual permit or other appropriate general permit.

TDOT projects shall be addressed in the *Waste and Borrow Policy*. Stormwater discharges associated with support activities that have been issued a separate individual permit or an alternative general permit are not authorized by this general permit.

1.2.3. Non-Stormwater Discharges Authorized by this Permit

The following non-stormwater discharges from site-wide SWPPP areas of permitted construction activities are authorized by this permit provided the non-stormwater component of the discharge is in compliance with Subsection 5.5.3.12:

- a) Dewatering of collected stormwater and groundwater, discharged in accordance with section 4.1.3.



- b) Waters used to wash dust and soils from vehicles where detergents are not used and detention and/or filtering is provided before the water leaves site. Wash removal of process materials such as oil, asphalt or concrete is not authorized.
- c) Water used to control dust in accordance with Section 5.5.3.7.
- d) Potable water sources, including waterline flushings, from which chlorine has been removed to the maximum extent practicable.
- e) Routine external building washdown that does not use detergents or other chemicals.
- f) Uncontaminated, non-turbid groundwater or spring water.
- g) Foundation or footing drains where flows are not contaminated with pollutants (e.g., lubricants and fluids from mechanized equipment, process materials such as solvents, heavy metals, etc.).
- h) Discharges from emergency fire-fighting activities.
 - i) Fire hydrant flushings.
 - j) Landscape irrigation.
- k) Pavement wash waters, provided spills or leaks of toxic or hazardous substances have not occurred (unless all spill material has been removed) and where soaps, solvents, and detergents are not used.
- l) Uncontaminated air conditioning or compressor condensate.

All non-stormwater discharges authorized by this permit must be free of sediment and other solids, must not cause erosion of soils, and must not result in sediment or erosion impacts to receiving streams.

1.2.4. Other NPDES-Permitted Discharges

Discharges of stormwater or wastewater authorized by and in compliance with a different NPDES permit may be mixed with discharges authorized by this permit.

1.3. LIMITATIONS ON COVERAGE

Except for discharges from support activities, as described in Section 1.2.2 and non-stormwater discharges listed in Section 1.2.3, all discharges covered by this permit shall be composed entirely of stormwater. This permit does not authorize the following discharges:

- a) Post-construction discharges - Stormwater discharges associated with permanent stormwater management structures after construction



activities have been completed, the site has undergone permanent stabilization and the coverage under this permit has been terminated.

- b) Discharges mixed with non-stormwater - Discharges that are mixed with sources of non-stormwater, other than discharges which are identified in Section 1.2.4 and in compliance with Subsection 5.5.3.12 of this permit.
- c) Discharges covered by another permit - Discharges associated with construction activities that have been issued an individual permit in accordance with Subpart 8.11.
- d) Discharges threatening water quality - Discharges from construction sites that the director determines will cause or has the reasonable potential to cause or contribute to violations of water quality standards. Where such a determination has been made, the division will notify the discharger in writing that an individual permit application is necessary as described in Subpart 8.11. The division may authorize coverage under this permit after appropriate controls and implementation procedures have been included in the SWPPP that are designed to bring the discharge into compliance with water quality standards.
- e) Discharges into waters with unavailable parameters - Discharges to waters with unavailable parameters that would cause measurable degradation of water quality for the parameter that is unavailable; or that would cause additional loadings of unavailable parameters that are bioaccumulative or that have criteria below method detection levels. Waters with unavailable parameters means any segment of surface waters that has been identified by the division as failing to support its designated classified uses. A discharge that complies with the additional requirements set forth in Subpart 6.4 is not considered to cause measurable degradation of waters with unavailable parameters, unless the division determines upon review of the SWPPP that there is a reason to limit coverage as set forth in Subpart 1.3(d) and the SWPPP cannot be modified to bring the site into compliance.
- f) Discharges into Outstanding National Resource Waters - Discharges into waters that are designated by the Water Quality Control Board as Outstanding National Resource Waters (ONRW) pursuant to Tennessee Rules, Chapter 0400-40-03-.06(5), except activities conducted by, or on behalf of, the National Park Service on its own lands.
- g) Discharges into Exceptional Tennessee Waters - Discharges that would cause more than de minimis DE MINIMIS degradation of water quality for any available parameter in waters designated by TDEC as Exceptional Tennessee Waters. A discharge that complies with the additional requirements set forth in Subpart 6.4 is not considered to cause more than de minimis degradation of available parameters unless the division determines upon review of the SWPPP that there is a reason to limit



coverage as set forth in Subpart 1.3(d)) and the SWPPP cannot be modified to bring the site into compliance.

- h) Discharges not protective of aquatic or semi-aquatic threatened and endangered species, species deemed in need of management or special concern species - Discharges or discharge-related activities that are likely to jeopardize the continued existence of listed or proposed threatened or endangered aquatic species, or their critical habitat, under the Endangered Species Act (ESA), or other applicable state law or rule.

Discharges or conducting discharge-related activities that will cause a prohibited "take" of federally listed aquatic species (as defined under Section 3 of the ESA and 50 CFR §17.3) unless such take is authorized under Sections 7 or 10 of the ESA.

Discharges or conducting discharge-related activities that will cause a prohibited "take" of state listed aquatic species², unless such take is authorized under the provisions of T.C.A. § 70-8-106(e).

- i) Discharges from a new or proposed mining operation - Discharges from new or proposed mining operations are not authorized.
- j) Discharges into waters with an approved Total Maximum Daily Load - Discharges of a pollutant to waters for which there is an EPA-approved or established total maximum daily load (TMDL) for that pollutant, unless the SWPPP incorporates measures or controls consistent with the assumptions and requirements of the TMDL.

Any discharge of stormwater or other fluids to groundwater via an improved sinkhole or injection well requires a Class V Underground Injection Control authorization by rule, or an individual permit under the provisions of Tennessee Rules, Chapter 0400-45-06.

1.4. OBTAINING PERMIT COVERAGE

A complete NOI, Stormwater Pollution Prevention Plan (SWPPP) and application fee³ are required to obtain coverage under this general permit. **Submitting for coverage under this permit means that an applicant has examined a copy of**

² As defined in the Tennessee Wildlife Resources Commission Proclamation, Endangered or Threatened Aquatic Species, and in the Tennessee Wildlife Resources Commission Proclamation, Wildlife in Need of Management.

³ Any reference to an "*application*" in this permit should be considered equivalent to the phrase "*complete NOI, SWPPP and application fee*"



this permit and thereby acknowledged the applicant's claim of ability to comply with permit terms and conditions.

1.4.1. Notice of Intent (NOI)

Operators wishing to obtain coverage under this permit must submit a complete NOI in accordance with Part 3, using the NOI form provided in Appendix A of this permit. Electronic submittal is encouraged (see NPDES Electronic Reporting for more information). The division may review NOIs and SWPPPs for completeness and accuracy and, when deemed necessary, investigate the proposed project for potential impacts to the waters of the state. Absent extraordinary circumstances, NOCs should be issued within 30 days of NOI submittal, unless the division has responded to the operator within that time requesting additional information. Permittees must obtain all required local authorizations related to stormwater management (see Section 1.4.4).

1.4.2. Stormwater Pollution Prevention Plan (SWPPP)

Operators wishing to obtain coverage under this permit must submit a site-specific SWPPP with the NOI, or sign and certify an existing site-specific SWPPP. The SWPPP shall address all of the operators' construction-related activities from the date construction commences to the date of termination of permit coverage, to the maximum extent practicable. The SWPPP must address the total acreage planned to be disturbed, including any associated construction support activities (see Section 1.2.2). The SWPPP must be developed, implemented and updated according to the requirements in Part 5 and Section 6.4.1. The SWPPP must be implemented prior to commencement of construction activities.

Preparation and implementation of the SWPPP may be a cooperative effort with all operators at a site. New operators with design and operational control of their portion of the construction site are expected to adopt, modify, update and implement their portion of the SWPPP. Alternatively, permittees at the site may develop and submit a SWPPP addressing only their portion of the project, as long as the proposed Best Management Practices (BMPs) are compatible with the previously submitted SWPPPs, as updated, and complying with conditions of this general permit.

SWPPPs must be updated or addended if site activities diverge significantly from those indicated in the initial SWPPP. A copy of the most recent version of the SWPPP must be available at the site.



Site operators who are building single family residences on at-grade lots (see Section 2.1.2) and who are submitting an application for coverage under this permit, may complete and submit Form CN-1249, the Stormwater Pollution Prevention Plan (SWPPP) for Single Family Residential Homebuilding Sites. This SWPPP template is available on our website at:

http://tdec.tn.gov/etdec/DownloadFile.aspx?row_id=CN-1249.

Form CN-1249 is not appropriate if significant grading of the lot or lots is necessary.

1.4.3. Permit Application Fee

The permit application fee should accompany the applicant's NOI form. The fee is based on the total acreage planned to be disturbed by an entire construction project for which the applicant is requesting coverage, including any associated construction support activities (see Section 1.2.2). The applicant may present documentation of areas in the project that will not be subject to disturbance at any time during the life of the project and have these areas excluded from the fee calculation.

The application fees shall be as specified in Tennessee Rules, Chapter 0400-40-11. The application will be deemed incomplete until the appropriate application fee is paid in full. Checks for the appropriate fee should be made payable to "Treasurer, State of Tennessee." Electronic payment methods, if made available by the State of Tennessee, are acceptable and are encouraged. The following conditions apply:

- a) If stormwater discharges from the site or acreage to be disturbed was previously authorized by a CGP, but coverage has been since terminated, a primary operator must submit a new application for coverage under the CGP.
- b) A new primary operator seeking subsequent coverage under an actively permitted activity must submit the subsequent coverage fee to obtain coverage under an active NOC.
- c) Acreage additions up to 10% of the original plan area, but not to exceed a total of 5 acres, and other minor modifications of the original plan do not require separate NOI submittal. These minor additions require submittal of a plan indicating the additional area(s) of disturbance, the total acreage to be disturbed, and the updated SWPPP. The permittee is responsible for thoroughly and accurately identifying all waterbodies (including wetlands and streams) located on the added acreage and to provide a determination of the water's status if not previously provided. An additional fee and



updated NOI are required only if the total acreage of disturbance would require a higher fee than originally paid, and then only the difference is due. New acreage disturbances cannot be added as previously disturbed acreage is stabilized, to create a 'rolling' total of disturbance. Iterative changes that would create cumulative impact exceeding 10% of the original plan area, or a total of 5 acres require submittal of updated NOI and SWPPP to the division.

- d) In addition to the application fee, an annual maintenance fee applies per Tennessee Rules, Chapter 0400-40-11-.02(12)(i).

1.4.4. Submittal of Documents to Local Municipalities

Some permittees may discharge stormwater through an NPDES-permitted municipal separate storm sewer system (MS4) who are not exempted in Section 1.4.5. These permittees are encouraged to coordinate with the local MS4 authority prior to submitting an NOI to the division. Permitting status of all permittees covered, or previously covered, under this general permit as well as the most current list of all MS4 permits is available at:

<http://tn.gov/environment/article/tdec-dataviewers>.

Permittees must obtain all necessary authorizations pursuant to provisions of any local ordinances that apply to construction activities, and permittees are expected to comply with any additional erosion prevention, sediment control, and construction stormwater management measures required by a local municipality, county or permitted MS4 program.

1.4.5. Permit Coverage Through a Qualifying Local Program (QLP)

Coverage equivalent to coverage under this general permit may be obtained from a qualifying local erosion prevention and sediment control MS4 program. A Qualifying Local Program (QLP) is a municipal stormwater program implemented for stormwater discharges associated with construction activity that has been formally approved by the division. More information about Tennessee's QLP program and MS4 participants can be found at:

<https://www.tn.gov/environment/permit-permits/water-permits1/npdes-permits1/npdes-stormwater-permitting-program/tennessee-qualifying-local-program.html>.

If a construction site is within the jurisdiction of, and has obtained a notice of coverage from, a QLP, the operator is authorized to discharge stormwater associated with construction activity under this general permit without the submittal of an application to the division. Permitting of stormwater runoff from



construction sites from federal or state agencies (e.g., Tennessee Department of Transportation and Tennessee Valley Authority) and the local MS4 program itself will remain solely under the authority of TDEC.

The division may require any operator located within the jurisdiction of a QLP to obtain permit coverage directly from the division. The operator shall be notified in writing by the division that coverage by the QLP is no longer applicable and how to obtain coverage under this permit.

1.5. NOTICE OF COVERAGE

1.5.1. Permit Tracking Numbers

Construction activities covered under this permit will be assigned permit tracking numbers in the sequence TNR100001, TNR100002, etc. Permit tracking numbers assigned under a previous construction general permit will be retained. An operator applying for new permit coverage will be assigned a new permit tracking number. Assigning a permit tracking number by the division to a proposed discharge from a construction activity does not confirm or imply an authorization to discharge under this permit. Operators receiving new permit coverage will be listed as active on the TDEC Dataviewer.

1.5.2. Notice of Coverage (NOC)

The NOC is a notice from the division to the primary permittee informing them that the NOI, the SWPPP, and the application fee were received and accepted. The primary permittee is authorized to discharge stormwater associated with construction activity as of the effective date listed on the NOC.

For new operators seeking subsequent coverage under an existing tracking number, the division will not issue a NOC. New operators that notify the division to be added to an existing coverage are covered upon receipt of notification of permit coverage by the division. The permit record reflecting the additional operator will be published on TDEC's DataViewer in the next update.

The division reserves the right to deny coverage to artificial entities (e.g., corporations or partnerships, excluding entities not required to register with the Tennessee Secretary of State) that are not properly registered and in good standing (i.e., listed with an entity status of "active") with the Tennessee Secretary of State, Division of Business Services. The division also reserves the right to issue permit coverage in the correct legal name of the individual or entity seeking



coverage, including each general partner of a general partnership in addition to the general partnership.

Alterations to channels or waterbodies (see definition of streams) that are contained on, traverse through or are adjacent to the construction site are not authorized by this permit. Such alterations may require an Aquatic Resources Alteration Permit (ARAP): <https://www.tn.gov/environment/permit-permits/water-permits1/aquatic-resource-alteration-permit--arap-.html>.

It is the responsibility of the applicant to thoroughly and accurately identify all waterbodies (see definition of streams) located on the site and to provide a determination of the water's status.

For channels, this determination must be conducted in accordance with Tennessee's standard operating procedures for hydrologic determinations set forth at Tennessee Rules, Chapter 0400-40-03.05(9). Wetlands determinations must include the submission of a wetland delineation completed utilizing the USACOE 1987 *Wetlands Delineation Manual* and applicable *Regional Supplement*. For the purposes of permitting, the permittee may choose to provide all aquatic features located on the site the protections afforded to streams and wetlands in lieu of conducting hydrologic determinations. ARAPs are independent requirements from CGP coverage and complete applications for ARAPs shall precede NOI submittal. The division reserves the right to delay or withhold issuance of coverage under the CGP in some cases until the appropriate ARAP coverage has been obtained.

The treatment and disposal of wastewater (e.g., sanitary, commercial or industrial wastewater) generated during and after the construction must be also addressed prior to issuance of the NOC. The NOC may be delayed until adequate wastewater treatment is identified and accompanying disposal permits are issued.



PART 2

2. CONSTRUCTION SITE OPERATORS

2.1. TYPES OF OPERATORS

2.1.1. Owner/Developer

An owner or developer of a project is a primary permittee. This person has operational or design control over construction plans and specifications, including the ability to make modifications to those plans and specifications. This person may include, but is not limited to, a developer, landowner, realtor, commercial builder, homebuilder, utility company, etc. This person may be an individual, a corporate entity, or a governmental entity. An owner's or developer's responsibility to comply with requirements of this permit extends until permit coverage is terminated in accordance with requirements of Part 9.

The site-wide permittee is the first primary permittee to apply for coverage for a construction activity. There may be other primary permittees for a project, but there is only one site-wide permittee. Where there are multiple operators associated with the same project, all operators are required to obtain permit coverage. Once covered by a permit, each operator is responsible for complying with the permit. Permittees are jointly and severally liable for a violation related to construction activities that affect the same project site, unless a permittee affirmatively demonstrates to the satisfaction of the Department that its own action, or failure to act, was not a cause of the violation.

2.1.2. Commercial Builders

A commercial builder can be a primary or secondary permittee at a construction site.

A commercial builder who purchases one or more lots from a primary permittee for the purpose of constructing and selling a structure⁴ and has design or operational control over construction plans and specifications for that portion of

⁴ e.g., residential house, non-residential structure, commercial building, industrial facility, etc.



the site, or is hired by an end user, such as a lot owner who may not be a permittee, must obtain coverage in one of the following ways:

- a) The site-wide permittee may transfer coverage to the commercial builder, for the entire site or just the acreage/lots the builder has purchased;
- b) The commercial builder may submit a new NOI for the acreage purchased, following requirements in Section 3.1.4; or
- c) The commercial builder may be hired by the primary permittee or a lot owner to build a structure, and by mutual agreement build on the site under the existing coverage of the site-wide permittee. In this case, the commercial builder signs the primary permittee's NOI and SWPPP as a contractor (see Section 2.1.3) and is considered a secondary permittee.

2.1.3. Contractors

A contractor is considered a secondary permittee. This person has day-to-day operational control of the activities necessary to ensure compliance with the SWPPP or other permit conditions (e.g., the contractor is authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions). A contractor may be:

- a general contractor
- a grading contractor
- an erosion control contractor
- a sub-contractor responsible for land disturbing activities or erosion prevention and sediment control (EPSC) implementation and maintenance
- a commercial builder hired by the primary permittee.

The contractor may need to include in their contract with the party that hired them specific details for the contractor's responsibilities concerning EPSC measures. This includes the ability of the contractor to make EPSC modifications. The contractor shall sign the primary permittee's NOI and SWPPP associated with the construction project at which they will be an operator (insofar as possible), or submit a separate NOI to the division indicating their intent to be added to the existing activity coverage as an operator.

2.2. RESPONSIBILITIES OF OPERATORS

A permittee may meet one or more of the operational control components in the definition of "operator" found in Subpart 2.1. Either Section 2.2.1 or 2.2.2, or both, will apply depending on the type of operational control exerted by an individual permittee.



2.2.1. Permittees with Design Control

Permittees with operational control over construction plans and specifications at the construction site, including the ability to make modifications to those plans and specifications, must ensure that:

- a) the project specifications meet the minimum requirements of Part 5 (SWPPP) and all other applicable conditions;
- b) the SWPPP indicates the areas of the project where they have operational control;
- c) all other permittees implementing and maintaining portions of the SWPPP impacted by any changes made to the plan are notified of such modifications in a timely manner;
- d) all common BMPs (i.e., sediment treatment basin and drainage structures) necessary for the prevention of erosion or control of sediment are maintained and effective until all construction is complete and all disturbed areas in the entire project are stabilized, unless permit coverage has been obtained and responsibility has been taken over by a new primary permittee; and
- e) all operators on the site have permit coverage, if required.

If parties with day-to-day operational control of the construction site have not been identified at the time the site-wide SWPPP is initially developed, the permittee with operational control shall be considered to be the responsible person until an NOI is submitted identifying the new operators (see Section 3.1.4). These new operators (e.g., general contractor, utilities contractors, sub-contractors, erosion control contractors, hired commercial builders) are considered secondary permittees. The SWPPP must be updated to reflect the addition of new operators.

2.2.2. Permittees with Day-to-Day Operational Control

Permittees with day-to-day operational control of the activities necessary to ensure compliance with the SWPPP or other permit conditions must ensure that:

- a) the SWPPP for portions of the project where they are operators meets the requirements of Part 5 and identifies the parties responsible for implementing the control measures identified in the plan;
- b) the SWPPP indicates areas of the project where they have operational control over day-to-day activities; and



- c) measures in the SWPPP are adequate to prevent soil erosion and control any sediment that may result from their earth disturbing activity.

Permittees with operational control over only a portion of a larger construction project are responsible for compliance with all applicable terms and conditions of this permit as it relates to their activities on their portion of the construction site. This includes, but is not limited to, implementation of Best Management Practices (BMPs) and other controls required by the SWPPP. Permittees shall ensure either directly or through coordination with other permittees, that their activities do not render another person's pollution control ineffective. All permittees must implement their portions of the SWPPP.



PART 3

3. NOTICE OF INTENT (NOI) REQUIREMENTS

3.1. NOI SUBMITTAL

3.1.1. Who Must Submit an NOI?

All operators must submit an NOI form. For the purpose of this permit and in the context of stormwater associated with construction activity, an “operator” means any person associated with a construction project who meets either or both of the following two criteria:

- a) The person has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications. This person is considered the primary permittee and is typically:
 - the owner or developer of the project,
 - the owner or developer of a portion of the project (e.g., subsequent builder), or
 - the person who is the current owner of the construction site.
- b) The person has day-to-day operational control of the activities necessary to ensure compliance with the SWPPP or other permit conditions. This person is typically a contractor, or a commercial builder hired by the primary permittee, and is considered a secondary permittee.

3.1.2. Existing Sites

An operator presently permitted under the 2016 construction general permit shall be granted coverage under this new general permit. Coverage will be extended automatically without notification to the division or an additional fee being assessed. The existing SWPPP shall be modified according to the Section 5.3.1 of this permit.

If an operator does not wish to be continued under the new general permit, they may terminate coverage (Section 9.1). If a site with terminated coverage is unstable or if construction continues, a new NOI, SWPPP and application fee must be submitted.

3.1.3. New Sites or New Phases of Existing Sites

Except as provided in Section 3.1.4, operators must submit a complete NOI, SWPPP and an application fee in accordance with the requirements described



in Subpart 1.4. The complete application should be submitted at least 30 days prior to commencement of construction activities. The permittee is authorized to discharge stormwater associated with construction activity as of the effective date listed on the NOC or the TDEC DataViewer. The land disturbing activities shall not start until the NOC is received by the applicant according to Subpart 1.5.

3.1.4. New Operators

New operators proposing to conduct construction activities at a site with existing coverage must submit an NOI. The NOI should be submitted prior to the new operator commencing work at the site. The NOI must reference the project name and tracking number assigned to the primary permittee's NOI. The NOI may not need to be submitted immediately upon assuming operational control if the portion of the site controlled by the new operator is inactive and all the previously disturbed areas are permanently stabilized.

A new operator working as a residential home builder may submit Form CN-1249, the Stormwater Pollution Prevention Plan (SWPPP) for Single Family Residential Homebuilding Sites. This form may be found at:
http://tdec.tn.gov/etdec/DownloadFile.aspx?row_id=CN-1249.

If the primary permittee's company name has changed (but not the site ownership or authorized signators), an updated NOI should be submitted to the division within 30 days of the name change, along with documentation that the name change has been properly registered with the Tennessee Secretary of State, Division of Business Services. If the new operator agrees to comply with an existing site-wide SWPPP already implemented at the site, a copy of the SWPPP does not have to be submitted with the NOI.

If the transfer of ownership is due to foreclosure or a permittee filing for bankruptcy proceedings, the new owner (e.g., a lending institution) must obtain permit coverage if the construction activity is inactive but soil is not stabilized sufficiently. If the property is sufficiently stabilized permit coverage may not be necessary, unless and until construction activity at the site resumes.

3.1.5. Late NOIs

Dischargers are not prohibited from submitting NOIs after construction at their site has already begun. When a late NOI is submitted, and if the division authorizes coverage under this permit, such authorization is only for future discharges. Any prior, unpermitted, discharges or permit noncompliances are subject to penalties as described in Section 8.1.2.



3.1.6. Who Must Sign the NOI?

All construction site operators as defined in Subpart 2.1 must sign the NOI form. Signatory requirements for a NOI are described in Section 8.7.1. Signatures on electronically submitted NOIs are deemed to be equivalent to a hardcopy signature. An NOI that does not bear a valid signature will be deemed incomplete.

3.2. FORMAT AND CONTENT OF THE NOI FORM

3.2.1. NOI Form

The NOI form is provided in Appendix A of this permit. This form and its instructions set forth the required content of the NOI. The NOI form must be filled in completely. If the division notifies applicants by mail, E-mail, public notice or by making information available on the world wide web of electronic NOI forms (see NPDES Electronic Reporting), the operators may be required to use those electronic options to submit the NOI (Section 3.3.2)

Owners, developers and contractors that meet the definition of the operator in Subpart 2.1 shall apply for permit coverage on the same NOI, if possible. The division may accept separate NOI forms from different operators for construction activities on the same construction site when warranted.

After permit coverage has been granted to the primary permittee, any subsequent NOI submittals must include the site's previously assigned permit tracking number and the project name. The SWPPP shall be prepared in accordance with Part 5, and must be submitted with the NOI unless the NOI is only being submitted to add a secondary permittee to an existing coverage.

3.2.2. Construction Site Map

An excerpt (8 ½" by 11" or 11" by 17") from the appropriate 7.5 minute United States Geological Survey (USGS) topographic map (or other map showing contours) with the proposed construction site centered, must be included with the NOI. The entire proposed construction area must be clearly outlined on the map, with all acreage to be disturbed clearly identified. All outfalls⁵ discharging runoff from the property, streams receiving the discharge, and storm sewer systems conveying the discharge from outfalls shall be clearly identified and marked on the map. NOIs for linear projects must specify the location of each end

⁵ Phrase "point source" and term "outfall" are used interchangeably. For the purpose of this general permit, they can be considered synonyms.



of the construction area and all areas to be disturbed. Commercial builders that develop separate SWPPPs that cover only their portion of the project shall also submit a site or plat map that clearly indicates the lots for which they are applying for permit coverage, and the location of EPSCs that will be used at each lot (Section 5.5).

3.3. WHERE AND HOW TO SUBMIT AN APPLICATION

3.3.1. Traditional Submittal

The applicant shall submit the NOI, SWPPP and application fee to the appropriate Environmental Field Office (EFO) for the county where the construction activity is located and where stormwater discharges enters waters of the state. If a site straddles a county line of counties that are in different EFO service areas, the operators shall send the NOI and the application fee to the EFO that provides coverage for the majority of the proposed construction activity.

A list of counties and the corresponding EFOs is provided in Subpart 3.4. The division's Nashville Central Office will serve as a processing office for NOIs submitted by federal or state agencies (e.g., TDOT, TVA and the local MS4 programs).

3.3.2. Submittal Using Electronic Forms

The division is in the process of launching the new NPDES Electronic Reporting online customer portal for submission of permit applications and other reports. If the division notifies applicants by mail, E-mail, public notice or by making information available on the world wide web of electronic application submittal, the operators may be required to use those electronic options to submit the NOI, SWPPP and an application fee. For more information, visit <https://www.tn.gov/environment/program-areas/wr-water-resources/netdmr-and-electronic-reporting.html>.



3.4. TDEC ENVIRONMENTAL FIELD OFFICES (EFOS) AND CORRESPONDING COUNTIES

<u>EFO Name</u>	List of Counties
Chattanooga	Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea, Sequatchie
Columbia	Bedford, Coffee, Franklin, Giles, Hickman, Lawrence, Lewis, Lincoln, Marshall, Maury, Moore, Perry, Wayne
Cookeville	Cannon, Clay, Cumberland, DeKalb, Fentress, Jackson, Macon, Overton, Pickett, Putnam, Smith, Trousdale, Van Buren, Warren, White
Jackson	Benton, Carroll, Chester, Crockett, Decatur, Dyer, Gibson, Hardin, Haywood, Henderson, Henry, Lake, Lauderdale, Madison, McNairy, Obion, Weakley
Johnson City	Carter, Greene, Hancock, Hawkins, Johnson, Sullivan, Unicoi, Washington
Knoxville	Anderson, Blount, Campbell, Claiborne, Cocke, Grainger, Hamblen, Jefferson, Knox, Loudon, Monroe, Morgan, Roane, Scott, Sevier, Union
Memphis	Fayette, Hardeman, Shelby, Tipton
Nashville	Cheatham, Davidson, Dickson, Houston, Humphreys, Montgomery, Robertson, Rutherford, Stewart, Sumner, Williamson, Wilson

TDEC may be reached by telephone at the toll-free number 1-888-891-8332 (TDEC). Local [EFOs](#) may be reached directly when calling this number from the construction site, using a land line.



PART 4

4. CONSTRUCTION AND DEVELOPMENT EFFLUENT GUIDELINES

4.1. NON-NUMERIC EFFLUENT LIMITATIONS

Any point source authorized by this general permit must achieve, at a minimum, the effluent limitations representing the degree of effluent reduction attainable by application of best practicable control technology (BPT) currently available.

4.1.1. Erosion prevention and sediment controls

Design, install and maintain effective erosion and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed and maintained to:

- 1.) Control stormwater volume and velocity to minimize soil erosion in order to minimize pollutant discharges;
- 2.) Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points;
- 3.) Minimize the amount of soil exposed during construction activity;
- 4.) Minimize the disturbance of steep slopes;
- 5.) Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;
- 6.) Provide and maintain natural buffers as described in Section 4.1.2, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce pollutant discharges, unless infeasible;
- 7.) Minimize soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted; and
- 8.) Unless infeasible, preserve topsoil. Preserving topsoil is not required where the intended function of a specific area of the site dictates that the topsoil be disturbed or removed.

4.1.2. Water Quality Riparian Buffer Zone Requirements

The water quality riparian buffer zone requirements in this section apply to all streams with available parameters adjacent to construction sites (for waters with



unavailable parameters or Exceptional Tennessee Waters, see Section 6.4.2). A 30-foot natural water quality riparian buffer shall be preserved between such waterbodies and the disturbed areas, to the maximum extent practicable, during construction activities. The water quality riparian buffer is required to protect waters of the state that are not wet weather conveyances as identified using Tennessee's standard operating procedures for hydrologic determinations set forth in Tennessee Rules, Chapter 0400-40-03-.05(9).⁶ Because of the potential heavy sediment loading associated with construction site runoff, water quality riparian buffers are not primary sediment control measures and shall not be relied on as such; the primary purpose of water quality riparian buffers is additional pollutant removal. Stormwater discharges must enter the water quality riparian buffer zone as sheet flow, not as concentrated flow, where site conditions allow. Rehabilitation and enhancement of a natural buffer zone is allowed, if necessary, to improve its effectiveness in protecting waters of the state.

The water quality riparian buffer zone should be preserved between the top of stream bank and the disturbed construction area. The 30-foot criterion for the width of the buffer zone can be established on an average width basis at a project, as long as the minimum width of the buffer zone is more than 15 feet at any measured location. If the construction site encompasses both sides of a stream, buffer averaging can be applied to both sides, but each side must average the 30-foot criterion independently.

Construction activities within the water quality riparian buffer zone shall be avoided and existing forested buffer areas shall be preserved whenever possible. Where it is not practicable to maintain a full water quality riparian buffer, BMPs providing equivalent protection to a receiving stream as a natural water quality riparian buffer must be used. A justification for use and a design of equivalent BMPs shall be included in the SWPPP. Such equivalent BMPs are expected to be routinely used at construction projects typically located adjacent to surface waters. These projects may include sewer line construction, roadway construction, utility line or equipment installation, greenway construction, construction of a permanent outfall or a velocity dissipating structure.

⁶ If obtaining permit coverage for the first time following the effective date of this permit, 15-foot buffers are also required for any wet weather conveyance identified as waters of the United States by the U.S. Army Corps of Engineers or the Environmental Protection Agency.



This requirement does not apply to any valid Aquatic Resources Alteration Permit (ARAP), or equivalent permits issued by federal authorities. Additional buffer zone requirements may be established by the local MS4 program.

4.1.2.1. Water quality riparian buffer zone exemption based on existing uses

Water quality riparian buffer zones as described in Section 4.1.2 shall not be required in portions of the buffer where certain land uses exist and are to remain in place according to the following:

- a) A use shall be considered existing if it was present within the buffer zone as of the date of the Notice of Intent for coverage under the construction general permit. Existing uses may include buildings, parking lots, roadways, utility lines and on-site sanitary sewage systems. Only the portion of the buffer zone that contains the footprint of the existing land use is exempt from buffer zones. Activities necessary to maintain uses are allowed provided that no additional vegetation is removed from the buffer zone.
- b) If an area with an existing land use is proposed to be converted to another use or the impervious surfaces located within the buffer area are being removed, buffer zone requirements shall apply.

4.1.2.2. Pre-approved sites

Construction activity at sites that were pre-approved prior to February 1, 2010, is exempt from the buffer requirements of Section 4.1.2. Evidence of pre-approval for highway projects shall be a final right-of-way plan; and, for other construction projects, the final design drawings with attached written and dated approval by the local, state or federal agency with authority to approve such design drawings for construction.

4.1.3. Dewatering

Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls. Appropriate controls may include weir tanks, dewatering tanks, gravity bag filters, sand media particulate filters, pressurized bag filters, cartridge filters or other control units providing the level of treatment necessary to comply with permit requirements.



4.1.4. Pollution Prevention Measures

The permittee must design, install, implement and maintain effective pollution prevention measures to minimize the discharge of sediment and other pollutants. At a minimum, such measures must be designed, installed, implemented and maintained to:

- a) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water and other wash waters not containing soaps or solvents. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
- b) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater; and
- c) Minimize the discharge of pollutants from spills and leaks, and implement chemical spill and leak prevention and response procedures.

4.1.5. Prohibited Discharges

The following discharges are prohibited:

- a) Wastewater from washout of concrete, unless managed by an appropriate control.
- b) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials.
- c) Fuels, oils or other potential pollutants used in vehicle and equipment operation and maintenance.
- d) Soaps or solvents used in vehicle and equipment washing.



PART 5

5. STORMWATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS

5.1. THE GENERAL PURPOSE OF THE SWPPP

A SWPPP must be prepared and submitted along with the NOI as required in Section 1.4.2. The primary permittee must implement the SWPPP and maintain effective Best Management Practices (BMPs) from commencement of construction activity until permanent stabilization is complete, or until the permittee does not have design or operational control of any portion of the construction site. If a SWPPP submittal contains contradictory or ambiguous information, the division will hold the permittee to the most stringent interpretation of the information submitted. Requirements for termination of site coverage are provided in Part 9.

A site-specific SWPPP must be developed for each construction project or activity covered by this permit. The design, inspection and maintenance of BMPs described in the SWPPP must be prepared in accordance with good engineering practices. At a minimum, BMPs shall be consistent with the recommendations contained in the current edition of the Tennessee Erosion and Sediment Control Handbook (the handbook).

Once a definable area has been permanently stabilized as described in Subsection 5.5.3.4, the permittee may identify this area on the SWPPP. No further SWPPP or inspection requirements apply to that portion of the site (e.g., earth-disturbing activities around one of three buildings in a complex are done and the area is permanently stabilized, one mile of a roadway or pipeline project is done and permanently stabilized, etc.).

For more effective implementation of BMPs, a cooperative effort by the different operators at a site to prepare and participate in a site-wide SWPPP is expected. Primary permittees at a site may develop separate SWPPPs that cover only their portion of the project. In instances where there is more than one SWPPP for a site, the permittees must ensure the stormwater discharge controls and other measures are compatible with one another and do not prevent another operator from complying with permit conditions. The site-wide SWPPP developed and submitted by the primary permittee must assign responsibilities to secondary permittees and coordinate all BMPs at the construction site. Assignment and coordination can be done by name or by job title.



5.2. QUALIFICATION REQUIREMENTS

For sites greater than five acres of disturbance, the narrative portion of the SWPPP shall be prepared by an individual who has a working knowledge of erosion prevention and sediment controls, such as (but not limited to):

- a registered engineer or landscape architect,
- a Certified Professional in Erosion and Sediment Control (CPESC) or
- a person that successfully completed the “Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites” course.

For sites less than or equal to five acres of disturbance, these qualification requirements do not apply, and the division provides the following optional templates:

- Form CN-1249, the Stormwater Pollution Prevention Plan (SWPPP) for Single Family Residential Homebuilding Sites. This SWPPP template is available at:
http://tdec.tn.gov/etdec/DownloadFile.aspx?row_id=CN-1249. Form CN-1249 is not appropriate if significant grading of the lot or lots is necessary.
- SWPPP Template for Sites Not Requiring Engineer Design from the DWR – NR – G – 02 - Construction Stormwater – 05172019 Guidance regarding construction stormwater general permit coverage involving sites with Non-Engineer Design SWPPPs:
<https://www.tn.gov/content/dam/tn/environment/water/policy-and-guidance/dwr-nr-g-02-cgp-non-engineering-swppp-final-051719.pdf>
Attachment A (template):
<https://www.tn.gov/content/dam/tn/environment/water/policy-and-guidance/dwr-nr-g-02-cgp-non-engineering-swppp-final-051719-template.docx>.

Plans and specifications for any building or structure, changes in topography and drainage, including the design or modification of sediment basins or other sediment controls involving structural, hydraulic, hydrologic or other engineering calculations shall be prepared by a professional engineer or landscape architect registered in Tennessee and signed and sealed in accordance with the Tennessee Code Annotated, Title 62, Chapter 2 and the rules of the Tennessee Board of Architectural and Engineering Examiners. Engineering design of sediment basins or equivalent sediment controls must be provided for construction sites involving



drainage to an outfall totaling 10 or more acres (Subsection 5.5.3.5) or 5 or more acres if draining to waters with unavailable parameters or Exceptional Tennessee Waters (Section 6.4.1).

5.3. SWPPP PREPARATION AND COMPLIANCE

5.3.1. Existing Sites

Operators of an existing site, presently permitted under the division's 2016 construction general permit, shall maintain full compliance with the existing SWPPP. The existing SWPPP shall be modified, if necessary, to meet requirements of this new general permit, and the SWPPP changes implemented as soon as practicable but no later than 12 months following the new permit effective date. The permittee shall make the updated SWPPP available for the division's review upon request.

5.3.2. New Sites or New Phases of Existing Sites

For construction stormwater discharges not authorized under an NPDES permit as of the effective date of this permit, a SWPPP that meets the requirements of Part 5 of this permit shall be prepared and submitted along with the NOI and an appropriate fee for coverage under this permit.

5.3.3. Signature Requirements

The SWPPP shall be signed by the operators in accordance with Subpart 8.7, and if applicable, certified according to requirements in Section 5.2. Signatures on electronically submitted documents are deemed equivalent to original signatures. A SWPPP that does not bear a valid signature will be deemed incomplete.

5.3.4. SWPPP Availability

A copy of the existing version of the SWPPP shall be retained on-site at the location which generates the stormwater discharge in accordance with Part 7 of this permit. If the site is inactive or does not have an onsite location adequate to store the SWPPP, the location of the SWPPP, along with a contact phone number, shall be posted on-site. If the SWPPP is located off-site, reasonable local access to the plan during normal working hours must be provided.

The permittee shall make the existing SWPPP and inspection reports available upon request to the director; the local agency approving erosion prevention and sediment control plans, grading plans, land disturbance plans or stormwater management plans; or the operator of an MS4.



5.4. KEEPING SWPPP CURRENT

5.4.1. SWPPP Modifications

The permittee must modify, update and recertify the SWPPP if any of the following conditions apply:

- a) Whenever there is a change in the scope of the project that would be expected to have a significant effect on the discharge of pollutants to the waters of the state and which has not otherwise been addressed in the SWPPP.
- b) Whenever there is a change in chemical treatment methods, including the use of different treatment chemical, different dosage or application rate or different area of application.
- c) Whenever inspections or investigations by site operators or local, state or federal officials indicate the SWPPP is proving ineffective in eliminating or significantly minimizing pollutants from sources identified under Section 5.5.2, or is otherwise not achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activity. Where local, state or federal officials determine that the SWPPP is ineffective in eliminating or significantly minimizing pollutant sources, a copy of any correspondence to that effect must be retained in the SWPPP.
- d) Whenever any new operator (typically a secondary permittee) who will implement a measure of the SWPPP must be identified (see Subpart 3.1.1 for further description of which operators must be identified).
- e) Whenever it is necessary to include water quality protection measures as required by the applicable wildlife management agency intended to prevent a negative impact to legally protected state or federally listed fauna or flora (or species proposed for such protection – Subpart 1.3). Amendments to the SWPPP may be reviewed by the division, a local MS4, the EPA, or an authorized regulatory agency.
- f) Whenever a Total Maximum Daily Load (TMDL) is developed for the receiving waters for a pollutant of concern (e.g., siltation). A list of Tennessee's TMDLs can be found at:
<https://www.tn.gov/environment/program-areas/wr-water-resources/watershed-stewardship/tennessee-s-total-maximum-daily-load--tmdl--program.html>.



5.5. COMPONENTS OF THE SWPPP

The SWPPP must:

- a) identify all potential sources of pollutants likely to affect the quality of stormwater discharges from the construction site;
- b) describe practices to be used to reduce pollutants in stormwater discharges from the construction site; and
- c) assure compliance with the terms and conditions of this permit.

The SWPPP shall include the items described in Sections 5.5.1, 5.5.2 and 5.5.3.

5.5.1. SWPPP Narrative

Each SWPPP shall provide a description of pollutant sources and other information as indicated below:

- a) A description of all construction activities at the site, including the intended sequence of activities which disturb soils for major portions of the site (e.g., grubbing, excavation, grading, utilities and infrastructure installation).
- b) Estimates of the total area of the site and the total area that is expected to be disturbed by excavation, grading, filling or other construction activities.
- c) A description of the topography of the site, including an estimation of percent slope and delineation of drainage area (acres) serving each outfall. Drainage area estimates shall include off-site drainage, if applicable.
- d) Hydric soils must be clearly identified.
- e) A description of how the runoff will be handled to prevent erosion at the permanent outfall and receiving stream.
- f) An erosion prevention and sediment control (EPSC) plan with the proposed construction area clearly outlined. The plan shall indicate the boundaries of the permitted area, drainage patterns, approximate slopes anticipated after major grading activities, areas of soil disturbance, an outline of areas which are not to be disturbed, the location of major structural and nonstructural controls identified in the SWPPP, the location of areas where stabilization practices are expected to occur, streams and sinkholes, and identification on the erosion control plan of outfall points intended for coverage. The erosion control plan must meet requirements stated in Section 5.5.3.
- g) A description of any discharge associated with industrial activity other than construction stormwater that originates on site and the location of that activity and its permit number.



- h) Identification of any streams on or adjacent to the project, a description of any anticipated alteration of these waters and the permit number or the tracking number of the Aquatic Resources Alteration Permit (ARAP) or Section 401 Certification issued for the alteration.
- i) The name of the receiving waters (this does not include wet weather conveyances connecting the site discharge to the receiving stream).
- j) Identification if those receiving waters have unavailable parameters for siltation.⁷
- k) Identification if those receiving waters are Exceptional Tennessee Waters.⁸
- l) If applicable, clearly identify and outline the buffer zones established to protect waters of the state located within the boundaries of the project.
- m) A description of the construction phasing for projects of more than 50 acres (Subsection 5.5.3.2).
- n) The timing of the planting of the vegetation cover must be discussed in the SWPPP if permanent or temporary vegetation is to be used as a control measure. Planting cover vegetation during winter months or dry months should be avoided.

5.5.2. SWPPP and EPSC plans

The SWPPP must include EPSC plans (Section 5.5.3) showing the approximate location of each control measure and a description of when the measure will be implemented during the construction process (e.g., prior to the start of earth disturbance, as the slopes are altered and after major grading is finished). The different stages of construction and the EPSC measures that will be utilized during each stage shall be depicted on multiple plan sheets as described below.

Three separate EPSC plan sheets should be developed for most sites, with the exception of single-lot homes, commercial lots, or linear infrastructure projects of less than or equal to 5 acres, for which a single plan sheet may be sufficient:

- a. The first plan sheet will address the EPSC measures necessary to manage stormwater runoff, erosion and sediment during the initial land disturbance (grading) stage.

⁷ DWR Construction Stormwater Permitting Map Viewer can be found at: <https://tdeconline.tn.gov/dwrcgp/>

⁸ List of Exceptional Waters and ORNWs in Tennessee can be found at: [https://tdec.tn.gov:8090/pls/enf_reports/f?p=9034:34304](https://tdec.tn.gov:8090/pls/enf_reports/f?p=9034:34304;); corresponding map viewer is under development



- b. A second plan sheet will address the EPSC measures necessary to manage stormwater runoff, erosion and sediment during any interim grading and construction stages.
- c. The third plan sheet will address the EPSC measures necessary to manage stormwater runoff, erosion and sediment during the final grading stage while permanent site stabilization is being achieved.

The description and implementation of controls shall address the following minimum components, as described in Sections 5.5.3, 5.5.3.6 and 5.5.3.7. Additional controls may be necessary to comply with Section 6.3.2.

5.5.3. Erosion Prevention and Sediment Controls (EPSC)

5.5.3.1. General criteria and requirements

- a) The erosion prevention controls shall be designed to eliminate to the maximum extent practicable the dislodging and suspension of soil in water. Sediment controls shall be designed to retain mobilized sediment on site to the maximum extent practicable.
- b) All control measures must be properly selected, installed and maintained in accordance with the manufacturer's specifications and/or good engineering practices. If periodic inspections or other information indicate a control has been used inappropriately, or incorrectly, the permittee must replace or modify the control.
- c) If sediment escapes the permitted area, off-site accumulations that have not reached a stream must be removed at a frequency sufficient to minimize off-site impacts (e.g., sediment that has escaped a construction site and collected in a street must be removed so that it does not subsequently wash into storm sewers and streams during the next rain or so that it does not pose a safety hazard to users of public streets). Permittees shall not initiate remediation or restoration of a stream without receiving prior authorization from the division. This permit does not authorize access to private property. Arrangements concerning the removal of sediment on adjoining property must be settled by the permittee and the adjoining landowner.
- d) Sediment must be removed from sediment traps, silt fences, sediment basins and other sediment controls when design capacity has been reduced by 50%.
- e) Erodible material storage areas (e.g., overburden and stockpiles of soil) and borrow pits that are used primarily for the permitted project are considered a part of the site and shall be identified on the NOI, addressed in the SWPPP and included in the fee calculation. TDOT projects shall be addressed in the Waste and Borrow Manual per the Statewide Stormwater Management Plan (SSWMP).



- f) Pre-construction vegetative ground cover shall not be destroyed, removed or disturbed more than 14 days prior to commencement of grading or earth moving activities unless the area is subsequently temporarily or permanently stabilized.
- g) Clearing and grubbing must be held to the minimum necessary for grading and equipment operation. Existing vegetation at the site shall be preserved to the maximum extent practicable. The limits of soil disturbance shall be clearly outlined in the SWPPP and the areas to remain undisturbed clearly indicated on the site, with the methods to be used to mark these areas described in the SWPPP.
- h) Construction must be sequenced to minimize the exposure time of graded or denuded areas.
- i) EPSC measures must be in place and functional before earth moving operations begin and must be constructed and maintained throughout the construction period stages as appropriate. Temporary measures may be removed at the beginning of the workday but must be replaced at the end of the workday.
- j) Off-site vehicle tracking of sediment and the generation of dust shall be minimized. A stabilized construction access shall be described and implemented to reduce the tracking of mud and dirt onto public roads by construction vehicles.

5.5.3.2. Construction phasing

Construction phasing is recommended on all projects regardless of size as an effective practice for minimizing erosion and limiting sedimentation. It is recommended that construction be phased to keep the total disturbed area less than 50 acres at any one time. This includes off-site borrow or disposal areas that meet the conditions of Section 1.2.2. Areas where construction is completed must be stabilized within 14 days (Subsection 5.5.3.4).

5.5.3.3. Projects Exceeding 50 acres of Disturbance

On projects where the permittee chooses to disturb more than 50 acres at one time, the following additional requirements shall apply:

- a) The permittee shall notify the division immediately if more than 50 acres of disturbance at one time is planned.
- b) Site assessments, as described in Subsection 5.5.3.8, shall be conducted on a quarterly basis.
- c) Operator inspections as described in Subsection 5.5.3.9 shall be conducted twice per week and following any rainfall event of more than 0.5 inches in



24 hours. Inspections following rainfall events can be counted as one of the twice-weekly inspections.

- d) Data describing the erodibility of soils on site, how the soil type erodibility will dictate the needed control measures and how the soil may affect the expected quality of runoff from the site shall be provided. The data may be referenced or summarized. Hydric soils must be clearly identified.
- e) A geospatial file shall be submitted to the division which identifies the project area boundaries as a polygon feature. This polygon feature can be submitted in any common data format (e.g., .kml file, shapefile, feature layer, etc.) that is compatible with common geographic systems software (e.g., Google Earth, ESRI, QGIS, etc.). The file name should reflect the same site name provided on the permit application, or a permit tracking number, if available.
- f) Stormwater runoff monitoring shall be conducted at each outfall draining 10 or more acres (Section 5.5.3.5) or 5 or more acres if draining to waters with unavailable parameters or Exceptional Tennessee Waters (Section 6.4.1).

Code	Parameter	Qualifier	Unit	Sample Type	Monitoring Frequency	Statistical Base
00070	Turbidity	Report	NTU	Grab	Monthly	Daily Maximum
00070	Turbidity	Report	NTU	Grab	Monthly	Monthly Average
00530	Total Suspended Solids (TSS)	Report	mg/L	Grab	Monthly	Daily Maximum
00530	Total Suspended Solids (TSS)	Report	mg/L	Grab	Monthly	Monthly Average
45613	Floating solids or visible foam-visual	Report	Y=1;N=0	Visual	Monthly	Value
50050	Flow	Report	MGD	Estimate	Monthly	Daily Maximum
50050	Flow	Report	MGD	Estimate	Monthly	Monthly Average

The permittee shall maintain a log of rainfall events including date, estimated duration (in hours), and total estimated rainfall per calendar day. For sampling events, the permittee shall provide an estimate of the total volume of the discharge per sampled outfall and the interval between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event.



The permittee shall report the estimated total drainage area and estimated acreage of land disturbance in the drainage area for each outfall for each sampling event. Record of the estimated drainage area and amount of land disturbance for a given sample event shall be reported in the notes section of the Discharge Monitoring Report.

5.5.3.4. Stabilization practices

The SWPPP shall include a description of temporary and permanent stabilization practices, including site-specific scheduling of the implementation of the practices. Site plans should ensure that existing vegetation is preserved when possible. Stabilization practices may include: temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees and the preservation of mature vegetation. When seasonal or climate conditions would prevent timely establishment of vegetation other stabilization practices must be utilized. Use of impervious surfaces for permanent stabilization in lieu of a permanent vegetative cover should be avoided where practicable. No stabilization control measures or EPSC measures are to be installed in a stream without obtaining a Section 404 permit and an Aquatic Resources Alteration Permit (ARAP).

Stabilization measures shall be initiated as soon as possible in portions of the site where construction activities have temporarily or permanently ceased. Temporary or permanent soil stabilization at the construction site must be completed within 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. In the following situations, temporary stabilization measures are not required:

- a) Where the initiation of stabilization measures is precluded by snow cover or frozen ground conditions or adverse soggy ground conditions, stabilization measures shall be initiated as soon as practicable.
- b) Where construction activity on a portion of the site is temporarily ceased, but soil disturbing activities is planned to resume within 2weeks.
- c) In arid, semiarid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative stabilization measures such as properly anchored mulch, soil binders or matting must be employed.

Steep slopes shall be stabilized within one week after construction activity on the slope has temporarily or permanently ceased.



Permanent stabilization with perennial vegetation (using native herbaceous and woody plants where practicable) or other permanently stable, non-eroding surface shall replace any temporary measures as soon as practicable. Unpacked gravel containing fines (silt and clay sized particles) or crusher runs will not be considered a non-eroding surface. On sites where disturbed acreage will be returned to its prior agricultural use (i/e. row crops, pasture) normal agricultural practices can be substituted.

5.5.3.5. Structural practices

The SWPPP shall include a description of structural practices utilized to divert flows from exposed soils, store flows or otherwise limit runoff and discharge of pollutants from exposed areas of the site. Such practices may include, but are not limited to silt fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions and temporary or permanent sediment basins. Structural controls shall not be placed in streams except as authorized by a section 404 permit and/or Aquatic Resources Alteration Permit (ARAP).

EPSC measures shall be designed to minimize erosion and maximize sediment removal resulting from a 2-year, 24-hour storm (the design storm). The design of erosion prevention and sediment controls must adhere to good engineering practices. The drainage area recommendations and treatment design specifications are provided in the Tennessee Erosion and Sediment Control Handbook. Chemical treatment of the stormwater runoff may be necessary to minimize the amount of sediment being discharged when clay and other fine particle soils or highly erodible soils are present at the construction site. However, the use of cationic polymers for treatment is prohibited.

For an outfall that receives drainage from 10 or more acres, a minimum sediment basin volume that will provide treatment for a calculated volume of runoff from a 2-year, 24-hour storm and runoff from each acre drained, or equivalent control measures as specified in the Tennessee Erosion and Sediment Control Handbook, shall be provided until permanent stabilization of the site. A drainage area of 10 or more acres includes disturbed and undisturbed portions of the site and areas adjacent to the site, all draining through the common outfall. Where an equivalent control measure is substituted for a sediment basin, the equivalency (with respect to sediment removal) must be justified to the division. Runoff from any undisturbed acreage should be diverted around the disturbed area and the sediment basin. Diverted runoff can be omitted from the volume calculation.



Sediment storage expected from the disturbed areas must be included. Discharges from basins and impoundments shall utilize outlet structures that only withdraw water from near the surface of the basin or impoundment, unless infeasible.

All calculations related to drainage areas, runoff coefficients, basin volumes and equivalent control measures must be provided in the SWPPP. The discharge structure from a sediment basin must be designed to retain sediment during the lower flows in accordance with the most current version of the Tennessee Erosion and Sediment Control Handbook. Muddy water to be pumped from excavation and work areas must be held in settling basins, filtered or chemically treated prior to its discharge into surface waters. Water must be discharged through a pipe, grassed or lined channel or other equivalent means so that the discharge does not cause erosion and sedimentation. Discharged water must not cause an objectionable color contrast with the receiving stream.

Sediment structures treating drainage areas in excess of 25 acres require a site-specific design that accurately defines the site hydrology, site-specific sediment loading, hydraulics of the site, and adheres to all Tennessee Erosion and Sediment Control Handbook design recommendations for sediment basins.

Velocity dissipation structures shall be installed if needed to provide for non-erosive discharge velocities to wet weather conveyances or streams.

5.5.3.6. Stormwater management

The following factors must be accounted for in the design of all stormwater controls:

- a) The nature of stormwater runoff and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features. Stormwater controls must be designed to control stormwater volume, velocity, and peak flow rates to minimize discharges of pollutants in stormwater, as well as minimizing channel and streambank erosion at discharge points.
- b) The soil type and range of soil particle sizes expected to be present on the site.
- c) Description of any measures that will be installed during the construction process to control pollutants in stormwater discharges that will occur after construction operations have been completed, including a brief



description of applicable State or local erosion and sediment control requirements.

5.5.3.7. Other items needing control

- a) No solid materials, including building materials, shall be placed in waters of the state, except as authorized by a section 404 permit and/or Aquatic Resources Alteration Permit (ARAP). Litter, construction debris and construction chemicals exposed to stormwater shall be picked up prior to storm events or before being carried off the site by wind so that they do not become a pollutant source for stormwater discharges. EPSC materials shall be prevented from becoming a pollutant source for stormwater discharges.
- b) The SWPPP shall identify and provide the necessary EPSC measures for the installation of any waste disposal system, sanitary sewer or septic system. Permittees must also comply with applicable state and local waste disposal, sanitary sewer or septic system regulations as necessary.
- c) The SWPPP shall include a description of construction and waste materials expected to be stored on-site. The SWPPP shall also include a description of controls used to reduce pollution from materials stored on site. Controls may include storage practices to minimize exposure of the materials to stormwater or spill prevention and response.

5.5.3.8. Site Assessments

Site assessment shall be conducted at each outfall draining 10 or more acres (Section 5.5.3.5) or 5 or more acres if draining to waters with unavailable parameters or Exceptional Tennessee Waters (Section 6.4.1). The site assessment is a documented site inspection conducted by a qualified individual to verify the installation, functionality and performance of the EPSC measures described in the SWPPP. Site assessments shall cover the entire disturbed area and occur within 30 days of construction commencing at each portion of the site that drains the qualifying acreage. The site assessment shall be performed by individuals with one or more of the following qualifications:

- 1. A licensed professional engineer or landscape architect;
- 2. A Certified Professional in Erosion and Sediment Control (CPESC); or
- 3. A person who has successfully completed the "Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites"



At a minimum, site assessments should be performed to verify the installation, functionality and performance of the EPSC measures described in the SWPPP. If structural BMPs (or equivalent EPSC measures) are not constructed or construction is in progress at the time of the site assessment, a follow-up monthly assessment(s) are required until the BMPs are constructed per the SWPPP. The site assessment should be performed with the inspector and should include a review and update (if applicable) of the SWPPP. Modifications of plans and specifications for any building or structure, including the design of sediment basins or other sediment controls involving structural, hydraulic, hydrologic or other engineering calculations shall be prepared by a licensed professional engineer or landscape architect and stamped and certified in accordance with the [Tennessee Code Annotated](#), Title 62, Chapter 2 and the rules of the [Tennessee Board of Architectural and Engineering Examiners](#).

5.5.3.9. Inspections

Operators shall ensure proper installation, maintenance, and overall effectiveness of erosion prevention and sediment controls (EPSCs) by performing twice weekly site inspections. Inspections must verify and document the functionality and performance of the EPSC measures described in the SWPPP. Initial inspections shall also indicate if all EPSCs have been installed as designed in the submitted SWPPP and EPSC plans; and, if not, measures that need to be taken so those EPSCs meet the design specifications in the field SWPPP and EPSC plans.

5.5.3.10. Inspector qualifications

Twice weekly inspections can be performed by:

- a) a person with a valid certification from the "Level I - Fundamentals of Erosion Prevention and Sediment Control" course,
- b) a licensed professional engineer or landscape architect,
- c) a Certified Professional in Erosion and Sediment Control (CPESC), or
- d) a person who has successfully completed the "Level II - Design Principles for Erosion Prevention and Sediment Control for Construction Sites" course.

An inspector performs and documents the required inspections, paying particular attention to time-sensitive permit requirements, such as stabilization and maintenance activities.



5.5.3.11. Schedule of inspections

- a) Inspections described in paragraphs b, c and d below, shall be performed at least twice weekly. Inspections shall be performed at least 72 hours apart. Where sites or portions of construction sites have been temporarily stabilized, inspections only have to be conducted once per month until construction activity resumes. Inspection requirements do not apply to definable areas that have been permanently stabilized. Changes to the inspection frequency and the justification for such request must be included in the records kept on site. For projects by the Tennessee Department of Transportation (TDOT) and the Tennessee Valley Authority (TVA), such request must be submitted to the division's Nashville Central Office. The division reserves the right to require more frequent inspections if deemed necessary to ensure compliance at a site.
- b) Qualified personnel, as defined in Subsection 5.5.3.10 (provided by the permittee or cooperatively by multiple permittees), shall inspect disturbed areas of the construction site that have not been permanently stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, locations where vehicles enter or exit the site and each outfall.
- c) Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the site's drainage system. EPSC measures shall be observed to ensure that they are operating correctly.
- d) Outfall points shall be inspected to determine whether EPSC measures are effectively preventing sediment discharges off-site or impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.
- e) Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced, modified or repaired as necessary, before the next rain event; but in no case more than seven days after the need is identified.
- f) Based on the results of the inspection, the site description identified in the SWPPP in accordance with Section 5.5.1 and pollution prevention measures identified in the SWPPP in accordance with Section 5.5.3 shall be revised as appropriate. Such revisions shall be made no later than seven days following the inspection. In addition, any modifications to pollution prevention measures shall be implemented as soon as practicable but no later than 14 days following the inspection.



- g) All inspections shall be documented on the *Construction Stormwater Inspection Certification Form* provided in Appendix C of this permit. An alternative inspection form may be used as long as the form contents and the inspection certification language are equivalent to the division's form and the permittee has obtained a written approval from the division to use the alternative form. The form must contain the printed name and signature of the inspector and the certification must be executed by a person who meets the signatory requirements of Section 8.7.2. Inspection reports must be submitted to the division within 10 days of the request.
- h) Inspectors shall accurately document site conditions in their inspection reports. Falsifying inspection records, or other documentation; or failure to complete inspection documentation shall result in a violation of this permit and any other applicable acts or rules.
- i) The initial primary permittee (such as a developer) is no longer required to inspect portions of the site that are covered by a subsequent primary permittee (such as a home builder). Subsequent primary permittees who have obtained coverage under this permit shall conduct twice weekly inspections as per the requirements in Subsection 5.5.3.9.

5.5.3.12. Pollution prevention measures for non-stormwater discharges

The SWPPP must identify source(s) of all non-stormwater discharge(s) listed in Section 1.2.3 if it is to be combined with stormwater discharges associated with construction activity. The SWPPP shall identify and ensure the implementation of appropriate pollution prevention measures for the non-stormwater components of the discharge. Any non-stormwater must be discharged through stable discharge structures. Estimated volume of the non-stormwater components of the discharge must be included in the design of all impacted control measures.



PART 6

6. SPECIAL CONDITIONS, MANAGEMENT PRACTICES, AND OTHER NON-NUMERIC LIMITATIONS

6.1. RELEASES IN EXCESS OF REPORTABLE QUANTITIES

The discharge of hazardous substances or oil in the stormwater discharges from a facility shall be prevented or minimized in accordance with the applicable SWPPP for the facility. This permit does not relieve the permittee of the reporting requirements of 40 CFR 117 and 40 CFR 302.

6.2. SPILLS

This permit does not authorize the discharge of hazardous substances or oil resulting from an on-site spill.

6.3. DISCHARGE COMPLIANCE WITH STATE WATER QUALITY STANDARDS

6.3.1. Violation of water quality standards

This permit does not authorize stormwater or other discharges that would cause or contribute to a violation of a state water quality standard (Tennessee State Rules, Chapters 0400-40-03, 0400-40-04). Such discharges constitute a violation of this permit.

Where a discharge is already authorized under this permit and the division determines the discharge to cause or contribute to the violation of applicable state water quality standards, the division will notify the operator of such violations. The permittee shall take all necessary actions to ensure future discharges do not cause or contribute to the violation of a water quality standard and shall document these actions in the SWPPP.

6.3.2. Discharge quality

- a) The construction activity shall be carried out in such a manner that will prevent violations of water quality criteria as stated in the Tennessee Rules, Chapter 0400-40-03-.03. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits or turbidity impair the usefulness of waters of the state for any of the uses designated for that water body by Tennessee Rules, Chapter 0400-40-04. Construction activity carried out in the manner required by



this permit shall be considered in compliance with the Tennessee Rules, Chapter 0400-40-03-.03.

- b) There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits, or sludge banks of such size or character as may be detrimental to fish and aquatic life.
- c) The stormwater discharge must not contain total suspended solids, turbidity, or color in such amounts or character that will result in any objectionable appearance compared to the turbidity or color of the receiving water, considering the nature and location of the water.
- d) The stormwater discharge shall not contain pollutants in quantities that will be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream. This provision includes species covered under Subpart 1.3.
- e) Solids or other materials removed by any sediment control treatment devices must be disposed of in a manner that prevents its entrance into or pollution of any surface or subsurface waters.

6.4. DISCHARGES INTO WATERS WITH UNAVAILABLE PARAMETERS OR EXCEPTIONAL TENNESSEE WATERS

6.4.1. SWPPP/BMP Requirements

- a) Discharges that would cause measurable degradation of waters with unavailable parameters or that would cause more than de minimis degradation of Exceptional Tennessee Waters are not authorized by this permit (Subpart 1.3). To be eligible to obtain and maintain coverage under this permit, the operator must satisfy, at a minimum, the following additional requirements for discharges into waters with unavailable parameters for siltation and for discharges to Exceptional Tennessee Waters⁹. All other provisions of this general permit that apply to receiving waters with available parameters shall also apply.
- b) The SWPPP must certify that EPSC measures used at the site are designed to control stormwater runoff generated by a 5-year, 24-hour storm event (the design storm), at a minimum, either from total rainfall in the designated period or the equivalent intensity as specified on the following website https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html.

⁹ or discharges upstream of such waters and because of the proximity to the segment and the nature of the discharge is likely to cause more than de minimis degradation in the unavailable or exceptional segment.



- c) The permittee shall perform inspections described in Section 5.5.3.9 at least twice every calendar week. Inspections shall be performed at least 72 hours apart.
- d) If the division finds that an operator is contributing to the impairment of a receiving stream despite complying with the SWPPP, the operator will be notified by the division in writing that the discharge is no longer eligible for coverage under the general permit. The operator may update the SWPPP and implement the necessary changes designed to eliminate further impairment of the receiving stream. If the permittee does not implement the SWPPP changes within seven days of receipt of notification, the permittee will be notified in writing that continued discharges must be covered by an individual permit (Subpart 8.11). To obtain the individual permit, the operator must file an individual permit application and submit an updated SWPPP. The project must be stabilized immediately and remain stable until the SWPPP is updated and the individual permit is issued. Only discharges from earth disturbing activities necessary for stabilization are authorized to continue until the individual permit is issued.
- e) For an on-site outfall in a drainage area totaling five or more acres, a minimum sediment basin volume that will provide treatment for a calculated volume of runoff from a 5-year, 24-hour storm and runoff from each acre drained; or equivalent control measures as specified in the Tennessee Erosion and Sediment Control Handbook, shall be provided until permanent stabilization of the site.
- f) For an on-site outfall in a drainage area totaling 3.5 - 4.9 acres, a minimum sediment trap volume or engineering equivalent that will provide treatment for a calculated volume of runoff from a 5-year, 24-hour storm and runoff from each acre drained, is required until permanent stabilization of the site. A drainage area of 3.5 - 4.9 acres includes both disturbed and undisturbed portions of the site or areas adjacent to the site, all draining through the common outfall.

6.4.2. Water Quality Riparian Buffer Zone Requirements

Sites that contain, or are adjacent to, receiving waters with unavailable parameters for siltation or designated as Exceptional Tennessee Waters shall preserve a 60-foot natural water quality riparian buffer zone adjacent to the receiving stream. All other buffer zone requirements as stated in Section 4.1.2 will apply.



The natural water quality riparian buffer zone shall be preserved between the top of stream bank and the disturbed construction area. The 60-foot criterion for the width of the buffer can be established on an average width basis at a project, as long as the minimum width of the buffer is more than 30 feet at any measured location. If the construction site encompasses both sides of a stream, buffer averaging can be applied to both sides, but each side must average the 60-foot criterion independently.

This requirement does not apply to an area that is being altered under the authorization of a valid Aquatic Resources Alteration Permit (ARAP), or equivalent permits issued by federal authorities. Additional natural buffer zone requirements may be established by the local MS4 program.



PART 7

7. RETENTION, ACCESSIBILITY AND SUBMISSION OF RECORDS

7.1. DOCUMENTS

The primary permittee shall retain copies of SWPPPs, reports required by this permit, records of all data used to complete the NOI and the NOT for a period of at least three years from the date the NOT is submitted. This period may be extended by written request of the director.

7.2. ACCESSIBILITY AND RETENTION OF RECORDS

The permittee shall retain a copy of the SWPPP and a copy of the permit at the construction site (or other location accessible to the division) from the date construction commences to the date of termination of permit coverage. Permittees with day-to-day operational control over SWPPP implementation shall have a copy of the SWPPP available at a central location onsite for the use of all operators and those identified as having responsibilities under the plan whenever they are on the construction site.

7.2.1. Posting Information at the Construction Site

A notice shall be posted near the main entrance of the construction site visible to the public with the following information:

- a) a copy of the NOC with the NPDES permit tracking number for the construction project;
- b) a name or company name; E-mail address (if available); telephone number and address of the project site owner/operator or a local contact person; and
- c) the location of the SWPPP (Subpart 7.2).

The notice must be maintained in a legible condition. The notice shall be posted in a local public building if posting this information near a main entrance is infeasible due to safety concerns or if the site is not accessible to the public. If the construction project is a linear construction project (e.g., pipeline or highway), the notice must be placed in a publicly accessible location near where construction is actively underway and moved as necessary. This permit does not provide the public with any right to trespass on a construction site for any reason, including inspection of a site. This permit does not require permittees to allow members of the public access to a construction site.



The permittee shall also retain the following items in an appropriate location on-site (or other location accessible to [the division](#)):

- a) A rain gauge (or use a reference site for a record of daily precipitation) and accurate [rainfall](#) records;
- b) A copy of all required inspection reports; and
- c) Records of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated.

7.3. ELECTRONIC SUBMISSION OF DOCUMENTS

This permit requires the submission of forms developed by the [director](#) in order for a person to comply with certain requirements, including, but not limited to, making reports, submitting inspection findings, applying for permit coverage and requesting for termination of permit coverage. The [director](#) may make these forms available electronically and, if submitted electronically, then that electronic submission shall comply with the requirements of Chapter [0400-01-40](#). Electronic submission may be required when available, unless waived by the Commissioner in accordance with 40 C.F.R. § 127.15.

If [the division](#) notifies applicants by mail, E-mail, public notice or by making information available on the world wide web of electronic forms (see [NPDES Electronic Reporting](#)), the [operators](#) may be required to use those electronic options to submit the [NOI](#) (Section 3.3.2)

In the event of large-scale emergencies and/or prolonged electronic reporting system outages, an episodic electronic reporting waiver may be granted by the Commissioner in accordance with 40 CFR § 127.15. A request for a deadline extension or episodic electronic reporting waiver should be submitted to DWRWater.Compliance@tn.gov, in compliance with the Federal NPDES Electronic Reporting Rule.

In the event that [NPDES Electronic Reporting](#) is not functioning, the permittee shall comply with reporting conditions by mailing reports with wet-ink original signatures shall to the following address:



*STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
COMPLIANCE & ENFORCEMENT UNIT
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102*

For purposes of determining compliance with this permit, data provided to the division electronically is legally equivalent to data submitted on signed and certified forms. A copy must be retained for the permittee's files.

7.3.1. Monitoring Results

Monitoring results (if applicable, for projects exceeding 50 acres of disturbance at one time, see Subsection 5.5.3.3) shall be recorded monthly and submitted monthly using NetDMR. Submittals shall be no later than 15 days after the completion of the reporting period. If NetDMR is not functioning, a completed DMR with an original signature shall be submitted to the address for Compliance and Enforcement Unit as listed in the Subpart 7.3 above. The first DMR is due on the 15th of the month following permit effectiveness.

DMRs must be signed and certified by a responsible corporate officer as defined in Tennessee Rule 0400-40-05-.05(6), a general partner or proprietor, or a principal municipal executive officer or ranking elected official, or his duly authorized representative. Such authorization must be submitted in writing and must explain the duties and responsibilities of the authorized representative.



PART 8

8. STANDARD PERMIT CONDITIONS

8.1. DUTY TO COMPLY

8.1.1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Tennessee Water Quality Control Act (TWQCA) and is grounds for an enforcement action, permit termination, revocation and reissuance, modification; or for denial of a permit renewal application.

8.1.2. Penalties

Pursuant to T.C.A. § 69-3-115 of The Tennessee Water Quality Control Act of 1977, as amended:

- a) Any person who violates an effluent standard or limitation or a water quality standard established under this part (T.C.A. § 69-3-101, et. seq.); violates the terms or conditions of this permit; fails to complete a filing requirement; fails to allow or perform an entry, inspection, monitoring or reporting requirement; violates a final determination or order of the board, panel or commissioner; or violates any other provision of this part or any rule or regulation promulgated by the board, is subject to a civil penalty of up to ten thousand dollars (\$10,000) per day for each day during which the act or omission continues or occurs.
- b) Any person unlawfully polluting the waters of the state or violating or failing, neglecting, or refusing to comply with any of the provisions of this part (T.C.A. § 69-3-101, et. seq.) commits a Class C misdemeanor. Each day upon which such violation occurs constitutes a separate offense.
- c) Any person who willfully and knowingly falsifies any records, information, plans, specifications, or other data required by the board or the commissioner, or who willfully and knowingly pollutes the waters of the state, or willfully fails, neglects or refuses to comply with any of the provisions of this part (T.C.A. § 69-3-101, et. seq.) commits a Class E felony and shall be punished by a fine of not more than twenty-five thousand dollars (\$25,000) or incarceration, or both.



8.1.3. Civil and criminal liability

Nothing in this permit shall be construed to relieve the discharger from civil or criminal penalties for noncompliance. Notwithstanding this permit, the discharger shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge to any surface or subsurface waters. Additionally, notwithstanding this permit, it shall be the responsibility of the discharger to conduct stormwater discharge activities in a manner such that public or private nuisances or health hazards will not be created. Furthermore, nothing in this permit shall be construed to preclude the State of Tennessee from any legal action or relieve the discharger from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or the Federal Water Pollution Control Act.

8.1.4. Liability Under State Law

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable local, state or federal law.

8.2. CONTINUATION OF THE EXPIRED GENERAL PERMIT

Permittees shall maintain coverage under this general permit until a new general permit is issued.

Operator(s) of an existing site permitted under the division's 2016 construction general permit shall maintain full compliance with the existing SWPPP. The existing SWPPP shall be modified according to the Section 5.3.1 of this permit.

8.3. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

8.4. DUTY TO MITIGATE

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.



8.5. DUTY TO PROVIDE INFORMATION

The permittee shall furnish to the division or an authorized representative of the division, within a time specified by the division, any information that the division may request to determine compliance with this permit or other information relevant to the protection of the waters of the state. The permittee shall also furnish to the division, upon request, copies of records required to be kept by this permit.

8.6. OTHER INFORMATION

When the permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the Notice of Intent or in any other report to the director, he or she shall promptly submit such facts or information.

8.7. SIGNATORY REQUIREMENTS

All NOIs, SWPPPs, NOTs, Construction Stormwater Inspection Certifications, Construction Stormwater Monitoring Report forms, reports, certifications or information either submitted to the director or the operator of a large or medium Municipal Separate Storm Sewer System (MS4) shall be signed as described in Sections 8.7.1 and 8.7.2 and dated.

8.7.1. Signatory Requirements for an NOI¹⁰

The NOI shall be signed as follows:

- a) For a corporation, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
 - i. a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or
 - ii. the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated site including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive

¹⁰ As specified in 40 CFR 122.22(a)(1)-(3) [48 FR 14153, Apr. 1, 1983, as amended at 48 FR 39619, Sept. 1, 1983; 49 FR 38047, Sept. 29, 1984; 50 FR 6941, Feb. 19, 1985; 55 FR 48063, Nov. 16, 1990; 65 FR 30907, May 15, 2000]



measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

- b) For a general partnership, by each general partner in the general partnership,
- c) For a sole proprietorship, by the proprietor,
- d) For a municipality, state, federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
 - i. the chief executive officer of the agency, or
 - ii. a senior executive officer having responsibility for the overall operations of a principle geographic unit of the agency (e.g., Regional Administrators of [EPA](#)).

NOTE: The division does not require specific assignments or delegations of authority to responsible corporate or municipal, state, federal, or other public agency officers. The division will presume that these officers have the requisite authority to sign permit applications unless the entity has notified the [director](#) to the contrary. Procedures governing authority to sign permit applications may provide for assignment or delegation to applicable positions rather than to specific individuals.

8.7.2. Signatory Requirements for SWPPPs, Reports and Other Items

SWPPPs, Construction Stormwater Inspection Certification forms, reports, certifications or other information submittals required by the permit and other information requested by [the division](#), including but not limited to Notice of Violation responses, shall be signed by a person described in Section 8.7.1, or by a duly authorized representative of that person.

8.7.3. Duly Authorized Representative

For a purpose of satisfying signatory requirements for reports (Section 8.7.2), a person is a duly authorized representative only if:

- a) the authorization is made in writing by a person described in Section 8.7.1;
- b) the authorization specifies an individual having responsibility for the overall operation of the regulated site or activity such as the position of



plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company; a duly authorized representative may thus be either a named individual or any individual occupying a named position; and

- c) the written authorization is submitted to the director or an appropriate EFO. The written authorization shall be a written document including the name of the newly authorized person or any individual occupying a named position as described in paragraph b) above, and the corresponding contact information (title, mailing address, phone number and E-mail address) for the authorized person or position. The written authorization shall be signed by the newly authorized person accepting responsibility and by the person described in Section 8.7.1 delegating the authority.

8.7.4. Changes to Authorization

If an authorization under Sections 8.7.1 or 8.7.3 is no longer accurate because a different individual or position has responsibility as the primary or secondary permittee, but the company name (permittee name) remains the same, a new NOI and SWPPP certification shall be submitted and signed by the new party who meets signatory authority satisfying the requirements of Sections 8.7.1 or 8.7.3 . The NOI shall include the new individual's information (title, mailing address, phone number and E-mail address), the existing tracking number and the project name.

8.7.5. Signatory Requirements for Primary Permittees

Primary permittees required to sign an NOI and SWPPP because they meet the definition of an operator (Subpart 2.1) shall sign the following certification statement on the NOI and on the SWPPP:

"I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury."



8.7.6. Signatory Requirements for Secondary Permittees

Secondary permittees required to sign an NOI and SWPPP because they meet the definition of an operator but who are not primarily responsible for preparing an NOI and SWPPP, shall sign the following certification statement on the NOI and on the SWPPP:

"I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and for failure to comply with these permit requirements. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury."

8.8. OIL AND HAZARDOUS SUBSTANCE LIABILITY

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to Section 311 of the Clean Water Act or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

8.9. PROPERTY RIGHTS

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges; nor does it authorize any injury to private property, any invasion of personal rights or any infringement of federal, state or local laws or regulations. The issuance of this permit does not authorize trespassing or discharges of stormwater or non-stormwater across private property.

8.10. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.



8.11. INDIVIDUAL PERMITS

8.11.1. Required Individual Permit Coverage

The director may require any person covered by this permit to apply for and obtain an individual NPDES permit to ensure adequate protection of designated uses of a receiving stream. Any interested person may petition the director in writing to take action under this paragraph but must include in their petition the justification for such an action. Where the director requires a discharger authorized to discharge under this permit to apply for an individual NPDES permit, the director shall notify the discharger in writing that an individual permit application is required. This notification will include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for the discharger to file the application and a statement that coverage under this general permit shall terminate upon the effective date of an individual NPDES permit; or denial of coverage under an individual permit. An individual NPDES permit is required only when additional permit terms or conditions beyond those set forth herein are necessary to protect water quality. Criteria for the division to require an individual NPDES permit may include, but are not limited to:

- a) Due to unique site conditions the discharge may result in greater than de minimis degradation, or a threat to threatened or endangered aquatic or semi-aquatic species.
- b) The total acreage to be disturbed and/or total drainage area to an outfall may exceed the capability of standard EPSCs and other BMPs to prevent pollution to waters.
- c) Steep grades or erosive soil conditions warrant site-specific controls that exceed the conditions of the CGP.
- d) Other site-specific conditions, such as contaminated soils or public lands.

The notification may require stabilization of the site and suspend coverage under this general permit until the individual permit is issued. Individual permit applications and updated SWPPP shall be submitted to the appropriate Environmental Field Office of the division as indicated in Subpart 3.4. The director may grant additional time to submit the application upon request of the applicant. If a discharger fails to submit in a timely manner an individual NPDES permit application as required by the director under this paragraph, then the applicability of this permit to the discharger will be terminated at the end of the day specified by the director for application submittal.



If the decision to require an individual NPDES permit precedes the issuance of coverage under this general permit, earth disturbing activities cannot begin until the individual permit is issued.

8.11.2. Permittee-Requested Individual Permit Coverage

Any discharger authorized by this permit may request to be excluded from the coverage of this permit by applying for an individual permit. Any discharger that knowingly cannot abide by the terms and conditions of this permit must apply for an individual permit. In such cases, the permittee shall submit an individual application in accordance with the requirements of 40 CFR 122.26(c)(1)(ii), with reasons supporting the request, and a SWPPP to the appropriate division's Environmental Field Office. The request may be granted by issuance of an individual permit, or alternative general permit, if the reasons cited by the permittee are adequate to support the request.

8.11.3. General Permit Termination

When an individual NPDES permit is issued to a discharger otherwise subject to this permit, or the discharger is authorized to discharge under an alternative NPDES general permit, the applicability of this permit to the discharger is terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit, whichever the case may be. When an individual NPDES permit is denied to an owner or operator otherwise subject to this permit, or the owner or operator is denied for coverage under an alternative NPDES general permit, the applicability of this permit to the individual NPDES permittee is terminated on the date of such denial, unless otherwise specified by the director. Coverage under the Tennessee Multi-Sector General Permit for the Discharge of Stormwater from an Industrial Activity (TMSP) will not be considered as an alternative general permit under this section without being specified by the director.

8.12. OTHER, NON-STORMWATER, PROGRAM REQUIREMENTS

No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

8.13. PROPER OPERATION AND MAINTENANCE

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related equipment) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of SWPPPs.



Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee, when determined by the permittee or the division to be necessary to achieve compliance with the conditions of the permit.

8.14. INSPECTION AND ENTRY

The permittee shall allow authorized representatives of the Environmental Protection Agency, the director or an authorized representative of the commissioner of TDEC, or, in the case of a construction site which discharges through a municipal separate storm sewer, an authorized representative of the MS4 receiving the discharge, upon the presentation of credentials and other documents as may be required by law:

- a) to enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
- b) to have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and
- c) to inspect any facilities or equipment, including monitoring and control equipment.

8.15. PERMIT ACTIONS

This permit may be issued, modified, revoked, reissued or terminated for cause in accordance with this permit and the applicable requirements of T.C.A. § 69-3-108. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.



PART 9

9. REQUIREMENTS FOR TERMINATION OF COVERAGE

9.1. TERMINATION OF DEVELOPER AND BUILDER COVERAGE

9.1.1. Termination Process for Primary Permittees

Primary permittees wishing to terminate coverage under this permit must submit a completed Notice of Termination (NOT) form provided in Appendix B of this permit (representative photo or video documentation of site stabilization is recommended). Electronic submittal is encouraged (see NPDES Electronic Reporting for more information). Primary permittees who abandon a site and fail to submit the NOT will be in violation of this permit. If the NOT was not submitted five years following the “estimated end date” (as identified on the NOI), the division can terminate the CGP coverage, unless the permittee specifically requests to maintain coverage. Signs notifying the public of the construction activity shall be in place until the NOT form has been submitted. Primary permittees may terminate permit coverage only if the conditions described below occur at the site:

- a) For areas where the primary permittee has control, all earth-disturbing activities and, if applicable, construction support activities permitted under Section 1.2.2 at the site are complete and the following requirements are met:
 - i. For any areas that were disturbed during construction, are not covered by permanent structures and over which the permittee had control during the construction activities; the requirements for permanent vegetation or non-vegetative stabilization described in Subsection 5.5.3.4 are met;
 - ii. The permittee has removed and properly disposed of all construction materials, as well as waste and waste handling devices. The permittee has removed all equipment and vehicles that were used during construction, unless they are intended for long-term use following termination of permit coverage;
 - iii. The permittee has removed all stormwater controls that were installed and maintained during construction, except those that are intended for long-term use following termination of permit coverage;
 - iv. The permittee has identified in the SWPPP who is responsible for ongoing maintenance of any stormwater controls left on the site for long-term use following termination of permit coverage, and
 - v. The groundcover achieves permanent stabilization.



- b) The permittee has transferred control of all areas of the site for which he is responsible (including, but not limited to, infrastructure, common areas, [stormwater](#) drainage structures, [sediment](#) control basin) under this permit to another [operator](#), and that [operator](#) has submitted an [NOI](#) and obtained coverage under this permit.
- c) The permittee obtains coverage under an individual or alternative general NPDES permit.

9.1.2. NOT Review

The division may review [NOTs](#) for completeness and accuracy and, when necessary, investigate the proposed site for which the [NOT](#) was submitted. Coverage under the permit is terminated when the permit record is published on [TDEC's DataViewer](#) as "Inactive." [Operators](#) may be liable for discharges that occur from the site after termination.

The division retains the right to deny termination of coverage under this general permit upon receipt of the [NOT](#). If the local Environmental Field Office has information indicating that the permit coverage is not eligible for termination, written notification will be provided within 30 days of receipt that permit coverage has not been terminated. The notification will include a summary of existing deficiencies. When the site meets the termination criteria, the [NOT](#) should be re-submitted.

If any permittee files for bankruptcy or the site is foreclosed on by the lender, the permittee shall notify [the division](#) of the situation so that [the division](#) may assess the site to determine if permit coverage should be obtained by any other person or whether other action is needed.

9.2. TERMINATION OF BUILDER AND CONTRACTOR COVERAGE

9.2.1. Termination Process for Secondary Permittees

Secondary permittees must request termination of coverage under this permit by submitting a [NOT](#) when they are no longer an [operator](#) at the construction site. Electronic submittal is encouraged (see [NPDES Electronic Reporting](#) for more information). Secondary permittees receive coverage under this permit but are not normally mailed a NOC. Consequently, [the division](#) may, but is not required to, notify secondary permittees that their notice of termination has been received. If [the division](#) has reason to believe that the secondary permittee's [NOT](#) should



not have been submitted, the division will deny the secondary permittee's NOT in writing, with specific reasons as to why the NOT should not have been submitted.

9.3. NOT CERTIFICATION

The NOT and the following certification must be signed in accordance with Subpart 8.7 of this permit:

"I certify under penalty of law that either: (a) all stormwater discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or (b) I am no longer an operator at the construction site. I understand that by submitting this notice of termination, I am no longer authorized to discharge stormwater associated with construction activity under this general permit, and that discharging pollutants in stormwater associated with construction activity to waters of the state is unlawful under the Tennessee Water Quality Control Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Tennessee Water Quality Control Act. I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury."

9.4. WHERE TO SUBMIT A NOT?

Electronic submittal is encouraged (see [NPDES Electronic Reporting](#) for more information). Otherwise, the NOT shall be submitted to the Environmental Field Office (EFO) which issued the NOC to the primary permittee. A list of counties and the corresponding EFOs is provided in Subpart 3.4. The appropriate permit tracking number must be clearly printed on the form.



PART 10

10. DEFINITIONS, ACRONYMS AND RESOURCES

10.1. DEFINITIONS

2-year 24-hour 5-year 24-hour	2-year and 5-year design storm depths and intensities The estimated design rainfall amounts, for any return period interval (i.e., 2-yr, 5-yr, 25-yr, etc.,) in terms of either 24-hour depths or intensities for any duration, can be found by accessing the data available at https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html . Other data sources may be acceptable with prior written approval by TDEC Division of Water Resources.
ARAP	Aquatic Resource Alteration Permit Persons who wish to make an alteration to a <u>stream</u> , river, lake or wetland must first obtain a water quality permit. Physical alterations to properties of waters of the state require an ARAP or a §401 Water Quality Certification (§401 certification). Examples of <u>stream</u> alterations that require a permit from the division include: • Dredging, excavation, channel widening, or straightening • Bank sloping; stabilization • Channel relocation • Water diversions or withdrawals • Dams, weirs, dikes, levees or other similar structures • Flooding, excavating, draining and/or filling a wetland • Road and utility crossings • Structural fill General ARAPs are developed and maintained by the division to provide a streamlined, expedited means of authorizing projects that singularly or cumulatively propose minor impacts to water resources.
BMP	Best Management Practices ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the discharge of pollutants to <u>waters</u> of the state. BMPs also include treatment requirements, operating procedures; and practices to control plant site runoff,



	spillage, leaks, sludge or waste disposal, or drainage from raw material storage. BMPs include source control practices (non-structural BMPs) and engineered structures designed to treat runoff. <u>Structural BMPs</u> are facilities that help prevent pollutants in stormwater runoff from leaving the site. <u>Non-structural BMPs</u> are techniques, activities and processes that reduce pollutants at the source.
borrow pit	Borrow Pit is an excavation from which erodible material (typically <u>soil</u>) is removed to be fill for another site. There is no processing or separation of erodible material conducted at the site. Given the nature of activity and pollutants present at such excavation, a borrow pit is considered a construction activity for the purpose of this permit.
buffer zone	Buffer Zone or Water Quality Riparian Buffer is a permanent strip of natural perennial vegetation, adjacent to a <u>stream</u>, river, wetland, pond, or lake that contains dense vegetation made up of grass, shrubs, and/or trees. The purpose of a water quality riparian buffer is to maintain existing water quality by minimizing risk of any potential <u>sediments</u>, nutrients or other pollutants reaching adjacent surface waters and to further prevent negative water quality impacts by providing canopy over adjacent waters
clearing	Clearing refers to removal of vegetation and disturbance of <u>soil</u> prior to grading or excavation in anticipation of construction activities. Clearing may also refer to wide area land disturbance in anticipation of non-construction activities. Clearing, grading and excavation do not refer to clearing of vegetation along existing or new roadways, highways, dams or power lines for sight distance or other maintenance and/or safety concerns, or cold planning, milling, and/or removal of concrete and/or bituminous asphalt roadway pavement surfaces. The clearing of land for agricultural purposes is exempt from federal <u>stormwater</u> NPDES permitting in accordance with Section 401(1)(1) of the 1987 Water Quality Act and state <u>stormwater</u> NPDES permitting in accordance with the Tennessee Water Quality Control Act of 1977 (<u>T.C.A. 69-3-101 et seq.</u>).



commencement	Commencement of construction: the initial disturbance of <u>soils</u> associated with clearing, grading, excavating or other construction activities.
common plan	Common plan of development or sale is broadly defined as any announcement or documentation (including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design) or physical demarcation (including boundary signs, lot stakes, surveyor markings) indicating construction activities may occur on a specific plot. A common plan of development or sale identifies a situation in which multiple areas of disturbance are occurring on contiguous areas. This applies because the activities may take place at different times, on different schedules, by different <u>operators</u> .
control measure	Control measure refers to any Best Management Practice (BMP) or other method used to prevent or reduce the discharge of pollutants to waters of the state.
CWA	CWA means the Clean Water Act of 1977 or the Federal Water Pollution Control Act (33 U.S.C. 1251, et seq.)
director	Director means the director, or authorized representative, of the Division of Water Resources of the State of Tennessee, Department of Environment and Conservation.
degradation	Degradation means the alteration of the properties of waters by the addition of pollutants, withdrawal of water, or removal of habitat, except those alterations of a short duration.
de minimis	De Minimis is degradation of a small magnitude, as provided in this paragraph: (a) <u>Discharges and withdrawals</u> : 1. Subject to the limitation in part 3 of this subparagraph, a single discharge other than those from new domestic wastewater sources will be considered de minimis if it uses less than five percent of the available assimilative capacity for the substance being discharged. 2. Subject to the limitation in part 3 of this subparagraph, a single water withdrawal will be considered de minimis if it removes less than five percent of the 7Q10 flow of the <u>stream</u> .



	3. If more than one activity described in part 1 or 2 of this subparagraph has been authorized in a segment and the total of the authorized and proposed impacts uses no more than 10% of the assimilative capacity, or 7Q10 low flow, they are presumed to be de minimis. Where the total of the authorized and proposed impacts uses 10% of the assimilative capacity, or 7Q10 low flow, additional degradation may only be treated as de minimis if the Division finds on a scientific basis that the additional degradation has an insignificant effect on the resource. (b) Habitat alterations authorized by an Aquatic Resource Alteration Permit (ARAP) are de minimis if the Division finds that the impacts, individually and cumulatively, are offset by impact minimization and/or in-system mitigation, provided however, in Outstanding National Resource Waters (ONRWs) the mitigation must occur within the ONRW.
discharge of a pollutant	Discharge or discharge of a pollutant refers to the addition of pollutants to waters from a source.
disturbed area	Disturbed area means the total area presented as part of the development (and/or of a larger common plan of development) subject to being cleared, graded, grubbed, filled or excavated during the life of the development. The area cannot be limited to only the portion of the total area that the site-wide owner/developer initially disturbs through the process of various land clearing activities or in the construction of roadways, sewers, drainfields, and water utilities, <u>stormwater</u> drainage structures, etc., to make the property marketable.
division	Division means the Division of Water Resources of the State of Tennessee, Department of Environment and Conservation
exceptional waters	Exceptional Tennessee Waters are surface waters designated by the division as having the characteristics set forth at Tennessee Rules, Chapter 0400-40-03-.06(4). Characteristics include waters within parks or refuges; scenic rivers; waters with threatened or endangered species; waters that provide specialized recreational opportunities; waters within areas designated as lands



	unsuitable for mining; waters with naturally reproducing trout; waters with exceptional biological diversity and other waters with outstanding ecological or recreational value.
permanent stabilization	Permanent Stabilization means that all <u>soil</u> disturbing activities at the site have been completed and one of the three following criteria is met: (1) A perennial, preferably native, vegetative cover with a uniform (i.e., evenly distributed, without large bare areas) density of at least 70 percent has been established on all unpaved areas and areas not covered by permanent structures, and all slopes and channels have been permanently stabilized against erosion. (2) Equivalent permanent stabilization measures such as the use of riprap; permanent geotextiles; hardened surface materials including concrete, asphalt, gabion baskets or Reno mattresses have been employed. (3) For construction projects on land used for agricultural or silvicultural purposes, <u>permanent stabilization</u> may be accomplished by returning the disturbed land to its preconstruction agricultural or silvicultural use.
improved sinkhole	Improved sinkhole is a natural surface depression that has been altered in order to direct fluids into the hole opening. Improved sinkhole is a type of injection well regulated under the Underground Injection Control (UIC) program. Underground injection constitutes an intentional disposal of waste waters in natural depressions, open fractures and crevices, such as those commonly associated with weathering of limestone.
Level 1	Level 1 - Fundamentals of Erosion Prevention and Sediment Control training and certification program administered by University of Tennessee Water Resources Research Center (https://tnepsc.org/index.asp). The Fundamentals course is a foundation-building course intended for individuals involved in land-disturbing activities covered by the Construction General Permit. The course aims to build a working knowledge of erosion and <u>sedimentation</u> processes and practices and is intended for: site inspectors, inspection and enforcement personnel from all levels of government, plan preparers and reviewers, and designers and engineers. Topics include:



	Construction General Permit and related <u>SWPPP</u> requirements; function, installation, limitations, inspection and maintenance of Best Management Practices; roles of local officials and state government agencies involved in the permitting process; and basic hydrologic and erosion processes. Upon successful completion of a Course Certification Exam, the participant receives a Level 1 TNEPSC certificate. The Level 1 certificate is valid for three full years following the year that the certificate was issued. To meet the requirement for Level 1 certified staff, TDOT may develop and administer an approved equivalent Level1 training and certification program as provided in the TDOT individual <u>MS4</u> Permit. The equivalent TDOT Level 1 certification is valid only for TDOT staff and for projects where TDOT is the primary site <u>operator</u>.
Level 2	Level 2 - Design Principles for Erosion Prevention and Sediment Control for Construction Sites training and certification program administered by University of Tennessee Water Resources Research Center (https://tnepsc.org/index.asp). It is an advanced 2-day workshop designed for engineers and other professionals who have completed the prerequisite Level 1 course. The Level 2 Design workshop provides the general tools needed for developing an acceptable, working <u>SWPPP</u>. Topics discussed in the course include: hydrologic methods for determining peak flows; principles of <u>soil</u> erosion, scouring and <u>sediment</u> transport processes, including practice examples for preventing erosion; and open channel principles and practices for designing a stable channel, including use and examples of riprap, blankets and matting, and vegetation; <u>stormwater</u> control requirements and design; <u>sedimentation</u> principles; and <u>temporary sediment basin</u> design requirements, and detailed examples. The Level 2 Design workshop provides a Certificate of Completion after attending both days and successfully completing the take-home exam.
linear project	Linear Project is a land disturbing activity as conducted by an underground/overhead utility or highway department, including, but not limited to, any cable line or wire for the transmission of electrical energy; any conveyance pipeline for transportation of gaseous or liquid substance; any



	cable line or wire for communications; or any other energy resource transmission ROW or utility infrastructure, e.g., roads and highways. Activities include the construction and installation of these utilities within a corridor. Linear project activities also include the construction of access roads, staging areas and borrow/spoil sites associated with the linear project. Land disturbance specific to the development of residential and commercial subdivisions or high-rise structures is not considered a linear project.
measurable degradation	Measurable Degradation , as used in the context of <u>discharges</u> or withdrawals, means changes in parameters of waters that are of sufficient magnitude to be detectable by the best available instrumentation or laboratory analyses.
month	Month or Monthly refers to calendar months.
MS4	"Municipal Separate Storm Sewer System" or "MS4" is defined in 40 CFR §122.26(b)(8) to mean a conveyance or system of conveyances (e.g., roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) that are: a) owned and operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, <u>stormwater</u>, or other wastes, including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that <u>discharges</u> to waters of the United States; b) designed or used for collecting or conveying <u>stormwater</u>; c) not a combined sewer; and d) not part of a Publicly Owned Treatment Works (POTW) as defined in 40 CFR §122.2.
operator	Operator for the purpose of this permit and in the context of <u>stormwater</u> associated with construction activity, means any person (typically considered the primary permittee)



	associated with a construction project that meets either of the following two criteria: a) This person has operational or design control over construction plans and specifications, including the ability to make modifications to those plans and specifications. This person is typically the owner or developer of the project or a portion of the project (e.g., subsequent builder) or the person who is the current owner of the construction site. b) This person has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a <u>SWPPP</u> for the site or other permit conditions. This person is typically a contractor or a commercial builder who is hired by the primary permittee and is considered a secondary permittee. It is anticipated that at different phases of a construction project, different types of parties may satisfy the definition of “operator” (see Part 2 of this permit).
point source (or outfall)	Point source means any discernible, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include introduction of pollutants from non-point source agricultural and silvicultural activities, including <u>stormwater</u> runoff from orchards, cultivated crops, pastures, range lands, forest lands or return flows from irrigated agriculture or agricultural <u>stormwater</u> runoff. In short, outfall is a point where runoff leaves the site as a concentrated flow in a discrete conveyance. Phrase “point source” and term “outfall” are used interchangeably in this general permit, and can be considered synonyms.
pollutant	Pollutant means sewage, industrial wastes, or other wastes.
QLP	Qualifying State, Tribal, or local erosion and sediment control program is one that includes, as defined in 40 CFR 122.44(s):



	a) Requirements for construction site <u>operators</u> to implement appropriate erosion and <u>sediment</u> control best management practices. b) Requirements for construction site <u>operators</u> to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality. c) Requirements for construction site <u>operators</u> to develop and implement a <u>stormwater</u> pollution prevention plan. A stormwater pollution prevention plan includes site descriptions, descriptions of appropriate control measures, copies of approved State, Tribal or local requirements, maintenance procedures, inspection procedures and identification of non-<u>stormwater</u> discharges. d) Requirements to submit a site plan for review that incorporates consideration of potential water quality impacts.
rainfall	A rainfall event is defined as any occurrence of rain preceded by 10 hours without precipitation that results in an accumulation of 0.01 inches or more. Instances of rainfall occurring within 10 hours of each other will be considered a single rainfall event.
registered engineer	Registered Engineer and Registered Landscape Architect An engineer or landscape architect certified and registered by the State Board of Architectural and Engineer Examiners pursuant to Section 62-202, Tennessee Code Annotated, to practice in Tennessee.
runoff coefficient	Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff. Runoff coefficient is also defined as the ratio of the amount of water that is not absorbed by the surface to the total amount of water that falls during a rainstorm.
sediment	Sediment means solid material, both inorganic (mineral) and organic, that is in suspension, is being transported; or has been moved from the site of origin by wind, water, gravity or ice as a product of erosion.
sediment basin	Sediment basin A temporary basin consisting of an embankment constructed across a wet weather



	conveyance, an excavation that creates a basin or by a combination of both. A sediment basin typically consists of a forebay cell, dam, impoundment, permanent pool, primary spillway, secondary or emergency spillway and surface dewatering device. The size and shape of the basin depends on the location, size of drainage area, incoming runoff volume and peak flow, <u>soil</u> type and particle size, land cover, and receiving <u>stream</u> classification (i.e., waters with unavailable parameters, Exceptional TN Waters, or waters with available parameters).
sedimentation	Sedimentation means the action or process of forming or depositing sediment.
soil	Soil or Topsoil means the unconsolidated mineral and organic material on the immediate surface of the earth that serves as a natural medium for the growth of plants.
steep slope	Steep Slope or Steep Grade means a natural or created slope of 35% grade or greater. Designers of sites with steep slopes must pay attention to <u>stormwater</u> management in the <u>SWPPP</u> to engineer runoff around or over a steep slope so as not to erode the slope. In addition, site managers should focus on erosion prevention on the slopes and stabilize the slopes as soon as practicable to prevent slope failure or sediment discharges from the project.
stormwater	Stormwater means rainfall runoff, snow melt runoff, and surface runoff and drainage.
stream	A Stream is a surface water that is not a wet weather conveyance. Therefore, as used in this permit, "stream" includes lakes, wetlands and other non-linear surface waters.
construction stormwater	Stormwater associated with industrial activity is defined in 40 CFR 122.26(b)(14) and incorporated here by reference. Most relevant to this permit is 40 CFR 122.26(b)(14)(x), which relates to construction activity including clearing, grading, filling and excavation activities, including borrow pits containing erodible material. Disturbance of soil for the purpose of crop production is exempt from permit requirements, but stormwater discharges from agriculture-related activities that involve construction of structures (e.g., barn construction, road construction, pond construction) are considered associated with industrial



	activity. Maintenance to the original line and grade, hydraulic capacity; or to the original purpose of the facility (e.g., re-clearing, minor excavation performed around an existing structure necessary for maintenance or repair and repaving of an existing road) is not considered a construction activity for the purpose of this permit.
discharge-related activities	Stormwater discharge-related activities means activities that cause, contribute to or result in point source stormwater pollutant discharges. These activities may include excavation, site development, grading and other surface disturbance activities; and activities to control stormwater including the siting, construction and operation of best management practices (BMPs).
SWPPP	Stormwater Pollution Prevention Plan is a written site-specific plan required by this permit that includes a narrative pollution prevention plan and graphical erosion and sediment control plan. In its basic form, the plan contains a site map, a description of construction activities that could introduce pollutants to stormwater runoff, a description of measures or practices to control these pollutants, and erosion and sediment control plans and specifications. It must be prepared and submitted before construction begins. In order to effectively reduce erosion and <u>sedimentation</u> impacts, Best Management Practices (BMPs) must be designed, installed and maintained during land disturbing activities. The <u>SWPPP</u> should be prepared in accordance with the <u>Tennessee Erosion and Sediment Control Handbook</u> .
take	Take of an endangered species means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct.
the handbook	<u>Tennessee Erosion and Sediment Control Handbook</u> is a guidance issued by the Division of Water Resources for the purpose of developing Stormwater Pollution Prevention Plans and Erosion and Sediment Control Plans required by the TNCGP. The handbook is designed to provide information to planners, developers, engineers and contractors on the proper selection, installation and maintenance of BMPs. The handbook is intended for use during the design and



	construction of projects that require erosion and sediment controls to protect waters of the state.
temporary stabilization	Temporary stabilization is achieved when vegetation or non-erodible surface has been established on the area of disturbance and construction activity has temporarily ceased. Under certain conditions, temporary stabilization is required when construction activities temporarily cease. However, if future construction activity is planned, permit coverage continues.
TMDL	Total maximum daily load (TMDL) means the sum of the individual wasteload allocations for <u>point sources</u> and load allocations for nonpoint sources and natural background (40 CFR 130.2(l)). TMDL is a study that quantifies the amount of a pollutant in a <u>stream</u>, identifies the sources of the pollutant and recommends regulatory or other actions that may need to be taken in order for the <u>stream</u> to cease being polluted. TMDLs can also be described by the following equation: $\text{TMDL} = \text{sum of nonpoint sources (LA)} + \text{sum of } \underline{\text{point sources (WLA)}} + \text{margin of safety}$ A list of completed TMDLs that have been approved by EPA can be found at our web site: https://www.tn.gov/environment/program-areas/wr-water-resources/watershed-stewardship/tennessee-s-total-maximum-daily-load--tmdl--program.html
treatment chemicals	Treatment chemicals are polymers, flocculants or other chemicals used to reduce turbidity in stormwater discharges by chemically bonding to suspended silts and other soil materials and causing them to bind together and settle out. Common examples of anionic treatment chemicals are chitosan and anionic PAM.
turbidity	Turbidity is the cloudiness or haziness of a fluid caused by individual particles (suspended solids) that are generally invisible to the naked eye, similar to smoke in air.
waste site	Waste site is an area where material from a construction site is disposed of. When the material is erodible, such as soil, the site must be treated as a construction site.



waters or waters of the state	Waters (or waters of the state) means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through, or border upon Tennessee or any portion thereof, except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine or effect a junction with natural surface or underground waters.
unavailable parameters	Waters with unavailable parameters means any segment of surface waters that has been identified by the division as failing to support one or more classified uses. For the purpose of this permit, pollutant of concern is siltation. Based on the most recent assessment information available to staff, the division will notify applicants and permittees if their discharge is into, or is affecting, waters with unavailable parameters. Resources to be used in making this determination include biennial compilations of impaired waters, databases of assessment information, updated GIS coverages (https://tdeconline.tn.gov/dwr/), and the results of recent field surveys. GIS coverages of the streams and lakes not meeting water quality standards, plus the biennial list of waters with unavailable parameters, can be found at https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html .
week	A one-week period is a synonym of a calendar-week ; typically, a period from Sunday through Saturday.
wet weather conveyance	Wet weather conveyances are man-made or natural watercourses, including natural watercourses that have been modified by channelization, that meet the following: a) The conveyance carries flow only in direct response to precipitation runoff in its immediate locality. b) The conveyance's channels are at all times above the ground water table. c) The flow carried by the conveyance is not suitable for drinking water supplies. d) Hydrological and biological analyses indicate that, due to naturally occurring ephemeral or low flow under normal weather conditions, there is not sufficient water



	to support fish or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months. (Tennessee Rules, Chapter 0400-40-3-.04(3)).

10.2. ACRONYMS AND ABBREVIATIONS

7Q10	7-day minimum, 10-year recurrence interval
<u>ARAP</u>	Aquatic Resource Alteration Permit
<u>BMP</u>	Best Management Practice
BPT	Best Practicable Control Technology Currently Available
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CGP	Construction General Permit (this NPDES permit)
<u>CWA</u>	Clean Water Act
<u>EFO</u>	Environmental Field Office (see Subpart 3.4)
EPA	(U.S.) Environmental Protection Agency
EPSC	Erosion Prevention and Sediment Control
<u>MS4</u>	Municipal Separate Storm Sewer System
NOC	Notice of Coverage (see Subpart 1.5)
NOI	Notice of Intent (to be covered by this permit – see Section 1.4.1)
NOT	Notice of Termination (see Part 9)
NPDES	National Pollutant Discharge Elimination System
ONRW	Outstanding National Resource Waters
<u>QLP</u>	Qualifying Local Program (see Section 1.4.5)
<u>SWPPP</u>	Stormwater Pollution Prevention Plan
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
<u>TMDL</u>	Total Maximum Daily Load
TMSP	Tennessee Multi-Sector General Permit for the Discharge of Stormwater from an Industrial Activity
TVA	Tennessee Valley Authority
TWQCA	Tennessee Water Quality Control Act
UIC	Underground Injection Control
USGS	United States Geological Survey



10.3. RESOURCES, HYPERLINKS, AND WEB PAGES

Electronic Code of Federal Regulations (eCFR), Title 40 (40 CFR § 1 through § 1099)

<https://www.ecfr.gov/cgi-bin/text-idx?SID=75202eb5d09974cab585afeea981220b&mc=true&tpl=/ecfrbrowse/Title40/40chapter1.tpl>

Electronic Reporting (NetDMR) Waiver Request

https://www.tn.gov/content/dam/tn/environment/water/documents/wr_electronic_reporting_waiver.pdf

Online Forms

[NPDES Electronic Reporting](#)

NPDES Compliance Inspection Manual (EPA)

<https://www.epa.gov/sites/production/files/2017-01/documents/npdesinspect.pdf>

NPDES Electronic Reporting Rule

<https://www.federalregister.gov/documents/2015/10/22/2015-24954/national-pollutant-discharge-elimination-system-npdes-electronic-reporting-rule>

Rules of the TN Department of Environment and Conservation, Chapter 0400-40

<https://publications.tnsosfiles.com/rules/0400/0400-40/0400-40.htm>

TDEC Water Quality Rules, Reports, and Publications

<https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html>

Technical Support Document for Water Quality-based Toxics Control (EPA)

<https://www3.epa.gov/npdes/pubs/owm0264.pdf>

Tennessee Water Resources Data and Map Viewers

<https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-resources-data-map-viewers.html>

USGS StreamStats

https://www.usgs.gov/mission-areas/water-resources/science/streamstats-streamflow-statistics-and-spatial-analysis-tools?qt-science_center_objects=0#qt-science_center_objects



USGS SWToolbox

<https://www.usgs.gov/software/swtoolbox-software-information>

(End of body of permit; appendices follow.)

APPENDIX A – NOTICE OF INTENT FORM (NOI)

(See Next Page)



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor
Nashville, TN 37243
Toll Free Number: 1-888-891-8332 (TDEC)

**NOTICE OF INTENT (NOI) FOR GENERAL NPDES PERMIT FOR
STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (TNR100000)**

Site or Project Name:		NPDES Tracking Number: TNR	
Street Address including city or zip code or Location:		Construction Start Date:	
		Estimated End Date:	
Site Description:		Latitude (dd.dddd):	
		Longitude (-dd.dddd):	
County(ies):	MS4 Jurisdiction (if applicable):	Acres Disturbed:	
		Total Acres:	
Are there any streams ☐ and/or wetlands ☐ on or adjacent to the construction site? If wetlands are located on-site and may be impacted, attach wetlands delineation report. If an Aquatic Resource Alteration Permit has been obtained for this site, what is the permit number? ARAP Number:			
Receiving waters:			
Include the SWPPP with the NOI ☐ SWPPP Included		Include a site location ☐ Map Included map	

Name of Site Owner or Developer (Site-Wide Permittee): (correct legal name of person, company, or entity that has operational or design control over construction plans and specifications)			
For corporate entities only, provide the Tennessee Secretary of State (SOS) Control Number:			
Site Owner or Developer Contact Name: (individual responsible for site)		Title or Position: (the party who signs the certification below):	
Mailing Address:	City:	State:	Zip:
Phone: ()	E-mail:		

Optional Contact Name:	Title or Position:		
Mailing Address:	City:	State:	Zip:
Phone: ()	E-mail:		

Owner or Developer Certification: (must be signed by president, vice-president or equivalent, or ranking elected official) (Primary Permittee)

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Owner or Developer Name: (print or type)

Signature:

Date:

Contractor(s) Certification: (must be signed by president, vice-president or equivalent, or ranking elected official) (Secondary Permittee)

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and for failure to comply with these permit requirements. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Primary contractor name, address, and SOS control number (if applicable): (print or type)

Signature:

Date:

Primary contractor name, address, and SOS control number (if applicable): (print or type)

Signature:

Date:

Primary contractor name, address, and SOS control number (if applicable): (print or type)

Signature:

Date:

NOTICE OF INTENT (NOI) FOR GENERAL NPDES PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (TNR100000)

Purpose of this form: A completed notice of intent (NOI) must be submitted to obtain coverage under the Tennessee General NPDES Permit for Discharges of Stormwater Associated with Construction Activity (permit). **Requesting coverage under this permit means that an applicant has obtained and examined a copy of this permit, and thereby acknowledges applicant's claim of ability to be in compliance with permit terms and conditions.** This permit is required for stormwater discharge(s) from construction activities including clearing, grading, filling and excavating (including borrow pits) of one or more acres of land. This form should be submitted at least 30 days prior to the commencement of land disturbing activities, or no later than 48 hours prior to when a new operator assumes operational control over site specifications or commences work at the site.

The appropriate permit application fee must accompany the NOI and is based on total acreage to be disturbed by an entire project, including any associated construction support activities (e.g., equipment staging yards, material storage areas, excavated material disposal areas, borrow or waste sites):

(i) Projects equal to or greater than 150 acres	\$10,000
(ii) Projects equal to or greater than 50 acres and less than 150 acres	\$6,000
(iii) Projects equal to or greater than 20 acres and less than 50 acres	\$3,000
(iv) Projects equal to or greater than 5 acres and less than 20 acres	\$1,000
(v) Projects equal to or greater than 1 acre and less than 5 acres	\$250
(vi) Projects seeking subsequent coverage under an actively covered larger common plan of development or sale	\$100

There is no fee for sites less than 1 acre. A separate annual maintenance fee is also required for construction activities that exceed 1 year under general permit coverage. Tennessee Rules, Chapter 0400-40-11-.02(b)(12)).

Who must submit the NOI form? Per Section 2 of the permit, all site operators must submit an NOI form. "Operator" for the purpose of this permit and in the context of stormwater associated with construction activity means any person associated with a construction project who meets either or both of the following two criteria: (1) The person has operational or design control over construction plans and specifications, including the ability to make modifications to those plans and specifications. This person is typically the owner or developer of the project or a portion of the project (e.g. subsequent builder), or the person that is the current landowner of the construction site. This person is considered the primary permittee; or (2) The person has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a SWPPP for the site or other permit conditions. This person is typically a contractor or a commercial builder who is hired by the primary permittee and is considered a secondary permittee.

Owners, developers and all contractors that meet the definition of the operator in subsection 2.2 of the permit shall apply for permit coverage on the same NOI, insofar as possible. After permit coverage has been granted to the primary permittee, any separate or subsequent NOI submittals must include the site's previously assigned permit tracking number and the project name. The site-wide site-specific SWPPP shall be prepared in accordance with the requirements of part 5 of the permit and must be submitted with the NOI unless the NOI being submitted is to only add a contractor (secondary permittee) to an existing coverage.

Artificial entities (e.g., corporations or partnerships excluding entities not required to register) must submit the TN Secretary of State, Division of Business Services, control number. The Division reserves the right to deny coverage to artificial entities that are not properly registered and in good standing with the TN Secretary of State.

Notice of Coverage The division will review the NOI for completeness and accuracy and prepare a notice of coverage (NOC). Stormwater discharge from the construction site is authorized as of the effective date of the NOC.

Complete the form Type or print clearly, using ink and not markers or pencil. Answer each item or enter "NA," for not applicable, if a particular item does not fit the circumstances or characteristics of your construction site or activity. If you need additional space, attach a separate piece of paper to the NOI form. **The NOI will be considered incomplete without a permit fee, a map, and the SWPPP.**

Describe and locate the project Use the legal or official name of the construction site. If a construction site lacks street name or route number, give the most accurate geographic information available to describe the location (reference to adjacent highways, roads and structures; e.g. intersection of state highways 70 and 100). Latitude and longitude (expressed in decimal degrees) of the center of the site can be located on USGS quadrangle maps. The maps can be obtained at the USGS World Wide Web site: <http://www.usgs.gov/>; latitude and longitude information can be found at numerous other web sites. Attach a copy of a portion of a 7.5 minute topographic map, a city map, or a county map showing location of site, with boundaries at least one mile outside the site boundaries. Provide estimated starting date of clearing activities and completion date of the project, and an estimate of the number of acres of the site on which soil will be disturbed, including borrow areas, fill areas, stockpiles and the total acres. For linear projects, give location at each end of the construction area.

Give name of the receiving waters Trace the route of stormwater runoff from the construction site and determine the name of the river(s), stream(s), creek(s), wetland(s), lake(s) or any other water course(s) into which the stormwater runoff drains. Note that the receiving water course may or may not be located on the construction site. If the first water body receiving construction site runoff is unnamed ("unnamed tributary"), determine the name of the water body that the unnamed tributary enters.

An ARAP may be required **If your work will disturb or cause alterations of a stream or wetland, you must obtain an appropriate Aquatic Resource Alteration Permit (ARAP).** If you have a question about the ARAP program, contact your local Environmental Field Office (EFO).

Submitting the form and obtaining more information Note that this form must be signed by the company President, Vice-President, or a ranking elected official in the case of a municipality, for details see subpart 2.5. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). Submit the completed NOI form (keep a copy for your records) to the appropriate EFO for the county(ies) where the construction activity is located, addressed to **Attention: Stormwater NOI Processing** or use MyTDEC Forms for electronic submittal.

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	8383 Wolf Lake Drive, Bartlett	38133-4119	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305-4316	Chattanooga	1301 Riverfront Parkway, Suite 206	37402-2013
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverdale Road	37601

APPENDIX B – NOTICE OF TERMINATION FORM (NOT)

(See Next Page)



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC)
Division of Water Resources (DWR)
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243
1-888-891-TDEC (8332)

**Notice of Termination (NOT) for
General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)**

This form is required to be submitted when requesting termination of coverage from the CGP. The purpose of this form is to notify the TDEC that either all stormwater discharges associated with construction activity from the portion of the identified facility where you, as an operator, have ceased or have been eliminated; or you are no longer an operator at the construction site. Specifically, this means that all disturbed soils at the portion of the construction site where the operator had control have been permanently stabilized, the temporary erosion and sediment control measures have been removed, and/or subsequent operators have obtained permit coverage for the site or portions of the site where the operator had control. Submission of this form shall in no way relieve the permittee of permit obligations required prior to submission of this form.

Submit this form to the local DWR Environmental Field Office (EFO) address (see table below) or using MyTDEC Forms electronic submittal process. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC).

Site or Project Name:	NPDES Tracking Number: TNR
Street Address or Location:	County(ies):

Name of Permittee Requesting Termination of Coverage:			
Permittee Contact Name:		Title or Position:	
Mailing Address:	City:	State:	Zip:
Phone: ()	E-mail:		

Check the reason(s) for termination of permit coverage: (check only one)

☐	Primary permittee termination: all requirements for termination under Permit Part 9.1.1. a) through c) have been met. This includes, but is not limited to, for areas the primary permittee has control all earth-disturbing activities at the site are complete and permanent stabilization as defined in Part 10 of the CGP has been achieved. (attach photo documentation).
☐	When applicable, and you are a primary permittee seeking termination, list who is responsible for ongoing maintenance of stormwater controls left on the site subject for long-term use following termination of coverage:
☐	Secondary permittee termination: all requirements for termination under Permit Part 9.2.1. have been met (no longer an operator at the construction site).

CN-1175 (Rev. 12-21)

RDA 2366

Certification and Signature:

(must be signed by president, vice-president or equivalent ranking elected official)

I certify under penalty of law that either: (a) all stormwater discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or (b) I am no longer an operator at the construction site. I understand that by submitting this notice of termination, I am no longer authorized to discharge stormwater associated with construction activity under this general permit, and that discharging pollutants in stormwater associated with construction activity to waters of the state is unlawful under the Tennessee Water Quality Control Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Tennessee Water Quality Control Act. I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Permittee name (print or type):

Signature:

Date:

EFO	Address	EFO	Street Address
Memphis	8383 Wolf Lake Drive, Bartlett, TN 38133	Cookeville	1221 South Willow Ave., TN 38506
Jackson	1625 Hollywood Drive, TN 38305	Chattanooga	1301 Riverfront Parkway, Ste. 206, TN 37402
Nashville	711 R S Gass Boulevard, TN 37243	Knoxville	3711 Middlebrook Pike, TN 37921
Columbia	1421 Hampshire Pike, TN 38401	Johnson City	2305 Silverdale Road, TN 37601

APPENDIX C – INSPECTION REPORT FORM

(See Next Page)



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC)
Division of Water Resources (DWR)
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor,
Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

**General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)
Construction Stormwater Inspection Certification (Inspection Form)**

Site or Project Name:		NPDES Tracking Number: TNR
Primary Permittee Name:		Date of Inspection:
Current approximate disturbed acreage:	Has rainfall been checked/documented daily? ☐ Yes ☐ No	Name of Inspector:
Current weather/ground conditions:	Rainfall total since last inspection:	Inspector's TNEPSC Certification Number:
Site Assessment ☐ Yes ☐ No	Assessor's TN PE registration number:	Assessor's TNEPSC Level II/CPESC number:

Check the box if the following items are on-site:	
☐	Notice of Coverage (NOC)
☐	Stormwater Pollution Prevention Plan (SWPPP)
☐	Weekly inspection documentation
☐	Site contact information
☐	Rain Gage
Off-site Reference Rain Gage Location	

Best Management Practices (BMPs):

Are the Erosion Prevention and Sediment Controls (EPSCs) functioning correctly?				
If "No," describe below in Comment Section				
1.	Are all applicable EPSCs installed and maintained per the SWPPP per the current phase?	☐ Yes	☐ No	
2.	Are EPSCs functioning correctly at all disturbed areas/material storage areas? (permit section 5.5.3)	☐ Yes	☐ No	
3.	Are EPSCs functioning correctly at outfall/discharge points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts? (permit section 5.5.3.5 and 6.3.2)	☐ Yes	☐ No	
4.	Are EPSCs functioning correctly at ingress/egress points such that there is no evidence of track-out? (permit section 5.5.3.1)	☐ Yes	☐ No	
5.	If applicable, have discharges from dewatering activities been managed by appropriate controls? (permit section 4.1.3) If "No," describe below the measure to be implemented to address deficiencies.	☐ N/A	☐ Yes	☐ No
6.	If construction activity at any location on-site has temporarily/permanently ceased, was the area stabilized within 14 days? (permit section 5.5.3.4) If "No," describe below each location and measures taken to stabilize the area(s).	☐ N/A	☐ Yes	☐ No
7.	Have pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from wash waters, exposure of materials and discharges from spills and leaks per section 4.1.4? If "No," describe below the measure to be implemented to address deficiencies.	☐ N/A	☐ Yes	☐ No

Site or Project Name:		NPDES Tracking Number: TNR		
Primary Permittee Name:		Date of Inspection:		
8.	If a concrete washout facility is located on site, is it clearly identified on the project and maintained? If "No," describe below the measures to be implemented to address deficiencies. (permit section 1.2.2)	☐ N/A	☐ Yes	☐ No
9.	Have all previous deficiencies been addressed? If "No," describe the remaining deficiencies in the Comments section. ☐ Check if deficiencies/corrective measures have been reported on a previous form.	☐ N/A	☐ Yes	☐ No
Comment Section. If the answer is "No" for any of the above, describe the problem and summarize corrective actions to be taken. Otherwise, describe any pertinent observations:				
Certification and Signature (must be signed by the certified inspector and the permittee per Sections 5.5.3.11 (g) and 8.7.2 of the CGP)				
I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.				
Inspector Name and Title :		Signature:	Date:	
Primary Permittee Name and Title:		Signature:	Date:	

Construction Stormwater Inspection Certification Form (Inspection Form)

Purpose of this form/ Instructions

An inspection, as described in subsection 5.5.3.9. of the General Permit for Stormwater Discharges from Construction Activities ("Permit"), shall be performed at the specified frequency and documented on this form. Inspections shall be performed at least 72 hours apart. Where sites or portion(s) of construction sites have been temporarily stabilized, or runoff is unlikely due to winter conditions (e.g., site covered with snow or ice), such inspection only has to be conducted once per month until thawing results in runoff or construction activity resumes.

Inspections can be performed by:

- a) a person with an valid certification from the "Fundamentals of Erosion Prevention and Sediment Control Level I" course,
- b) a licensed professional engineer or landscape architect,
- c) a Certified Professional in Erosion and Sediment Control (CPESC), or
- d) a person who has successfully completed the "Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites" course.

Qualified personnel, as defined in subsection 5.5.3.10 of the Permit (provided by the permittee or cooperatively by multiple permittees) shall inspect disturbed areas of the construction site that have not been permanently stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, locations where vehicles enter or exit the site, and each outfall.

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the site's drainage system. Erosion prevention and sediment control measures shall be observed to ensure that they are operating correctly.

Outfall points (where discharges leave the site and/or enter waters of the state) shall be inspected to determine whether erosion prevention and sediment control measures are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced or modified, or repaired as necessary, before the next rain event if possible, but in no case more than 7 days after the need is identified.

Based on the results of the inspection, the site description identified in the SWPPP in accordance with section 5.5.1 of the Permit and pollution prevention measures identified in the SWPPP in accordance with section 5.5.2 of the Permit, shall be revised as appropriate, but in no case later than 7 days following the inspection. Such modifications shall provide for timely implementation of any changes to the SWPPP, but in no case later than 14 days following the inspection.

All inspections shall be documented on this Construction Stormwater Inspection Certification form. Alternative inspection forms may be used as long as the form contents and the inspection certification language are, at a minimum, equivalent to the Division's form and the permittee has obtained a written approval from the Division to use the alternative form. Inspection documentation will be maintained on site and made available to the Division upon request. Inspection reports must be submitted to the Division within 10 days of the request.

Trained certified inspectors shall complete inspection documentation to the best of their ability. Falsifying inspection records or other documentation or failure to complete inspection documentation shall result in a violation of this permit and any other applicable acts or rules.



Memphis-Shelby County Airport Authority COMPREHENSIVE STORM WATER POLLUTION PREVENTION PLAN

**For Contractors Performing
Construction Activities at the
Memphis International Airport
Under Permits TNR10-0000 and TNR15-0091**

Comprehensive Storm Water Pollution Prevention Plan

Appendix A: Figures

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MSCAA requires that all construction activity on airport property must be in compliance with TDEC and City of Memphis requirements. All recommended techniques and materials, along with guidelines on implementation and use are provided in the following documents:

MSCAA recommends that all Contractors working on MSCAA property become fully educated on the contents of this documents and request assistance from both organizations if questions or concerns arise.

TDEC Erosion and Sediment Control Handbook

<http://tnepsc.org/handbook.asp>

City of Memphis Storm Water Control website

https://www.memphistn.gov/wp-content/uploads/2020/09/003-Volume3_BestManagementPracticesManual.pdf

MSCAA maintenance expectations, at a minimum, throughout the entire project:

Temporary Seeding and Planting

- Ensure proper calculation of seeding rate, based on seed purity and germination information
- Inspect frequently to verify that vegetation is growing
- Reseed areas to prevent sheet and rill erosion
- Spot seed in small areas

Permanent Seeding and Planting

- Ensure proper calculation of seeding rate, based on seed purity and germination information
- Inspect frequently to verify that vegetation is growing
- Reseed areas to prevent sheet and rill erosion
- Spot seed in small areas

Soil Binders

- Apply according to manufacturer's specification
- Apply stabilizers/tackifiers with sufficient drying time before rainfall (typically 24 hours)
- Select a product that is best suited for the area installed (considering longevity, curing time, resistance to abrasion, and compatibility with existing vegetation)
- Soil binders must be maintained by reapplying in high traffic areas, after storm events, or after being in-place for an extended period.

Mulches

- Inspection of the application should be performed along with other regularly scheduled erosion and sediment control inspections.
- Any areas that have washed out due to high storm water flows should be reconsidered for different BMP use, or at least retreated.
- Areas that have been disturbed by blowing wind should be retreated.
- Maintenance needs identified in inspections or by other means shall be accomplished before the next storm event if possible, but in no case more than 7 days after the need is identified.

Silt Fence

Silt fence stake pockets should be placed on the uphill side of the sediment fence, so if the stitching of the pocket pulls out, the fabric will still drape against the stakes. The bottom of the fabric of the fence should be trenched into the ground, or else water and sediment can flow under the sediment fence. The silt fence should be placed on the contour, or else a “flume” will be created where flow and sediment can concentrate. A failure is likely to occur at such a concentration point and the flume will release concentrated flow and sediment down the face of the slope. Silt fence is designed for sheet flow only and should never be placed over concentrated flows, such as channels or streams. Silt fence is designed for relatively small drainage areas and should not be placed at the bottom of a large drainage area that will overwhelm the sediment fence in the first storm event.

- Sediment fences should be cleaned of accumulated sediment after each major storm, or when deposition is one-half of the barrier height.
- Breaks or overtopped areas should be replaced or repaired immediately. Fences should be repaired and the accumulated sediment dispersed to a stable area.
- Sediment fence should be removed when the area being protected is fully stabilized and prior to termination of permit coverage.

Storm Drain Inlet Protection

Using inlet protection measures that divert flow, rather than filter flow, can result in flooding of adjacent areas, or overwhelming adjacent inlets. Common problems are bypassing of inlet protection due to insufficient packing of the ends of Biofilter bags and bypassing of the inlet protection due to overflow slots on drain inlet insert devices.

Inlet filters for storm drains should be inspected and cleaned after each significant storm event and repaired promptly. Sediment shall be removed after each significant storm event and deposited in a stable area where it will not be subject to erosion.

If the inlet protection device becomes clogged with sediment, it must be carefully removed from the inlet and either cleaned or replaced.

Temporary Sediment Basin

- Constructing a basin that is too wide and not long enough can result in short-circuiting of the basin and discharge of sediment out of the basin.
- Temporary and post-construction sediment basins should be cleaned of accumulated sediment after every significant storm event, or when sediment reaches the basin capacity as designed in the EPSCP.
- Removed sediment shall be properly disposed in a stable area that is not susceptible to erosion.

Entrance/Exit Tracking Controls

- While gravel for temporary construction entrances should be coarse enough to shake loose soil that adheres to the vehicles' wheels and undercarriage, it should not be so coarse and angular that it causes damage to tires.
- Stabilized gravel construction entrances shall be inspected for the transport of sediment onto public rights-of-way and any tracked sediment shall be removed immediately by vacuum sweeping and not washed off by water trucks. If tracking is an ongoing problem, a wheel wash facility should be added to the site.

Entrance/Exit Tire Wash

- Installation of tire wash with other entrance/exit tracking controls to reduce sediment loading on tire wash

Remove accumulated sediment from tire wash

Diversion of Run-On

- Diversion channels must be properly sized to convey design flows around disturbed soil areas or other areas of concern.
- Diversion measures must be maintained to remove debris and sediment, repair linings, and replace lost rip rap as needed.

Check Dams

- Place check dams or barriers so that the abutments are at a higher elevation than the center of the barrier so that flow around the ends of the barrier does not occur. Trench the bottom of the check dam or barrier so that undermining of the barrier does not occur.
- Check dams should be checked for undermining and/or short-circuiting and repaired or replaced if necessary.
- Check dams should be cleaned after each significant storm event or when accumulated sediment reaches one-half the height of the check dam.
- Check dams should be keyed into the channel banks a minimum of 18 inches to prevent flow around the dam or as designed in the EPSCP.



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**IMMEDIATE RESPONSE PROCEDURES
ON-SCENE PERSONNEL**

- 1. Initiate evacuation, if necessary.**
- 2. Notify MSCAA Environmental Manager at (901) 922-8754 or Airport Police at (901) 922-8298, and report the following information, if it is known or can reasonably be determined:**
 - Name of individual reporting spill
 - Location of spill
 - Number of injured personnel and number of injuries, if applicable
 - Substance spilled
 - Estimated amount spilled
 - Estimated rate at which material is currently spilling
 - Estimated time of spill occurrence
 - Extent of spill travel
 - Necessity of fire department to respond to protect life, property, and environment
 - Any additional pertinent information such as other potential hazards.
- 3. Stop spill flow when possible without undue risk of personal injury.**
- 4. Contain the spill using whatever means is readily available.**
- 5. Make spill scene OFF LIMITS to unauthorized personnel.**
- 6. Restrict all sources of ignition when flammable substances are involved.**
- 7. Report to the emergency spill response designee upon his/her arrival to the scene.**

EMERGENCY NOTIFICATIONS AND RESPONSE RESOURCES

Table D-1 contains installation and local phone numbers that are to be used to alert personnel of the incident or to request additional assistance.

Table D-1 Emergency Telephone Numbers				
Prioritized Contact List	Response Role	Contact Timeline	Day Phone	24-Hour Phone
USEPA, Region 4, Emergency Response (24-hour Hotline)	Regulator	As indicated in Table D-2	(404) 562-8700	(404) 562-8700
U.S. Coast Guard, 8 th District Marine Safety Office (for coastal waters)	Regulator	As indicated in Table D-2	(901) 544-3912 x2122	(901) 544-3912 x2122 or (866) 777-2784
Tennessee Department of Environment & Conservation (TDEC) Memphis Office	Regulator	As indicated in Table D-2	(901) 371-3000	(800) 262-3300
TN Emergency Management Agency (TEMA) 24-hr	Regulator	As indicated in Table D-2	(800) 262-3300 or (615) 741-0001	(800) 262-3300
National Response Center www.nrc.uscg.mil	Receiver of all reports of spills to waters of the U.S., or potential to affect waters.	Immediately	(800) 424-8802	(800) 424-8802
City of Memphis Storm Water	Regulator	As indicated in Table D-2	(901) 576-4349	(901) 576-6721 (hotline)
City of Memphis POTW	Regulator	As indicated in Table D-2	(901) 353-2392	
Shelby County Storm Water Hotline	Regulator	As indicated in Table D-2	(901) 545-3870	
City of Memphis Fire Department and Local Emergency Planning Committee (LEPC) within 15 minutes of spill	Emergency Assistance	Immediately	911	911
	MFD Hazmat	As needed	(901) 320-5368	(901) 320-5368
City of Memphis Fire Department	Emergency Assistance	As needed	(901) 458-3311	(901) 458-3311
YOUR on call first responders	Spill Response Contractor	As needed	TBD	TBD
MLGW Emergency	Utility Issues	As needed	(901) 528-4465	(901) 528-4465
Local Health Department	Public Health Concerns	As needed	(901) 576-7600	(901) 576-7600

Note:

The NRC will notify the U.S. Coast Guard and USEPA.

NOTIFICATION REQUIREMENTS

Table D-2 provides a cross-reference matrix that identifies specific release scenarios and associated reporting and notification requirements, including respective timeframes.

Table D-2 Notification Requirements				
Scenario #	Basis For Reporting	Agencies To Contact	Time Frame For Contact	Information To Be Provided
1	Discharge of Petroleum Product to the Grass/Soil — A 25-gallon or greater release of petroleum product to grassy or soil areas must be reported.	A	Within 24 hours	• Location, source(s), time, and duration of the release • Chemical name or identity and of any substance involved in the release • Estimate of the quantity (pounds or gallons) released • The medium (land, water, or air) in which the release occurred or exists • Extent of the release • Any known or anticipated acute or chronic health risks with the release and advice regarding medical attention necessary for exposed individuals • Proper precautions to take as a result of the release or discharge, including evacuation and other proposed response actions • The name and telephone number of the person(s) to be contacted for further information
2	Discharge of Petroleum Product to Surface Water — A discharge of petroleum product that violates 40 CFR 110.6 must be reported. This is basically any amount of petroleum product that reaches surface water (overland or through sewers).	A, B, C, D, E, G	Immediately	Same as Scenario 1 with these additions: • Location of spill and name of receiving water Shelby County Code Section 30-62 requires a written report within 5 days to Memphis and Shelby Emergency Management Agency at: Manager, P.O. Box 111249, Memphis 38111. The following particulars must be included in the report: • A description of the discharge, including an estimate of the volume. • The exact dates, times, and duration of the discharge. • Steps being taken to eliminate and prevent recurrence. • A site drawing showing the location of the spill, direction of flow, and topographical grade of the property, the impacted watercourse(s), and the properties adjacent to the spill site.

Notes:

- A Tennessee Emergency Management Agency — (800) 262-3300/Local TDEC Office (901) 368-7939
- B NRC — (800) 424-8802
- C USEPA, Region 4 — (404) 562-8700 (NRC will call)
- D U.S. Coast Guard, 8th District Marine Safety Office — (901) 544-3912 x2122 (NRC will call)
- E Memphis-Shelby Emergency Management Agency /City of Memphis Fire Department — (901) 458-1515 / 911
- F City of Memphis' WWTP — (901) 353-2392
- G City of Memphis or Shelby County Storm Water Hotline — City at (901) 576-6721 / County at (901) 545-3870

Table D-2 Notification Requirements				
Scenario #	Basis For Reporting	Agencies To Contact	Time Frame For Contact	Information To Be Provided
4	Discharge of Petroleum Product to Surface Water in Excess of 1,000 gal.— If the facility has a spill in 1,000 gal or has two spills that violate 40 CFR 110.6, a report to the USEPA Regional Administrator is required (40 CFR 112.4).	A, B, C, E, G A, C	Immediately Within 3 days of event that violates 40 CFR 112.4	Same as Scenario 2 Written report that describes: • Name of facility • Name(s) of the owner or operator of the facility • Location of the facility • Date and year of initial facility operation • Maximum storage or handling capacity of the facility and normal daily throughput • Description of the facility, including maps, flow diagrams and topographic maps • A complete copy of the SPR Plan with any amendments • The cause(s) of such spill, including a failure analysis of system or subsystem in which failure occurred • The corrective actions and/or countermeasures taken, including an adequate description of equipment repairs and/or replacements • Additional preventive measures taken or contemplated to minimize the possibility of reoccurrence • Such other information as the Regional Administrator may reasonably require pertinent to the Plan or spill event
5	Spill of Hazardous Substances in Excess of the Reportable Quantity — Table 302.4 (40 CFR 302.4 and Attachment K of this SPR) lists the spill quantity of hazardous substances that triggers reporting under 40 CFR 302. (Use "Final RQ" column) If a hazardous substance does not have a reportable quantity, use 100 pounds.	A, B, C, G E	Immediately Within 2 hours	• Facility name and address • Reporter's name and phone number • Type and quantity of material spilled • Time of spill • Is spill continuing? • Location of spill • Current response action
6	Discharge to Sanitary Sewer — Accidental spill of petroleum product, hazardous waste/material, or any other material which by reason of their nature or quantity are sufficient to cause fire or explosion or be injurious in any other way to the sewerage system or to the operation of the waste reclamation facilities.	A, E, F B, E	Immediately Immediately (depending upon substance and quantity)	• Facility name and address • Reporter's name and phone number • Type and quantity of material spilled • Time of spill • Is spill continuing? • Location of spill • Current response action

Notes:

A Tennessee Emergency Management Agency — (800) 262-3300/Local TDEC Office (901) 368-7939

B NRC — (800) 424-8802

C USEPA, Region 4 — (404) 562-8700 (NRC will call)

D U.S. Coast Guard, 8th District Marine Safety Office — (901) 544-3912 x2122 (NRC will call)

E Memphis-Shelby Emergency Management Agency / City of Memphis Fire Department — (901) 458-1515 / 911

F City of Memphis' WWTP — (901) 353-2392

G City of Memphis or Shelby County Storm Water Hotline — City at (901) 576-6721 / County at (901) 545-3870



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