

**Manchester - Boston Regional Airport
City of Manchester - Department of Aviation**

MHT FIRE ALARM SYSTEM REPLACEMENT PROJECT

**FAA AIP No. 3-33-0011-TBD-2020
Bid # FY20-805-02**



**ISSUED FOR BIDDING
June 2020**

PREPARED BY:
LAVALLEE | BRENSINGER ARCHITECTS
LAVALLEE BRENSINGER ARCHITECTS
155 DOW STREET, SUITE 400
MANCHESTER NH 03101

**SECTION 00 01 03
PROJECT DIRECTORY**

OWNER:

Manchester Boston Regional Airport
City of Manchester - Department of Aviation
One Airport Road, Suite 300
Londonderry, New Hampshire, 03053-2010
Telephone: 603-628-6211

ARCHITECT:

Lavallee Brensinger Architects (LBA)
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Manchester, New Hampshire, 03101
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Contact: Sean Landry

ARCHITECT'S CONSULTANTS

FIRE PROTECTION, PLUMBING, MECHANICAL & ELECTRICAL ENGINEERS
Bard, Rao + Athanas Consulting Engineers (BR+A)
10 Guest Street, Boston, Massachusetts 02135
Telephone: 617-925-8288
Contact: Patrick Duffy E-mail: pjd@brplusa.com

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CITY OF MANCHESTER DEPARTMENT OF AVIATION REQUEST FOR BIDS

NOTICE IS HEREBY GIVEN that sealed bids are sought and requested for performance of a contract, according to specifications, by the City of Manchester, Department of Aviation, Manchester • Boston Regional Airport (AIRPORT) for the following:

MANCHESTER • BOSTON REGIONAL AIRPORT
MHT TERMINAL FIRE ALARM SYSTEM REPLACEMENT PROJECT
MHT / City Bid # FY20-805-02
AIP # 3-33-0011-TBD-2020

The Department of Aviation will accept bids from contractors interested in bidding on the upgrade of the airline terminal fire alarm system at Manchester-Boston Regional Airport. The project will provide either modification and technology upgrade or replacement of the existing Edwards/EST “IRC-3” fire alarm system that currently serves the main terminal building at the Airport. The base bid work will include replacement of existing fire alarm control equipment with new equipment panels which are compatibly-listed for use with the existing field devices and wiring that will remain. An allowable alternative approach would permit replacement of all existing EST equipment and field devices with that of an acceptable alternate manufacturer. Upon completion of the work, the complete modified system will be subject to acceptance testing by the installing contractor and system supplier in accordance with NFPA 72 requirements and as directed by the local Authorities Having Jurisdiction. The contractor must maintain an active fire alarm system during the upgrade or replacement.

Bid Documents will be available to be viewed and downloaded on **June 2, 2020**, at no cost, in Portable Document Format (.PDF) at the Manchester-Boston Regional Airport website link located at **<https://www.flymanchester.com/doing-business-with-mht/airport-projects/>**. All addendums will be on the same website link. It is the bidder’s responsibility to download, review and consider all addendums.

A **Mandatory Pre-Bid Meeting and Site Tour** will be held at the Airport administrative offices boardroom located on the third floor of the Airport terminal at One Airport Road, Manchester, NH on **Tuesday, June 9, 2020 at 2:00 pm**. Prospective bidders shall RSVP not less 24 hours prior to the meeting through Ms. Kathy Tarbox at the Airport Administration Office who can be reached at (603) 628-6211 or by email at **ktarbox@flymanchester.com**.

All Bid-related inquiries shall be submitted in writing and received before June 19, 2020, 3:00 pm, to Sean Landry., Senior Associate at Lavelle Brensinger Architects, via email to sean.landry@lbpa.com.

Bids will be received until and publicly opened and read aloud on June 25, 2020 at 3:00 pm at the Airport Administration Office on the third floor of the Airport Terminal located at One Airport Road, Manchester, New Hampshire. The contract will be awarded to lowest responsive and responsible bidder. The AIRPORT intends to issue a notice-to-proceed within 60 days of the bid opening contingent upon available funding, qualified bids, receipt of insurance certificates and receipt of bonds.

Each bidder must deposit with his/her bid, security in the amount of 5% of the total base bid. A 100% performance and payment bond will be required with the execution of the contract. The AIRPORT reserves the right to waive any informality in the bidding or to reject any or all bids.

In this bid process and the resulting Contract, if executed, all Bidders and Contractors must fully comply with the Required Contract Provisions for Airport Improvement Program (AIP) and for Obligated Sponsors contained within the Contract Documents for the MHT Terminal Fire Alarm Replacement Project. The AIP Contract Provisions include, but are not restricted to, Disadvantaged Business Enterprise (DBE) Subcontractor participation, Equal Employment Opportunity requirements, and compliance with Federal Wage and Hour requirements (Davis-Bacon Act). All requirements of the Federal funding and, as well as all administrative regulations shall apply to the Fire Alarm Replacement work in this project, as if herein written out in full. The attention of prospective bidders is called to the fact that this project is to be bid upon, and contract executed, under the Federal Funding Rules and Regulations for carrying out the provisions of:

- Civil Rights General Provisions (Title 49 United States Code, § 47123)
- Title VI Provisions of the Civil Rights Act of 1964, as amended and supplemented
- Buy American Preferences (Title 49 United States Code, §50101)
- Foreign Trade Restriction: Denial of Public Works Contracts on Suppliers of Goods and Services of Countries that Deny Contracts to Suppliers of Goods and Services of Countries that Deny Procurement Market Access to U.S. Contractors (DOT Regulation 49 CFR Part 30)
- Davis-Bacon Act (DOL Regulation 29 CFR Part 5)
- Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246, as amended, and DOL Regulation 41 CFR Part 60)

- Government Debarment and Suspension and Government-wide Requirements for Drug-free Workplace (2 CFR Part 180 (Subpart C), 2 CFR part 1200, DOT Order 4200.5 DOT Suspension & Debarment Procedures & Ineligibility)

The requirements of 49 CFR Part 26, Regulations of the U.S. Department of Transportation, apply to this contract. Award of this contract will be conditioned upon satisfying the requirements of this section. These requirements apply to all bidders/offerors, including those who qualify as a DBE. A DBE contract goal of 5% has been established for this contract. The bidder/offeror shall make good faith efforts, as defined in Appendix A, 49 CFR Part 26, to subcontract 5% of the dollar value of the prime contract amount to Disadvantaged Business Enterprises (DBE), as defined in 49 CFR Part 26.

Manchester-Boston Regional Airport, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award. It is the policy of the Manchester-Boston Regional Airport to practice nondiscrimination based on race, color, sex, or national origin in the award or performance of this contract. All disadvantaged business enterprise firms qualifying under this solicitation are encouraged to submit bids/proposals. Award of this contract will be conditioned upon satisfying the requirements of this section.

All bidders will be required to execute a sworn Non-Collusion Affidavit statement, certifying that the bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such Contract.

INFORMATION FOR BIDDERS

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Section 00 41 01

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INFORMATION FOR BIDDERS

1.01 RECEIPT AND OPENING BIDS

The City of Manchester, Department of Aviation, Manchester, New Hampshire (herein called the Owner), invites bids on the form attached hereto, all blanks of which must be appropriately filled in. Bids will be received by the Manchester-Boston Regional Airport Administration Office at One Airport Road Manchester, NH until **June 25th at 3:00 pm** and then at said office publicly opened and read aloud.

The envelopes containing the bid must be sealed, addressed and designated as:

MHT FIRE ALARM SYSTEM REPLACEMENT PROJECT

The Owner may consider irregular any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid prior to 180 calendar days from the date of bid opening.

1.02 DESCRIPTION OF WORK

The project will provide either modification and technology upgrade or replacement of the existing Edwards/EST "IRC-3" fire alarm system that currently serves the main terminal building at the Airport. The base bid work will include replacement of existing fire alarm control equipment with new equipment panels which are compatibly-listed for use with the existing field devices and wiring that will remain. An allowable alternative approach would permit replacement of all existing EST equipment and field devices with that of an acceptable alternate manufacturer. Upon completion of the work, the complete modified system will be subject to acceptance testing by the installing contractor and system supplier in accordance with NFPA 72 requirements and as directed by the local Authorities Having Jurisdiction. The contractor must maintain an active fire alarm system during the upgrade or replacement.

All areas of the airport disturbed by the Contractor's operations not within the construction limits as set forth by the Owner shall be restored at least equal to original condition at no cost to the Owner.

Attention shall be directed to the Contract Documents for specific information of the work to be performed.

1.03 PREPARATION OF BID

Each bid must be prepared in strict accordance with the requirements of Section 20 of the FAA General Contract Provisions of these specifications.

1.04 SUBCONTRACTS

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract must be acceptable to the Owner and the Federal Aviation Administration.

The successful bidder will be required to submit a list of his/her subcontractors within 4 days of the opening of Bids and before the award of a contract. The successful bidder will be required to submit all subcontracts to the Engineer for approval after the contract is awarded.

1.05 BIDDER'S QUALIFICATIONS

Refer to Section 20-02 "Qualifications of Bidders" in FAA General Contract Provisions for information on bidder's qualifications.

1.06 BID MODIFICATION

Any bidder may modify his/her bid by written communication at any time prior to the schedule closing time for receipt of bids, providing such written communication is received by the Owner prior to the bid closing time. The written communication should not reveal the bid price but should provide the addition or subtraction or any other modification so that the final prices or terms will not be known by the Owner until the sealed bid is opened.

1.07 PROPOSAL GUARANTY BID SECURITY

Each bid must be accompanied by cash, certified check of the bidder, or a bid bond prepared on the form of bid bond included in the Contract Documents in the amount of 5% of the bid, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner. The bid bond shall be executed or countersigned for the surety by a person who has current power of attorney for the surety.

The bid security will be returned to all except the two lowest bidders within three days after the opening of bids, and the remaining cash, checks, or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the Contract, or, if no award has been made prior to **180 calendar days** after the bid opening, upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid.

1.08 TIME OF COMPLETION AND LIQUIDATED DAMAGES

The bidder must agree to commence work on a date to be specified in the written Notice to Proceed of the Owner and to fully complete the project within **270 calendar days**. Bidder must agree to pay to the Owner as liquidated damages the sum of **five hundred dollars (\$500.00)** for each calendar day the work remains incomplete beyond the above specified time.

1.09 SECURITY FOR FAITHFUL PERFORMANCE

Simultaneously with his/her delivery of the executed Contract, the successful bidder shall furnish Surety bonds as security for faithful performance of this Contract and for the payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract, as specified in the FAA General Contract Provisions included herein. The bonds shall be of the form provided hereinafter and shall be executed by Surety acceptable to the Owner. The bonds shall be executed by or countersigned by an agent for Surety and said agent to have current power of attorney for the Surety. Each bond shall be in the amount of 100% of Contract awarded. Contractors should also submit with all bonds evidence showing the financial strength of the Surety.

Prior to the final payment for the project, the Contractor shall deliver to the Owner a Warranty Bond in the amount of 5% of the final cost of the construction.

1.10 ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally. Every request for such interpretation shall be in writing addressed to Sean Landry, Senior Associate with Lavelle Brensinger Architects, by email sean.landry@lbpa.com and to be given consideration, must be received by **June 19, 2020 at 3:00 PM**. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be emailed to all prospective bidders (at the respective address or fax number furnished for such purposes), not later than one (1) working days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his/her bid as submitted. All addenda so issued shall become part of the Contract Documents.

1.11 POWER OF ATTORNEY

Attorneys-in-fact or others who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

1.12 LAWS AND REGULATIONS

The bidder's attention is directed to the fact that all applicable Federal and State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though therein written out in Full. The Contractor shall be responsible for payment of all taxes, fees, and assessments as levied by Federal, State and Local authorities.

1.13 EXECUTION OF CONTRACT

The individual, firm, partnership, or corporation to whom or to which the Contract has been awarded shall sign the necessary agreements entering into a Contract with the Owner and return them to the Office of the Owner (with the required contract bonds) within 15 calendar days after the Contract is mailed.

1.14 APPROVAL OF CONTRACT

Approval of the Contract shall be in accordance with paragraph 30-07 of the FAA General Contract Provisions. No Contract is binding upon the Owner until it has been executed by the Owner and delivered to the Contractor.

1.15 FAILURE TO EXECUTE CONTRACT

Failure of a bidder to comply with any of the requirements of the proposal, failure to execute the Contract within 15 days after mailing, as specified, or failure to furnish contract bonds as required shall be just cause for the annulment of the award. In the event of such annulment of the award, the amount of bid security shall become the property of the Owner, not as a penalty but as fixed and agreed liquidated damages. Award may then be made to the next best qualified bidder, or the work re-bid, or otherwise handled as the Owner may elect.

1.16 NOTICE OF SPECIAL CONDITIONS

Attention is particularly called to those parts of the Contract Documents which deal with the following:

Manchester-Boston Regional Airport
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INFORMATION FOR BIDDERS

- a. Inspection of work.
- b. Insurance requirements.
- c. Scheduling the contract work.
- d. Liquidated damages for failure to complete the various portions of the specified times.
- e. Airport safety and security.
- f. Buy American Act.
- g. Wage Rates.

1.17 EMPLOYMENT OF WOMEN

Women will be afforded equal opportunity in all areas of employment. However, the employment of women shall not diminish the standards or requirements for the employment of minorities.

1.18 EQUAL EMPLOYMENT OPPORTUNITY

- a. Each bidder will be required to comply with the affirmative action plan for equal employment opportunity prescribed by the OFCC, United States Department of Labor, Regulations of the Secretary of Labor (41 CFR 60), or by other designated trades used in the performance of the contract and other nonfederally involved contracts in the area geographically defined in the plan.
- b. The proposed contract is under and subject to Executive Order 11246 of September 26, 1965, as amended, and to the equal opportunity clause; and
- c. The successful bidder will be required to submit a Certification of Nonsegregated Facilities prior to award of the contract, and to notify prospective subcontractors of the requirement for such a certification where the subcontract exceeds \$10,000. Samples of the certification and the notice to subcontractors appear in the specifications.
- d. When a determination has been made to award a contract or subcontract to a specific contractor, such contractor is required, prior to the award or after the award, or both, to furnish such other information as the FAA, the sponsor, or the Director of OFCC requests.
- e. A bidder must indicate whether he has previously had a contract subject to the equal opportunity clause, whether he has filed all report forms required in such contract, and if not, compliance report Standard Form (SF) 100 must be submitted with his bid.
- f. Equal Employment Opportunity (EEO) and labor provisions, when applicable, are included in the bidding documents of specifications.
- g. Contractors and subcontractors may satisfy EEO requirements of paragraph 2 of the EEO contract clause by stating in all solicitations or advertisements for employees that: "All qualified applicants will receive consideration for employment without regard to race, color, sex, or national origin." or by using a single advertisement in which appears in clearly distinguished type, the phrase: "an equal opportunity employer".
- h. A contractor having 50 or more employees and his subcontractors having 50 or more employees and who may be awarded a subcontract of \$50,000 or more will, within 120 days from contract commencement, be required to develop a written affirmative action compliance program for each of its establishments (state and local governments are exempt).

1.19 Electronically Provided Bid Documents

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Bid Documents provided electronically are provided as a convenience to the Bidder and are not the controlling data for the contract. The original hard copy (paper) contract plans and specifications and modifications thereto reviewed and signed by the Architect or Engineer are the legal construction documents and shall be used for interpretations and determinations for the project, overriding any alterable electronic files. Bidder agrees to accept full responsibility for their use of the electronic files and the completeness, correctness, and/or readability of the electronic media file, and shall indemnify, defend and hold harmless, the Owner and the Owner's consultants from any and all claims (including third party) arising from discrepancies between the electronic media file and the sealed drawings or report.

SECTION 00 41 00

PROPOSAL (BID) DOCUMENTS

MANCHESTER-BOSTON REGIONAL AIRPORT

for

MHT TERMINAL FIRE ALARM SYSTEM REPLACEMENT PROJECT

at

MANCHESTER-BOSTON REGIONAL AIRPORT

City of Manchester, New Hampshire

NOTE: The Bidder shall complete and submit the Proposal Documents in a sealed envelope labeled MHT TERMINAL FIRE ALARM SYSTEM REPLACEMENT PROJECT. Submit completed Sections 00 41 02 through 00 41 05 .

PROPOSAL
for
MHT TERMINAL FIRE ALARM SYSTEM REPLACEMENT PROJECT
at
Manchester-Boston Regional Airport

Proposal of _____ * (hereinafter called "Bidder") a corporation organized under the laws of the State of _____, a partnership, or an individual** doing business as _____, to the **City of Manchester, New Hampshire, Department of Aviation** (hereinafter called "Owner").

Gentlemen:

The Bidder, _____ in compliance with your invitation for Bids for the construction of airport improvements having examined the Drawings and Specifications with related documents and the site of the proposed work if required, and being familiar with all of the conditions surrounding the construction of the proposed Project including the availability of materials, and labor, hereby proposes to furnish all plant, labor, materials, supplies, equipment, services, and to construct the work in accordance with the Contract Documents, within the time set forth therein, and at the amount in U.S. dollars provided herein. This price is to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this Contract on the date to be specified in written "Notice to Proceed" of the Owner, and to fully complete the Project within the specified contract period.

Bidder acknowledges receipt of the addenda shown on the attached form entitled, **ACKNOWLEDGMENT OF ADDENDA**.

Bidder identifies _____, as the project superintendant. This person was project superintendant on the following three (3) projects for the Bidder (list project name, location and client):

1. _____
2. _____
3. _____

****The name of the Bidder must be exactly the same as the name under which the Bidder was pre-qualified with the City of Manchester.***

Bidder agrees to perform all the work required by the Contract Documents for the amount of:

Base Bid \$ _____ (U.S. Dollars).

The stated prices shall include-all plant, labor, materials, supplies, equipment, services, incidentals, expenses, overhead, profit, insurance, etc., to cover the finished Work.

Bid Alternate No. 1: ADD / (DEDUCT) \$ _____ (U.S. Dollars).

The Bidder agrees that the Owner may base low bid on the Base Bid plus any or all of the Additive Alternates, if applicable.

The Bidder understands that the Owner reserves the right to reject any or all Bids and to waive any informalities in the Bidding.

The Bidder agrees that this Bid shall be good and may not be withdrawn for a period of 90 calendar days after the actual date of the Bid opening.

The Bidder agrees that the Owner may reduce the quantities or may delete work items altogether if necessary to bring the contract awarded within funds available to finance the project. Such reduction or deletion of work shall not constitute a basis for withdrawal of this proposal.

Upon receipt of written notice of acceptance of this Bid, Bidder will execute the formal contract attached within 15 calendar days and deliver the Surety Bonds as required by the General Provisions. The Bid security attached in the sum of _____

_____ is to become the property of the Owner in the event the contract and bonds are not executed within the time above set forth, as liquidated damages for the delay and additional expenses to the Owner caused thereby.

Respectfully submitted:

Name of Bidder: _____

By: _____

Name and Title: _____

Business Address: _____

(Affix corporate seal if bid is by a corporation)

**CERTIFICATE AS TO CORPORATE PRINCIPAL
PROPOSAL**

I, _____ certify that I am the _____ of the corporation named as Bidder in the above Proposal; that _____ who signed the said Proposal on behalf of the Bidder was then _____ of said Corporation; that I know his signature and his/her signature thereto is genuine; and that said Proposal was duly signed, sealed and attested to for and in behalf of said Corporation by authority of its governing body and is within the scope of its corporate powers.

(Signature) (Corporate Seal)

ACKNOWLEDGMENT OF ADDENDA

Addendum No. _____ Date:

Addendum No. _____ Date:

Addendum No. _____ Date:

Addendum No. _____ Date:

END OF DOCUMENT

1. Full Name of Company:

a. Company is: Corporation ()
Partnership ()
Individual ()

b. Federal ID No. (Employer's Identification No.): _____

c. DUNS No.: _____ (for www.sam.gov check)

2. Permanent main office address:

Address City State Zip

Phone No.: _____ Fax No.: _____

3. Date Established: _____

4. If a corporation, when and where incorporated?

5. How many years has this organization been engaged in the contracting business under the present firm or trade name?

a. If a corporation: Attach list of names and phone numbers of the principal officers.

b. If a partnership: Attach list type of partnership (general, limited, association, etc.) and names and phone numbers of all partners.

6. Describe the general character of the work performed by the applicant.

a. How many years of experience, in work similar to the identified projects, has the applicant had?

(1) As a General Contractor: _____

(2) As a Sub-Contractor: _____

7. List the construction projects the organization has under contract on the date of this application. Attach a schedule showing: gross contract amount; actual or anticipated start and completion dates; percent complete; percent sublet; name and address of client; name and phone number of person supervising for the client.
8. List the construction projects the organization has completed in the last five (5) years. Attach a schedule showing: gross contract amount; actual start and completion dates; percent sublet; name and address of client; name and phone number of person supervising for the client.
9. a. Of the projects listed in # 7 above, did the applicant's organization, its partners or officers not complete a project by the original contract date?

Yes _____ No _____ If yes, attach a list of the project(s) with explanation (s).
- b. Of the projects listed in # 7 above.
 - (1) Did the applicant's organization, its partners', or officers' delay the work by more than 14 days?

Yes _____ No _____
 - (2) Did the applicant's organization, its partners', or officers' cease work?

Yes _____ No _____
 - (3) Did the applicant's organization, its partners', or officers' leave the job site during the construction?

Yes _____ No _____

If yes to any of the above, attach list of project(s) with explanation(s).

10. List backgrounds and experience of the principal members of the applicant's organization, including the officers and the individuals who will be the field superintendent(s) on the proposed work at the Manchester-Boston Regional Airport. Attach a schedule showing: individuals name; present position; years of construction experience; magnitude and type of work; in what capacity; previous airport work.
11. a. List major material suppliers and/or sub-contractors with whom the organization has done business in the past five (5) years. Attach a schedule showing: name; complete address; phone number; contact person for each.
- b. List each material supplier and/or sub-contractor of the applicant who has given notice of lien, filed a mechanics lien, or brought suit for payment on any contract in the last five (5) years. Attach schedule showing: name; complete address; phone no.; contact person; explanation and resolution for each.

12. Provide name, complete address, phone no., and contact person for each of the following:
- a. Bank _____
 - b. Bonding Company * _____
 - c. Bonding Agent _____
- * Bonding Co. must be registered and licensed to do business in the State of New Hampshire.
13. List the major equipment available for the proposed project(s). Attach a schedule showing: quantity; description including size of capacity; condition; age; cost; depreciation; book value.
14. Provide names, complete addresses, and phone numbers for three (3) owners, engineers, or architects, not employed by the applicant, involved in current contracts or contracts completed in the last five (5) years, who can attest to the character, integrity, reputation, judgment, experience, and efficiency of the applicant.
15. Provide names, complete addresses, and phone numbers of all adverse parties in any suit involving the applicant in the last five (5) years.
16. Provide names, complete addresses, and phone numbers for all government entities who have determined the applicant qualified for the type of work requested herein and all who have not determined the applicant qualified, in the last five (5) years.

The Owner reserves the right to determine the bidder's qualifications based on the information provided above. In addition, the Owner may accept or reject any bid, regardless of price, based on the qualifications provided above.

CERTIFICATES OF COMPLIANCE FOR AIP PROJECTS

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CERTIFICATES OF COMPLIANCE

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CERTIFICATIONS TO ACCOMPANY PROPOSAL BID FORMS

1.01 ALL CONTRACTS

- a. The bidder (proposer) must supply all the information required by the proposal forms and specifications.
- b. The City of Manchester Department of Aviation, New Hampshire, in accordance with Title VI of the Civil Rights Act of 1964, hereby notifies all bidders that they (bidders) must affirmatively insure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for award.

1.02 INSTRUCTIONS TO BIDDERS

- a. Section 60-1.7(b) of the Regulations of the Secretary of Labor requires each bidder or prospective prime Contractor and proposed subcontractors, where appropriate, to state in the bid whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and if so, whether it has filed with the Joint Reporting Committee, the Director, an agency, or the former President's Committee on Equal Employment Opportunity all reports due under the applicable filing requirements. In any case in which a bidder or prospective prime Contractor or proposed subcontractor has participated in a previous contract subject to Executive Orders 10Y25, 11114, or 11246 and has not filed a report due under the applicable filing requirements, no contract nor subcontract shall be awarded unless such Contractor submits a report covering the delinquent period or such other period specified by the FAA or the Director, OFCC.
- b. To achieve these requirements, the Bidder shall complete and sign the attached statement.

AFFIRMATIVE ACTION CERTIFICATION

The Bidder (has / has not)* participated in a previous contract subject to the equal opportunity clause prescribed by Executive Order 10925, or Executive Order 11246, or Executive Order 11114.

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

If the Bidder has participated in a previous contract subject to the equal opportunity clause and has not submitted compliance reports due under applicable filing requirements, the Bidder (Proposer) shall submit a compliance report on Standard Form 100, "Employee Information Report EE0-1" prior to the award of contract.

The Bidder (has / has not) been considered for sanction due to violation of Executive Order 11246, as amended.

Dated _____, 20____
_____ *Legal Name of Person, Firm or Corporation*

By: _____
_____ *Title*

****Strike out inappropriate term.***

CERTIFICATION OF NONSEGREGATED FACILITIES

1. Notice to Prospective Federal Assisted Construction Contractors.
 - a. A Certification of nonsegregated Facilities must be submitted prior to the award of a contract exceeding \$10,000 which is not exempt from the provisions of the equal opportunity clause.
 - b. Contractors receiving contract awards exceeding \$10,000 which are not exempt from the provisions of the equal opportunity clause will be required to provide for the forwarding of the notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the equal opportunity clause. NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.
2. Notice to Prospective Construction Subcontractors.
 - a. A Certificate of Nonsegregated Facilities must be submitted prior to the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the equal opportunity clause.
 - b. Contractors receiving subcontract awards exceeding \$10,000 which are not exempt from the provisions of the equal opportunity clause will be required to provide for the forwarding of this notice to prospective subcontractors for supplies and construction contracts where the subcontractors exceed \$10,000 and are not exempt from the provisions of the equal opportunity clause. NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.
3. Notice to Prospective Contractors of Requirement for Certification for Nonsegregated Facilities.

A Certification of Nonsegregated Facilities must be submitted prior to the award of a contract or subcontract exceeding \$10,000 which is not exempt from the provisions of the equal opportunity clause.

**CERTIFICATION OF NONSEGREGATED FACILITIES
(CONTRACTORS/ SUBCONTRACTORS)**

The Contractor certifies that he/she does not maintain or provide for his/her employees any segregated facilities at any of his/her establishments, and that he/she does not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. The construction contractor certifies further that he will not maintain or provide for his/her employees any segregated facilities at any of his/her establishments, and that he/she will not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. The contractor agrees that a breach of this certification is a violation of the equal opportunity clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex or national origin, because of habit, local custom, or any other reason. The contractor agrees that (except where he/she has obtained identical certifications from proposed subcontractors for specific time periods) he/she will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the equal opportunity clause, and that he/she will retain such certifications in his/her files.

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

Name and Title of Signer (Please type)

Signature

Date

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

BUY AMERICAN PREFERENCE

(Title 49 USC § 50101)

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

A bidder or offeror must complete and submit the Buy America certification included herein with their bid or offer. The Owner will reject as nonresponsive any bid or offer that does not include a completed Certificate of Buy American Compliance.

CERTIFICATE OF BUY AMERICAN COMPLIANCE FOR TOTAL FACILITY

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with its proposal. The bidder or offeror must indicate how it intends to comply with 49 USC § 50101 by selecting one of the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (i.e. not both) by inserting a checkmark (✓) or the letter "X".

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

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

- To provide to the Owner evidence that documents the source and origin of the steel and manufactured product.
- To faithfully comply with providing U.S. domestic products.
- To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

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

- a) To submit to the Owner within 15 calendar days of the bid opening, a formal waiver request and required documentation that supports the type of waiver being requested.

- b) That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination that may result in rejection of the proposal.
- c) To faithfully comply with providing U.S. domestic products at or above the approved U.S. domestic content percentage as approved by the FAA.
- d) To furnish U.S. domestic product for any waiver request that the FAA rejects.
- e) To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

Required Documentation

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

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

Type 4 Waiver – Total cost of project using U.S. domestic source product exceeds the total project cost using non-domestic product by 25 percent. The required documentation for a Type 4 of waiver is:

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

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

Date

Signature

Company Name

Title

GOALS AND ASSURANCES FOR DISADVANTAGED BUSINESS ENTERPRISES

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

The requirements of CFR 49 Part 26, Regulations of the U. S .Department of Transportation, apply to this contract. It is the policy of The City of Manchester-Department of Aviation to practice nondiscrimination based on race, color, sex, or national origin in the award or performance of this contract. All firms qualifying under this solicitation are encouraged to submit bids/proposals. Award of this contract will be conditioned upon satisfying the requirements of this bid specification. These requirements apply to all bidders/offers, including those who qualify as a DBE. A DBE goal of “**5.0**” percent has been established for this contract. The bidder/offeror shall make good faith efforts, as defined in Appendix A, 49 CFR Part 26 (Attachment 1), to meet the contract goal for DBE participation in the performance of this contract.

The bidder/offeror will be required to submit the following information (1) the names and addresses of DBE firms that will participate in this contract; (2) a description of the work that each DBE will perform; (3) the dollar amount of the participation of each DBE Firm participating; (4) written documentation of the bidder/offeror’s commitment to use a DBE subcontractor whose participation it submits to meet the contract as provided in the commitment made under (4); and (5) if the contract goal is not met, evidence of good faith efforts.

DISADVANTAGED BUSINESS ENTERPRISE (DBE) UTILIZATION

The undersigned bidder/offeror has satisfied the requirements of the bid specification in the following manner (please check the appropriate space):

_____ The bidder/offeror is committed to a minimum of **5.0%** DBE utilization on this contract.

_____ The bidder/offeror (if unable to meet the DBE goal of **5.0%**) is committed to a minimum of _____ % DBE utilization on this contract and submits documentation demonstrating good faith efforts.

Name of bidder/offeror's firm:

State Registration No. _____

By _____
(Signature) (Title)

DBE LETTER OF INTENT

Name of bidder'/offeror's firm: _____

Address: _____

City: _____ State: _____ Zip: _____

Name of DBE firm: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____

Description of work to be performed by DBE firm:

The bidder/offeror is committed to utilizing the above-named DBE firm for the work described above. The estimated dollar value of this work is \$ _____.

Affirmation

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

By: _____
(Signature) (Title)

If the bidder/offeror does not receive award of the prime contract, any and all representations in this letter of Intent and Affirmation shall be null and void.

(Submit this page for each DBE subcontractor.)

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION (For Bids Exceeding \$25,000)

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

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

Name and Title of Signer (Please type)

Signature

Date

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

If available, bidder shall provide their firms DUNS Number. The DUNS Number will be used to check the firms status to contract work with the US Government. This will be conducted by entering the DUNS Number in the website www.sam.gov.

Bidders DUNS # _____ (complete)

**SECTION 00 41 05
CERTIFICATE AS TO CORPORATE PRINCIPAL
BID BOND**

KNOW ALL MEN BY THESE PRESENTS, THAT WE, THE UNDERSIGNED,

(Name of Principal)

as PRINCIPAL, and _____

(Name of Surety)

as SURETY, are held and are firmly bound unto **The City of Manchester, New Hampshire, Department of Aviation** hereinafter called the Owner, in the penal sum of

lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the accompanying Bid, _____ for _____

(Enter Title and Number of Contract/Project)

NOW, THEREFORE, if the Principal shall not withdraw said bid within 90 calendar days after the opening thereof, and shall within fifteen (15) calendar days after the prescribed forms are presented to him/her for signature, enter into a written Contract with the Owner in accordance with the bid as accepted, and give bonds with good and sufficient Surety or sureties, as may be required, for the faithful performance and proper fulfillment of such Contract; or in the event of the withdrawal of said bid within the period specified, or the failure to enter into such Contract and give such bonds within the time specified, if the Principal shall pay the Owner the difference between the amount specified in said bid and the amount for which the Owner may procure the required work or supplies or both, if the latter amount be in excess of the former, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

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

In presence of:

Individual Principal SEAL

Business Address

Manchester-Boston Regional Airport
MHT Terminal Fire Alarm System
Replacement Project
LBA 18-062-00 FY20-805-02

Individual Principal SEAL

Business Address

Attest:

Corporate Principal

Business Address

**Affix
Corporate
Seal**

By: _____

Attest:

Corporate Surety

Business Address

Affix Corporate Seal

By: _____

Attorney-in-Fact

** Power of attorney for person(s) signing for surety company must be attached to this bond.*

I, _____, certify that I am the
_____ of the Corporation named as principal in the within
bond; that _____, who signed the said bond on
behalf of the Principal was then _____
of said Corporation; that I know his/her signature, and his/her signature thereto is genuine, and
that said bond was duly signed, sealed, and attested to for and in behalf of said Corporation by
authority of its governing body. _____

Affix Corporate Seal

END OF DOCUMENT

**SECTION 00 41 06
AGREEMENT DOCUMENTS**

This AGREEMENT, made this, _____ day of _____ by and between the City of Manchester, New Hampshire, Department of Aviation herein called "Owner", and _____, a _____ organized under the laws of the State of _____, hereinafter called "Contractor".

WITNESSETH, that the Contractor and the Owner for the consideration stated herein mutually agree as follows:

ARTICLE 1. STATEMENT OF WORK

The Contractor shall furnish all means and methods to perform and complete all Work, including but not necessarily limited to plant, labor, material, equipment, supplies and services including all extra Work directed, as required in strict accordance with all requirements stated or shown in the Contract Documents including Addenda to said Contract Documents which Addenda are numbered and dated as follows:

Addendum No.	Dated
_____	_____
_____	_____
_____	_____
_____	_____

ARTICLE 2. THE CONTRACT PRICE

The Owner shall pay the Contractor for this satisfactory performance of the Contract, in current funds, subject to additions and deductions as provided in the Contract Documents, the sum of:

(in words)

(in figures)

ARTICLE 3. CONTRACT DOCUMENTS

The executed Contract Documents shall consist of the following component parts:

- a) This Agreement
- b) Addenda as listed in Article 1
- c) Signed Copy of Proposal
- d) Required Certifications of Compliance
- e) Specifications – Project Manual
- f) Drawings (as listed in the Schedule of Drawings)
- g) Performance and Payment Bonds

This instrument, together with the other documents enumerated in this Article 3, which said other documents are as fully a part of the Contract as if hereto attached or herein repeated, from the Contract. The various conditions in Addenda shall be construed in the order of preference of the component part of the Contract which each modified.

ARTICLE 4. SITE AVAILABILITY AND TIME FOR COMPLETION

The Contractor hereby acknowledges the following scheduled availability dates: _____
through _____.

The Contractor agrees to complete work under this Contract within the time specified below.

ARTICLE 5. CERTIFICATES OF INSURANCE

The Contractor shall furnish Certificates of Insurance as described in Section 00 82 20 – Insurance Requirements, and shall list the policies as follows:

Type of Insurance	Limits of Policy Coverage	Number	Insurance Co.	Expiration Date
Workman's Compensation	_____			
General Liability	_____			
Automobile Liability	_____			
Builder's Risk	_____			

These Insurance Certificates as well as Performance and Payment Bonds must be furnished at or before the time of the execution of this document. Such certificates shall, with respect to comprehensive general liability and auto liability insurance, name the City of Manchester, Departments of Aviation and Risk Management and the Architect, (except worker's compensation).

IN WITNESS WHEREOF, the parties to these presents have executed this Contract in seven (7) counterparts each of which shall be deemed an original, as of the year and day first above mentioned.

(Seal)
ATTEST:

_____	By:	_____
Witness		Contractor Date
_____	By:	_____
Witness		Department of Aviation Date

END DOCUMENT

**SECTION 00 41 07
PERFORMANCE BOND**

FORM OF PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS

That we, _____
an individual*, a partnership*, a corporation organized under the laws of the State of _____
_____ * having a usual place of business in the State of _____
_____ as Principal, and _____

_____ a corporation organized under the laws of the State of _____
and having a usual place of business in the State of _____
as Surety, are holden and stand firmly bound and obligated unto the City of Manchester, New Hampshire,
Department of Aviation (hereinafter the Owner), its successors and assigns, in the sum of _____

_____ ----- Dollars (\$ _____).
lawful money of the United States of America, to and for the true payment whereof, we bind ourselves and
each of us, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by
these presents. WHEREAS, the said Principal has by means of a written agreement dated _____
_____, 20____, entered into a Contract with the Owner for: _____

(Statement of Work/Project)

a copy of which Contract is attached hereto and by reference made a part hereon.

NOW, THEREFORE, THE CONDITION of this obligation is such that if the said Principal and his/her subcontractors shall well and truly keep and perform all the agreements, terms and conditions in said Contract set forth and specified to be by said Principal kept and performed, and shall well and truly indemnify and save harmless the Owner against all counsel fees paid or incurred by the Owner as a result of a breach of any condition of this bond, and against all claims and suits for damage to person or property arising from carelessness or want of due care, or any act or omission on the part of said Principal during the performance of said Contract, then this obligation shall be void; otherwise, it shall remain in full force and virtue.

PROVIDED, FURTHER, that said Surety, for value received, hereby stipulates and agrees that no extension of time, or change in, alteration or addition to the terms of the Contract or to the work to be performed there under or the Contract Documents accompanying the same and no failure or refusal of the Owner to withhold any monies from the Principal shall in any way affect its obligations on this bond, and it does hereby waive notice of any such extension of time, change, alterations or addition to the terms of the Contract or the Work or to the Contract Documents.

In the event that the Contract is abandoned by the Principal, or is terminated by the Owner under the

provisions of said Contract, said Surety hereby further agrees that said Surety shall, if requested in writing by the Owner, take action as is necessary to complete said Contract.

This bond shall become effective at the same time as the Contract annexed hereto for the work hereinbefore mentioned.

IN WITNESS WHEREOF, we have set our hands and seals to this bond, this _____ day of _____, 20____ In presence of:

Individual Principal SEAL

Business Address

Individual Principal SEAL

Business Address

Attest:

Corporate Principal SEAL

By:

Attest:

Corporate Surety SEAL

Business Address

Countersigned:

By: _____

By: _____

**CERTIFICATE AS TO CORPORATE PRINCIPAL
PERFORMANCE BOND**

I, _____, certify that I am the _____ of the Corporation named as Principal in the within bond; that, _____ who signed the said bond on behalf of the principal was then _____, of said Corporation; that I know his/her signature and his/her signature thereto is genuine; and that said bond was duly signed, sealed and attested to for and in behalf of said Corporation by authority of its governing body and is within the scope of its corporate powers.

SEAL

(Power of attorney of person(s) signing Bond for Surety Company must be attached.)

NOTE: Date of Bond must not be prior to date of Contract. If Principal is Partnership, all partners must execute bond.

END OF DOCUMENT

**SECTION 00 41 08
PAYMENT BONDS
FORM OF PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS

That we, _____,
an individual *, a partnership*, a corporation organized under the laws of the State of _____
_____ * having a usual place of business in the State of _____,
as Principal, and _____,
a corporation organized under the laws of the State of _____,
and having a usual place of business in the State of _____,
as Surety, are holden and stand firmly bound and obligated unto the City of Manchester, New Hampshire,
Department of Aviation (hereinafter the Owner), its successors and assigns, in the sum of _____

_____ Dollars (\$ _____),
lawful money of the United States of America, to and for the true payment whereof, we bind ourselves and
each of us, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by
these presents.

WHEREAS, the said Principal has by means of a written agreement dated _____, 20_____
entered into a Contract with the Owner for: Manchester–Boston Regional Airport, Terminal Fire Alarm
System Replacement Project, FY20-805-02, a copy of which Contract is attached hereto and by reference
made a part hereof.

* Strike out inapplicable terms.

NOW, THEREFORE, THE CONDITION Of this obligation is such that is the said Principal and his/her subcontractors shall pay for all labor performed or furnished, for all equipment hired, including trucks, for all material used or employed in such construction, including lumber so employed which is not incorporated in the work, and for fuels, lubricants, power, tools, hardware, and supplies purchased by said principal and used in carrying out said Contract, and for labor and parts furnished upon the order of said contractor for the repair of equipment used in carrying out said Contract, this agreement to make such payments being in compliance with the requirements of Section 16 of Chapter 447, of New Hampshire Revised Statutes, Annotated, 1955, to furnish security there under and being in fact such security, and if said Principal shall well and fully indemnify and save harmless the Owner against all counsel fees paid or incurred by the Owner as a result of a breach of any condition of this bond, and against all claims and suits for damage to person or property arising from carelessness or want of due care, or any act or omission on the part of said Principal during the performance of said Contract, then this obligation shall be void; otherwise, it shall remain in full force and virtue.

PROVIDED, FURTHER, that said Surety, for value received, hereby stipulates and agrees (1) that no extension of time, or change in, alteration or addition to the terms of the Contract or to the Work to be performed there under or the Contract Documents accompanying the same and no failure or refusal of the

Owner to withhold any monies from the Principal shall in any way affect its obligations on this bond, and it does hereby waive notice of any such extension of time, change, alterations, or addition to the terms of the Contract or the work or to the Contract Documents; (2) that in case of liabilities not covered by said Section 16 of Chapter 447 RSA, as amended, but covered by this bond, then the provisions of this bond shall control.

In addition to the obligations of the undersigned enumerated above, the bond is also made for the use and benefit of all persons, firms and corporations, who may furnish any material or perform any labor on account of said Contract, or rent or hire out any appliances or equipment used or employed in the execution of said Contract and they and each of them are hereby made Obligees hereunder the same as if their own proper respective names were written herein as such, and they and each of them may proceed or sue hereon, and in case of failure of said Principal to carry out the foregoing provisions made for the use and benefit of any said persons, firms and corporations, the Owner as an additional remedy may maintain an action against the undersigned in its own name, but in trust for and for the benefit of said persons, firms and corporations.

This bond shall become effective at the same time as the Contract annexed hereto for the work hereinbefore mentioned.

IN WITNESS WHEREOF, we have set our hands and seals to this bond, this _____ day of _____, 2019. In presence of:

Individual Principal SEAL

Business Address

Individual Principal SEAL

Business Address

Attest:

Corporate Principal SEAL

By: _____

Attest:

Corporate Surety SEAL

Business Address

Countersigned: By: _____

By: _____

**CERTIFICATE AS TO CORPORATE PRINCIPAL
PAYMENT BOND**

I, _____, certify that I am the
_____ of the Corporation named as Principal in
the within bond; that, _____ who signed the said
bond on behalf of the principal was then _____,
of said Corporation; that I know his/her signature and his/her signature thereto is genuine; and that said
bond was duly signed, sealed and attested to for and in behalf of said Corporation by authority of its
governing body and is within the scope of its corporate powers.

_____ SEAL

(Power of attorney of person(s) signing Bond for Surety Company must be attached.)

NOTE: Date of Bond must not be prior to date of Contract. If Principal is Partnership, all partners must execute bond.

END OF DOCUMENT

**SECTION 00 73 04
SPECIAL PROJECT PROCEDURES**

1.01 AIRPORT SECURITY

- a. The Contractor shall comply with all airport security requirements and regulations as directed by the airport operations coordinator. Security regulations include the Transportation Security Administration (TSA) 49 CFR Part 1542 – Airport Security, as well as Airport rules and regulations.
- b. The Contractor shall be responsible for controlling access to the work area. The Owner may impose fines and penalties for violations to Airport rules, regulations and security procedures. The Contractor shall pay all fines assessed against the airport due to violations caused by the Contractor and his personnel, subcontractors and vendors.
- c. Airport security measures require the Contractor's employees and subcontractors park vehicles in the areas designated by the Owner that purpose. The Contractor, as a subsidiary obligation shall provide adequate and safe transportation for his employees from the area where vehicles are parked to and from the work area.
- d. Vehicles delivering material to the work area shall be subject to search.

1.02 AIRPORT OPERATIONAL SAFETY DURING CONSTRUCTION

- a. The Contractor shall prepare and submit a safety plan that details how it proposes to comply with the requirements presented within the safety plan. The Contractor shall implement all necessary safety plan measures prior to commencement of any work activity. The Contractor shall conduct routine checks of the safety plan measures to assure compliance with the safety plan measures.
- b. It is the explicit intention of the Contract that the safety of aircraft, terminal structure, passengers, tenant personnel, employees, as well as the Contractor's equipment and personnel, is the most important consideration. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas of the airport with respect to his/her own operations and the operations of all of his/her subcontractors.
- c. 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 safety plan and that they implement and maintain all necessary measures. No deviation or modifications shall be made to the approved safety plan unless approved in writing by the Owner.
- d. Each Contractor's motorized vehicle operated on the Air Operations Area (AOA) shall be equipped with an amber flashing light.
- e. All Contractor's vehicles shall have the company identification plainly visible on both sides of the vehicle in order to identify the vehicle.
- f. The Contractor shall check all temporary barricades, signage, lighting and other safety measures to assure placement and operating condition before leaving the job each day.

1.03 AIRFIELD ACCESS AND CONTRACTOR SECURITY BADGES

- a. The airfield is a completely secured controlled access site. The primary means for controlling access to the site is the surrounding fence and gates. For any given work area, access for vehicles, equipment, materials and manpower shall be restricted to the routes depicted on the plans and Construction Phasing and Safety Plan (CSPP).
- b. The Contractor shall have a minimum of 75% of on-site workers submit to the badging process. Badged individuals must display their Airport issued badges on their outermost garment at all times while on the job site (Terminal Building roof or building interior) or on the airfield. Refer to the Construction Safety and Phasing Plan (CSPP, Appendix B) documents for more information, and costs associated with obtaining badges and vehicle permit stickers. The costs associated with security access badges are the responsibility of the Contractor and shall not be paid for by the Owner.
- c. At all times while on the airfield, secure side of the terminal building (interior and exterior roof areas), AOA, non-badged workers must be:
 1. Within 50 feet of a badged worker.
 2. Within visual contact of a badged worker.
 3. Able to respond to the requests of a badged worker.
 4. Able to command the attention of a badged worker.
- d. Any non-badged workers will not be allowed into secured areas or on the airfield without valid picture identification acceptable to the TSA (current and valid driver's license, passport, etc.) and shall remain with a badged worker or Airport escort at all times.
- e. The Owner will control access to the Work areas through agreed upon doors or gates that are identified as Contractor access points. Any and all vehicles entering the airfield are subject to search by gate guards or Owner personnel.
- f. Failure to provide sufficient security and safety can result in serious penalties and fines of up to \$10,000 per incident. If for any reason, the Owner is fined for actions or inactions of the Contractor, the Contractor shall be liable for any and all fines incurred.
- g. More information regarding badging and vehicle access requirements may be found in the Construction Phasing Safety and Phasing Plans which are part of this Contract document.

1.04 INDOOR QUALITY IMPROVEMENT

- a. The Contractor shall implement the following procedures in an effort to improve indoor air quality during the Owner's occupancy:
 1. All adhesives paints, thinners and solvents shall among other technical qualifications, be low VOC and selected in consideration to indoor air pollution.
 2. The Contractor shall make every practical effort to minimize building interior to exposure to fumes and dust from construction. Such efforts shall include the construction of temporary air-tight barriers, isolation of ventilation systems and all other appropriate means as determined by the Contractor.

END OF SECTION

**SECTION 00 73 10
SPECIFICATIONS AND DRAWINGS**

1.01 DESCRIPTION

- a. For convenience, the Specifications are arranged into Sections, but such separation shall not be considered as the limits of the Work required of any separate trade. The terms and conditions of such limitations are wholly between the Contractor and his subcontractors. Requirements contained in any Section are required as if contained in all Sections and are the responsibility of the Contractor. The Contractor, prior to awarding subcontracts, shall assure the Work required as a whole has been coordinated among the subcontracts.

1.02 SUMMARY OF THE ORDER OF PRECEDENCE

- a. In case of conflicts between the Contract Documents the order of precedence shall be as follows:
 - 1. Modifications or changes last in time are first in precedence.
 - 2. Addenda.
 - 3. Specifications – Project Manual.
 - 4. Drawings. In case of discrepancy, calculated dimensions will govern over scaled dimensions.
 - 5. Cited standards for materials or testing.
 - 6. Cited FAA advisory circulars.
- b. In the event where provisions of codes, safety orders, contract documents, referenced manufacturer's specifications or industry standards are in conflict, the more restrictive and higher quality shall govern.
- c. Note: Should there be a conflict within the Specifications – Project Manual, the more stringent shall apply.

END OF SECTION

**SECTION 00 74 00
CONTROL OF MATERIALS**

1.01 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS

- a. The materials used in the Work shall conform to the requirements of the Contract Documents. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).
- b. In order to expedite the inspection and testing of materials, the Contractor shall furnish complete statements to the Architect as to the origin, composition, and manufacture of all materials to be used in the Work prior to delivery.
- c. It is the intent of this Contract that the use of asbestos containing materials and/or other hazardous materials be prohibited. Prior to Substantial Completion, the Contractor shall submit written certification that no asbestos and/or other hazardous substances have been incorporated into the Work.

1.02 SAMPLES, TESTS AND CITED SPECIFICATIONS

- a. All materials used in the Work shall be reviewed by the Architect before incorporation in the Work. Testing shall conform to Contract Document requirements. All contractor provided testing costs shall be absorbed by the Contractor and treated as incidental to the total Contract amount. Any work in which materials are used without approval or written permission of the Architect 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 Architect, shall be removed at the Contractor's expense. Unless otherwise designated, tests in accordance with the cited standard methods of ASTM which are current on the date of advertisement for bids will be made by and at the expense of the Contractor. 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 shall be furnished to the Architect and Owner. Owner's right to inspect and test materials to be used in the Work shall not diminish in any way the Contractor's responsibility for determining that all materials furnished for the work fully meet all requirements of the Contract Documents.

1.03 CERTIFICATION OF COMPLIANCE

- a. The Architect may accept materials or assemblies when accompanied by manufacturer's certificates of compliance 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 Project shall be accompanied by a certificate of compliance in which the lot is clearly identified.
- b. 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.
- c. The form of certificates of compliance shall be as approved by the Architect.
- d. When a material or an assembly is specified by "brand name or approved equal" and the Contractor elects to furnish the specified "approved 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:

1. Conformance to the specified performance, testing, quality or dimensional requirements and suitability of the material or assembly for the use intended in the Work.
- e. Should the Contractor propose to furnish an "or approved equal" material or assembly, he shall furnish the manufacturer's certificates of compliance as hereinbefore described for the specified brand name material or assembly. However, the Architect shall be the sole judge as to whether the proposed "or approved equal" is suitable for use in the Work.
- f. The Architect reserves the right to refuse permission for use of materials or assemblies on the basis of certificates of compliance.

1.04 IN-PLANT INSPECTION

- a. The Architect, Owner or his 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 his/her acceptance of the material or assembly.
- b. Should the Owner's representative conduct plant inspections, the following conditions shall exist:
 1. Full cooperation and assistance of the Contractor and the producer with whom he has contracted for materials.
 2. Full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.
- c. It is understood and agreed that the Owner shall have the right to retest any material which has been tested and approved at the source of supply after it has been delivered to the site. The Owner shall have the right to reject only material which, when retested, does not meet the requirements of the Contract Documents.

1.05 STORAGE OF MATERIALS

- a. Materials shall be so stored as 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 so as to facilitate their prompt inspection.

1.06 UNACCEPTABLE MATERIALS

- a. Any material or assembly that does not conform to the requirements of the Contract Documents shall be considered unacceptable.
- b. No rejected material or assembly, the defects of which have been corrected by the Contractor, shall be returned to the site of the Work until such time as the Architect has approved its use in the Work.

1.07 CONTRACTOR'S TITLE TO MATERIALS

- a. No materials or supplies for the Work shall be purchased by the Contractor or by any Subcontractor subject to any chattel mortgage or under a conditional sales contract or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all materials and supplies used by him/her in the work, free from all liens, claims or encumbrances.

END OF SECTION

SECTION 00 75 00
LEGAL REGULATIONS & RESPONSIBILITY TO PUBLIC

1.01 LAWS TO BE OBSERVED

- a. The Contractor shall keep fully informed of all Federal and State laws, all local laws including Manchester – Boston Regional Airport rules and regulations, ordinances, regulations and security directives 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 his officers, agents, representatives 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 himself/herself or his/her representatives, employees, subcontractors, suppliers, or material men.

1.02 PERMITS, LICENSES, AND TAXES

- a. 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 prosecution of the Work.

1.03 PATENTED DEVICES, MATERIALS, AND PROCESSES

- a. If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, he shall provide for such use by suitable legal agreement with the patentee or owner and shall pay all appropriate license fees, royalties and all costs incident to the use in performance of the Work. The Contractor and the Surety shall indemnify and save 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 and any third party for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the prosecution or after the completion of the work.

1.04 RESTORATION OF SURFACES DISTURBED BY OTHERS

- a. The Owner reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, or a utility service of another government agency at any time during the progress of the Work.
- b. Should the owner of a public or private utility service, 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 so as to facilitate such construction, reconstruction or maintenance by others. When ordered as extra work by the Architect, 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 Documents. 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.

1.05 SANITARY, HEALTH, AND SAFETY PROVISIONS

- a. Before beginning the Work, the Contractor shall notify the Architect and Owner in writing that the Contractor has prepared a Contractor's safety program that implements all of the Contractor's responsibilities hereunder. The Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work. The Contractor shall take all necessary precautions for the safety of and shall provide the necessary protection to prevent damage, injury or loss to:
 - 1. All employees on the Project and other persons and organizations who may be affected thereby;
 - 2. All the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
 - 3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground facilities not designated or removal, relocation or replacement in the course of construction.
- b. The Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss and shall erect and maintain all necessary safeguards for such safety and protection.
- c. In emergencies affecting the safety or protection of persons of the work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the Owner, is obligated to act to prevent threatened damage, injury or loss. The Contractor shall give the Architect and Owner prompt written notice if the Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby.
- d. The Contractor shall designate a responsible representative at the site whose duty shall be the prevention of accidents. The person shall be designated in writing by the Contractor and accepted by the Owner.

1.06 PUBLIC CONVENIENCE AND SAFETY

- a. The Contractor shall control his operations and those of his subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances safety shall be the most important consideration.

1.07 RESPONSIBILITY FOR DAMAGE CLAIMS

- a. The Contractor shall indemnify, defend and hold harmless the Architect, and the Owner and their officers, employees, representatives, sub-consultants, and agents from all suits, actions, claims, damages or costs (including attorneys' fees and costs) 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 his/her contract as may be considered necessary by the Owner for such purpose may be retained for the use of the Owner or, in case no money is due, his/her

Surety may be held until such suit or suits, action or actions, claim or claims for injuries or damages as aforesaid 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 is adequately protected by public liability and property damage insurance.

1.08 THIRD PARTY BENEFICIARY CLAUSE

- a. 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 in the public or any member thereof a third party beneficiary of any right created by the Contract Documents or by operation of law.

1.09 CONTRACTOR'S RESPONSIBILITY FOR WORK

- a. Until the Owner's final written acceptance of the entire completed work, excepting only the portions of the Work accepted in accordance with the subsection titled PARTIAL ACCEPTANCE of Section 00 73 00, 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.
- b. 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

1.10 PERSONAL LIABILITY OF PUBLIC OFFICIALS

- a. In carrying out any of the contract provisions or in exercising any power or authority granted to him/her by this Contract, there shall be no liability upon the Owner, his 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.

1.11 NO WAIVER OF LEGAL RIGHTS

- a. Upon completion of the Work, the Architect and 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 his Surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill his 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.

- b. 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.

1.12 HAZARDOUS MATERIALS

- a. Hazardous Materials: The Contractor shall be responsible for the proper handling, storage, and/or disposal of hazardous materials used or generated during the course of the Project. Such materials may include, but are not limited to motor vehicle fuels, waste oils and lubricants, paints, lacquers, paint thinners, and solvents. Should a spill or accidental release of hazardous materials occur during the course of the project, the Contractor shall be responsible for transmitting all pertinent data through the Airport Communications Center. As directed by the Owner, the Contractor shall be required to subsequently report the spill to the New Hampshire Department of Environmental Services (NHDES) and proceed under NHDES direction to effect such clean up measures as may be deemed necessary by the NHDES. The Contractor shall be responsible for cost of testing, removal, and proper disposal of any hazardous material released as a result of their actions, or those of their employees, consultants, or subcontractors. The Airport's Environmental Compliance Specialist will inspect hazardous material storage, including petroleum products. Hazardous materials shall be properly labeled to identify contents, stored out of contact with storm water, and shall not adversely affect water, soil, or air quality. The Contractor shall contact the Owner.
- b. In the event of a spill, the Contractor's EPA Generator Identification number will be used on all documents for all disposal/removal purposes.
- c. At no time shall any Contractor personnel work in a potentially hazardous environment unless certified to do so under 29 CFR 1910.
- d. At all times the Contractor shall be responsible for satisfying the City of Manchester Department of Aviation, State of New Hampshire, US Environmental Protection Agency, and the Occupational Safety and Health Administration requirements for handling, storage, and disposal of potentially hazardous materials.
- e. Additional Considerations: Aside from the environmental regulations and permit conditions specified above, the Contractor is responsible for understanding and following all other applicable federal, state, and local laws and regulations.

1.13 ADDITIONAL OR SUBSTITUTE BOND

- a. If at any time the Owner for justifiable cause shall be or become dissatisfied with any Surety or sureties, then upon the Performance or Payment Bonds, the Contractor shall within five (5) days after notice from the Owner to do so, substitute an acceptable bond (or bonds) in such form and sum signed by such other surety or sureties as may be satisfactory to the Owner. The premiums on such bond shall be paid by the Contractor. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable bond to the Owner.

1.14 GENERAL GUARANTY

- a. Neither the final certificate of payment nor any provision in the Contract Documents, nor partial or entire occupancy of the premises by the Owner, shall constitute any acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for any damage to other work

resulting there from, which shall appear within a period of one year from the date of final acceptance of the work unless a longer period is specified. The Owner shall give notice of observed defects with reasonable promptness.

1.15 NOTICE AND SERVICE THEREOF

- a. Any notice to the Contractor from the Owner relative to any part of the Contract shall be in writing and considered delivered and the service thereof completed, when said notice is posted, by certified or registered mail, to the said Contractor at his last given address, or delivered in person to the said Contractor or his authorized representative on the Work.

1.16 PRESS RELEASES

- a. All press releases or other published information in any way concerning this Contract or the Work hereunder, which the Contractor or any of its subcontractors desires to make, shall be subject to approval by the Owner prior to release. Request for such releases shall be sent to the Owner for review and approval.

END OF SECTION

FAA 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.

Paragraph Number	Term	Definition
10-08	ASTM International (ASTM)	Formerly known as the American Society for Testing and Materials (ASTM).
10-09	Award	The Owner's notice to the successful bidder of the acceptance of the submitted bid.
10-10	Bidder	Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.
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	<p>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.</p> <p>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.</p>

Paragraph Number	Term	Definition
10-17	Contract Item (Pay Item)	A specific unit of work for which a price is provided in the contract.
10-18	Contract Time	The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, in lieu of a number of calendar or working days, the contract shall be completed by that date.
10-19	Contractor	The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.
10-20	Contractors Quality Control (QC) Facilities	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. NOT APPLICABLE – INTERIOR FIRE ALARM WORK.
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,

Paragraph Number	Term	Definition
		inspection, and/or observation of the contract work and acting directly or through an authorized representative.
10-26	Equipment	All machinery, together with the necessary supplies for upkeep and maintenance; and all tools and apparatus necessary for the proper construction and acceptable completion of the work.
10-27	Extra Work	An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the Owner's Engineer or Resident Project Representative (RPR) to be necessary to complete the work within the intended scope of the contract as previously modified.
10-28	FAA	The Federal Aviation Administration. When used to designate a person, FAA shall mean the Administrator or their duly authorized representative.
10-29	Federal Specifications	The federal specifications and standards, commercial item descriptions, and supplements, amendments, and indices prepared and issued by the General Services Administration.
10-30	Force Account	<p>a. Contract Force Account - A method of payment that addresses extra work performed by the Contractor on a time and material basis.</p> <p>b. Owner Force Account - Work performed for the project by the Owner's employees.</p>
10-31	Intention of Terms	<p>Whenever, in these specifications or on the plans, the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer and/or Resident Project Representative (RPR) is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer and/or RPR, subject in each case to the final determination of the Owner.</p> <p>Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of</p>

Paragraph Number	Term	Definition
		the entire section, specification item, or cited standard that may be pertinent to such specific reference.
10-32	Lighting	A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.
10-33	Major and Minor Contract Items	A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 20% of the total amount of the award contract. All other items shall be considered minor contract items.
10-34	Materials	Any substance specified for use in the construction of the contract work.
10-35	Modification of Standards (MOS)	Any deviation from standard specifications applicable to material and construction methods in accordance with FAA Order 5300.1.
10-36	Notice to Proceed (NTP)	A written notice to 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 the City of Manchester, NH.
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

Paragraph Number	Term	Definition
		pay in full all bills and accounts for materials and labor used in the construction of the work.
10-41	Performance bond	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.
10-42	Plans	The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications. Plans may also be referred to as 'contract drawings.'
10-43	Project	The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
10-44	Proposal	The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.
10-45	Proposal guaranty	The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Owner.
10-46	Quality Assurance (QA)	Owner's responsibility to assure that construction work completed complies with specifications for payment.
10-47	Quality Control (QC)	Contractor's responsibility to control material(s) and construction processes to complete construction in 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

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

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

Paragraph Number	Term	Definition
10-66	Architect	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for architecture, architectural engineering, inspection, and/or observation of the contract work and acting directly or through an authorized representative.

END OF SECTION 10

Section 20 Proposal Requirements and Conditions

20-01 Advertisement (Notice to Bidders). Refer to the Advertisement for Bid.

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.

Refer to the Bid Proposal for additional qualification requirements.

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*.

A prebid conference is required on this project to discuss as a minimum, the following items: material requirements; submittals; Quality Control/Quality Assurance requirements; the construction safety and phasing plan including airport access and staging areas; and unique airfield construction requirements. Refer to the Advertisement for Bid for time, date and place of the meeting.

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. Not used. Project items are Lump Sum. The contractor shall estimate the quantities based on the contract, plans and specifications. All materials, labor, equipment and expenses to complete the work are to be included in the Lump Sum value.

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, by fax, or by email before the time specified for opening bids. Revised proposals must be received at the place specified in the advertisement before the time specified for opening all bids.

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

20-14 Disqualification of bidders. A bidder shall be considered disqualified for any of the following reasons:

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

b. Evidence of collusion among bidders. Bidders participating in such collusion shall be disqualified as bidders for any future work of 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 3 calendar days prior to bid opening.

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

END OF SECTION 20

Section 30 Award and Execution of Contract

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

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

a. If the proposal is irregular as specified in Section 20, paragraph 20-09, *Irregular Proposals*.

b. If the bidder is disqualified for any of the reasons specified Section 20, paragraph 20-14, *Disqualification of Bidders*.

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

30-02 Award of contract. The award of a contract, if it is to be awarded, shall be made within **180 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 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

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.

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.

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. Division 01 through 33 specifications.

50-05 Cooperation of Contractor. The Contractor shall be supplied with five hard copies 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 in the following format(s): Topographic surveys are not applicable.

Laser, GPS, String line, or other automatic control shall be checked with temporary control as necessary. In the case of error, on the part of the Contractor, their surveyor, employees or subcontractors, resulting in established grades, alignment or grade tolerances that do not concur with those specified or shown on the plans, the Contractor is solely responsible for correction, removal, replacement and all associated costs at no additional cost to the Owner.

No direct payment will be made, unless otherwise specified in contract documents, for this labor, materials, or other expenses. The cost shall be included in the price of the bid for the various items of the Contract.

50-08 Authority and duties of Quality Assurance (QA) inspectors. QA inspectors shall be authorized to inspect all work done and all material furnished. Such QA inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. QA inspectors are not authorized to revoke, alter, or waive any provision of the contract. QA inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

QA Inspectors are authorized to notify the Contractor or their representatives of any failure of the work or materials to conform to the requirements of the contract, plans, or specifications and to reject such nonconforming materials in question until such issues can be referred to the RPR for a decision.

50-09 Inspection of the work. All materials and each part or detail of the work shall be subject to inspection. The RPR shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the RPR requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

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

Should the contract work include relocation, adjustment, or any other modification to existing facilities, not the property of the (contract) Owner, authorized representatives of the Owners of such facilities shall have the right to inspect such work. Such inspection shall in no sense make any facility owner a party to the contract, and shall in no way interfere with the rights of the parties to this contract.

50-10 Removal of unacceptable and unauthorized work. All work that does not conform to the requirements of the contract, plans, and specifications will be considered unacceptable, unless otherwise determined acceptable by the RPR as provided in paragraph 50-02, *Conformity with Plans and Specifications*.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of Section 70, paragraph 70-14, *Contractor's Responsibility for Work*.

No removal work made under provision of this paragraph shall be done without lines and grades having been established by the RPR. Work done contrary to the instructions of the RPR, work done beyond the lines shown on the plans or as established by the RPR, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply with any order of the RPR made under the provisions of this subsection, the RPR will have authority to cause unacceptable work to be remedied or removed and replaced; and unauthorized work to be removed and recover the resulting costs as a liquidated damage against the Contractor.

50-11 Load restrictions. The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage that may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor, at their own expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel.

50-12 Maintenance during construction. The Contractor shall maintain the work during construction and until the work is accepted. Maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the work is maintained in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

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

Should the Contractor fail to respond to the RPR's notification, the Owner may suspend any work necessary for the Owner to correct such unsatisfactory maintenance condition, depending on the exigency

that exists. Any maintenance cost incurred by the Owner, shall be recovered as a liquidated damage against the Contractor.

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

50-15 Final acceptance. Upon due notice from the Contractor of presumptive completion of the entire project, the RPR and Owner will make an inspection. If all construction provided for and contemplated by the contract is found to be complete in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The RPR shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the RPR will notify the Contractor and the Contractor shall correct the unsatisfactory work. Upon correction of the work, another inspection will be made which shall constitute the final inspection, provided the work has been satisfactorily completed. In such event, the RPR will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

50-16 Claims for adjustment and disputes. If for any reason the Contractor deems that additional compensation is due for work or materials not clearly provided for in the contract, plans, or specifications or previously authorized as extra work, the Contractor shall notify the RPR in writing of their intention to claim such additional compensation before the Contractor begins the work on which the Contractor bases the claim. If such notification is not given or the RPR is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the RPR has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed, the Contractor shall, within 10 calendar days, submit a written claim to the RPR who will present it to the Owner for consideration in accordance with local laws or ordinances.

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

50-17 Value Engineering Cost Proposal. The provisions of this paragraph will apply only to contracts awarded to the lowest bidder pursuant to competitive bidding.

On projects with original contract amounts in excess of \$100,000, the Contractor may submit to the RPR, in writing, proposals for modifying the plans, specifications or other requirements of the contract for the sole purpose of reducing the cost of construction. The value engineering cost proposal shall not impair, in any manner, the essential functions or characteristics of the project, including but not limited to service life, economy of operation, ease of maintenance, desired appearance, design and safety standards. This provision shall not apply unless the proposal submitted is specifically identified by the Contractor as being presented for consideration as a value engineering proposal.

Not eligible for value engineering cost proposals are changes in the basic design of a pavement type, runway and taxiway lighting, visual aids, hydraulic capacity of drainage facilities, or changes in grade or alignment that reduce the geometric standards of the project.

As a minimum, the following information shall be submitted by the Contractor with each proposal:

- a. A description of both existing contract requirements for performing the work and the proposed changes, with a discussion of the comparative advantages and disadvantages of each.
- b. An itemization of the contract requirements that must be changed if the proposal is adopted.
- c. A detailed estimate of the cost of performing the work under the existing contract and under the proposed changes.
- d. A statement of the time by which a change order adopting the proposal must be issued.
- e. A statement of the effect adoption of the proposal will have on the time for completion of the contract.
- f. The contract items of work affected by the proposed changes, including any quantity variation attributable to them.

The Contractor may withdraw, in whole or in part, any value engineering cost proposal not accepted by the RPR, within the period specified in the proposal. The provisions of this subsection shall not be construed to require the RPR to consider any value engineering cost proposal that may be submitted.

The Contractor shall continue to perform the work in accordance with the requirements of the contract until a change order incorporating the value engineering cost proposal has been issued. If a change order has not been issued by the date upon which the Contractor's value engineering cost proposal specifies that a decision should be made, or such other date as the Contractor may subsequently have requested in writing, such value engineering cost proposal shall be deemed rejected.

The RPR shall be the sole judge of the acceptability of a value engineering cost proposal and of the estimated net savings from the adoption of all or any part of such proposal. In determining the estimated net savings, the RPR may disregard the contract bid prices if, in the RPR's judgment such prices do not represent a fair measure of the value of the work to be performed or deleted.

The Owner may require the Contractor to share in the Owner's costs of investigating a value engineering cost proposal submitted by the Contractor as a condition of considering such proposal. Where such a condition is imposed, the Contractor shall acknowledge acceptance of it in writing. Such acceptance shall constitute full authority for the Owner to deduct the cost of investigating a value engineering cost proposal from amounts payable to the Contractor under the contract.

If the Contractor's value engineering cost proposal is accepted in whole or in part, such acceptance will be by a contract change order that shall specifically state that it is executed pursuant to this paragraph. Such change order shall incorporate the changes in the plans and specifications which are necessary to permit the value engineering cost proposal or such part of it as has been accepted and shall include any conditions upon which the RPR's approval is based. The change order shall also set forth the estimated net savings attributable to the value engineering cost proposal. The net savings shall be determined as the difference in costs between the original contract costs for the involved work items and the costs occurring as a result of the proposed change. The change order shall also establish the net savings agreed upon and shall provide for adjustment in the contract price that will divide the net savings equally between the Contractor and the Owner.

The Contractor's 50% share of the net savings shall constitute full compensation to the Contractor for the value engineering cost proposal and the performance of the work.

Acceptance of the value engineering cost proposal and performance of the work shall not extend the time of completion of the contract unless specifically provided for in the contract change order.

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.

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. An Engineer/RPR field office is 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, 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.

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 Operational Safety on Airports During Construction. As applicable, the Contractor shall complete the work in accordance with AC 150/5370-2, Operational Safety on Airports During Construction.

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. 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 shall be coordinated with the RPR at the pre-construction meeting.

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 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.

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. 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 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. Not used.

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. For insurance requirements see Supplemental Provisions.

END OF SECTION 70

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 **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 **7** days of the NTP date. The Contractor shall notify the RPR at least 48 hours in advance of the time contract operations begins. The Contractor shall not commence any actual operations prior to the date on which the notice to proceed is issued by the Owner.

80-03 Execution and progress. Unless otherwise specified, the Contractor shall submit their coordinated construction schedule showing all work activities for the RPR's review and acceptance at least 10 days prior to the start of work. The Contractor's progress schedule, once accepted by the RPR, will represent the Contractor's baseline plan to accomplish the project in accordance with the terms and conditions of the Contract. The RPR will compare actual Contractor progress against the baseline schedule to determine that status of the Contractor's performance. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the RPR's request, submit a revised schedule for completion of the work within the contract time and modify their operations to provide such additional materials, equipment, and labor necessary to meet the revised

schedule. Should the execution of the work be discontinued for any reason, the Contractor shall notify the RPR at least 24 hours in advance of resuming operations.

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

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.

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 Contractor shall be required to conform to safety standards contained in AC 150/5370-2, Operational Safety on Airports During Construction.

80-04.1 Operational safety on airport during construction. All Contractors' operations shall be conducted in accordance the current version of AC 150/5370-2, Operational Safety on Airports During Construction. For work in the AoA, the Contractor shall prepare and submit for approval a Safety Plan Compliance Document (SPCD) that details how it proposes to comply with the requirements of AC 150/5370-2, Operational Safety on Airports During Construction.

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 SPCD and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved SPCD unless approved in writing by the Owner. The necessary coordination actions to review Contractor proposed modifications to an 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

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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:

80-07.1 Contract time based on calendar days. Contract Time based on calendar days shall consist of the number of calendar days stated in the contract counting from the effective date of the Notice to Proceed and including all Saturdays, Sundays, holidays, and non-work days. All calendar days elapsing between the effective dates of the Owner's orders to suspend and resume all work, due to causes not the fault of the Contractor, shall be excluded.

At the time of final payment, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in the contract time shall not consider either cost of work or the extension of contract time that has been covered by a change order or supplemental agreement. Charges against the contract time will cease as of the date of final acceptance.

80-08 Failure to complete on time. For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in paragraph 80-07, *Determination and Extension of Contract Time*) the sum specified in the contract and proposal as liquidated damages (LD) will be deducted from any money due or to become due 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
1	\$500/calendar day	270 Calendar Days

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 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

Term	Description
	shall be weighed empty daily at such times as the RPR directs, and each truck shall bear a plainly legible identification mark.
Measurement by Volume	Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable for the materials hauled, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of 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

Term	Description
	<p>certified permanently installed commercial scales. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.</p> <p>Scales shall be accurate within 0.5% of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the RPR before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed 0.1% of the nominal rated capacity of the scale, but not less than one pound (454 grams). The use of spring balances will not be permitted.</p> <p>In the event inspection reveals the scales have been “overweighing” (indicating more than correct weight) they will be immediately adjusted. All materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of 0.5%.</p> <p>In the event inspection reveals the scales have been under-weighing (indicating less than correct weight), they shall be immediately adjusted. No additional payment to the Contractor will be allowed for materials previously weighed and recorded.</p> <p>Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the RPR can safely and conveniently view them.</p> <p>Scale installations shall have available ten standard 50-pound (2.3 km) weights for testing the weighing equipment or suitable weights and devices for other approved equipment.</p> <p>All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.</p>
Rental Equipment	<p>Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered in connection with extra work will be measured as agreed in the change order or supplemental agreement authorizing such work as provided in paragraph 90-05 <i>Payment for Extra Work</i>.</p>
Pay Quantities	<p>When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the RPR. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.</p>

90-02 Scope of payment. The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the execution thereof, subject to the provisions of Section 70, paragraph 70-18, *No Waiver of Legal Rights*.

When the “basis of payment” subsection of a technical specification requires that the contract price (price bid) include compensation for certain work or material essential to the item, this same work or material will not also be measured for payment under any other contract item which may appear elsewhere in the contract, plans, or specifications.

90-03 Compensation for altered quantities. When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in Section 40, paragraph 40-02, *Alteration of Work and Quantities*, will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or indirectly from their own unbalanced allocation of overhead and profit among the contract items, or from any other cause.

90-04 Payment for omitted items. As specified in Section 40, paragraph 40-03, *Omitted Items*, the RPR shall have the right to omit from the work (order nonperformance) any contract item, except major contract items, in the best interest of the Owner.

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

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

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

90-05 Payment for extra work. Extra work, performed in accordance with Section 40, paragraph 40-04, *Extra Work*, will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work.

90-06 Partial payments. Partial payments will be made to the Contractor at least once each month as the work progresses. Said payments will be based upon estimates, prepared by the RPR, of the value of the work performed and materials complete and in place, in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with paragraph 90-07, *Payment for Materials on Hand*. No partial payment will be made when the amount due to the Contractor since the last estimate amounts to less than five hundred dollars.

a. From the total of the amount determined to be payable on a partial payment, 10% percent of such total amount will be deducted and retained by the Owner for protection of the Owner’s interests. Unless

otherwise instructed by the Owner, the amount retained by the Owner will be in effect until the final payment is made except as follows:

(1) Contractor may request release of retainage on work that has been partially accepted by the Owner in accordance with Section 50-14. Contractor must provide a certified invoice to the RPR that supports the value of retainage held by the Owner for partially accepted work.

(2) In lieu of retainage, the Contractor may exercise at its option the establishment of an escrow account per paragraph 90-08.

b. The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than 30 days after the Contractor has received a partial payment. Contractor must provide the Owner evidence of prompt and full payment of retainage held by the prime Contractor to the subcontractor within 30 days after the subcontractor's work is satisfactorily completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the Owner. When the Owner has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

c. When at least 95% of the work has been completed to the satisfaction of the RPR, the RPR shall, at the Owner's discretion and with the consent of the surety, prepare estimates of both the contract value and the cost of the remaining work to be done. The Owner may retain an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. The remainder, less all previous payments and deductions, will then be certified for payment to the Contractor.

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.

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 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.
- m.** Return all Airport badges.

END OF SECTION 90

SUPPLEMENTAL PROVISIONS

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I. CONTRACT DOCUMENT DRAWINGS

Attention shall be directed to the General Provisions and to the Supplemental General Provisions for complete definition and enumeration of the Contract Documents. Attention shall be paid to the drawings, specifications, and addenda enumerated in Paragraph I of the Supplemental General Provisions which form a part of this contract.

A. Dimensions

The drawings are made to scale, unless otherwise noted, but all working dimensions shall be taken from the figured dimensions or by actual measurements at the work, and in no case by scaling the prints. The Contractor (and his/her subcontractors) shall study and compare all drawings and verify all figures before laying out or constructing the work and shall be responsible for any and all errors in the Contract work which might have been avoided thereby. Whether or not an error is believed to exist, deviations from the drawings and the dimensions given thereon shall be made only after approval in writing is obtained from the Engineer. The Contractor (and his/her subcontractors) shall take all measurements of existing established conditions notwithstanding the figured dimensions are not in agreement with the Contractor's (or his/her subcontractors) measurements, the Engineer shall be immediately notified and the Engineer will promptly adjust same.

B. Diagrammatic Drawings

1. Work and Materials Included

Plans or drawings where the work is shown diagrammatically indicate approved working systems. Every piece of material, fitting, fixture or small equipment is not shown nor is every difficulty or interference that may be encountered. To carry out the true intent and purpose of the Contract Documents, all necessary parts to make complete, approved working systems, or installations shall be included as if detailed on the drawings.

2. Location of Construction

The location of construction or installations shown on the drawings, unless exactly dimensioned, shall be considered as approximate only. The Contractor (and his/her subcontractors) shall adjust the position of the construction and installation in accordance with good working practices and as directed or approved by the Engineer to meet interferences, provide proper clearance and provide proper access space for operations and maintenance.

C. Typical Details

Where shown on the drawings, typical details shall apply to each and every item of the Contract work where such items are incorporated and the detail is applicable. Unless noted otherwise, such typical details shall be applicable in full.

II. SPECIAL INSPECTION REQUIREMENTS

A. The project will be financially aided by grants from the Federal Aviation Administration (U. S. Government) and from the New Hampshire Department of Transportation, Bureau of Aeronautics. All work done under this Contract will be subject to the rules and regulations and the approval of said Administration and Department. The Contractor shall provide authorized representatives of said Administration and Department with proper access to the work for inspection purposes at any time during the preparation for or progress on the Contract work.

B. The Contractor shall throughout the course of the work give proper notice to the Engineer and all others having jurisdiction of his/her schedule of operations. It shall be the Contractor's responsibility to have all parts of the work inspected and approved by the proper authorities as required.

C. All applicable inspection and certification requirements of the Standard Specifications referred to herein will be enforced, in addition to any other inspections or certifications deemed necessary by the Engineer.

III. "OR EQUAL" CLAUSE

Whenever a material, article or piece of equipment is identified on the plans or in the specifications by reference to manufacturer's or vendor's names, trade names, catalogue numbers, etc., it is intended merely to establish a standard; and, any material, article, or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed, is, in the opinion of the Engineer, of equal substance and function. It shall not be purchased or installed by the Contractor without the Engineer's written approval.

IV. PROTECTION OF LIVES AND HEALTH

In order to protect the lives and health of his/her employees under the contract, the Contractor shall comply with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc., and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the Contract. He/she alone shall be responsible for the safety, efficiency, and adequacy of his/her plant, appliances, and methods, and for any damage which may result from their failure of their improper construction, maintenance or operation.

V. INSURANCE

A. General

1. The Contractor, under any circumstances, shall not commence work under this Contract until he/she has obtained all the insurance required by these Specifications. The Owner and the Engineer shall be named as certificate holder on all policies. The types and minimum amounts of the insurance to be provided by the contractor shall be as specified below.

B. Types and Minimum Limits

1. Workmen's Compensation Insurance

The Contractor shall procure and shall maintain during the life of this Contract Workmen's Compensation Insurance as required by applicable State or territorial law for all of his/her employees to be engaged in work at the site of the project under this Contract and, in case of any such work sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance for all the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Workmen's Compensation Insurance.

In case any class of employees engaged in hazardous work on this project under this Contract is not protected under the Workmen's Compensation Statute, the Contractor shall provide and shall cause each subcontractor to provide adequate employer's liability insurance for the protection of such of his/her employees as are not otherwise protected.

2. Contractor's Public Liability and Property, Damage and Vehicle Liability and Property Damage Insurance

The Contractor shall procure and shall maintain during the life of this Contract, Contractor's Public Liability Insurance, Contractor's Property Damage Insurance, and Vehicle Liability Insurance. The Public Liability and Property Damage policies shall be extended to cover completed operations for a period of one year following acceptance of the contract work. The limits of insurance coverage shall be as follows:

For bodily injury:

\$ 5,000,000.00 Each person

For property damage:

\$ 5,000,000.00 Each accident

\$ 5,000,000.00 Aggregate

The insurance required under this subparagraph shall provide adequate protection for the contractor against damage claims which may arise from operation under this contract, whether such operations be by the insured or by anyone directly or indirectly employed by him/her and also against any damage or injury to aircraft or persons in aircraft operating on or near the project site. The insurance shall also cover damage or injury resulting from the use, storage, handling or transportation of explosives in connection with the contract work.

3. Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance

The Contractor shall either (a) require each of his/her subcontractors to procure, and to maintain during the life of his/her subcontract, Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability and Property Damage Insurance of the types and amount specified in (2) above or (b) insure the activities of all subcontractors under the Contractor's own policies specified in (2) above.

4. Builder's Risk Insurance and/or All Risk Property Damage Insurance (Fire and Extended Coverage)

Until the project is completed and accepted by the Owner the Contractor is required to maintain Builder's Risk Insurance and/or All Property Damage Insurance (Fire and Extended Coverage) on a 100 percent completed value basis on all materials and workmanship utilized all portions of the project for the benefit of the Owner, the Contractor and subcontractor as their interests may appear.

Builder's Risk Insurance is only required for construction of structures or buildings including work on existing structures and/or buildings.

5. Owner's, Contractor's Protective Insurance

The Contractor shall procure and maintain during the life of this Contract at his/her own expense and shall furnish to the Owner a separate Owner's Contractor's Protective Policy providing public liability and property damage with the following minimum limits:

For bodily injury:

\$ 5,000,000.00 Each person

For property damage:

\$ 5,000,000.00 Each accident

\$ 5,000,000.00 Aggregate

C. Insurance Certificates

1. The Contractor shall furnish the Owner at the time of executing the Contract, Certificates of Insurance showing clearly the types and amounts of insurance coverage, the operations covered, effective dates, and expiration dates for all of the required insurance coverage. Certificates of Insurance shall be endorsed essentially as follows: "None of the coverage indicated on the Certificate will be modified or cancelled without ten days prior written notice to the Owner." The Certificates of Insurance shall clearly state all of the requirements specified in all these subparagraphs and shall state the month and year of the Contract. Acceptance of the insurance certificates by the Owner shall not relieve or decrease the liability of the Contractor under the Contract.

VI. SPECIAL HAZARDS

The Contractor's and Subcontractor's Public Liability, Property Damage, Vehicle Liability, and Vehicle Property Damage insurance coverage shall provide adequate protection against the following special hazards:

A. Damage or injury to aircraft or persons in aircraft operating on or near the project site, resulting from any operations under this Contract.

B. Damage or injury resulting from the use, storage, handling or transportation of explosives in connection with the Contract work.

VII. PRICING OF CONSTRUCTION CONTRACT CHANGE ORDER OR SUPPLEMENTAL AGREEMENT DOCUMENTATION

A. GENERAL

1. The contract language contained in this Section will supplement and take precedence over all other Change Order (CO) or Supplemental Agreement (SA) pricing contract provisions in the Contract Documents provided by the Owner, Design-BUILDER (Contractor), Construction Manager (Contractor), General Contractor (Contractor) and/or Architect/Owner. It is

Manchester-Boston Regional Airport

SUPPLEMENTAL PROVISIONS

MHT Terminal Fire Alarm System

Replacement Project

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understood that these contract provisions will govern the pricing and administration of all change order proposals to be submitted by the Construction Manager and/or the General Contractor and/or the Trade Contractors and/or the Subcontractors and/or all other lower tier sub-subcontractors (all referred to as “Contractor” in this Section). In the event of a conflict between the other Contract Documents used for the Project, the change order pricing contract provisions in this Section shall govern.

2. Contractor agrees that it will incorporate the provisions of this Section into all agreements with lower tier Contractors. It is understood that these change order pricing provisions apply to all types of contracts and/or subcontracts specifically including lump sum (or fixed price contracts), and/or, unit price contracts. It is further understood that these change order provisions will apply to all methods of change order pricing specifically including lump sum change order proposals and unit price change order proposals.

3. Whenever change order or Supplemental Agreement proposals to adjust the contract price become necessary, the Owner will have the right to select the method of pricing to be used by the Contractor in accordance with the pricing provisions found in this Section. The options will be (1) lump sum change order proposal, or (2) unit price change order proposal as defined in the following provisions.

4. The word “Change Order” in this section applies to both Change Orders and Supplemental Agreements as defined by Section 10-12 and 10-48 of the General Provisions of these specifications.

B. CHANGE ORDER TYPES

1. Lump Sum Change Orders. Provides a single lump sum amount for extra work that comprises of multiple task and a well-defined amount of effort.

2 Unit Price Change Orders. Provides a per unit amount for a single task that will be measured for payment upon completion of the task.

3. If a CO proposal is not acceptable to the Owner and prompt agreement between the two parties cannot be reached, the Owner at its sole option, may order the Contractor to proceed with the work on a “Time and Material” basis. The resulting CO will be treated as a Lump Sum CO for determining cost. A Time and Material worksheet will be used to track time and materials on a daily basis and must be signed by the Contractor and the Engineer each day.

C. CHANGE ORDER PROPOSALS

1. The following will apply to all types of Change Orders:

a. For all labor the Contractor shall receive the rate of the personnel reasonably anticipated to perform the work, or in the case of Time and Materials, the wage actually paid as shown by his certified payroll, which shall be at least the minimum rate established by the Contract Documents.

1. The labor rate shall include allowable overhead labor burden defined as employer's net actual cost of payroll taxes (FICA, Medicare, SUTA, FUTA), net actual cost for employer's cost of union benefits (or other usual and customary fringe benefits if the employees are not union employees), and net actual cost to employer for worker's compensation insurance.

2. For all foremen in direct charge of the work the Contractor shall receive the actual wage paid the foremen, as shown on (his certified payroll). No part of the salary or expense of anyone above the grade of foreman and having general supervision of the work will be included in the labor item.

3. Contractor shall receive the actual cost of such labor and labor burden, to which shall be added a maximum of fifteen percent (15%) of the sum thereof.

b. For all materials used by the Contractor, he shall receive the actual cost of such materials, less any allowable cash discounts, delivered on the work, including delivery charges as shown by original receipted bills, to which shall be added a maximum of five percent (5%) of the sum thereof.

c. For any major power operated machinery, trucks or equipment, which it may be necessary to use, the Owner shall allow the Contractor the rental price as set forth in the standard schedule of equipment rental prices established by the Rental Rate Blue Book for Construction Equipment, current edition as published by Dataquest, or equivalent publication.

1. Should the proper completion of the work require equipment of a type not covered by the above-mentioned schedule, the Owner shall allow the Contractor a reasonable rental price to be agreed upon in writing before the work is begun.

2. No percentage shall be added to the amounts of any of the above stated equipment rental prices, but the price as set forth in the schedule or agreed upon shall be total compensation allowed for the use of such equipment.

3. Major equipment is defined as tools and equipment with an individual purchase cost of more than \$750.

d. For all cost of all insurance, bonds, and taxes imposed by law on labor employed on the work, the Contractor shall receive the actual amount paid without being marked up.

1. In the event the Contractor has been required to furnish comprehensive general liability insurance and/or performance and/or payment bonds as part of the base contract price, a final contract change order will be processed to account for the Contractor's net increase or decrease in comprehensive general liability insurance costs and/or bond premium costs associated with change orders to Contractor's base contract price.

e. All extra work performed by a subcontractor will be according to the above requirements as if the work were performed directly by the Contractor. Extra work performed by a subcontractor may be marked up by the General Contractor by a

maximum of five percent (5%). If there are second and third tier subcontractors, subcontractors can markup lower tier subcontractors by a maximum of five percent (5%), the aggregate mark-up of all subcontractors involved shall be a maximum of twenty percent (20%), including the General Contractors markup. The maximum mark-up for all labor, materials and subcontractors is twenty-five percent (25%).

f. In no event will any lump sum or percentage amounts for "contingency" be allowed to be added as a separate line item in change order estimates. Unknowns attributable to labor hours will be accounted for when estimating labor hours anticipated performing the work. Unknowns attributable to material scrap and waste will be estimated as part of material costs.

g. The Contractor's proposals for changes in the contract amount or time shall be submitted within seven (7) calendar days of the Owner's request, unless the Owner extends such period of time due to the circumstances involved. If such proposals are not received in a timely manner, if the proposals are not acceptable to Owner, or if the changed work should be started immediately to avoid damage to the project or costly delay, the Owner may direct the Contractor to proceed with the changes without waiting for the Contractor's proposal or for the formal change order to be issued. In the case of an unacceptable Contractor proposal, the Owner may direct the Contractor to proceed with the changed work on a time and material basis with an agreed upon "not-to-exceed" price for the work to be performed. Such directions to the Contractor by the Owner shall be confirmed in writing within seven (7) calendar days. The cost or credit, and or time extensions will be determined by negotiations as soon as practical thereafter and incorporated in a Change Order to the Contract.

D. UNAUTHORIZED CHANGES IN THE WORK

1. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented.



**FAA
AIRPORTS**

Contract Provision Guidelines For Obligated Sponsors and Airport Improvement Program Projects

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ACCESS TO RECORDS AND REPORTS

(2 CFR § 200.333, 2 CFR § 200.336, FAA Order 5100.38)

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

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION to
ENSURE EQUAL EMPLOYMENT OPPORTUNITY**

(41 CFR part 60-4, Executive Order 11246)

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

Timetables

Goals for minority participation for each trade: **0.5%**

Goals for female participation in each trade: 6.9%

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

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

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

4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is [New Hampshire, Rockingham County](#).

BREACH OF CONTRACT TERMS

(2 CFR § 200 Appendix II(A))

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 the 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.

BUY AMERICAN PREFERENCE

(Title 49 USC § 50101)

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

A bidder or offeror must complete and submit the Buy America certification included herein with their bid or offer. The Owner will reject as nonresponsive any bid or offer that does not include a completed Certificate of Buy American Compliance.

CERTIFICATE OF BUY AMERICAN COMPLIANCE FOR TOTAL FACILITY

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with its proposal. The bidder or offeror must indicate how it intends to comply with 49 USC § 50101 by selecting one of the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (i.e. not both) by inserting a checkmark (✓) or the letter "X".

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

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

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

- c) To faithfully comply with providing U.S. domestic products at or above the approved U.S. domestic content percentage as approved by the FAA.
- d) To furnish U.S. domestic product for any waiver request that the FAA rejects.
- e) To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

Required Documentation

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

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

Type 4 Waiver – Total cost of project using U.S. domestic source product exceeds the total project cost using non-domestic product by 25 percent. The required documentation for a Type 4 of waiver is:

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

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

Date	Signature
Company Name	Title

GENERAL CIVIL RIGHTS PROVISIONS

(49 USC § 47123)

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 binds the Contractor and subcontractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required by Title VI of the Civil Rights Act of 1964.

Title VI Solicitation Notice:

The City of Manchester, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 USC §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders or offerors that it will affirmatively ensure that any contract entered into pursuant to this advertisement, [disadvantaged business enterprises](#) will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

Compliance with Nondiscrimination Requirements:

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

1. **Compliance with Regulations:** The Contractor will comply with the Title VI List of Pertinent Nondiscrimination Acts and Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Nondiscrimination:** 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 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.
3. **Solicitations for Subcontracts, including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier 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.
4. **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.

5. **Sanctions for Noncompliance:** In the event of a Contractor's noncompliance with the non-discrimination provisions of this contract, the sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:
 - a. Withholding payments to the Contractor under the contract until the Contractor complies; and/or
 - b. Cancelling, terminating, or suspending a contract, in whole or in part.
6. **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.

Title VI List of Pertinent Nondiscrimination Acts and Authorities

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 USC § 2000d *et seq.*, 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination in Federally-assisted programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 USC § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973 (29 USC § 794 *et seq.*), as amended (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended (42 USC § 6101 *et seq.*) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (49 USC § 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, 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 (42 USC §§ 12131 – 12189) as implemented by U.S. Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration’s Nondiscrimination statute (49 USC § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 USC 1681 et seq).

CLEAN AIR AND WATER POLLUTION CONTROL

(2 CFR § 200, Appendix II(G))

Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act (42 USC § 740-7671q) and the Federal Water Pollution Control Act as amended (33 USC § 1251-1387). The Contractor agrees to report any violation to the Owner immediately upon discovery. The Owner assumes responsibility for notifying the Environmental Protection Agency (EPA) and the Federal Aviation Administration.

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

CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS

(2 CFR § 200, Appendix II(E))

1. Overtime Requirements.

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

2. Violation; Liability for Unpaid Wages; Liquidated Damages.

In the event of any violation of the clause set forth in paragraph (1) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this clause, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this clause.

3. Withholding for Unpaid Wages and Liquidated Damages.

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

4. Subcontractors.

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

COPELAND “ANTI-KICKBACK” ACT
(2 CFR § 200, Appendix II(D), 29 CFR Parts 3 and 5)

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

DAVIS-BACON REQUIREMENTS
(2 CFR § 200, Appendix II(D), 29 CFR Part 5)

1. Minimum Wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalent thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

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

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

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

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by

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the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

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

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

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program: *Provided* that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding.

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

3. Payrolls and Basic Records.

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

(ii)(A) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit the payrolls to the applicant, Sponsor, or Owner, as the case may be, for transmission to the Federal Aviation Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (*e.g.* the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at www.dol.gov/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker and shall provide them upon request to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit them to the applicant, sponsor, or Owner, as the case may be, for transmission to the Federal Aviation Administration, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, Sponsor, or Owner).

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

(1) The payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5 (a)(3)(i), and that such information is correct and complete;

(2) Each laborer and mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations 29 CFR Part 3;

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

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

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

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

4. Apprentices and Trainees.

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

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

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

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

5. Compliance with Copeland Act Requirements.

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

6. Subcontracts.

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

7. Contract Termination: Debarment.

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

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

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

9. Disputes Concerning Labor Standards.

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

10. Certification of Eligibility.

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

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

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

CERTIFICATION OF LOWER TIER CONTRACTORS REGARDING DEBARMENT

(2 CFR part 180 (Subpart C), 2 CFR part 1200, DOT Order 4200.5)

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

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

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

DISADVANTAGED BUSINESS ENTERPRISES

(49 CFR part 26)

Contract Assurance (§ 26.13) –

The Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of Department of Transportation-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Owner 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.

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

TEXTING WHEN DRIVING

(Executive Order 13513, DOT Order 3902.10)

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

In support of this initiative, the Owner encourages the Contractor to promote policies and initiatives for its employees and other work personnel that decrease crashes by distracted drivers, including policies that ban text messaging while driving motor vehicles while performing work activities associated with the project. The Contractor must include the substance of this clause in all sub-tier contracts exceeding \$3,500 that involve driving a motor vehicle in performance of work activities associated with the project.

ENERGY CONSERVATION REQUIREMENTS

2 CFR § 200, Appendix II(H)

Contractor and Subcontractor agree to comply with mandatory standards and policies relating to energy efficiency as contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 USC 6201*et seq.*).

EQUAL OPPORTUNITY CLAUSE

(2 CFR 200, Appendix II(C), 41 CFR § 60-1.4, 41 CFR § 60-4.3, Executive Order 11246)

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

- (1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identify, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff, or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
- (3) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (4) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (5) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (7) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for

noncompliance: *Provided, however*, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

**STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS**

1. As used in these specifications:

- a. “Covered area” means the geographical area described in the solicitation from which this contract resulted;
- b. “Director” means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;
- c. “Employer identification number” means the Federal social security number used on the Employer’s Quarterly Federal Tax Return, U.S. Treasury Department Form 941;
- d. “Minority” includes:
 - (1) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);
 - (3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

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

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

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

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

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

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

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

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

- d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or female sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions, including specific review of these items, with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other contractors and subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR part 60-3.

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

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

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

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

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

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a contractor association, joint contractor union, contractor community, or other similar groups of which the Contractor is a member and participant may be asserted as fulfilling any one or more of its obligations under 7a through 7p of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

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

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

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

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

fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR part 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

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

FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)

(29 USC § 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.

CERTIFICATION REGARDING LOBBYING

(31 USC § 1352 – Byrd Anti-Lobbying Amendment, 2 CFR part 200, Appendix II(J), 49 CFR part 20, Appendix A)

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

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

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

PROHIBITION OF SEGREGATED FACILITIES

(41 CFR § 60)

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

(b) “Segregated facilities,” as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

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

OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

(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. The employer must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The employer retains full responsibility to monitor its compliance and their subcontractor’s compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (20 CFR Part 1910). The employer must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

PROCUREMENT OF RECOVERED MATERIALS

(2 CFR § 200.322, 40 CFR part 247, Solid Waste Disposal Act)

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

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

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

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

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

RIGHTS TO INVENTIONS

(2 CFR § 200, Appendix II(F), 37 CFR §401)

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

SEISMIC SAFETY

(49 CFR part 41)

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

CERTIFICATION OF OFFERER/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

(Sections 415 and 416 of Title IV, Division L of the Consolidated Appropriations Act, 2014 (Pub. L. 113-76), and similar provisions in subsequent appropriations acts.

DOT Order 4200.6 - Requirements for Procurement and Non-Procurement Regarding Tax Delinquency and Felony Convictions)

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

Certifications

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

Note

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

Term Definitions

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

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

TERMINATION FOR CONVENIENCE (CONSTRUCTION & EQUIPMENT CONTRACTS)

(2 CFR § 200 Appendix II(B), FAA Advisory Circular 150/5370-10, Section 80-09)

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

1. Contractor must immediately discontinue work as specified in the written notice.
2. Terminate all subcontracts to the extent they relate to the work terminated under the notice.
3. Discontinue orders for materials and services except as directed by the written notice.
4. Deliver to 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.
5. Complete performance of the work not terminated by the notice.
6. 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.

TERMINATION FOR DEFAULT (CONSTRUCTION)

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

TRADE RESTRICTION CERTIFICATION
(49 USC § 50104, 49 CFR part 30)

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

- 1) is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms as published by the Office of the United States Trade Representative (USTR);
- 2) has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country included on the list of countries that discriminate against U.S. firms as published by the USTR; and
- 3) has not entered into any subcontract for any product to be used on the Federal project that is produced in a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR.

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

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

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to an Offeror or subcontractor:

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

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

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

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

VETERAN'S PREFERENCE

49 USC § 47112(c)

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

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WAGE RATES

"General Decision Number: NH20200022 02/14/2020

Superseded General Decision Number: NH20190022

State: New Hampshire

Construction Type: Building

County: Rockingham County in New Hampshire.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2020
1	01/24/2020
2	02/14/2020

ASBE0006-014 09/01/2019

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 38.75	29.75

BOIL0029-004 01/01/2017

	Rates	Fringes
BOILERMAKER.....	\$ 42.42	24.92

BRNH0003-001 05/01/2018

	Rates	Fringes
BRICKLAYER.....	\$ 30.36	25.20

* ELEC0490-006 01/01/2020

	Rates	Fringes
ELECTRICIAN (Includes Low Voltage Wiring and Alarm Installation).....	\$ 30.28	20.58

ELEV0004-007 01/01/2020		

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 61.42	34.77

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day and the Friday after Thanksgiving.

b. VACATION: Employer contributes 8% of basic hourly rate for 5 years or more of service; 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

IRON0007-037 03/16/2019

	Rates	Fringes
IRONWORKER (Reinforcing and Structural).....	\$ 26.01	22.57

LAB00976-008 06/01/2018		

	Rates	Fringes
LABORER: Common or General.....	\$ 21.01	17.57

PLUM0131-004 06/01/2019		

	Rates	Fringes
PIPEFITTER.....	\$ 34.07	23.48

SUNH2015-008 06/16/2017		

	Rates	Fringes
CARPENTER, Includes Acoustical Ceiling Installation and Form Work (Excludes Drywall Hanging and Drywall Finishing/Taping).....	\$ 24.47	8.55
CEMENT MASON/CONCRETE FINISHER...	\$ 22.04	9.70
DRYWALL FINISHER/TAPER.....	\$ 25.00	0.00
DRYWALL HANGER, Includes Metal Stud Installation.....	\$ 25.00	0.00
GLAZIER.....	\$ 26.75	3.48
LABORER: Mason Tender - Brick...	\$ 16.52	4.74
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 24.02	4.25

OPERATOR: Crane.....	\$ 27.42	3.83
OPERATOR: Loader.....	\$ 22.25	2.13
OPERATOR: Roller.....	\$ 23.56	3.28
PAINTER (Brush and Roller).....	\$ 18.10	1.58
PAINTER: Spray.....	\$ 22.99	3.28
PLUMBER, Includes HVAC Pipe Installation.....	\$ 26.72	5.56
ROOFER.....	\$ 19.22	0.00
SHEET METAL WORKER, Includes HVAC Duct Installation.....	\$ 24.88	5.46
SPRINKLER FITTER (Fire Sprinklers).....	\$ 31.29	9.78
WATERPROOFER.....	\$ 26.69	0.00

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

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

Survey Rate Identifiers

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

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

Union Average Rate Identifiers

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

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

----- WAGE DETERMINATION APPEALS PROCESS

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

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

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

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

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

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END OF GENERAL DECISION"

SECTION 01 00 30
ELECTRONIC MEDIA

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The provisions of this Section apply to each and every contract and contractor or other person or persons supplying labor, material, equipment and/or services entering into this Project and/or on the premises directly or indirectly.
- B. Following the receipt of a written request by the Contractor, signed Electronic Data Transfer and Non-Disclosure Agreement, and if applicable, payment in full from the Contractor, the Architect will make available an electronic data version of the Project, for the limited purposes described in this Agreement. It shall be the Contractor's responsibility to make electronic files available to subcontractors in accordance with the Electronic Data Transfer and Non-Disclosure Agreement.

ELECTRONIC DATA TRANSFER AND NON-DISCLOSURE AGREEMENT

The Agreement is entered into and agreed by, between and among Lavallee Brensinger Professional Association (LBA) and _____ (Recipient) and is made in reference to the Manchester-Boston Regional Airport, MHT Terminal Fire Alarm System Replacement Project. It is understood and agreed that it may become desirable for LBA to make certain Instruments of Service in electronic machine readable format, hereinafter referred to as "Electronic Data" available to other parties related to the Project. It is also understood that such information is proprietary to LBA and that LBA intends to limit its distribution and use. It is the intent of the Agreement to govern all circumstances under which Electronic Data is made available by LBA.

In consideration of the request of _____ (Recipient) to LBA to deliver to Recipient or otherwise enable the Recipient to access certain Electronic Data for use on the Project, the parties mutually agree as follows:

1. Electronic Data includes but is not limited to, computer-aided design files including native file formats (DWG), Building Information Models (BIM), files produced by word processing, spread sheet, scheduling, data base and other software programs. Computer-Aided-Design files shall be provided as Autocad .dwg files. Building Information Models shall be provided as Revit .rvt files.
2. The means by which the Electronic Data is transferred may include, but are not limited to, electronic mail, File Transfer Protocol sites and CD-Rom, transmitted between the parties in this Agreement. Recipient acknowledges that Electronic Data transferred in any manner or translated from the system and format used by LBA to an alternate system or format is subject to errors that may affect the accuracy and reliability of the data and that the data may be altered, whether inadvertently or otherwise. Accordingly, LBA makes no warranty, express or implied, as to the correctness, accuracy, and/or completeness of the information transferred. Although LBA may issue information throughout the development of the Project, LBA does not represent that the information provided includes all revisions to-date, nor shall LBA assume any responsibility for providing updated information as the Project proceeds.

3. LBA reserves the right to retain hard copy originals in addition to electronic copies of the Electronic Data transferred, which originals shall be referred to and shall govern in the event of any inconsistency with the transferred data. Should the recipient discover errors or conflicts in any transferred files, he shall promptly notify LBA.

4. As consideration to LBA for the transfer of the Electronic Data, Recipient agrees that the use of Electronic Data shall be entirely at his/her own risk, and that LBA shall not be liable for, and Recipient hereby waives all claims and agrees to indemnify and hold LBA harmless from all liabilities, claims, losses, damages or expenses (including attorney's fees) arising out of, or connected with: (1) the transfer of Electronic Data by any means; or (2) the use, modification or misuse of the Electronic Data by parties other than LBA; or (3) the limited life expectancy and decline of accuracy or readability of the Electronic Data due to storage; or (4) translation and data errors; or (5) any use of the Electronic Data by any third parties receiving the data from other parties to this Agreement; or (6) the incompatibility of software or hardware used by LBA and the other parties to this Agreement.

5. The Electronic Data provided by LBA under the terms of this Agreement is the proprietary information of LBA, containing designs, details, model elements and other information developed by LBA. LBA is willing to supply such information only if the Recipient enters into this Non-Disclosure Agreement and agrees to strictly enforce its terms and conditions. All Electronic Data is to be treated as confidential and is not to be disclosed to or shared with any third parties, not expressly allowed herein, without LBA's express, written consent.

6. Recipient agrees to maintain and protect any and all proprietary information of LBA and to exercise great care in the preservation of its confidentiality. The Recipient will disclose the proprietary information only to its own employees, and then only to the extent required for the design and construction of this Project. The Recipient shall be responsible for any unauthorized use or disclosure of LBA's proprietary information by anyone to whom it may disclose such information.

7. The Recipient agrees that any and all Electronic Data shall remain the property of LBA. Neither the execution of this Agreement, nor the transfer of Electronic Data shall constitute a conveyance or transfer to the Recipient of any right, interest, or license in the proprietary materials. The Recipient shall not reproduce any proprietary information without the express written authorization of LBA.

8. Electronic Data are provided as a convenience to the Recipient for informational purposes only in connection with the Recipient's performance of its responsibilities and obligations relating to the Project. The Electronic Data do not replace or supplement the paper copies of the Drawings and Specifications which are and remain, the Contract Documents for the Project.

9. Electronic Data shall only be used for purposes allowable by this Agreement. It is understood and agreed that, without the separate express written permission of LBA to do so, the Electronic Data are not to be used for any purpose whatsoever, by anyone (any contractor or any of its subcontractors of any tier or any materials supplier or vendor) other than the Recipient. It shall be the responsibility of the Recipient to notify LBA of any and all third parties with whom the Recipient wishes to share LBA's Electronic Data, to identify the intended uses of the information, and to obtain LBA's prior written authorization to share LBA's information.

10. All transmittal of Electronic Data whether by CD-Rom, e-mail, Internet or any other methods shall require that the file name, size, date and time be recorded along with the date and time of transmission (if by electronic means) and the identity of the sender and recipient.

11. The Recipient further agrees to indemnify and save harmless LBA and its sub-consultant and each of their partners, officers, shareholders, directors and employees from any and all claims, judgments, suits, liabilities, damages, costs or expenses (including reasonable defense and attorney's fees) arising as the result of either: 1) Recipient's failure to comply with any of the requirements of the Electronic Data Transfer Agreement; or 2) a defect, error or omission in the Electronic Data or the information contained therein, which defect error or omission was not contained in the Contact Documents as defined in paragraph 3 or where the use of such Contact Documents would have prevented the claim, judgment, suit, liability, damage, cost or expense.

12. This agreement shall be interpreted under the laws of the State of New Hampshire. The Recipient hereby agrees that the breach of this Agreement by the Recipient will cause LBA considerable harm, and LBA shall be entitled to recover damages, as well as all expenses and costs incurred by LBA arising out of or related to such breach, including, without limitation, reasonable attorney's fees and costs.

13. In general, the protocols for the distribution of Electronic Data shall be as follows:

- a. LBA may make certain Electronic Data available to_____. (Recipient - MUST be Owner, Construction Manager) free of charge, providing that:
 - 1) Such files can be issued in the format currently used by LBA, without modification.
 - 2) The Recipient delivers to LBA a fully executed copy of this Agreement and, among other requirements, agrees not to share LBA's Electronic Data with any third parties without LBA's prior written authorization.
- b. In the event the Recipient wishes to share LBA's Electronic Data with a third party:
 - 1) The Recipient shall first forward a complete list of all such third parties to LBA for LBA's prior written authorization. The list shall include all third party names, addresses, telephone numbers, and email addresses.
 - 2) Each individual third party shall then deliver, through the Recipient, a fully executed copy of this Agreement.
- c. In the event that it is necessary for LBA to convert files from its currently used format to an alternative format, LBA shall be compensated for such conversion at the rate of \$75.00 per file, payable in advance.

The parties have executed this Agreement as of the dates stated below:

RECIPIENT

Company: _____

By: _____

Title: _____

Date: _____

END OF SECTION

SECTION 01 23 00
ALTERNATES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Description of Alternates.
- B. The Contractor shall provide all labor, materials, equipment, and services, etc., necessary for the proper and complete execution of accepted Alternates. Amount of Alternate prices to be added to or deducted from the Base Bid shall be stated on the Proposal Form and shall include cost of any and all modifications made necessary by Owner's acceptance of Alternates.
- C. Related Work Described Elsewhere:
 - 1. Materials and methods to be used in the Base Bid and in the Alternatives are generally described in the Contract Documents.
 - 2. Method for stating the proposed Contract Sum is described in the Proposal Form.
- D. NOTE: Alternates will be carefully considered in the Owner's selection of a Contractor.

1.02 ACCEPTANCE OF ALTERNATES

- A. If the Owner elects to proceed on the basis of one or more of the described Alternates, make all modifications to the Work required in order to furnish and install the selected Alternate or Alternates to the approval of the Architect and at no additional cost to the Owner, other than as proposed on the Proposal Form.
- B. Immediately after award of the Contract, or as soon thereafter as the Owner has made a decision on which, if any, Alternates will be selected, thoroughly and clearly advise all necessary personnel and suppliers as to the nature and extent of Alternates selected by the Owner. Use all means necessary to alert those personnel and suppliers involved as to all changes in the Work caused by the Owner's selection or rejection of Alternates.
- C. It shall be the responsibility of the Contractor to properly coordinate work related to Alternates with all other Work of this Contract in order to ensure that a complete and proper job is provided.
 - 1. Include as part of each Alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.
- D. Submit a Schedule of Values including adjustments to all Sections affected by accepted Alternates.
- E. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement. The Owner reserves the right to accept or reject any or all Alternates per their discretion. Order of Alternates do NOT represent an order of preference or acceptance of any manner.
- F. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.03 SCHEDULE OF ALTERNATES

- A. Bid Alternate No. 1: Add/Alternative Approach – New Replacement Fire Alarm System
 - 1. State the amount to be ADDED/DEDUCTED to the Base Bid to provide a completely new replacement fire alarm system. See Section 28 31 10 – 1.03 ADD/ALTERNATIVE APPROACH for additional information and requirements.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 30 00 SUBMITTALS

1.01 DESCRIPTION

- a. This Section describes the requirements for the submission of a submittal schedule, shop drawings, product data, samples and other items as specified. Other miscellaneous submittals include, but are not limited to, bonds, warranties, project photographs, quality testing and certifications, record drawings, operating and maintenance manuals.

1.02 SCHEDULE OF SUBMITTALS

- a. The Contractor shall submit a comprehensive and complete Submittal Schedule within (10) calendar days after the notice to proceed.
- b. The schedule shall identify all of the submittal items required by the Contract Documents governing the work.
- c. For each submittal item on the schedule, the following shall be indicated:
 - 1. Specification reference number.
 - 2. Submittal number assigned by the Contractor.
 - 3. Submittal date.
 - 4. Submittal for review or for record.
 - 5. Submittal return due date to the Contractor.
 - 6. Date for on-site delivery of material or equipment to maintain project schedule.
 - 7. Submittal description
 - 8. Subcontractor / Supplier name, address, and phone number.
- d. In preparing the submittal schedule, the Contractor shall consider the nature and complexity of each submittal item and allow ample time for review, revision, correction, re-submittal, and approval sufficiently in advance of the construction requirements.
 - 1. Allow at least fourteen (14) calendar days for review of each submittal or re-submittal by the Architect unless otherwise indicated.
 - 2. Allow at least thirty (30) calendar days for review of complex submittals and re-submittals.
 - 3. No claim for delay will be granted to the Contractor when the delay is caused by failure to make submittals in a timely manner and in accordance with the accepted Submittal Schedule.
 - 4. Allow adequate time beyond the required review time for processing and distribution of each submittal or re-submittal.
- e. The submittals shall be in sequence with the schedule for work except as required for products known to require long lead time. For submittals of items requiring long lead time, submit written verification of the required lead time from the supplier.
- f. The Submittal Schedule shall be considered a part of the Progress Schedule.
- g. At weekly progress meetings, the Contractor shall submit a detailed, updated and accurate schedule of anticipated submittals for the next three week time period for review by the Architect. In addition, a list of those submittals which have been provided since the last weekly meeting, submittals which have been returned since the last weekly meeting, any submittals which are overdue as compared to the requested return date, and a current list of all submittals and re-submittals shall be submitted.
- h. Fifteen (15) days after notice to proceed, the Contractor shall provide a listing to the Architect of all administrative submittals required by the Contract, including such items as the Work

Plan, CPM schedule, submittal schedule, etc. It will include a description of the item to be provided and the number of days after notice to proceed for submission.

1.03 SUBMITTAL TRANSMITTAL FORM AND SUBMITTAL REQUIREMENTS

- a. The Contractor shall include in each transmittal the following information:
 - 1. Submittal number.
 - 2. Submittal date.
 - 3. Name of Project, Contractor, Subcontractor.
 - 4. Project number.
 - 5. Specification Section and paragraph.
 - 6. Drawing reference.
 - 7. Date sent and requested due date from the Architect.
 - 8. Submittal type and # of copies.
 - 9. Drawing/item, date, and description.
 - 10. Deviations from Contract Documents.
 - 11. Contractor's certification of submittal review and compliance with the requirements of the Contract Documents.
 - 12. Field dimensions identified as such.
 - 13. Other pertinent information.
 - 14. All attachments identified with the submittal number.
- b. Documents for Review: Submittals to the Architect shall be electronic files in PDF format, unlocked, markable and reproducible.
- c. Submittals shall be provided to the Owner in hard copy and electronically.

1.04 SUBMITTAL NUMBERING SYSTEM

- a. Submittals and re-submittals shall be numbered sequentially by Specification Section. For example, the first submittal for Section 09 90 00 shall be "09 90 00-001". The first re-submittal of 09 90 00-001" shall be 09 90 00-001-01."

1.05 CONTRACTOR'S RESPONSIBILITIES

- a. The Contractor shall maintain a log of submittals showing the submittal number, description, specification section, schedule submittal date, date to the Architect, requested due date, date received from Architect, submittal review action code, and comments. The Contractor shall submit a current copy of the submittal log each month.
- b. The following information shall be included, where applicable:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Catalog numbers and similar data.
 - 5. Relation to adjacent structure or materials.
 - 6. Field dimensions, clearly identified as such.
 - 7. Applicable standards, such as ASTM numbers.
 - 8. 4" x 4" blank space for Architect's stamp.
 - 9. Notes identifying deviations from the Contract documents.
 - 10. "Clouds" on re-submittals showing revised areas.
- c. The Contractor shall submit drawings and samples in accordance with the approved schedule of submittal dates.
- d. The Architect shall be notified in writing, at the time of submission, of deviations in submittals from the requirements of the Contract Documents. The Contractor's responsibility for

deviations in submittals shall not be relieved by the Architect's review of the submittals, unless the Architect gives written acceptance of specific deviations. No changes shall be made without an approved Change Order.

- e. The Contractor shall indicate by signed stamp that the submittal has been thoroughly checked and that it is in strict accordance with the Contract requirements.
- f. The Contractor's responsibility for errors and omissions in the submittals shall not be relieved by the Architect's review.
- g. The Contractor shall be responsible for the accuracy of the submittals and for the proper fitting, verification of dimension, verification of quantities, construction of the work, furnishing of materials, and work required by the Contract Documents but not indicated on the submittals.
- h. Submission of shop drawings, calculations, product data, etc. in either original submission or when resubmitted with corrections, constitutes evidence that the Contractor has checked all information thereon, and that he/she accepts and is willing to perform the work as shown, in a workmanlike manner, and in accordance with the best standard practice.
- i. The Contractor shall not submit drawings, samples, or data for products that have not been specified unless such products have been formally approved as a substitute. (Section 01 60 01 – Product Options & Substitutions)
- j. No work which requires submittals shall begin until such submittals have been reviewed by the Architect and returned to the Contractor.
- k. The Contractor shall notify the Architect immediately if they consider any comments, notations, instructions, notes, etc. applied to the submittals by the Architect to be a change to the Contract requirements. The Contractor shall initiate an RFI (Request for Information) identifying the scope of the work which they consider to be a change to the Contract requirements. The RFI will be submitted in accordance with the IR processing requirements contained within the Specification.
- l. The Contractor shall perform no portion of the work requiring submittal until such submittal is made to the Architect and the review process is completed.

1.06 ARCHITECT'S RESPONSIBILITIES

- a. The Architect shall review submittals with reasonable promptness as defined below for design concept and compliance with the Contract Documents.
- b. The Architect's review of the shop drawings will be for general conformance with design conditions only and will not relieve the Contractor of responsibility for quantity, fit, dimensions, coordination and full compliance with all of the Contract documents.
- c. The Architect reserves the right to reject submittals which, in its opinion, are incomplete and/or lack sufficient information to enable them to accomplish a thorough review.
- d. The Architect may reject re-submittals which do not clearly indicate where revisions have been made to the original submittal.
- e. The Architect shall reject submittals for product which have not been specified unless such products have been formally approved as acceptable substitutes. See Section 01 60 01 – Product Options & Substitutions.

- f. The Architect's review of the submittals shall not be construed as approving departures from the Contract requirements.
- g. The Architect's review of the submittals shall not relieve the Contractor from responsibility for any violation, indicated on such submittals, of local, City, State, or Federal laws, rules, ordinances, or rules and regulations of commissions, boards, or other authorities or public utilities having jurisdiction.
- h. The Architect's review of separate items does not constitute review of an assembly in which the item functions.

1.07 RESUBMISSION REQUIREMENTS

- a. Shop drawings: The Contractor shall revise initial shop drawings as required. Areas of the revision shall be indicated by drawing a "cloud" around the revised areas and identify revisions by a revision number and date. The Architect's review of a resubmission shall not constitute acceptance of any changes not specifically requested on the prior submission.
- b. Product data and samples: Shall be submitted as required for initial submittal.

1.08 DISTRIBUTION OF SUBMITTALS AFTER REVIEW

- a. The Contractor shall distribute copies of submittals which carry the Architect's stamp to:
 - 1. The Contractor's project site file and the project record file.
 - 2. Subcontractors as appropriate.
 - 3. Others as appropriate.

END OF SECTION

**SECTION 01 30 05
PROJECT COORDINATION**

1.01 CONTRACTOR'S RESPONSIBILITIES

- a. The Contractor's project coordination responsibilities include, but may not be limited to the following:
1. Coordinate the work of all subcontractors and provide copies of coordination schedules as requested by the Architect.
 2. Establish lines of authority and communication; supply the Owner with list a list of 24 hr. emergency contact numbers of all supervisors and subcontractor supervisors.
 3. Include in the scheduled weekly meetings, the coordination of various entities and activities. Where necessary, schedule additional coordination meetings for the purpose of coordinating the work, daily security issues, and resolving conflicts,
 4. Provide all subcontractors with reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work.
 5. Make provisions to accommodate items installed by the Owner or by others under separate contracts and/or controls.
 6. Prepare, utilize and submit for information, coordination drawings to indicate how work shown by separate shop drawings will be interfaced and sequenced for installation.
 7. Establish and maintain procedures to ensure that persons performing work at site are skilled in methods and craftsmanship needed to produce required quality-levels. Remove and replace (at no additional cost to the Owner) work which does not comply with workmanship standards as specified and as recognized in the construction industry for applications indicated.
 8. In advance of installation of every major unit of work which requires coordination and interfacing with other work, meet at project site with installers and representatives of manufacturers and fabricators who are involved in or affected by unit of work. Review progress of other work and preparations for particular work under consideration.
 9. Require installer of each major unit of work to inspect substrate to receive work, and conditions under which work will be performed, and to report (in writing to Contractor) unsatisfactory conditions. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to installer.
 10. Where installation includes manufactured products, comply with manufacturer's instructions and recommendations, to extent these are more explicit or more stringent than requirements indicated in contract documents.
 11. Inspect each item of materials or equipment immediately prior to installation, and reject damaged and defective items.
 12. Provide proper and structurally sound connection devices and methods for securing work as it is installed; true to line and level, and within recognized industry tolerances if not otherwise indicated. Allow for expansion and building movements. Provide uniform joint widths in exposed work. Refer appearance choices to Architect for final decision,

13. As an integral step of starting each installation, recheck measurements of the Work.
14. Install work during conditions of temperature, humidity, exposure, weather, and status of project which will ensure satisfactory results. Coordinate with entire work. Isolate each unit of work from non-compatible work, as required to prevent rust, electrolysis, and deterioration or any kind due to incompatibility of materials. Where units of work touch, use only materials proven to be compatible.
15. Coordinate work with required inspections and tests, so as to minimize uncovering work.
16. Where mounting heights are not indicated, refer to Architect for final decision. Submit manufacturer's recommendations.
17. Coordinate the tolerances of all materials. Coordinate with the other Contractors.
18. Require training for subcontractor field supervision personnel for Airport operations and security.

1.02 MUTUAL RESPONSIBILITY

- a. If any part of the Contractor's Work depends for proper-execution or results upon the work of the Owner or any separate contractor, the Contractor shall, prior to proceeding with the Work, inspect and promptly report to the Owner any apparent discrepancies or defects in such other work that render it unsuitable for such proper execution and results.
- b. Failure of the Contractor to so inspect and report shall constitute acceptance of the work of others as fit and proper to receive the work, except as to defects which may subsequently become apparent in such work by others.
- c. Any costs caused by defective or ill-timed work shall be borne by the responsible party to whom the Architect attributes the cause of the defect(s).
- d. Should the Contractor wrongfully cause damage to the work or property of others or to other work or property on the site, the Contractor shall promptly remedy such damage.

1.03 NOTICE AND UTILITY SERVICES

- a. If the Contractor uses existing utilities they shall repair or any damage caused by their use or the Work at their own expense.

1.04 OVERTIME AND HOLIDAY WORK

- a. Overtime, multiple shift, weekend and holiday work may be required to complete the work within the allotted time of this Contract. If it becomes necessary to perform any work after regular working hours, on Saturdays, Sundays, or legal holidays in order to bring the Contractor's work into conformance with the Schedule due to delays for which the Contractor is responsible, the overtime, weekend, or holiday work shall be performed by the Contractor at no additional cost to the Owner.

1.05 COORDINATION WITH OWNER PERSONNEL

- a. The Contractor shall coordinate and cooperate with the Owner throughout the Project.

END OF SECTION

SECTION 01 30 10
SHOP DRAWINGS, PRODUCT DATA & SAMPLES

PART 1 GENERAL

1.01 SHOP DRAWINGS

- a. Submit to the Architect electronic markable PDF files for shop drawings. For large shop drawings, not to exceed 30" x 42", submit one reproducible copy.
- b. Each shop drawing shall have blank spaces large enough to accept 4" x 4" review stamps of the Contractor, Architect and/or Engineer.
- c. Shop drawings shall include plans, sections, and details including complete information for making connections with other work and any other information necessary to adequately describe the unit of work.
- d. Materials and finishes shall be clearly identified and, where applicable, Specification Sections and paragraph numbers shall be included as reference.
- e. Identify details by reference to sheet and detail numbers shown on the Contract Documents.
- f. Identify applicable standards, such as ASTM numbers, Federal or State Specification numbers on the drawings.
- g. Identify deviations from the Contract Documents.
- h. An electronic copy shall be returned to the Contractor.
- i. The Contractor shall provide a paper copy of all the final reviewed submittals shall be provided to the Owner for their use and archives.

1.02 PRODUCT DATA

- a. Submit electronic markable PDF files for manufacturer's catalog cuts, brochures, diagrams, schedules, performance charts, illustrations, and other descriptive data as required by the Specification Sections. When manufacturer's printed literature is required to be submitted it shall be submitted in original form. Make one coordinated submittal for each unit of work of system.
- b. Mark the manufacturer's data to clearly indicate the items to be included as a part of the Work. Product data submitted with multiple items and no clear indication as to which item is to be used in the work will be returned to the Contractor without being reviewed.
- c. Submit manufacturer's standard printed recommendations for application and use. Supplement standard information to provide additional information applicable to the Project.
- d. Include dimensions and clearances required. Indicate field dimensions which have been checked and verified.
- e. Review product data prior to submission to the Architect. Stamp and sign each submittal to indicate that the Contractor has reviewed the submittal for compliance with the Contract Documents.

- f. An electronic copy shall be returned to the Contractor.

1.03 SAMPLES

- a. The purpose of sample installations shall be to clearly establish standards of quality for the project prior to proceeding with the Work. The Contractor shall construct, prepare, or otherwise provide samples/sample installations as directed by the Architect. All costs related to providing, maintaining and removing required samples shall be paid by the Contractor.
- b. Submit four (4) samples as specified. Unless otherwise specified, samples shall be of sufficient size and quantity to clearly indicate:
 - 1. Functional characteristics of the product or material, with integrally related parts.
 - 2. Selected color.
- c. Requirements for field samples and mockups:
 - 1. Erect at site in locations acceptable to the Architect.
 - 2. Construct each mockup or field sample; include all items required in the finish work.
 - 3. Mockups or field samples shall remain in place until the work it represents has been completed and accepted by the Architect.
- d. Label each sample with Project name, Contractor, manufacturer and product.
- e. Provide units identical with final condition of proposed materials or products for the work. Include "range" samples (not less than three units) where unavoidable variations may be expected, and describe or identify the variations between units of each set. Provide full set of optional samples where Architect's selection is required.
- f. Prepare samples to match the Architect's samples where so indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations, and compliances with standards. Submit samples for the Architect's review and conformation of color, pattern, and texture.
- g. After a sample has been accepted, no change in brand or manufacturer will be permitted unless satisfactory written evidence is presented to, and accepted by the Architect, that the manufacturer cannot make scheduled delivery of the accepted material, or that the material delivered has been rejected and substitution of suitable material is an urgent necessity.
- h. Maintain returned final set of samples at project site, properly protected and in suitable condition and available for quality control comparisons by the Architect and others. Quality control set shall serve as the basis for comparison for following work, and shall establish the standard of color, pattern, texture, workmanship, and other qualities as applicable.
- i. Returned samples which are intended or permitted to be incorporated in the work are so indicated in individual sections, but must be undamaged at the time of use.
- j. Where colors are specified or described by the Architect to match a manufacturer's standard paint color number, secure sample color chips of sufficient size from the manufacturer and prepare matching samples for review by the Architect.

END OF SECTION

**SECTION 01 30 20
PROJECT ADMINISTRATION**

**PART 1 GENERAL
1.01 DESCRIPTION**

- a. The Work of this Project shall be subject to inspection by Owner's representative. No inspector, superintendent, or administrator is authorized to change any provisions of the Specifications without written authorization of the Architect, nor shall the presence or absence of the inspector relieve the Contractor from any requirements of the Contract.
- b. The Contractor shall adhere to the following procedures which include, but are not limited to, the following:
 1. Shall prepare a daily construction report, recording the following information concerning events at the site; and submit copies to the Architect and Owner at weekly intervals:
 - a) List of Subcontractors at the site.
 - b) Approximate count of personnel at the site.
 - c) Accidents and unusual events.
 - d) Meetings and significant decisions.
 - e) Stoppages, delays, shortages, losses, etc.
 - f) Meter readings and similar recordings.
 - g) General weather conditions, high & low temperatures.
 - h) Emergency procedures.
 - i) Orders and requests of governing authorities.
 - j) Change Orders received, implemented.
 - k) Services connected, disconnected.
 - l) Equipment or system tests and start-ups.
 - m) Partial Completions, occupancies.
 - n) Substantial Completions authorized.
 2. Shall be responsible for the quality of the Work performed, and take primary responsibility and authority for quality control in accordance with these specifications and shall provide a full time superintendant / foreman who shall manage on-site work and remain on-site while any work is undertaken throughout the entire Project. A change in superintendent / foreman shall only be allowed after review and approval of the Owner.
 3. Shall provide written advance notice to the Owner at least 3 working days prior to the start of Work which requires testing as required by governing authorities and/or by these specifications.
 4. Shall follow the field instructions issued by the Architect.
 5. Shall prepare and submit Cost Proposals, review with the Architect and submit final proposed Change Order Requests in accordance with the procedures established in the Specifications.
 6. Shall submit Applications for Payment as required. Submit claims in accordance with established procedures as outlined in the General and General Supplemental Conditions.
 7. Shall coordinate the closeout of the Project. Follow the procedures for closeout as established in the Specifications.
 8. Shall comply with the Architect's notices of noncompliance and utilize the notice of noncompliance form to notify when and how the Work is in compliance.
 9. Shall require subcontractors attendance at meetings as requested by the Architect.

END OF SECTION

SECTION 01 30 25
CLARIFICATION & INSTRUCTION

PART 1 GENERAL
1.01 DESCRIPTION

- a. Should the Contractor discover conflicts, omissions, or errors in the Contract Documents, or have any question concerning interpretation of the Contract Documents; or if it appears to the Contractor that the Work to be done is not sufficiently detailed or explained in the Contract Documents, the Contractor shall immediately notify the Architect in writing with a Request for Information (RFI), for interpretation or additional detailed instructions concerning the Work.
 - b. In event of failure to agree as to scope of Contract requirements, Contractor shall follow procedure set forth in Section 00 85 00 – DISPUTES-CLAIMS.
 - c. If the Contractor considers a clarification to be a change, he shall submit a cost proposal request within ten (10) calendar days following receipt of instruction or waive his right to the change.
1. Clarification: The Contractor shall ask for any clarification immediately upon discovery of an issue as outlined under Section A. The Contractor shall submit all requests for clarification and/or additional information to the Architect in writing on a Request for Information form. Subcontractor requests for information or clarification shall be made through the Contractor. The Architect, whose decision shall be final and conclusive, shall resolve such questions and issue instructions to Contractor within a reasonable amount of time but in no more than fourteen (14) calendar days. Only responses written and signed by the Architect are binding. Should the Contractor proceed with work affected before receipt of instructions from the Architect, the Contractor shall remove and replace or adjust work which is not in accordance therewith and shall be responsible for resultant damage, defect or added cost.
 2. Supplemental Instructions: The Architect may furnish additional detailed written instructions to further explain the Work, and such instructions shall be a part of the Contract requirements. Should additional detailed instructions, in the opinion of Contractor, constitute work in excess of scope of the Contract, he must submit written notice thereof immediately to the Architect but not more than seven (7) calendar days following receipt of such instruction, and in any event prior to commencement of work thereon. The Architect will then consider such notice and, if the judgment is justified, the Architect's instructions shall be revised, or the extra work authorized. The Contractor shall have no claim for additional compensation because of such additional instructions unless Contractor gives the Architect written notice thereof within the seven (7) days specified above.
 3. Field Reports: A field report issued by the Architect shall be used to document items of Work performed incorrectly or omitted by the Contractor that are non-conforming to the Contract Documents.
 1. All field reports shall be provided to the Contractor and Owner in writing.
 2. The Contractor shall be directed to advise the Architect of impacts on the schedule as a result of any field report.
 3. All field reports shall be discussed at project meetings.
 4. Field reports shall not be closed until a corrective action plan, prepared by the Contractor, is accepted by the Architect.

END OF SECTION

**SECTION 01 30 26
CHANGE ORDER PROCEDURES**

**PART 1 GENERAL
1.01 CHANGES**

- a. There will be no changes to the Contract except as by written notification in the form of an approved change order issued by the Architect and signed by the Owner and Contractor.
- b. Should the Architect or Owner at any time during the progress of the Work, request any extra work including but not necessarily limited to alterations, deviations, additions, or omissions from the Contract Documents, they shall be at liberty to do so. Changes may include but may not be limited to:
 - 1. Scope or materials.
 - 2. Facilities, equipment, materials, services, or site by others.
 - 3. Directing acceleration in the performance of the Work.
 - 4. Extra terms or time.

1.02 CHANGE ORDER WORK NOTIFICATION

- a. If any change causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the Work under this Contract, whether or not changed by any such order, the Architect shall make an equitable adjustment and modify the Contract in writing as a Change Order, signed by the Owner and Contractor.
- b. No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this Contract.
- c. Changes shall be performed in accordance with the original Contract requirements unless otherwise indicated.

1.03 CHANGE ORDER PROCESS

- a. Where the Architect and Owner concur that a change is due or requests a change, a Proposal Request (PR) shall be issued. Proposal requests issued by the Architect are for information only. Do not consider them as instruction either to stop work in progress, or to execute the proposed change. This information shall be issued by means of a numbered Proposal Request.
- b. Upon receipt of the Proposal Request, the Contractor shall submit a cost proposal, in accordance with the requirements and limitations set forth below, for work involving contemplated changes covered by the proposed change. The Contractor's written proposal for an equitable adjustment for a change shall be submitted in the following form:
 - 1. The proposal shall include a lump sum amount supported by a detailed itemized breakdown of all increases and decreases in the Contract, including all labor, equipment and materials, as required by the following paragraphs. The Contractor shall use a cost proposal form acceptable to the Architect and Owner. The Contractor shall upon request by the Architect permit inspection of the original unaltered contract bid estimate, subcontract agreements, or purchase orders relating to the change; and documents substantiating all costs associated with the Cost Proposal.
 - 2. The Contractor shall identify any adjustment in time of the final completion of the Work as a whole which is directly attributable to the changed work. The Contractor's request for a

change in time will be supported by a detailed schedule analysis indicating the activities which have been affected and the additional time being requested. For a change in time for the Work, the Contractor shall be entitled only to such adjustments in time by which completion of the entire Work is delayed due to the performance of the changed work. Failure to request extra time when submitting such estimate shall constitute waiver of the right to subsequently claim adjustment in time for final completion based upon such changed work.

3. If the Architect disagrees with the request for change it will notify the Contractor in writing and the Contractor may elect to issue a dispute notification according to the disputes clause.
 4. The Contractor shall submit the cost proposal within ten (10) days upon receipt of the proposal request. The Contractor shall submit cost proposals in less than 10 days if requested by the Architect or as required by schedule limitations.
- c. If the Contractor fails to submit the cost proposal within the 10-day period (or as requested), the Architect has the right to order the Contractor in writing to commence the work immediately on a force account basis and/or issue a lump sum change to the Contract price in accordance with the Architect's estimate of cost. If the change is issued based on the Architect's estimate, the Contractor shall waive his right to dispute the action unless within 10 days following completion of the added/deleted work, the Contractor presents proof that the Architect's estimate was in error.
 - d. If the Architect and the Contractor fail to agree as to the proposed change order, the Contractor upon written order from the Architect shall proceed immediately with the changed work. This written notice will be issued as a Construction Change Directive (CCD). The Contractor shall be directed to proceed according to one or more of the following methods:
 1. Unit Prices, as provided in the Contract proposal.
 2. Unit Prices, as subsequently and mutually agreed upon by the Owner and the Contractor.
 3. Lump Sum Amount, mutually agreed upon by the Owner and the Contractor.
 4. Time and Material, on a time and materials (T&M) (force account) basis.

When there has been failure to agree as to the cost, no payment shall be made to the Contractor until completion of the Work called for in the change order or in the written order authorizing performance of the work.

- e. The Architect shall establish a budget not-to-exceed (NTE) price for the T&M change order which may be increased with the approval of the Owner. The Contractor shall notify the Architect when he has reached 80% of the not-to-exceed budget. The Contractor shall proceed and shall maintain a daily job force account record containing detailed cost summary of labor, materials, and equipment required for the changed work. Upon being signed and agreed to by the Owner on a daily basis, the force account record shall become the basis for payment of the changed work, but such agreement shall not preclude subsequent adjustment based upon later audit by the Owner. The Contractor shall provide a weekly accounting of cost compared to the NTE budget.
- f. Upon completion of the Work under the T&M change order, the Contractor shall submit its invoice therefore containing only the items of labor, materials, and equipment which are in addition to the requirements of the contract and as approved by both parties, together with the allowable markups.
- g. A change order may adjust the Contract price either upward or downward in accordance with one or a combination of the following bases as the Owner may elect:
 1. On a lump sum basis as supported by the breakdown of estimated costs.

2. On a unit price basis.
 3. On a time and material (force account) basis.
- h. Costs associated with change orders include:
1. Overhead Rates
 - a) The overhead rate shall include profit, small tools, cleanup, bonds, engineering, supervision, warranties, job-site overhead and home office overhead.
 - b) The Contractor shall provide at the beginning of the Project a certified statement and detailed calculation from its accountant establishing the job site and prorate home office overhead rates for itself and its major subcontractors. The overhead and profit shall be against labor and materials only. Where Work is subcontracted, no mark up will be allowed on overhead or profit of others including second and third layer subcontractors or material suppliers. In no case shall the total accumulated overhead and profit on any change order work exceed 15% on a lump sum or unit price basis and 10% on a time and materials basis. In a credit situation the Contractor shall utilize the same overhead and profit rates against labor and materials in preparing the change order.
 - c) The Owner shall have the right to review and approve the overhead rate. Where the Contractor and Owner fail to come to an agreement for Contractor's overhead rate, the Owner shall set such rate based in current industry and the Contractor shall be entitled to dispute the action if he does so within 15 days following notice.
 - d) The Contractor at the beginning of the project shall provide a complete listing of all Contractor and subcontractor hourly labor rates.
 2. Direct Costs

- a) Cost for labor shall include any employer payments to or on behalf of the workmen for health, welfare, pension, vacation, and similar purposes. Labor rates will not be recognized when in excess of those prevailing in the locality and time the work is being performed. The costs for all supervision including General Superintendents and Foremen will be included in the markups established by the Contract. The only exception to this will be working foremen who perform actual manual labor. No labor charges will be accepted for engineering or proposal preparation. These costs will be included in the markups established by the Contract. A breakdown of the payroll rates for each trade will be provided for all change orders 15 days after notice to proceed including the base rate, benefits, payroll taxes, and insurance.

Overtime and premium time pricing shall only be allowed for labor which, based on mutual agreement, shall be performed after normal working hours.

- b) The actual cost to the Contractor for the materials directly required for the performance of the changed Work. Such cost of materials may include the cost of transportation and no delivery charges will be allowed unless the delivery is specifically for the changed Work

If a trade discount by an actual supplier is available to the Contractor, it shall be credited to the Owner. If the materials are obtained from a supplier or source owned wholly by or in part by the Contractor, payment thereof will not exceed the current wholesale price for the materials. The term 'trade discount' includes the concept of cash discounting.

If in the opinion of the Architect, the cost of the materials is excessive or if the Contractor fails to furnish satisfactory evidence of a cost to him from the actual supplier thereof, then, in either case, the cost of the materials shall be deemed to be the lowest current wholesale price at which similar materials are available in the

quantities required. The Owner reserves the right to furnish such materials as it deems advisable and the Contractor shall have no claims for cost or profits on materials furnished by the Owner.

- c) The actual cost to the Contractor for the use of equipment directly required in the performance of the changed work. In computing the hourly rental of equipment, any time less than 30 minutes shall be considered one-half hour. No payment will be made for time while equipment is inoperative due to breakdown or for non-workdays. In addition, the rental time shall not include the time required to move the equipment to the work for rental of such equipment, and to return it to the source. No mobilization or demobilization will be allowed for equipment already on site. If such equipment is not moved by its own power, then loading and transportation costs shall be paid in lieu of rental time thereof. However, neither moving time nor loading and transportation costs will be paid if the equipment is used on the project in any other way than upon the changed work.

Individual pieces of equipment having a replacement value of \$1,000 or less shall be considered to be small tools or small equipment and no payment shall be made therefore.

The rental rate for equipment shall not exceed that as recommended by the lower of the rental rates as contained in the current edition of the Rental Rate Blue Book applicable to the specific extra work or force account work.

For equipment owned, furnished, or rented by the Contractor no cost thereof shall be recognized in excess of the rates established by the Rental Rate Blue Book.

The amount to be paid to the Contractor for the use of equipment as set forth above shall constitute full compensation to the Contractor for the cost of fuel, power, oil, lubricants, supplies, small tools, small equipment necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, labor (except for equipment operators) and any and all costs to the Contractor incidental to the use of the equipment.

- i. The Contractor shall maintain his records in such a manner as to provide a clear distinction between the direct costs of extra work and the cost of other operations. This requirement pertains to proposed change orders change orders and work the Contractor considers to be potential change orders.
- j. Changes in the Work made necessary due to unexpected or unforeseen site conditions, discovery of errors or omissions in plans or specifications requiring immediate clarifications in order to avoid serious work stoppage, or other changes where the extent cannot be determined until completed, or under any circumstances whatsoever deemed necessary by the Architect, are types of emergency changes which may be authorized by the Architect in writing to the Contractor. The Contractor shall commence performance of emergency changes immediately upon authorization. These changes shall be performed on a time and material (force account) basis as aforementioned.
- k. The Contractor may not reserve a right to assess impact cost or time, extended job site costs, extended overhead, and/or constructive acceleration at some later date as related to any and all changes. These costs or estimated costs shall be supported with full schedule and cost documentation with each proposed change within the prescribed submission times. If a request for a change is denied and the Contractor disputes the denial, the Contractor shall supply the aforementioned documentation to support his claim under the dispute clause of this contract the Contractor shall waive his right to impact, extended overhead costs and construction acceleration due to the multiplicity of changes and clarifications.

- l. Contractor and subcontractors by submission of a bid acknowledges and waives the right to claim extended overhead, delay, impact, disruption, etc. if changes issued are within 5 percent of the award amount and/or the number of Request for Information (RFI's) is less than 2,000.
- m. If the changes exceed 10 percent of the contract and/or RFI's exceed 2,000 in number, the Contractor shall demonstrate on a case-by-case basis the effect on the Contract as a whole with detailed schedule and cost analysis. Should the Contractor find that a change has not been processed which may affect the immediate controlling activity(s), he shall request a Construction Change Directive (CCD) to proceed on a T&M basis.

END OF SECTION

SECTION 01 30 27
CONTRACTOR'S WORK PLAN

PART 1 GENERAL

1.01 DESCRIPTION

- a. This Section describes the requirements for finishing a work plan describing Contractor's approach and methods for prosecuting the Work.
- b. It is expressly agreed that time is of the essence of this Contract, and the Contractor agrees to perform the Work within the time and in the manner specified, or within the time of such extensions as may be granted.
- c. The Contractor's scheduling of work crews, equipment and materials will be of utmost importance for completing the work within the time allowed. The Contractor may be required to employ one or more of the following measures to build the project within the time constraints:
 - 1. Utilize extra equipment and manpower.
 - 2. Work more than the normal 8-hour shift per day, 5-day week. Overtime, two or three 8-hour shifts per day, 6 or 7 days per week may be required.
 - 3. Employ extra staff to plan, schedule, coordinate and expedite the work.
- d. In addition to employing additional resources as described above, the Contractor will be expected to take whatever additional steps are necessary to ensure timely completion of the Project.
- e. Submission of a bid by the Contractor constitutes acknowledgment that the foregoing requirements have been taken into account in the Contractor's bid price.

1.02 CONTRACTOR'S WORK PLAN

- a. Ten working days after notice to proceed, the lowest responsive, responsible bidder is required to submit a Work Plan describing in detail the Contractor's approach and methods for prosecuting the Work in accordance with the construction and time constraints. The Work Plan shall include but not be limited to the following:
 - 1. A summary schedule of the Work with milestone completion dates clearly indicated. The schedule shall show the major critical path trades and their respective activity constraints. The Contractor shall show the activities for glazing removal, framing and glazing installation by section of the pedestrian bridge.
 - 2. A narrative and schedule describing how the Contractor intends to staff, equip and supply the job by trade in order to meet contractual time constraints. Include number of crews, crew sizes, activity, number and types of major equipment to be used, method of material procurement, hours per work shift, work shifts per day, anticipated production rates, etc. Production rates shall be provided for glazing removal and installation.
 - 3. An organization chart describing: (a) the hierarchy and relationships of the Contractor's project management staff and the hierarchy of subcontractors and suppliers including the trade(s) or portion(s) of work for which each is responsible. Of particular interest is how

the Contractor intends organize and coordinate off-site work that involved the combined effort of subcontractors and suppliers.

4. A description of what additional methods will be used by the Contractor, should actual progress of the Work not meet the time constraints specified herein, as defined in Section 01 30 28.
 5. A directory of the Contractor and all subcontractors including 24-hour emergency telephone numbers.
- b. The Architect and Owner shall review the Contractor's Work Plan for reasonableness and for conformance with Contract requirements. If the Work Plan does not meet specific Contract requirements or if, in the Architect's opinion, the Work Plan does not give a reasonable assurance of the Contractor's commitment to timely completion, the Architect shall notify the Contractor of the deficiencies or his concerns with the Work Plan. Preconditions for payment shall be that the Contractor responds satisfactorily to the Architect's concerns. A completed and approved construction schedule is required prior to a submission of an Application For Payment.

END OF SECTION

**SECTION 01 30 28
PROGRESS SCHEDULE**

PART 1 GENERAL

1.01 DESCRIPTION

- a. The Contractor shall prepare, maintain and update detailed progress schedules. The schedules shall be a true and accurate representation of the Contract's Work Plan and shall accurately reflect and report the actual performance and progress of the Work.
- b. The Contractor's attention is specifically directed to the fact that submission and approval of Interim and Contract CPM Progress Schedules as well as CPM Progress Schedule updates, are required in order for the Architect to certify the approximate amount of work performed and compensation earned by the Contractor. See Section 00 76 50 - Measurement and Payment.

1.02 REQUIREMENTS

- a. The Contractor shall submit a complete computer-generated project CPM Project Schedule. This *Baseline* Schedule shall reflect the Contractor's projected plan and schedule to compete all work within Contract time specified.
- b. Schedule submittals are subject to review and acceptance by the Architect. The Owner retains the right to withhold progress payments until the Contractor submits a Progress Schedule acceptable to the Owner.
- c. The Contractor shall submit monthly progress review and update of the schedule as basis of each progress payment.
- d. A computer scheduling system shall be utilized for producing CPM Progress Schedule drawings and network reports. The preferred scheduling software shall be MS Project Primavera or equal compatible, and approved, software.
- e. Where system testing is required in no case shall more than 90-percent of the value be paid prior to the system passing all applicable tests.
- f. Mobilization activities shall include any costs necessary for the Contractor to set-up operations on-site, including but not be limited to: bonds, permits, field office, utilities, equipment, insurance, and storage trailers.
- g. At the head of the schedule, provide a two item cost correlation line indicating "Pre calculated" and "Actual" costs. On the line, show dollar - volume of work performed as of the dates used for preparation of payment applications.

1.03 PREPARATION GUIDELINES

- a. The Progress Schedule shall represent a practical plan to complete the work within the Contract time for completion. The Progress Schedule shall be consistent in every way with the Contractor's Work Plan submitted previously.
 - 1. A schedule extending beyond the Contract time will not be acceptable.
 - 2. A schedule showing the Work completed in less than the Contract time may be found by the Architect to be impractical.
 - 3. A schedule found to be impractical for the preceding reason or any other reason shall

be revised by the Contractor and resubmitted.

4. A schedule showing the Work completed in less than the Contract time, which is found to be practical by the Architect, shall be considered to have float. The float is the time between the scheduled completion of the work and Contract completion date. Float is a resource available to both the Owner and the Contractor.
 5. Approval of the Contractor's schedule if based on less time than the maximum time allowed does not serve to change the specified time of completion, nor serve as a waiver of the Contractor's nor the Owner's right to the full amount of time specified as the time of completion, unless the time of completion is changed by a formal change order to this Contract.
 6. Not less than 20-calendar days will be established prior to completion for punch list completion and cleanup.
 7. No more than 15-percent of the activities shall be critical or near critical. Near critical is defined as float in the range of 1 to 10 workdays.
 8. No activity shall have duration greater than 15 days.
- b. The Progress Schedule shall clearly show the sequence and interdependence of construction activities and shall specifically as a minimum indicate:
1. The start and completion of all items of work, their major components, and interim milestone completion dates, if any.
 2. Activities for procurement, delivery, installation and completion of each major piece of equipment, materials, and other supplies, including:
 - a) Time for submittals, re-submittals, and reviews.
 - b) Time for fabrication and delivery of manufactured products for the Work.
 - c) The interdependence of procurement and construction activities.
 3. Items related to action by others (Owner, regulatory agencies, other contractors) that may cause interference or be required to be completed by other before Work can start or finish.
- c. The schedule shall:
1. Be in sufficient detail to assure adequate planning and execution of the Work. Activities should generally range in duration from 3- to 15-work days each. Except for procurement items which shall have a duration which starts with approval of shop drawings and ends with delivery to construction site.
 2. Be suitable, in the judgment of the Architect, to allow monitoring and evaluation of progress in the performance of the Work.
 3. Show detailed subcontractor work activities. The Contractor will provide a schedule for all subcontractor/ Contractor CPM schedule meetings which are to be held prior to the submission of the CPM schedule to the Owner. The Architect and Owner shall be allowed to attend the scheduled sessions as an observer. In addition to the Contractor / subcontractor meetings, the Architect may require Contractor and subcontractors to attend scheduled development meetings to ascertain information for approval of the CPM schedule.

4. Be calendar time-scaled in the form of an activities-on-arrow network diagram:
 - a) The activities shall include:
 - (1) Description; what is to be accomplished and where.
 - (2) Calendar day duration.
 - (3) Responsibility code; identifiers who performs the activity. One per activity.
 - b) The network shall show continuous flow from left to right.
 5. Identify days per week and hours/shifts per day that Contractor intends to work.
 6. Include time for the Architect to review submittals (14 calendar days) or observe the work.
 7. Identify the activities which constitute the controlling operations or critical path.
 8. Include activities for start up and testing of equipment and/or systems, completion of punch list items and demobilization.
- d. Submittal of the Progress Schedule shall be understood to be the Contractor's representation that the schedule meets the requirements of the Contract Documents and that Work will be executed in the sequence indicated on the schedule. The Contractor shall distribute progress schedule to subcontractors for review and acceptance which will be noted on the subcontractor's letterhead to the Contractor and transmitted to the Architect and Owner for record.

1.04 SCHEDULE OF SUBMITTALS

- a. Within 15-days after the Notice to Proceed, the Contractor shall provide the Architect with the complete Contract CPM Progress Schedule.
- b. Within 30-days after Notice to Proceed, the Contractor shall provide to the Architect and Owner a copy of a project calendar delineating days and hours of work and holidays included in the schedule.
- c. Not later than the last day of each month thereafter during duration of Project, the Contractor shall provide the Architect and Owner with copies of an updated schedule showing work progress. Submittal of the updated schedule shall be attached with the request for payment and will be a condition of monthly payment.
- d. An updated schedule shall be prepared and submitted each month and shall include as a minimum the following:
 1. Approved changes to Contract.
 2. Any "slippage" due to procurement delays, rain, strikes and other delays.
 3. Changes in activity sequencing or duration as modified from previous submittals.

1.05 FORM OF SUBMITTAL

- a. All schedule submittals shall include seven (7) copies of the submittal report and seven (7) copies of the CPM network diagram. In addition, the Contractor shall submit the schedule electronically.
- b. Costs for preparation and reproduction of all schedule submittals shall be borne by the Contractor. Contractor is presumed to have allocated such costs to the bid items deemed most appropriate.

- c. Specifically, all schedule submittals shall consist of a computer-generated, time-scaled detailed graphic network diagram; a detailed narrative report; a current activity tabulation report; schedule activity analysis reports.
 1. The activity tabulation report generated by the current computerized schedule shall include a tabulation of each activity. The following information shall be furnished as a minimum for each activity or work items:
 - a) Preceding and succeeding event numbers.
 - b) Activity description and number.
 - c) Estimated current duration of each activity.
 - d) Earliest start date (by calendar date).
 - e) Earliest finish date (by calendar date).
 - f) Latest start date (by calendar date).
 - g) Latest finish date (by calendar date).
 - h) Scheduled float.
 - i) Percentage of activity completed, or number of working days remaining.
 - j) Actual start date (by calendar date) (for updates only).
 - k) Actual finish date (by calendar date) (for updates only).
 2. The computer-generated mathematical analysis reports shall be consistent with the information shown on the detailed graphic network diagram. The computer generated mathematical analysis reports shall include the following:
 - a) A network report sorted by early start.
 - (1) A network report sorted by total float.
 - (2) A network logic report indicating the preceding and succeeding activities.
 - (3) A six (6) week look ahead schedule based on early start sort.
 3. The detailed narrative report shall include a summary of progress this period; describe any special problems (with proposed solutions) or assumptions underlying the CPM schedule. The report shall also include a tabulation of all activities completed or partially completed, a discussion of all activities added or deleted or changed in either logic and/or duration during the report period. The report shall state the percentage of the work actually completed as of the report date, and the progress along the critical path in terms of days ahead or behind the allowable dates.

1.06 ANALYSIS AND UPDATING OF THE SCHEDULE

- a. The Contractor is responsible for accuracy of the information contained in the schedule reports including the computerized CPM, and subsequent updates of the CPM. Producing computerized CPM schedule drawings and revisions to schedule drawings is the responsibility of the Contractor.
- b. Once each month, the Contractor shall participate with the Architect and Owner in a schedule review to update the activity progress.
- c. As part of the detailed analysis the Contractor shall discuss any planned changes in the work, planned restraints, logic, sequence or timing of work shall be submitted in a written revision to any impacted portion of the progress schedule for the Authorities approval. Upon approval, the Contractor shall revise the computerized progress schedule in the next scheduled update.
- d. If, according to the updated CPM schedule, the Contractor is behind the milestone completion date(s), considering all approved time extensions, the Contractor shall submit a recovery schedule showing a workable plan to complete the Project on time. The Architect may assess interim withholds pursuant to Section Measurement and Payments.
- e. Scheduling of approved changes is the responsibility of the Contractor. The Contractor shall revise the schedule drawing to incorporate all activities involved in completing the change orders and submit it to the Architect for review and approval.

- f. If the Architect finds the Contractor is entitled to an extension of the completion date under the provisions of the Contract, the Architect's determination of the total number of days extension will be based upon the current analysis of the schedule and upon the data relevant to the extension.
- g. The Contractor acknowledges and agrees that delays to non-critical activities (those with float), will not be the basis for a time extension. Non-critical activities are those activities which, when delayed, do not affect the final Contract completion date.

1.07 RECOVERY SCHEDULE

- a. Where the Contractor is 7 days behind schedule the Contractor shall submit a written recovery schedule indicating how the Contractor intends to bring the Work back on schedule within the next 45 day period.
- b. Such recovery schedule shall be submitted within 7 days of submission of a current progress schedule which indicates a 7 or more day delay.
- c. The recovery schedule shall indicate any proposed adjustment to labor hours, work hours, sequencing of Work activities and/or any other approach to the construction in order to accomplish recovery of lost time or to overcome a specific obstacle or obstacles that would otherwise hold up Work.
- d. Should the Contractor fail to submit and implement such a recovery schedule the Architect may assess interim withholds.

1.08 APPROVAL OF CPM PROGRESS SCHEDULE

- a. Neither the acceptance, review or approval of any CPM Progress Schedule or other data submitted by the Contractor pursuant to this Section, nor any other action on the part of the Architect under this Section shall in any way be deemed as a representation by the Architect that the Contract can or will be permitted to follow a particular schedule or sequence of operations or that by following any such schedule or sequence he/she can or will complete the Work by the time(s) required by the Contract or by any other time(s). Nor shall the approval of any CPM progress Schedule or other such data relieve the Contractor of his/her obligation to complete the Contract by the time(s) required in the Contract, even though such CPM Progress Schedule approved may be inconsistent with such completion.
- b. Any approval under this Section shall be construed merely to mean that the Architect and Owner knew of no good reason at that time to object thereto. No acceptance, review or approval any other action under this Section shall limit, affect or impair the Contractor's obligation to perform all Work by time(s) required by the Contract and in accordance with other provisions of the Contract.

1.09 PERFORMANCE OF WORK

- a. The performance of the Work by the time(s) required in the Contract after taking into account extensions to which the Contractor may be entitled may require the use by the Contractor of overtime labor, additional shifts or additional plant and equipment and/or other measures. In any event, the Contractor shall anticipate, avoid and mitigate the effects of all delays, whether or not such delays involve activities with float. The Architect and Owner shall have the right at any time when in their judgment the Work is not proceeding in accordance with the approved CPM Progress Schedule or at any time when it is likely that the Work might not be completed by the time(s) required in the Contract even though the Contractor is proceeding in accordance with the approved CPM Progress Schedule, to order the Contractor without additional compensation, to employ additional shifts to increase the number of field staff employed, to use additional plant or equipment, or to take such other steps as may be

necessary or required to assure the completion of the various operations within the time(s) allotted therefore in the approved schedule or by the aforesaid completion time(s).

- b. No action on the part of the Contractor pursuant to this Section shall be construed as request for an extension of the time(s) for completion required by the Contract. A request for an extension of time shall be deemed made only if it complies with the requirements of Section 00 74 00 - Extensions. No extension of the time(s) for completion shall be inferred because of any action, omission to act, or statement on behalf of the Owner pursuant to this Section.

END OF SECTION

**SECTION 01 30 30
PROJECT MEETINGS**

PART 1 GENERAL

1.01 PRECONSTRUCTION CONFERENCE

- a. Prior to commencement of the Work, the Contractor shall attend a preconstruction meeting at a time and a place selected by the Architect and Owner, to discuss procedures to be followed during the course of the Work. The Contractor shall follow the procedures as set forth by the Architect.
- b. The pre-construction meeting shall introduce key personnel for Owner and Architect and review the Contract provisions, project procedures, and any other items pertaining to the Project.
- c. Attending shall be:
 - 1. Owner's Representatives
 - 2. Architect
 - 3. Contractor Project Manager
 - 4. Contractor's Superintendent / Quality Control Rep
 - 5. Major subcontractors
 - 6. Others as appropriate
- d. At the preconstruction conference, the Architect shall outline the procedures for payment, requests for information, change orders, disputes, submittals, quality control, testing, Contractor's reports, safety, field instructions, meetings, and job closeout. Contractor shall follow procedures provided at the meeting.

1.02 WEEKLY PROGRESS MEETINGS

- a. Once a week, on an agreed upon day and time, the Architect shall conduct a meeting to review the progress and the status of the work, and to discuss any problems that may arise. The Contractor shall attend all weekly progress meetings. Subcontractor's and vendors' representatives shall attend the progress meetings as appropriate to the particular stage of the work.
- b. Weekly progress meeting location: Owner's office located One Airport Road, Suite 300 Londonderry, NH.
- c. Attending shall be:
 - 1. Owner's Representatives
 - 2. Architect
 - 3. Contractor's Project Manager/Quality Control Rep
 - 4. Contractor's Superintendent
 - 5. Major subcontractors
 - 6. Others as appropriate
- d. The Contractor shall provide the Architect at least a day before the Progress Meeting, a three-week rolling schedule indicating the past week, current week, and the upcoming week at the weekly Meeting. The schedule will be provided in a bar chart form with information derived from the project CPM schedule. The schedule will include an item designation, activity description, start and finish dates (both scheduled and actual), a time scaled bar chart for each activity, and a remarks section. In addition, each activity will be coded to note those

activities on the critical path and those activities which are behind schedule. At the meeting, the Contractor will provide a verbal status utilizing the three week schedule indicating the progress to date and the forecast for completion.

- e. Meeting notes shall be recorded and distributed to the meeting attendees by the Contractor. Attendees taking exception to anything in the meeting notes shall state their objections in writing, within 5 working days following the receipt of the notes.
- f. Contractors shall submit at the progress meetings, a sheet listing work done last week/two weeks and work proposed for the next week/two weeks, along with a CPM schedule identifying all work proposed for the next week/two weeks.

1.03 MONTHLY PROGRESS MEETINGS

- a. Each month the Contractor attend a schedule update and progress payment meeting with the Architect and Owner to agree on the percentage of the work completed up to the last working day of the current month and establishes an amount to be requested in the Application for Payment. This meeting may be combined with the weekly meeting.
- b. Monthly Progress meeting location: Owner's office on or near the tenth of the month.
 - 1. Attending shall be: Owner, Architect, Contractor's Project Manager, Subcontractors as required
- c. The Contractor shall provide at this meeting, an itemized draft of the month's proposed billing for review with the Owner. For subcontracts in excess of \$10,000, the Contractor shall break down line items as to the cost of the material and the labor.
- d. Following review of the proposed billing, the Contractor shall prepare an Application for Payment and submit to the Architect and Owner not later than the fifteenth of each month.

1.04 SPECIAL MEETINGS

- a. As required by job conditions, the Architect may call special meetings among the representatives of the Contractor, subcontractors, and the Owner to discuss particular situations or problems which may arise. The Contractor, subcontractors and/or suppliers, as appropriate, shall attend.

1.05 CONTRACTOR MEETINGS

- a. This Section shall not limit meetings among the Contractor, subcontractors and others as the Contractor deems necessary. The Architect and/or Owner may attend the Contractor / subcontractor meetings.

1.06 SCHEDULE APPROVAL MEETINGS

- a. Prior to approval of the CPM schedule, the Architect may require that the Contractor and subcontractors attend meetings to ascertain information for approval of the CPM schedule. This information may include, but will not be limited to, productivity, manpower loading, activity durations, logic, cost loading, etc. The location will be at the Owner's office. Attending will be the Owner, Architect, Contractor and subcontractors / suppliers as appropriate as appropriate.

1.07 OTHER REQUIRED MEETINGS

- a. Thirty days prior to the estimated final completion, the Contractor shall hold a meeting to review outstanding punch list items, maintenance manuals, guarantees, close out submittals, bonds, and service contracts for materials and equipment. Implement repair and replacement of defective items. Meeting location at the Owner's office.
 - 1. Attending shall be: Owner, Architect, Contractor.
 - 2. Subcontractors, as appropriate
 - 3. Suppliers, as appropriate
 - 4. Others, as appropriate

END OF SECTION

**SECTION 01 35 50
GENERAL SITE SECURITY**

PART 1 GENERAL

1.01 DESCRIPTION

- a. The Contractor shall comply with all applicable federal, state and local laws. This includes but is not limited to 14 CFR Part 77 (Obstructions to Navigable Airspace), 14 CFR Part 139 (Certification of Airports) and 49 CFR Part 1542 (Airport Security).
- b. Provide protection for materials, tools and equipment being employed on the Project including the tools of workers. The Owner shall not be held to have incurred any liability for loss of, and damage to, materials, tools and equipment of the Contractor, or of those employed by him, by contract or otherwise.
- c. The Contractor shall employ such security service as he may deem necessary to properly protect and safeguard the Work. The Owner shall not in any way be liable or responsible for the damage or loss to the Work due to trespass or theft.
- d. The Owner may provide such security service as he deems necessary to protect his interest during the progress of the Work. Any protection provided by the Owner shall not in any way relieve the Contractor of the responsibility for the safety of the Work and acceptance thereof.
- e. The Contractor shall be responsible for controlling access to the work area and insuring that airport security is maintained at all times, including set-back security clearances enforced at the Airport, parking garage(s) and parking lots. The Federal Aviation Administration (FAA) and Transportation Security Administration (TSA) may impose fines of \$11,000.00 or more for security violations and incursions into active aircraft operation areas. In addition, the Owner may impose additional fines and/or penalties for such violations. The Contractor shall pay all fines assessed against the airport due to violations caused by the Contractor and his personnel, subcontractors, and vendors.
- f. Parking of all worker and construction related vehicles at the Work site shall only be permitted in areas approved by the Owner. The Contractor, as a subsidiary obligation shall provide adequate and safe transportation for his employees from the area where the vehicles are parked, to and from the work area. Employees and drivers of work vehicles shall be instructed regarding proper access roads and shall be cautioned that unauthorized use of aircraft pavements or other areas outside the designated Work area may lead to their arrest and subsequent payment of fines.
- g. All orders for material shall instruct the supplier of the procedures to be followed.
- h. The Contractor shall submit to the Owner within 10 days after signing of the contract a written Safety Plan detailing his methods of operations including but not limited the precautions he proposes for the control of vehicle traffic and pedestrians, including traffic control devices, flag person, signs, and any other measures he proposes. After Owner approval of the Safety Plan, the Contractor shall follow it explicitly. The Owner may close the Work at any time this plan is violated so as not to endanger airport or aircraft operations. Such closure shall not be considered a valid reason for extending the contract time or for any claim for extras by the Contractor.
- i. All security arrangements shall be subject to the approval of the Owner.

- j. The Contractor's personnel and vehicles will not have access to the entire airport, but shall be limited to work areas and the staging area.

1.02 PROTECTION

- a. Continuously maintain protection as necessary to protect the Work as a whole and in part, and adjacent property and improvements from accidents, injuries or damage.
- b. Properly protect the Work:
 - 1. With guards, temporary covers, and barricades.
 - 2. With bracing to secure all parts of the Work against storm and accident.
 - 4. With such additional forms of protection as may be necessary under existing circumstances.
- c. Provide and maintain in good condition all protective measures required to adequately protect the public from hazards resulting from the Work and to exclude unauthorized persons from the work area. When regulated by Building Code, OSHA or other authority, such legal requirements for protection shall be considered as minimum requirements. The Contractor shall be responsible for protections in excess of such minimum requirements as required.

1.03 CONTROL OF PROJECT WORK AREA

- a. The Contractor shall ensure that no alcohol, firearm, weapon or controlled substance enters or is used at the Project site. The Contractor shall immediately remove from the site and terminate the employment of any employee found in violation of this provision.
- b. Install approved temporary enclosure of partially completed construction areas to prevent unauthorized entrance, vandalism and theft.
- c. Secure temporary storage areas as required to prevent theft.
- d. To the extent possible through reasonable control and protection methods, supervise performance of Work in a manner and by means which will ensure that none of the Work, whether completed or in progress, will be subjected to harmful, dangerous, damaging, or otherwise deleterious exposures during construction period. Such exposures include (where applicable, but not by way of limitation) static loading, dynamic loading, internal pressures, external pressures, high or low temperatures, thermal shock, high or low humidity, air contamination or pollution, water, solvents, chemicals, light, radiation, puncture, abrasion, heavy traffic, soiling, bacteria, insect infestation, combustion, electrical current, high-speed operation, improper lubrication, unusual wear, misuse, incompatible interface, destructive testing, misalignment excessive weathering, unprotected storage, improper shipping and handling, theft and vandalism.

END OF SECTION

**SECTION 01 35 53
SECURITY PROCEDURES**

1.01 DESCRIPTION

- a. All security badge costs shall be considered incidental to the cost of the Contract and shall not be paid for separately.
- b. In addition to the below, the Contractor shall reference the requirements of the Manchester-Boston Regional Airport Safety and Security Phasing Plan for the project badging and gate security requirements.

1.02 IDENTIFICATION OF EMPLOYEES

- a. AIRPORT SIDA BADGES: Full-time competent and responsible employees of the Contractor, such as superintendents and foremen, shall obtain an Airport Security Identification Display Area (SIDA) badge. The SIDA badge requires finger printing screening and a criminal history check. The badge application process may take up to 14 days, the Contractor shall plan accordingly.
- b. CONTRACTOR ESCORTED BADGES: The Contractor shall furnish and issue, to each of his employees and the employees of all subcontractors, an escorted identification badge which the employees will be required to wear at all times on the site. The escorted badge shall be a minimum of 2.5 inches by 4 inches, laminated in plastic, and have a clip for attaching. The escorted badge shall have the following information:
 - 1. Employee's Name (1/8" high lettering);
 - 2. Contractor's name (1/8" high lettering);
 - 3. Subcontractor's name, if applicable (1/8" high lettering);
 - 4. Manchester-Boston Regional Airport (1/8" high lettering);
 - 5. "CONTRACTOR", "ESCORTED", "MHT" (1/4" high lettering);
 - 6. Badge Number (1/4" high lettering);
 - 7. 2" by 2" color photo of employee.
 - 8. Background color of the badge to be determined by the Owner.
- c. The Contractor shall submit a sample of the proposed badge to the Owner for approval.
- d. Escorted badged persons shall be escorted and within sight-line and control of an AIRPORT SIDA BADGED person at all times. The Contractor shall plan accordingly.
- e. TEMPORARY BADGES: Temporary badges may be issued for employees to be on the site less than one week. The temporary badges shall be as described above except for item (7).
- d. The Contractor shall provide the Owner with a list of employees on the job site and their badge number. The list shall include subcontractors and employees. The list shall be updated and submitted weekly.
- e. The Contractor's employees may be required to undergo a finger-print based criminal history records check.

END OF SECTION

**SECTION 01 38 00
CONSTRUCTION PHOTOGRAPHS**

PART 1 GENERAL

1.01 QUALITY ASSURANCE

- a. The Contractor shall utilize a digital camera with no less than 5 mega pixel resolution. The hiring of a professional photographer is not required.

1.02 SUBMITTALS

- a. The Contractor shall comply with pertinent provisions of Section 01 30 10 – Shop Drawings, Product Data and Samples.
- b. Except as otherwise directed and paid for, the Contractor shall furnish photographs of the project, in a variety of views. The photographs shall show the Project prior to construction, demolition, the Work in progress and the Project at the completion of Work.
- c. A minimum of 10 color photographs shall be taken during each 30 day period of the Contract. On the back of each print attach a printed label, in a manner not damaging to the print, showing job name, descriptive location, date of photo, photographer's name, photo number.
- d. At the completion of each 30-day period of the project, the Contractor shall deliver to the Owner and the Architect unaltered electronic files on CD and a set of color prints.
- e. The Contractor shall not permit prints to be issued for any other purpose without specific written approval from the Owner.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.01 CONSTRUCTION PHOTOGRAPHY

- a. Photographs: Shall be clear, in focus, with high resolution and sharpness, and with minimum distortion. Provide adequate lighting to produce clear photographs. The Architect may direct the Contractor to change locations as the construction progresses.

END OF SECTION

**SECTION 01 40 00
QUALITY CONTROL**

PART 1 GENERAL

1.01 DESCRIPTION

- a. The Contractor shall establish, provide, and maintain an effective Quality Control Program that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified herein and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.
- b. The intent of this Section is to enable the Contractor to establish a necessary level of control that will:
 - 1. Adequately provide for the production of acceptable quality materials.
 - 2. Provide sufficient information to assure both the Contractor and the Architect that the specification requirements can be met.
 - 3. Allow the Contractor as much latitude as possible to develop their own standard of control.
- c. The Contractor shall be prepared to discuss and present, at the preconstruction meeting their understanding of the quality control requirements.
- d. The quality control requirements contained in this Section and elsewhere in the contract technical specifications are in addition to and separate from the Owner's testing requirements.

1.02 OWNER'S DUTIES AND RESPONSIBILITIES

- a. The Owner has the right, but not the duty to monitor and inspect all work performed by the Contractor to insure performance of the work to the Contract Drawings and Specifications. All work shall be subject to inspection and test by the Owner at all reasonable times and at all places prior to acceptance. Any such inspection and test is for the sole benefit of the Owner and shall not relieve the Contractor of responsibility for providing quality control measures to assure that the work strictly complies with the contract requirements. No inspection or test by the Owner shall be construed as constituting or implying acceptance.

1.03 CONTRACTOR'S DUTIES AND RESPONSIBILITIES

- a. The Contractor is responsible for the quality of the work performed under this Contract as well as the quality of the material, equipment, and supplies incorporated into the Work.
- b. The Contractor shall designate a Quality Control Representative who will be on-site at all times while the respective Contractor's work is in progress and will have the authority and responsibility to accept or reject items of work. The Contractor's Quality Control Representative may delegate their duties but shall hold primary responsibility and authority.

- c. The Contractor's Quality Control Representative shall coordinate the submittal of all shop drawings, product data and samples to the Architect. Any submittal that is a change to the Contract requirements shall be identified as such and transmitted to the Architect. No work requiring submittal of a shop drawing, product data or sample shall be commenced until the submittal has been reviewed and accepted by the Architect.
- d. Where the Owner chooses to test any materials or equipment, the Contractor shall cooperate with the Owner's material testing laboratory. The Contractor shall notify the Owner when any material or equipment is in place in accordance with the Contract Documents and ready for testing or inspection.
- e. The Contractor shall notify the Owner two working days prior to when testing/inspection is required. The Contractor shall request all tests and inspections in accordance with the Owner's request and approval for testing services procedures on the form supplied by the Owner. The Contractor shall not contact the testing firms directly.
- f. The Contractor's Quality Control Representative shall review drawings, procurement documents and Contracts to ensure that the technical information provided and all work performed is in accordance with latest revisions of the Contract Drawings and Specifications.
- g. The Contractor's Quality Control Representative shall perform an inspection upon receipt at the site of all materials, equipment and supplies. Items which are damaged or not in conformance with the respective submittals, quality standards, Contract Drawings and Specifications will be identified and segregated from accepted items. Items thus identified shall not be incorporated into the work until corrective action acceptable to the Architect is completed. Items determined unsalvageable will be removed from the job site.

1.04 PROJECT PROGRESS SCHEDULE

- a. The Contractor shall submit a coordinated construction schedule for all work activities. The schedule shall be prepared as a network diagram in Critical Path Method (CPM), PERT, or other format, or as otherwise specified in the contract. As a minimum, it shall provide information on the sequence of work activities, milestone dates, and activity duration.
- b. 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.

1.05 SUBMITTALS SCHEDULE

- a. The Contractor shall submit a detailed listing of all submittals and shop drawings required by the technical specifications. The listing shall include specification item number; item description, type of submittal, date of submittal.

END OF SECTION

**SECTION 01 40 10
TESTING LABORATORY SERVICES**

PART 1 GENERAL

1.01 OWNER'S INDEPENDENT TESTING AGENCY

- a. The Owner shall employ an independent testing agency to perform tests, inspections and sampling of the Work. The Owner's use of the independent testing agency shall in no way relieve the Contractor of his/her obligations to perform the work in accordance with Contract requirements.
Such inspections and tests may include, but shall not be limited to:
 - a. Firestopping.
 - b. Other testing specified to be by Owner required under individual Specification Sections.

1.02 CONTRACTOR'S RESPONSIBILITIES

- a. Provide access, facilities, tools and labor necessary for duties to be performed at the site by the Owner including furnishing ladders, hoisting, lighting, water supply and like services.
The Contractor shall employ and pay an independent testing agency to perform quality control services, including but not limited to inspections, sampling and tests required for determining the suitability of materials prior to delivery to the site and other services as specified in the Specification Sections. Such inspections and tests shall include, but may not be limited to the following:
 - a. Fastener testing.
 - b. Sealant testing.
 - c. Electrical systems.
 - d. HVAC systems.
 - e. Piping systems.
 - f. Where the Owner has engaged a testing agency or other entity for testing and inspection of a part of the Work and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the Owner, unless otherwise agreed in writing with the Owner.

1.03 CONTRACTOR'S CONVENIENCE TESTING

- a. Inspecting and testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

END OF SECTION

**SECTION 01 42 19
REFERENCE STANDARDS**

PART 1 GENERAL

1.01 REFERENCE STANDARDS AND SPECIFICATIONS

- a. Whenever reference standards and specifications published by technical societies, institutions, associations and governmental agencies, such as ASTM, ANSI, FS and the like are referenced in the specifications, the applicable edition shall be the latest date of issue as of the time the bids are received, except that issues listed in governing building code and regulations supersede the above requirements.
- b. In case of conflict between referenced documents and Contract Documents, or between referenced documents, the one having more stringent requirements shall apply.
- c. No provisions of any referenced standards or specifications (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of the Owner, the Architect, their offices and the Contractor, or any of their consultants, agents or employees from those set forth in the Contract Documents.
- d. Where copies of standards are needed for proper performance of the work, the Contractor shall obtain such copies directly from the publication source. Copies of specified standards shall be maintained at the job-site by the Contractor and made available for review on request by the Owner.
- e. Where reference standard specifications require weather protection, it shall be provided by the Contractor at no additional cost to the Owner and shall be deemed necessary in order to construct the Project within the specified time period.

END OF SECTION

**SECTION 01 50 01
FIELD ENGINEERING**

PART 1 GENERAL

1.01 FIELD MEASUREMENTS AND LAYOUTS

- a. The Contractor shall be responsible for complete, timely and accurate field measurements as necessary for proper coordination, fabrication and installation of his materials and equipment. The Contractor agrees to cooperate with the Architect, if required, to accommodate any discovered variations or deviations from the Drawings and Specifications so that the progress of the Work is not adversely affected.

END OF SECTION

**SECTION 01 51 00
TEMPORARY FACILITIES**

PART 1 GENERAL

1.01 SUMMARY

- a. This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection. All costs associated with temporary facilities are to be paid by the Contractor until Substantial Completion, unless otherwise indicated.
- b. Temporary utilities required include but are not limited to:
 - 1. Temporary electric power: The Contractor may use the Owner's facilities so long as use is reasonable and does not interfere with the operation of the airport.
 - 2. Temporary lighting: The Contractor shall provide all necessary temporary lighting for work required.
 - 3. Telephone service.
- c. Temporary construction and support facilities required include but are not limited to:
 - 1. Storage trailer as required by the Contractor. Note: a field office is not required for this project.
 - 2. Drinking water. Note: Contractor may use the Owner's toilet room facilities.
 - 3. Temporary enclosures.
 - 4. Construction aids and miscellaneous services and facilities.
- d. Security and protection facilities required include but are not limited to:
 - 1. Temporary fire protection.
 - 2. Pedestrian control devices, barricades, warning signs, lights, traffic control.

1.02 QUALITY ASSURANCE

- a. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:
 - 1. Building Code requirements.
 - 2. Health and safety regulations.
 - 3. Police, Fire Department and Rescue Squad rules.
 - 4. Environmental protection regulations.
 - 5. Federal Aviation Administration.
- b. Standards: Comply with NFPA Code 241 - Building Construction and Demolition Operations, ANSI-A10 Series Standards for Safety Requirements for Construction and Demolition, and NECA Electrical Design Library Temporary Electrical Facilities.

1.03 MATERIALS

- a. General: Provide new materials; if acceptable to the Architect, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.
- b. Lumber and Plywood: Fire treated lumber and plywood shall be used for any safety barriers and temporary enclosures.

- c. Tarpaulins: Waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.
- d. Water: Potable water.

1.04 EQUIPMENT

- a. General: Provide new equipment; if acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- b. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.
- c. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.
- d. First Aid Supplies: Comply with governing regulations.
- e. Fire Extinguishers: Provide hand-carried, portable UL-rated, class "A" fire extinguishers for temporary offices and similar spaces. In other locations provide hand-carried, portable, UL-rated, class "ABC" dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.

1.05 INSTALLATION

- a. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- b. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

1.06 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

- a. Locate field storage trailers and support facilities as directed by the Owner.
- b. Provide safety showers, eye-wash fountains and similar facilities for convenience, safety and sanitation of personnel.
- c. Provide containerized tap-dispenser bottled-water type drinking water units, including paper supply. Provide port-a-potties.
- d. Temporary Enclosures: Provide temporary enclosure for protection of construction in progress and completed, from public use areas, exposure, foul weather, other construction operations and similar activities.

- e. Temporary Lifts and Hoists: Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- f. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.

1.07 SECURITY AND PROTECTION FACILITIES INSTALLATION

- a. Temporary Fire Protection: Comply with NFPA 10 Standard for Portable Fire Extinguishers, and NFPA 241 Standard for Safeguarding Construction, Alterations and Demolition Operations.
- b. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed provide lighting, including flashing red or amber lights.
- c. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Proposed method shall be reviewed and approved by the Owner prior to any use. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

1.08 OPERATION, TERMINATION AND REMOVAL

- a. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- b. At Substantial Completion, clean and renovate permanent facilities that have been used during the construction period.

END OF SECTION

**SECTION 01 52 13
CONTRACTOR'S FIELD OFFICE & SHEDS**

PART 1 GENERAL

1.01 DESCRIPTION

- a. A Contractor's field office will not be required for this project.
- b. The Contractor's staging area shall be on the Airport property, where authorized by the Owner.
- c. The Contractor shall obtain the Owner's approval of location of any storage trailers.

END OF SECTION

**SECTION 01 54 09
SAFETY PROGRAM**

PART 1 GENERAL

1.01 DESCRIPTION

- a. The Contractor (and his subcontractors) shall, at all time, exercise reasonable precautions for the safety of all persons. All rules, regulations, and laws concerning safety that are in effect at the work site, and in particular, all applicable regulations of the Occupational Safety and Health Administration (OSHA) of the U.S. Government, in addition to all the requirements of these specifications, shall be complied with in all respects.
- b. The Contractor shall provide adequate equipment and facilities as are necessary and required for first aid service to any person who may be injured in the prosecution the Work under this Contract whether they are his own personnel, his subcontractor's personnel, the owner's representative, or other persons who may for any reason enter within the limits of the contract Work. Also the Contractor shall have standing arrangements for or have effective written procedure on site, to care, and for removal and hospital treatment of any person who may be injured. Such equipment or facilities and arrangements shall be satisfactory to the Owner.
- c. Attention shall be directed to the requirements that the Contractor comply with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc.
- d. **Within 10-days after Notice to Proceed, Contractor shall submit a Safety Plan for review.** The Safety Plan shall not be paid for separately but shall be considered incidental to the project. The Contractor shall be required to comply with the Safety Program Plan and all applicable Federal, State, and local regulation codes, rules, laws and ordinances.
- e. Review of the Safety Program Plan shall not relieve the Contractor of any responsibility for complying with all applicable safety regulations nor, by reviewing the Safety Program Plan, will the Owner and Architect assume any of the Contractor's responsibilities for compliance with the said safety regulations.
- f. The Contractor further agrees to indemnify and hold the Owner and Architect harmless for, of and from any loss including but not limited to fines, legal fees, penalties and corrective measures. The Owner may sustain by reason of the Contractor's failure to comply with said laws, rules and regulations in connection with the performance of this Contract.
- g. It is essential that each Contractor and Subcontractor implement an effective and vigorous Safety and Health Program to cover his portion of the work. It shall be understood that the full responsibility for providing a safe place to work with respect to his portion of the work rests with each individual contractor.

1.02 SAFETY REQUIREMENTS

- a. Standards: Maintain the Project in accordance with State and local safety and insurance standards.
- b. The wearing of non-conducting, hard, safety hats on the job is mandatory. The Contractor shall be responsible for and shall enforce the wearing of such safety hats by his personnel

and the personnel of his subcontractors. The Contractor shall keep at least 5 safety hats at the work site for use by others inspecting or visiting the work site.

- c. All employees must wear approved safety shoes unless special shoes for the types of work are required.
- d. All tools and devices that require electric power shall be properly grounded.
- e. Safety glasses shall be worn by all workmen when performing operations hazardous to the eyes.
- f. Hazards Control:
 - 1. Store volatile wastes in covered metal containers, and remove from premises daily.
 - 2. Prevent accumulation of wastes which create hazardous conditions.
 - 3. Provide adequate ventilation during use of volatile or noxious substances.
 - 4. Cover trash containers and dumpsters to eliminate attraction of birds and other wildlife as well as avoid wind blown debris.
- i. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
- j. Provide accident information on the forms provided by the Owner. This information will be provided on the same day as the occurrence of said incident.
- k. The Owner will identify safety issues as they become apparent and will issue Notices of Noncompliance to the Contractor. These notices, however, do not relieve the Contractor of the sole responsibility for safety on the job site.
- l. In the event of any emergency constituting an immediate hazard to health or safety of Owner employees, property, or licensees, the Owner may undertake at the Contractor's expense, without prior notice, all work necessary to correct such hazardous conditions when it was caused by work of the Contractor not being in accordance with requirements of this contract.
- m. If, at any time, in the sole judgment of the Owner, the work is not properly lighted, barricaded or in any other respects safe in regard to public travel, persons on or about the work, or public or private property, the Owner shall have the right to order such safeguards to be erected and such precautions to be taken as he deems advisable, and the Contractor shall comply promptly with such orders. If, under such circumstances, the Contractor does not or cannot immediately put the work and the safeguards into proper and approved condition or if the Contractor or his representative is not upon the site so that he can be notified immediately of the insufficiency of safety precautions, the Owner may put the work into such a condition that it shall be, in his opinion, in all respects safe. The Owner has the right to shut down the job site if the Contractor does not comply with the Owner written requests of Non-Compliance in the form of a D/O. In such an occurrence the Contractor abandons his/her rights for claiming cost or schedule compensation for any related delays.

The Contractor shall pay all costs and expenses incurred by the Owner in so doing. Such action of the Owner, or their failure to take such action, shall in no way relieve or diminish the responsibility of the Contractor for any and all costs, expenses, losses, liability, suits, proceedings, judgments, awards or damages resulting from, by reason of or in connection with any failure to take safety precautions of the insufficiency or the safety precautions taken by him or by the Owner acting under authority of this paragraph.

- n. Fire Prevention: All operations in connection with the contract work shall be so performed that no fire hazards are needlessly created or permitted to exist. If the contract work involves a fire hazard, sufficient fire fighting equipment with trained, capable operators shall be in the area to contain any fire until the local fire department is able to arrive. Particular care shall be exercised with regard to the disposition of waste materials, the nature of quality of which might create or increase a fire hazard. The Contractor shall make sure that persons employed directly or indirectly by him while working in connection with this contract comply with any fire prevention regulations of the Owner. The Contractor shall also have a procedure for promptly notifying local fire fighting organizations in case of fire. The Contractor shall be responsible for compliance by personnel of his organization for their cooperation in fire prevention, fire reporting, and protective measures to minimize loss.

1.03 ENVIRONMENTAL CONTROL OFFICER

- a. The Contractor shall designate one of his staff as "Environmental Control Officer", whose duties shall include the responsibility for enforcing the environmental protection provisions of these Specifications including safety and health; the requirements of the Occupational Safety and Health Act; and other applicable Federal, State, and local standards. Contractor shall submit, for information his intended traffic flow plan, security plan, program for temporary structures, housecleaning plan, demolition program, and safety and health plan.

END OF SECTION

**SECTION 01 57 01
TEMPORARY CONTROLS**

PART 1 GENERAL

1.01 DESCRIPTION

- a. Noise and Vibration Control: Comply with all applicable state and local laws, ordinances, and regulations relative to noise control.
- b. Pollution Control: No burning of refuse, debris, or other materials will be permitted on or in the vicinity of the Project site. Comply with regulatory requirements and anti-pollution ordinances during the performance of construction and disposal operations, including the disposal of solid, liquid and gaseous contaminants.
- c. Cleaning: During handling and installation of work at Project site, clean and protect work in progress and adjoining work on a basis of perpetual maintenance. Apply suitable protective covering on newly installed work where reasonably required to ensure freedom from damage or deterioration at time of substantial completion; otherwise, clean and perform maintenance on newly installed work as frequently as necessary through remainder of construction period.

END OF SECTION

**SECTION 01 60 00
MATERIALS & EQUIPMENT**

PART 1 GENERAL

1.01 SUMMARY

- a. This Section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section 01 30 00 - Submittals.
- b. Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.
- c. Administrative procedures for handling requests for substitutions made after award of the Contract are included under Section "Product Substitutions."

1.02 DEFINITIONS

- a. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms such are self-explanatory and have well recognized meanings in the construction industry.
- b. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
- c. "Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
- d. "Materials" are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
- e. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

1.03 SUBMITTALS

- a. Product List Schedule: Prepare a schedule showing products specified in a tabular form acceptable to the Architect. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed. Coordinate the product list schedule with the Contractor's Construction Schedule and the Schedule of Submittals.
- b. Form: Prepare the product listing schedule with information on each item tabulated under the following column headings:
 - 1. Related Specification Section number.
 - 2. Generic name used in Contract Documents.
 - 3. Proprietary name, model number and similar designations.
 - 4. Manufacturer's name and address.
 - 5. Supplier's name and address.
 - 6. Installer's name and address.

7. Projected delivery date, or time span of delivery period.
- c. Initial Submittal: Within 21 days after date of commencement of the Work, submit 3 copies of an initial product list schedule. Provide a written explanation for omissions of data, and for known variations from Contract requirements.
 - d. Completed Schedule: Within 42 days after date of commencement of the Work, submit 3 copies of the completed product list schedule. Provide a written explanation for omissions of data, and for known variations from Contract requirements.
 - e. Architect's Action: The Architect will respond in writing to the Contractor within 2 weeks of receipt of the completed product list schedule. No response within this time period constitutes no objection to listed manufacturers or products, but does not constitute a waiver of the requirement that products comply with Contract Documents. The Architect's response will include a list of unacceptable product selections, containing a brief explanation of reasons for this action.

1.04 QUALITY ASSURANCE

- a. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.
 - 1. When specified products are available only from sources that do not or cannot produce a quantity adequate to complete project requirements in a timely manner, consult with the Architect for a determination of the most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources that produce products that possess these qualities, to the fullest extent possible.
- b. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
- c. 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 the exterior.
- d. 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.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- a. Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
- b. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
- c. 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.
- d. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.

- e. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.
- f. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units. Store products subject to damage by the elements above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

1.06 PRODUCT SELECTION

- a. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
- b. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- c. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience.
- d. Semi-Proprietary Specification Requirements: Where three or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.
- e. Non-Proprietary Specifications: When the Specifications list less than three products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
- f. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.
 - 1. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.
- g. Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.
- h. Visual Matching: Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.
- i. Visual Selection: Where specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern and texture from the product line selected.

1.07 INSTALLATION OF PRODUCTS

- a. Comply with manufacturer's instructions and recommendations for installation of products in the 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 at time of Substantial Completion.

END OF SECTION

SECTION 01 60 01
PRODUCT OPTIONS & SUBSTITUTIONS

PART 1 GENERAL

1.01 PRODUCTS

- a. The term "product" includes materials, systems, and equipment. Products shall be new, undamaged, of the types specified, and furnished in ample quantities to facilitate proper execution of the work.
- b. When requesting a product substitution, select an option which is compatible with other products already specified
- c. Where available, provide standard products or types which have been produced and used previously and successfully on other Projects and in similar applications.

1.02 LIST OF PRODUCTS

- a. Include substitutions in the required submittal list (Section 01 30 00 - Submittals), showing the names of the manufacturers proposed to be used for each of the products identified in the Specifications, and, where applicable, the name of the installer.
- b. The Architect will reply, in writing, to the Contractor stating whether, after due investigation, there is reasonable objection to any such proposal. If adequate data on any proposed manufacturer or installer is not available, the Architect may state that action will be deferred until the Contractor provides further data. No reply by the Architect shall not constitute waiver of any requirement.
- c. Up to and until 60-days after the date of the Notice to Proceed, the Architect will consider the Contractor's formal requests for substitutions in place of the specified items under the conditions set forth in this Section, assuming the item was listed in paragraph A above. No requests will be considered 60-days after the Notice to Proceed except as specified in this Section.

1.03 CONTRACTOR'S OPTIONS

- a. The Contractor has the following options:
 1. For products specified only by reference standards, select any product meeting those standards, by any manufacturer.
 2. For products specified by naming several products or manufacturers, select one of the specified products or manufacturers or submit a request, as required by this Section, for substitution, for any product not specifically named. Where only one manufacturer is specified but other manufacturers are listed as acceptable, their products shall be treated as a substitution and submitted in accordance with the requirements specified in this Section.
 3. For products specified by naming one or more products, but indicating the option of selecting equivalent products by stating "or equal", "equal to", or "approved equal", "equivalent to"; submit a request, as required by this Section, for substitution, for any product not specifically named.

4. If it is known that a specified product is not a feasible or acceptable selection, notify the Architect in writing before proceeding with the purchase of the product.
5. Where only compliance with an imposed standard, code, or regulation is required, select any product satisfying the requirement.
6. Where matching with an existing sample is required, the final decision whether a product proposed matches the sample satisfactorily is the Architect's judgment.
7. Except as otherwise indicated, where Specifications include the statement: "as selected from manufacturer's standard colors, patterns, textures..." or words of similar effect, the selection of manufacturer and basic product (complying with Specifications) is the Contractor's option, and the selection of color, pattern, and texture shall be the Architect's selection.

1.04 REQUIREMENTS FOR SUBSTITUTIONS

- a. Products proposed for substitution shall comply with specific performances indicated and/or specified, and which are recommended by the manufacturer (in published product literature or by individual certification) for application indicated. Overall performance of a product is implied where product is specified with only certain specific performance requirements.
- b. Products proposed for substitution shall have been produced in accordance with prescriptive requirements, using specified ingredients and components, and complying with specified requirements for fabricating, finishing, testing, and similar operations in manufacturing process.
- c. A proposed substitution shall not be purchased or installed by the Contractor without written acceptance from the Architect. Acceptance of any substitution shall not relieve the Contractor from responsibility for the proper execution of the work and any other requirements specified in the Contract Documents.
- d. The Contractor shall be responsible for the effect of a substitution of related work in the Project, and shall pay additional costs generated by a substitution, including the costs of the Architect's additional services.
- e. The burden of proving that the proposed substitution is "equal to the specified product is upon the Contractor and such proof shall include sufficient factual and comparative data and information necessary to establish that the requested substitution is equal in quality, utility, structural strength, mechanical and technical performance, finish, arrangement of plan, repair and maintenance, compatibility with other existing or specified items, and any other relevant data.
- f. By making a request for substitution, the Contractor:
 1. Represents that he has personally investigated the proposed substitute product and has determined that it is equal or superior in all respects to the specified product.
 2. Represents that he will provide the same warranty for the substitution that he would have for the specified product.
 3. Certifies that the cost data presented is complete and includes all related costs under the contract.

4. Waives all claims for additional costs or schedule impact related to the substitution which subsequently become apparent.
 5. Will coordinate the installation of the substitute, making sure changes as may be required for the work to be complete in all respects.
- g. Substitutions will not be considered if:
1. They are indicated or implied on shop drawings or product data submittals without formal request submitted in accordance with this Section.
 2. Acceptance will require substantial revision of the Contract Documents.
 3. The proposed product is inferior to the specified product as judged by the Architect.
 4. Request does not include sufficient data for the Architect to make a reasonable judgment regarding the acceptability of the proposed substitution.
- h. The Architect will be the judge of the acceptability of proposed substitutions, and his determination will be final.
- i. Approval of a substitution shall not relieve the Contractor from responsibility for the proper execution of the work and other requirements of the Contract Documents.
- j. If a substitution is rejected, provide the product originally specified.

1.05 REQUESTS FOR SUBSTITUTIONS

- a. Submit 7 copies of a written request for a substitution and data substantiating the request to the Architect in enough advance notice to allow a thorough evaluation by the Architect. Each request shall include the following:
1. Complete technical data of all characteristics of the originally specified item, including drawings, reference standards, performance specifications, cost data, samples, and test reports of the product proposed for substitution. Submit additional information if requested by the Architect. Annotate the specific salient characteristics which are being compared to those of the originally specified item. The mere submission of catalog cuts and/or other data without the annotation is not acceptable. See the following paragraph which requires line-by-line comparison.
 2. Data similar to that specified for the item for which the substitution is proposed. Include a line-by-line comparison of characteristics between specified item and proposed substitute documenting equal status. Highlight by underlining or other means characteristics that are different from those of the specified item. Equivalency will be based on salient characteristics as determined by the Architect.
 3. Effect on the progress schedule.
 4. Complete breakdown of costs indicating the cost amount to be added to or deducted from the Contract Sum if the proposed substitution is accepted.
 5. Certification by the Contractor that the proposed substitution is in compliance with the Contract Documents and applicable regulatory requirements.
 6. List of other work, if any, which may be affected by the substitution.

7. Availability of maintenance service and source of replacement materials.
8. Samples, if requested, of both the originally specified product and the proposed substitute product.
9. Name and address of similar Projects on which the proposed substitute product was used. Include name, address and telephone numbers of the Architect for each Project.
10. Sample of standard form of guarantee or warranty offered by the manufacturer for the substitute product proposed.

1.06 REQUESTS FOR SUBSTITUTIONS AFTER TIME SPECIFIED

- a. No substitution of materials, products, or equipment will be considered after the time described in the above paragraphs unless the specified material cannot be delivered or incorporated into the work in the time allowed due to conditions beyond the control of the Contractor.
- b. The Contractor shall reimburse the Architect's cost for additional services required by the Architect to review and process substitutions.
- c. Written requests for substitutions shall include reasons for the request, proof that delivery is impossible, complete description and data of the proposed substitute necessary for a complete evaluation of costs, delivery time, and other necessary information.
- d. Costs of delays which could have been avoided by the timely submission of requests for substitutions shall be borne by the Contractor.

1.07 SUBSTITUTION PROCESSING

- a. Submit substitutions on a Request for Information form; follow the request for information processing requirements. In addition, maintain a Request for Substitution log which will indicate the following: The RFI number, description, the date submitted to the Architect, the date required for return, the date returned from the Architect, and comments. This log will be reviewed at the weekly progress meetings.

END OF SECTION

SECTION 01 60 02
DELIVERY, STORAGE & HANDLING

PART 1 GENERAL

1.01 TRANSPORTATION AND HANDLING

- a. Manufactured products shall be delivered in the manufacturer's original unbroken containers or packaging, with identifying labels intact and legible.
- b. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and verify that products are properly protected and undamaged.
- c. Handle products and packages in a manner to avoid soiling or damaging. Promptly remove damaged or defective products from the site, and replace at no increase in Contract Sum.
- d. Tight wood sheathing shall be laid under any materials that are stored or moved over finished surfaces. Reinforced non-staining kraft building paper and plywood or planking shall be laid over all types of finished floor surfaces in traffic areas before moving any material over these finished areas. Wheelbarrows, if used over such areas, shall have rubber-tired wheels.

1.02 STORAGE

- a. Store manufactured products in accordance with the manufacturer's instructions, with seals and labels intact and legible.
 - 1. Store products subject to damage by the elements in weathertight enclosures. Maintain temperature and humidity within the ranges specified by the manufacturers.
 - 2. Control delivery schedules to minimize long-term storage at site, particularly for products recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss.
- b. Exterior Storage: Store fabricated products above the ground on blocking or skids to prevent soiling and staining. Cover products subject to deterioration with impervious sheet coverings; provide adequate ventilation to avoid condensation.
- c. Periodically inspect stored products to assure that specified conditions are maintained and the products are free from damage or deterioration.
- d. Protection after Installation: Provide coverings necessary to protect installed products from damage due to traffic or construction operations. Remove coverings when no longer needed.
- e. The Contractor will be permitted to store equipment needed for the immediate work on hand within the Work area as approved by the Owner. Equipment not in use will be returned to the appropriate Contractor's staging area. All equipment booms shall be lowered at the close of each day's work or when stored. All equipment will be parked in the staging area at the close of work each day and whenever it is not in use.

END OF SECTION

SECTION 01 71 00 CLEANING

PART 1 GENERAL

1.01 DESCRIPTION

- a. This Section describes the requirements for cleaning. Keep premises free from accumulations of waste, debris, and rubbish, caused by operations. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all exposed surfaces; leave Project clean.

1.02 MATERIALS

- a. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

1.03 COORDINATION

- a. The Contractor shall assume all financial responsibilities incurred by the Owner, its tenants, and/or customers in the event life safety systems of the Airport are activated by Contractor's cleaning activities (e.g. sweeping dust and tripping a smoke alarm).
- b. The Contractor shall coordinate cleaning activities with the Owner. The Contractor shall comply with all Airport policies regarding cleaning activities.

1.04 CLEANING DURING CONSTRUCTION

- a. Keep premises free from accumulations of waste materials and rubbish.
- b. At least once a week, or sooner if required, clean work area and dispose of waste materials, debris and rubbish off the site in a legal manner. Remove combustible materials such as paper and cardboard daily.
- d. Provide on-site containers for collection of waste materials, debris and rubbish. Provide a collection can at each location used as an eating area. Pick up all garbage daily.
- e. Remove waste materials, debris and rubbish from site and legally dispose of legally off Owner's property. Do not bury or burn waste materials at the site. It is essential that food waste be properly disposed of in secured collection containers to discourage wildlife (birds) from the airport environment.
- f. Vacuum clean interior areas on an as needed basis until work area is ready for substantial completion or occupancy.
- g. All rubbish shall be lowered by way of chutes or taken down on hoists or lowered into receptacles. Under no circumstances shall rubbish or waste be dropped or thrown from one level to another within or outside the building.

1.05 FINAL CLEANING

- a. Employ experienced workmen or professional cleaners for final cleaning.
- b. In preparation for Substantial Completion, conduct final inspection of sight-exposed interior and exterior surfaces.

- c. Remove grease, dust, dirt, stains, labels, fingerprints and other foreign materials from sight-exposed interior finished surfaces; polish bright surfaces to shine finish.
- d. Repair, patch and touch-up marred surfaces to specified finish to match adjacent surfaces.
- e. Broom clean paved surfaces; rake clean other surfaces of grounds.
- f. Keep Project clean until it is occupied by Owner.
- g. Except as otherwise indicated or requested by Owner, remove temporary protection devices and facilities.
- h. Where extra materials of value remain dispose of these to Owner's best advantage as directed.
- i. Clean all electronic detectors so as to function with full efficiency.

END OF SECTION

**SECTION 01 72 00
CUTTING AND PATCHING**

PART 1 GENERAL
1.01 DESCRIPTION

- a. The Contractor shall perform all cutting, fitting or patching required to:
 - 1. Make parts fit properly.
 - 2. Uncover work to permit the installation of ill-timed work.
 - 3. Remove and replace work not conforming to requirements of Contract Documents.
 - 4. Remove samples of installed work as may be required for testing.
- b. In addition to Contract requirements, upon the Architect's written instructions the Contractor shall:
 - 1. Uncover work to permit the Architect's observation of covered work.
 - 2. Remove samples of installed materials for testing.
 - 3. Perform any other cutting and patching directed by the Architect.
- c. The Contractor shall not endanger any work by cutting or altering work or any part of it.

1.02 QUALITY ASSURANCE

- a. Design Criteria:
 - 1. Patching shall achieve security, strength, and weather protection, and shall preserve continuity of existing fire ratings.
 - 2. Patching shall successfully duplicate undisturbed adjacent finishes, colors, textures, and profiles. Where there is dispute as to whether duplication is successful or has been achieved, the Architect's judgment will be final.

1.03 SUBMITTALS

- a. The Contractor shall submit written notice to the Architect requesting permission to proceed with cutting before any cutting, which affects:
 - 1. Structural integrity of any element of the Work.
 - 2. Integrity of weather exposed or moisture-resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of separate contractor.
- b. Include in request:
 - 1. Identification of the Work.
 - 2. Location and description of affected work.
 - 3. Necessity for cutting or alteration.
 - 4. Description of proposed work, and products to be used.
 - 5. Alternatives to cutting and patching.
 - 6. Effect on work of separate contractor.
 - 7. Written permission of affected separate contractor.
 - 8. Date and time-work will be executed.
- c. Should conditions of work or schedule indicate change of materials or methods, the Contractor shall submit written recommendation to the Architect, including:
 - 1. Conditions indicating change.
 - 2. Recommendations for alternative materials or methods.

3. Submittals as required for substitutions.

- d. The Contractor shall submit 2 working days advanced written notice to the Architect designating the time the Work will be uncovered.

1.04 MATERIALS

- a. Materials shall be as specified in the applicable sections of the Specifications (and as required to match existing construction).

1.05 INSPECTION

- a. Inspect existing conditions of work, including elements subject to movement or damage during cutting and patching, and excavating and backfilling.
- b. After uncovering work, inspect conditions affecting installation of new products. Beginning of cutting or patching means acceptance of existing conditions.

1.06 PREPARATION PRIOR TO CUTTING

- a. Provide shoring, bracing and support as required to maintain structural integrity.
- b. Provide protection for other portions of Project.

1.07 PERFORMANCE

- a. Fit and adjust products to permit the finished installation to comply with specified tolerances and finishes.
- b. Perform cutting and demolition by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs and new work.
- c. Perform cutting, associated structural reinforcing, and patching not required to be performed as part of the work of other Sections.
- d. Perform cutting, associated structural reinforcing, and patching to prevent damage to other work and to provide proper surfaces for the installation of materials, equipment, and repairs.
- e. Do not cut or alter structural members without prior approval of the Architect.
- f. Employ original installer or fabricator providing work under this Contract to perform cutting and patching for new:
1. Weather-exposed and moisture-resistant products.
 2. Fireproofing.
 3. Finished surfaces exposed to view.
- g. Adjust and fit products to provide a neat installation.
- h. Finish or refinish cut and patched surfaces to match adjacent finishes. Paint over complete surface plane, unless otherwise indicated. Over patched wall or ceiling surfaces, paint to nearest cutoff line for entire surface, such as intersection with adjacent wall or ceiling, beam pilasters, or to nearest opening frame, unless otherwise indicated. Surfaces shall not present a spotty, touched-up appearance.

END OF SECTION

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Required Recycling, Salvage, and Reuse: The following may not be disposed of in landfills or by incineration:
 - 1. Aluminum and plastic beverage containers.
 - 2. Corrugated cardboard.
 - 3. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
 - 4. Glass.
- E. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the project site.
 - 2. Burying on the project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
 - 5. Incineration, either on-site or off-site.
- F. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.
- G. Construction waste and demolition debris shall be sent to a certified recycling facility for sorting to recycle and reuse whenever possible. Any loads contaminated with municipal solid waste shall be taken to a municipal transfer station for off loading and trucking to a certified recycling facility. Materials that cannot be recycled or reused shall be landfilled. It is expected that at least 75% of loads shall be diverted from landfills.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate a person who will be responsible for implementing the plan, instructing workers, coordinating waste materials handling and separation for all trades and overseeing and documenting results of the Waste Management Plan. Distribute copies of the Waste Management Plan to job site superintendent, each subcontractor, Owner, and Architect.
- B. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- C. Meetings: Discuss trash/waste management goals and issues at project meetings.
- D. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

END OF SECTION

**SECTION 01 78 00
PROJECT CLOSEOUT**

PART 1 GENERAL

1.01 PREPARATION FOR SUBSTANTIAL COMPLETION

- a. When the work is Substantially Complete, submit the following to the Architect:
 - 1. A written notice that the work is Substantially Complete.
 - 2. A detailed, complete, and comprehensive list of items to be completed or corrected.
- b. After receipt of the above items, the Architect shall set up an inspection to determine whether or not the Project, or portion of the Project, is ready for Punch List Inspection.

1.02 ACHIEVING SUBSTANTIAL COMPLETION

- a. When the Architect determines that the Work is ready for the Punch List Inspection, the Contractor will arrange for the inspection by the Architect and representatives of the Owner as necessary.
- b. The Architect shall prepare a coordinated Punch List and will determine which items shall be completed by the Contractor to achieve Substantial Completion.
- c. The Architect will transmit the Punch List to the Contractor and Owner and will advise the Contractor as to the items that he must complete to achieve Substantial Completion.
- d. Beneficial Occupancy and Substantial Completion are not one and the same. The Owner has the right to beneficially occupy any portion of the Project, or the Project as a whole, at any time in accordance with the General Conditions.

1.03 SUBSTANTIAL COMPLETION

- a. When the specific Punch List items have been completed to the extent that the Work can be utilized for the intended use, the Architect will prepare a Certificate of Substantial Completion for the Owner and will attach a list of the balance of the punch list items to be completed for final completion. Other items which do not conform to the Contract Documents may be added to the list at any time.

1.04 FINAL COMPLETION

- a. When the Contractor considers the work to be complete for final inspection, he shall submit written certification that:
 - 1. Contract Documents have been reviewed.
 - 2. Work has been inspected for compliance with the Contract Documents.
 - 3. Work has been completed in accordance with the Contract Documents.
 - 4. Work is completed and ready for final inspection.
- b. After receipt of the above, the Architect will set up an inspection to determine whether or not the Project is ready for final inspection. The review shall consist of verifying that the remaining Punch List items from the Substantial Completion inspection have been completed.

- c. Should the Architect find the work to be incomplete, the Architect shall advise the Contractor in writing that the work is not acceptable. The Contractor may be assessed for additional inspection costs.
- d. The Contractor shall send another Certificate when the work is complete.
- e. After the Architect has completed the final inspection and finds that the work is complete under the Contract Documents, the 'The Date of Final Completion' shall be determined and the Contractor notified. The Contractor shall proceed to prepare for final closeout/acceptance and shall make final closeout submittals.

1.05 CLOSEOUT & ACCEPTANCE

- a. Responsibilities of the Contractor, prior to acceptance by the Architect, shall include but may not be limited to:
 - 1. Submitting a statement showing accounting of changes to the Contract Sum.
 - 2. Submitting warranties, maintenance agreements, final certifications, and similar documents required by the Contract Documents.
 - 3. Submit certification that materials used are asbestos free.
 - 4. Advising the Owner of pending insurance change-over requirements.
 - 5. Provide all release of liens from subcontractors and suppliers.
 - 6. Submitting final record documents, operations & maintenance manuals and data, and other final record information as required by the Contract Documents. The Owner may withhold final payment of retainage until the record documents and operations & maintenance manuals and data have been accepted.
 - 7. Removing all temporary facilities and services, along with construction tools and equipment mock-ups, and similar elements.
 - 9. Preparing final Application for Payment in accordance with the General Conditions and these Specifications.
 - 11. Submitting signed lien waiver forms.
- b. After acceptance of the Work, the final payment will be made.

END OF SECTION

**SECTION 01 78 08
RECORD DOCUMENTS**

PART 1 GENERAL

1.01 DESCRIPTION

- a. This Section describes the requirements for maintaining records of actual conditions in the field and for changes in the work.
- b. The purpose of final Record Documents is to provide factual information regarding all aspects of the work, both concealed and visible, to enable future modifications of the work to proceed without lengthy and expensive site measurements, investigation, and examination.
- c. The Owner and Architect shall have access to record documents at any time prior to final turn over to the Owner.

1.02 DOCUMENTS REQUIRED

- a. Maintain at the site the following record documents:
 - 1. Complete Contract Drawing set.
 - 2. Specifications and Addenda.
 - 3. Change Orders and other modifications to the Contract.
 - 4. Field Instructions and other written instructions from the Architect.
 - 5. Reviewed shop drawings, product data, and samples.
 - 6. Test Reports.
 - 7. Requests for Information.
 - 8. General Correspondence.
 - 9. Record Document Drawings.

1.03 MAINTENANCE OF DOCUMENTS AND SAMPLES

- a. Store record documents and samples in Contractor's field office apart from documents used for construction. Provide files and racks for storage of documents.
- b. Make documents and samples available at all times for inspection by the Architect and Owner.
- c. Update the documents within 24-hours after receiving information that a change has occurred or clarification has been issued.

1.04 MARKING DEVICES

- a. Non-fade felt tip marking pens shall be used for recording information. Green marks shall be used for added items; red marks shall be used for deleted items; and yellow marks shall be used for unchanged items.

1.05 RECORDING

- a. Record information concurrently with the construction process. Legibly mark drawings to record actual construction. The Contractor shall comply with the following:
 - 1. Do not conceal any work until required information is recorded.

2. Completely, accurately, and legibly record, to the satisfaction of the Architect, all deviations in construction.
 3. Record any deviations caused by approved changes and/or clarifications to the work.
 4. Use additional copies of prints, if necessary, to insure legible recording of data
 5. Date all entries.
 6. Call attention to the entry by drawing a 'cloud' around the area affected on each drawing.
 7. Post details not on original contract drawings.
 8. All Record Documents shall show both the original design and the final design. (Example: if a utility location, type, etc. has deviated from the original design, the old data should be crossed out and new data shall be shown.)
 9. All elevations and coordinates shall be in the same horizontal and vertical datum as the contract documents.
- b. Stamp each Record Document drawing with the following information:
1. "RECORD DOCUMENT"
 2. Prepared by: Contractor's name, permanent address.
 3. Date prepared.
 4. Contractor's (Principal of firm) typed name and signature.
 5. In typed words on each drawing the following statement:
 "_____ (Insert Contractor firm name) hereby certifies that to best of our knowledge that these Record Document drawings represent a true and accurate record of the work in-place."
- c. Legibly mark each section of the specifications to record the following: manufacturer, trade name, catalog number, and supplier of each product and item of equipment installed and changes made reflecting approved changes to the Work.
- d. Maintain shop drawings as record drawings. Legibly annotate shop drawings to record changes made after approval.

1.06 SUBMITTAL

- a. Thirty (30) calendar days after Substantial Completion, submit the record documents prepared in accordance with this specification. The Architect shall have thirty (30) calendar days from receipt of the record documents for review and comment. Record documents found deficient shall be returned to the Contractor after the specified review period. The Contractor shall have fourteen (14) calendar days to correct deficiencies and return corrected record documents. The Contractor shall be required to meet with the Architect and Owner to review the contents of the Record Documents.

1.07 PAYMENT

- a. Prior to submitting each request for payment, status of Record Documents shall be reviewed. Periodic Payments or portions thereof to the Contractor may be withheld until the Owner verifies that as-built information has been properly recorded on the Record Documents. The Owner may withhold final payment of retainage until the Record Documents have been accepted by the Owner.

1.09 RESPONSIBILITY

- a. The Contractor shall be fully responsible for the accuracy and completeness of record documents and shall bear all costs of damages incurred by the Owner of any nature whatsoever due to inaccuracies or incompleteness of said records, except to the extent that conditions are disturbed by subsequent construction.

END OF SECTION

**SECTION 01 78 09
OPERATING AND MAINTENANCE DATA**

PART 1 GENERAL

1.01 DESCRIPTION

- a. This Section describes the requirements for furnishing product data and related information appropriate for Owner maintenance and operation of products furnished under the Contract.
 - 1. The Contractor shall prepare operating and maintenance data as specified in this Section and as referenced in other Sections.
 - 2. The Contractor shall be responsible for the instruction of Owner personnel in the maintenance of products.

1.02 QUALITY ASSURANCE

- a. Preparation of data shall be done by personnel trained and experienced in maintenance of the described products, completely familiar with specified requirements, skilled as a technical writer to the extent required to communicate essential data, and skilled as a draftsman competent to prepare required drawings.

1.03 FORM OF SUBMITTAL

- a. Prepare data in the form of an instructional manual for use by Owner personnel. The instructional/users manual will be prepared to organize and synthesize documents.
- b. Format: 3 ring binder with durable plastic cover.
 - 1. Size: 8-1/2-inch x 11-inch.
 - 2. Paper: 24-pound minimum, white, for typed pages.
 - 3. Electronic Media: In addition to paper, submit in duplicate Operation & Maintenance Manuals and Data on CD/DVD.
 - 4. Text: Manufacturer's printed data, or neatly typewritten.
 - 5. Drawings: Provide reinforced punched binder tab, bind in with text. Fold larger drawing to the size of the text pages.
 - 6. Provide fly-leaf for each separate product. Provide typewritten description of product.
 - 7. Cover: Identify as " MAINTENANCE INSTRUCTIONS". List title of Project, identity of separate structure as applicable, and identity of general subject matter covered in the manual.

1.04 CONTENT OF MANUAL

- a. Neatly typewritten table of contents. Include:
 - 1. Contractor, name of responsible principal, address and telephone number.
 - 2. A list of each product and certification warranty/guarantee required to be included, indexed to the content of the volume.
 - 3. List, with each product, the name, address, and telephone number of:
 - a) Subcontractor or installer.
 - 4. Identify each product by product name and other identifying symbols as set forth in the Contract Documents.

- b. Product Data:
 - 1. Include only those sheets which are pertinent to the specific product.
 - 2. Annotate each sheet to:
 - a) Clearly identify the specific product or part installed.
 - b) Clearly identify the data applicable to the installation.
 - c) Delete references to inapplicable information.
- c. Drawings:
 - 1. Supplement product data with drawings as necessary to clearly illustrate:
 - a) Relations of component parts of equipment and systems.
 - 2. Coordinate drawings with information on Project Record Documents to assure correct illustration of completed installation.
 - 3. Do not use Project Record Documents as maintenance drawings.
- d. Copy of each warranty, bond and service contract issued.
 - 1. Provide information sheet for Owner personnel; include:
 - a) Instances which might affect the validity of warranties or bonds.
- e. Provide copies of performance tests.

1.05 MANUAL FOR MATERIALS AND FINISHES

- a. Submit three copies of complete manual in final form.
- b. Content, for architectural products, applied materials and finishes:
 - 1. Manufacturer's data, giving full information on products.
 - a) Catalog number, size, composition.
 - b) Color and texture designations.
 - c) Information required for re-ordering special-manufactured products.
 - 2. Instructions for care and maintenance:
 - a) Manufacturer's recommendation for types of cleaning agents and methods.
 - b) Cautions against cleaning agents and methods which are detrimental to the product.
 - c) Recommended schedule for cleaning and maintenance.
- c. Content, for moisture-protection and weather-exposed products:
 - 1. Manufacturer's data, giving full information on products.
 - a) Applicable standards.
 - b) Chemical composition.
 - c) Details of installation.
 - 2. Instructions for inspection, maintenance and repair.

1.06 SUBMITTAL SCHEDULE

- a. Submit three copies of accepted data in final form 10-days after Final Inspection.

1.07 INSTRUCTION OF OWNER PERSONNEL

- a. Prior to Owner's inspection for Substantial Completion, fully instruct Owner in the maintenance of all products installed.

END OF SECTION

**SECTION 01 78 10
WARRANTIES AND BONDS**

PART 1 – GENERAL

1.01 DESCRIPTION

a. Requirements Included:

1. Compile specified guarantees, warranties, bonds and certificates.
2. Compile specified service and maintenance contracts.
3. Co-execute submittals when so specified.
4. Review submittals to verify compliance with Contract Documents.
5. Submit for review and transmittal to Architect.

1.02 SUBMITTAL REQUIREMENTS

- a. Provide list and assemble all guarantees, warranties, bonds, certificates and service and maintenance contracts, executed by the Contractor and each of the respective manufacturers, suppliers, and subcontractors. Submit within 10 days after Final Inspection.
- b. Number of original signed copies required: Two each.
- c. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item, including: Product or work item, firm, with name of principal, address and telephone number, type and duration of guarantee or warranty.

1.03 FORM

- a. In addition to other requirements of the Contract Documents regarding the general one year warranty, as a condition preceding certifying final payment, the Contractor shall provide extended guarantees/warranties for certain work, as specified in the applicable Specification Sections, on the following form written on the Contractor's own letterhead. The guarantees/warranties shall commence on the Date of Substantial Completion of the Work by the Owner, unless specifically indicated otherwise. Sample Form:

Guarantee/Warranty for _____ (Phase or portion of work under warranty)

Project: _____

Address: _____ Date: _____

We hereby warrant and the Contractor guarantees that the _____ which we have installed in the _____ has been performed in accordance with the Contract and that the work as installed will fulfill the requirements of the guarantee/warranty included in the Specifications.

We agree to repair or replace any or all of our work, together with any or all other work which may be damaged or displaced by so doing, that may prove to be defective in its workmanship, materials, or failure to conform to Contract provisions and requirements within a period of _____ years from the Date of Substantial Completion of the above named structure by the Owner without expenses whatever to the said Owner, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of our failure to comply with the foregoing conditions within 10-days after being notified in writing by the Owner, we collectively or separately do hereby authorize the Owner to proceed to have said defects repaired and made good at our expense and we will honor and pay the costs and charges therefore upon demand.

Signed: _____ Date: _____
(Contractor)

1.04 CORRECTION OF GUARANTEED/WARRANTED WORK

- a. Unless repair is agreed to by Owner, Contractor shall correct failed work by removal and replacement of the failed portions with new materials.
- b. In connection with Contractor's correction of warranted work which has failed, remove and replace other work of Project which has been damaged as a result of such failure, or which must be removed and replaced to provide access for correction of warranted work.
- c. Except as otherwise indicated or required by governing regulations, special Project warranties and product warranties are not extended to cover damage to building contents (other than work of Contract), which occurs as a result of failure of warranted work.
- d. Except as otherwise indicated, when work covered by a special Project warranty or product warranty has failed and has been corrected by replacement or restoration, reinstate warranty by written endorsement for the specified time period, starting on date of acceptance of replaced or restored work.
- e. Except as otherwise indicated, costs of replacing or restoring failing warranted units or products is Contractor's obligation, without regard for whether Owner has already benefitted from use through a portion of anticipated useful service lives.
- f. Do not purchase, subcontract for, or allow others to purchase or sub-subcontract for materials or units of work for Project where a special Project warranty, specified product warranty, certification or similar commitment is required, until it has been determined by the Contractor that entities required to countersign such commitments are willing to do so.

END OF SECTION

SECTION 02 41 00
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition of building elements for alterations purposes and as otherwise required for the complete and proper execution of the Work.
- B. The Work of this Section is not necessarily fully represented on the Drawings or specifically identified herein. The Contractor, either himself or through his various subcontractors, shall thoroughly review all available documents and shall visit the site and existing building prior to bidding, as required to fully satisfy himself as to the types, locations and quantities of demolition work required for the complete and proper execution of the Work. No pleas of misunderstanding resulting from the failure to adequately inspect existing conditions will be entertained and no additional expenses related thereto will be granted.

1.02 RELATED REQUIREMENTS

- A. Section 01 51 00 - Temporary Facilities: Security, protective barriers, and waste removal.
- B. Section 01 72 00 - Cutting and Patching
- C. Section 01 74 19 - Construction Waste Management: Limitations on disposal of removed materials; requirements for recycling.

1.03 REFERENCE STANDARDS

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Submittals, for submittal procedures.
- B. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
 - 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
 - 2. Identify demolition firm and submit qualifications.
 - 3. Include a summary of safety procedures.
- C. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.05 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Company specializing in the type of work required.
 - 1. Minimum of 5 years of documented experience.

PART 2 PRODUCTS

2.01 MATERIALS

- A. For replacement of Work removed, use materials that comply with the pertinent Sections of these Specifications. All other materials, not specifically described but required for a complete and proper job, shall be as selected by the Contractor, subject to the approval of the Architect.

PART 3 EXECUTION

3.01 SPECIAL REQUIREMENTS FOR DEMOLITION

- A. All methods, techniques and procedures of safety, shoring, barricading, protection, demolition, removal and disposal are left solely to the discretion of, and shall be the responsibility of the Contractor. Special attention shall be paid to the issues of safety and protection of existing construction and/or other improvements to remain. The Contractor shall take all precautions necessary to prevent the movement, settlement, or failure of adjacent construction. See Section 01 00 00 - General Requirements, for additional information.
- B. The Contractor shall be responsible for compliance with all applicable Local, State and Federal environmental regulations, including but not limited to the National Emission Standard for Hazardous Air Pollutants, as enforced by the United States Environmental Protection Agency. It shall be the Contractor's responsibility to provide all inspections and notifications related thereto.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain and pay for all required permits and approvals required for demolition, hauling, dumping and in general, all activities related to the Work of this Section.
 - 2. Comply with applicable requirements of NFPA 241.
- B. The Contractor shall be alert to potential problems or dangerous conditions. He shall exercise caution during demolition or removal which may affect structural safety. He shall proceed only when he has fully satisfied himself that he has provided proper support, shoring, bracing, protection, and safety precautions.
 - 1. If uncovered conditions are not as anticipated, immediately notify the Architect and secure needed directions. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved
 - 2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 3. Provide, erect, and maintain temporary barriers and security devices.
 - 4. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
 - 5. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 6. Do not close or obstruct roadways or sidewalks without permit.
 - 7. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
- C. Do not begin removal until receipt of notification to proceed from Owner.
- D. Do not begin removal until built elements to be salvaged or relocated have been removed.
- E. Protect existing structures and other elements that are not to be removed.
 - 1. Provide bracing and shoring.
 - 2. Prevent movement or settlement of adjacent structures.
 - 3. Stop work immediately if adjacent structures appear to be in danger.
- F. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- G. The Architect's Scope of Services and responsibilities exclude the investigation, discovery, detection, identification, presence, leakage, release, use, handling, disposal, encapsulation, abatement, treatment or removal of, or exposure of a person or persons to, hazardous materials, pollutants, contaminants, or disease transmitting organisms, preexisting or otherwise deposited at any time and in any form at the Project, including but not limited to volatile organic

compounds, molds, fungus, bacteria, petroleum products, lead, asbestos or asbestos products, radon and electro-magnetic frequency radiation or other radiation. Should any such substances be encountered, the Owner and Architect shall be promptly notified, in writing.

- H. Perform demolition in a manner that maximizes salvage and recycling of materials.
 - 1. Comply with requirements of Section 01 74 19 - Waste Management.
 - 2. Dismantle existing construction and separate materials.
 - 3. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

3.03 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as shown.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Separate areas in which demolition is being conducted from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof barriers of construction specified in Section 01 51 00.
- C. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove items indicated on drawings.
- D. Services (Including but not limited to Fire Protection, Electrical and Fire Alarm. Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
 - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - 3. Verify that abandoned services serve only abandoned facilities before removal.
 - 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- E. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch as specified for patching new work.

3.04 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Remove from site all materials not to be reused on site; comply with requirements of Section 01 74 19 - Waste Management.
- C. Contractor shall leave the site in neat, clean and safe condition, with all appropriate barricades, fencing, warning signage, etc. securely in place, ready for subsequent work.
- D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 05 50 00
METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Shop fabricated miscellaneous steel items. Including but not limited to:
 - 1. Frames, brackets and supports for:
 - a. Supports for other equipment as indicated.
 - b. Supports for electrical equipment, other items indicated in the contract documents.
- B. It shall be a requirement of the Work of the Section to thoroughly review all of the Contract Documents and provide any and all miscellaneous metal fabrications required for a complete and proper job.

1.02 RELATED REQUIREMENTS

- A. Division 26 – Electrical.

1.03 REFERENCE STANDARDS

- A. ASTM A36 - Standard Specification for Carbon Structural Steel; 2008.
- B. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2012.
- C. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- D. ASTM A283 - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2012.
- E. ASTM A325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength; 2014.
- F. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2014.
- G. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; American Welding Society; 2012.
- H. AWS D1.1 - Structural Welding Code - Steel; American Welding Society; 2010.
- I. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; Society for Protective Coatings; 1999 (Ed. 2004).
- J. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); Society for Protective Coatings; 2002 (Ed. 2004).
- K. SSPC-SP; Society for Protective Coatings; 1982 (Ed. 2004).

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit for manufactured products specified herein.
- C. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
 - 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
 - 2. Submit structural calculations including, but not limited to design criteria, stress and deflection analysis and selected framing, fittings and anchors prepared by a professional structural engineer licensed in the State of New Hampshire.
- D. Certifications:

1. Welders' Certificates: Submit certification for welders employed on the project, verifying AWS qualification within the previous 12 months.
 2. Fabricator's Qualification Statement: Provide documentation showing steel fabricator is accredited under IAS AC172.
 3. Submit documentation of steel fabricator's in-plant special inspections program including registration of special inspections program, written procedural and quality control manuals and evidence of periodic auditing of fabrication practices by an approved inspection agency.
- E. Samples: Submit samples representative of materials and finished products as may be requested by the Architect.

1.05 QUALITY ASSURANCE

- A. Fabricator's Qualifications: Only fabricators that maintain an agreement with an approved independent inspection or quality control agency to conduct periodic in-plant inspections at the fabricator's plant, at a frequency that will assure the fabricator's conformance to the requirements of the inspection agency's approved quality control program will be approved for this project.
- B. Design all structures under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in New Hampshire.
- C. Welding Standards: Comply with applicable provisions of ASW D1.1 "Structural Welding Code - Steel" and ASW D1.3 "Structural Welding Code - Sheet Steel".

1.06 PRODUCT HANDLING

- A. Delivery of Materials: Deliver, store and handle components in such a manner as to prevent damage to finished surfaces.
- B. Storage of Materials: Store components in a dry, clean location, away from uncured masonry and concrete. Cover with tarpaulin or polyethylene sheeting.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

- A. Steel Sections: ASTM A 36/A 36M.
- B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.
- C. Plates: ASTM A 283.
- D. Slotted Channel Framing: ASTM A653 Grade 33, electro-galvanized steel metal channel framing and ASTM A1011 channel fittings system
 1. Engineered, fabricated and installed by the manufacturer's authorized installer with a minimum of five (5) years of experience.
 2. Manufacturer: Unistrut Corp.
 - a. Substitutions: See Section 01 60 00 - Product Requirements.
- E. Fasteners: ASTM B33, Class FE/An 25 for electro-plated zinc coating, for exterior use or where built into exterior walls. Select fasteners for the type, grade, and class required.
 1. Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, galvanized to ASTM A 153/A 153M where connecting galvanized components.
 2. Machine Screws: ANSI B18.6.3.
 3. Lag Bolts: ANSI B18.2.1.
 4. Expansion Anchors: Carbon steel components zinc-plated to comply with ASTM B633.
- F. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- G. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

- H. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 FABRICATION

- A. NOTE: It is the Owner's intent to use energy conserving, environmentally friendly materials to the greatest extent practical. The Contractor is therefore encouraged to use recycled steel products.
- B. Metal fabrications shall be standard approved products, fabricated in accordance with best shop practices and, wherever possible, shop assembled, ready for erection.
- C. Metals shall be free from defects impairing strength, durability, or appearance and shall be best commercial quality for purposes specified. Metals shall be made with structural properties, to safely sustain and withstand strains, stresses, to which they will be normally subjected.
- D. Fit and shop assemble items in largest practical sections, for delivery to site.
- E. Fabricate items with joints tightly fitted and secured.
- F. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- G. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FABRICATED ITEMS

- A. Slotted Channel Framing System: For concealed overhead support of all electrical, fire alarm or other equipment or components as required; engineered, fabricated and installed by the manufacturer's authorized installer.
 - 1. Field inspection to verify job conditions, dimensions, and suitability of primary structure to receive channel framing.
 - 2. Engineering of all channel framing, attachments between framing members, attachments between framing systems and building structure, and anchor points to receive attachments by the manufacturer of the building material or equivalent to be supported by the channel framing systems.
 - 3. Coordination of framing load capacity and anchor point types and locations with the requirements of the related material or equipment manufacturer.

2.04 FINISHES - STEEL

- A. Shop Priming: Shop prime all steel items, unless otherwise indicated.
 - 1. Exceptions: Do not prime surfaces in direct contact with concrete, where field welding is required, and items to be covered with sprayed fireproofing.
 - 2. Preparation:
 - a. Prepare interior steel to be primed and steel to be fireproofed in accordance with SS PC-SP3 Power Tool Cleaning Standard.
 - b. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
 - 3. Product: One coat shop standard primer, 2 - 3 mils DFT.

2.05 FABRICATION TOLERANCES

- A. Squareness: 1/8 inch maximum difference in diagonal measurements.
- B. Maximum Offset Between Faces: 1/16 inch.
- C. Maximum Misalignment of Adjacent Members: 1/16 inch.
- D. Maximum Bow: 1/8 inch in 48 inches.
- E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work. Coordinate all work with the work of other trades.

3.02 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Shearing and punching shall leave clean true lines and surfaces. Weld or rivet permanent connections. Welds and flush rivets shall be finished flush and smooth on surfaces that will be exposed after installation. Welds shall be continuous unless otherwise noted. Welds shall not have voids or pockets and shall be ground to provide smooth transitions between metal surfaces. Do not use screws or bolts where they can be avoided; where used, heads shall be countersunk, screwed up tight and threads nicked to prevent loosening.
- C. Fastenings shall be concealed where practicable. Thickness of metal and details of assembly and supports shall give ample strength and stiffness. Joints exposed to weather shall be formed to exclude water. Provide holes and connections for the work of other trades.
- D. Connections and accessories shall be adequate to safely sustain, withstand stresses, strains, to which they will be normally subjected.
 - 1. Connections to steel unless otherwise specified shall be steel.
 - 2. Bolts, nuts, screws for exterior work shall be electrogalvanized, unless otherwise noted.
- E. Furnish all standard screws, bolts, washers, and other such fastening devices as are necessary for attaching this work to other materials. Anchors and other connecting devices required in concrete or masonry shall be built-in as the work progresses. NOTE: Special attention shall be given to the firm and secure anchoring of overhead mounted materials and equipment.
- F. Do cutting, punching, drilling, tapping required for attachment of other work coming in contact with miscellaneous metal where so indicated or where directions for same are given prior to or with review of shop drawings.
- G. Unless otherwise indicated, bolt, and screw heads shall be flat countersunk in exposed faces of ornamental or finished character; elsewhere as required. Cut off bolts, screws, etc., where exposed, flush with nuts, or other adjacent metal. Except as otherwise required, weld shop-assembled connections; welds, bolts, or machine screws may be used for field connections. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Locate joints where least conspicuous. Exposed fastenings shall be the same materials, color, and finish as metal to which they apply, unless otherwise required.
- H. Make up threaded connections tightly so that threads will be entirely concealed by fittings.
- I. Allow for thermal movement resulting from a maximum temperature range change of 120 degrees F ambient and 180 degrees F surface by preventing buckling, opening up of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and night time sky heat loss.

3.03 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects. All work shall be designed for adjustment to field variation, fitted with proper joints and intersections, adequately anchored in place.
- B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Perform field welding in accordance with AWS D1.1.
- D. Obtain approval prior to site cutting or making adjustments not scheduled.

- E. After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.
- F. Install all supporting members, fastening, framing, hangers, bracing, brackets, straps, bolts, angles, and the like required to set, connect work rigidly and properly to structural steel, masonry, other construction.
- G. Setting bearing plates: Clean concrete and masonry bearing surfaces of bond reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates. Set bearing and leveling plates on wedges, shims or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with grout. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.
- H. Immediately after erection, clean field welds, bolted connections and abraded areas of shop paint, and paint exposed areas with the same materials as used for shop painting, complying with SSPC-PA1. Apply by brush or spray to provide a minimum 2 mil dry film thickness. Clean field welds, bolted connections and abraded areas of galvanized surfaces to comply with ASTM A780.

3.04 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

SECTION 07 84 00
FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Firestopping systems for all penetrations and interruptions to fire-rated assemblies, smoke barriers, non-fire rated floor assemblies, whether indicated on drawings or not, and other openings indicated.
- B. Identification signage.
- C. Intent: Sealing of **ALL** penetrations within rated assemblies resulting from the demolition and/or installation of the scope of work indicated. Penetrations within non-rated assemblies shall be sealed per Section 07 90 05.

1.02 RELATED REQUIREMENTS

- A. Section 07 90 05 – Joint Sealers: Sealing of non-rated assemblies.
- B. Division 26 - Electrical: Firestopping of electrical work.

1.03 REFERENCE STANDARDS

- A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2014.
- B. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2013a.
- C. ASTM E1966 - Standard Test Method for Fire Resistive Joint Systems; 2007 (Reapproved 2011).
- D. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015.
- E. ITS - Directory of Listed Products; Intertek Testing Services NA, Inc.; current edition.
- F. FM P7825 - Approval Guide; Factory Mutual Research Corporation; current edition.
- G. UL - Fire Resistance Directory; current edition.

1.04 DEFINITIONS

- A. Annular Space is the opening around an item (pipe, duct, etc.) penetrating a construction assembly.
- B. Fire-resistance is the property of materials or their assemblies that prevents or retards the passage of excessive heat, hot gases, or flames under conditions of use.
- C. Fire-resistive joint system is the assemblage of specific materials or products that are designed, tested and fire-resistance rated in accordance with ASTM E-119 to resist for a prescribed period of time the spread of fire through joints in or between fire-resistance rated assemblies.
- D. Firestopping is a specific assembly of materials or products fill openings and annular spaces around penetrating items (such as cables, cable trays, conduits, ducts, pipes) and their means of support through the wall, floor, ceiling or roof to prevent spread of fire and includes fire-resistive joint systems and through-penetration firestop systems.
- E. Through-penetration is an opening that passes entirely through a fire-resistance rated assembly.
- F. Through-penetration firestop system is a specific assembly of materials that are designed, tested and installed to prevent the spread of fire through openings in fire-resistive rated floors and walls to accommodate through-penetrations of electrical, mechanical, plumbing, and communications systems.

- G. "F" rating indicates the period of time that the through-penetration firestop system is capable of preventing the passage of flame to the unexposed (non-fire) side of the assembly in conjunction with an acceptable hose stream test performance.
- H. "T" rating indicates the period of time that the through-penetration firestop system is capable of preventing the passage of flame and temperature rise of 325 degrees F. above ambient temperature on the unexposed (non-fire) side of the assembly in conjunction with an acceptable hose stream test performance.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Submittals, for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance ratings, and limitations.
- C. Shop Drawings: Submit manufacturer's illustrated test assembly shop drawings detailing materials, installation methods, and relationships to adjoining construction for each through-penetration firestop system and fire-resistant joint system, each construction condition and type of penetration or joint. Include firestop design designation from the approved testing agency (UL, for example).
 - 1. For those firestop applications for which no tested system is available from the manufacturer, the manufacturer's engineering judgment derived from similar tested system designs or other tests shall be submitted to the Authority Having Jurisdiction for their review and approval prior to installation.
 - 2. One firestopping submittal shall cover products used for all phases of multi-phase projects.
- D. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.
- E. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.
- F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- G. Installer Qualifications: Submit qualification statements for installing mechanics.

1.06 QUALITY ASSURANCE

- A. Single Source: If the Contractor determines that individual trades (i.e. mechanical, plumbing, fire protection, electrical) shall be responsible for firestopping their penetrations, instead of all firestopping provided by a single contractor, products used shall be coordinated among the various trades by the Contractor so that multiple products or manufacturers are NOT used for the same type of application.
- B. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
 - 1. Listing in the current-year classification or certification books of UL, FM, or ITS (Warnock Hersey) will be considered as constituting an acceptable test report.
 - 2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at www.icc-es.org will be considered as constituting an acceptable test report.
 - 3. For those firestop applications that exist for which no approved tested system is available through a manufacturer, an engineered judgment derived from similar system designs or other approved tests shall be submitted to the local Authority Having Jurisdiction for review and approval prior to installation. Engineering judgment drawings shall follow requirements set forth by the International Firestop Council.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with minimum ten years documented experience.
- D. Installer Qualifications: Company or personnel specializing in performing the work of this Section, trained by the firestop manufacturer(s) and with a minimum of 3 years documented experience installing work of this type. Submit written qualifications statements for installing mechanics.

- E. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
 - 1. Listing in the current-year classification or certification books of UL - Fire Resistance Directory.

1.07 MOCK-UP

- A. Install one firestopping assembly representative of each fire rating design required on project.
 - 1. Where one design may be used for different penetrating items or in different wall constructions, install one assembly for each different combination.
 - 2. Where firestopping is intended to fill a linear opening, install minimum of 1 linear ft.
- B. Obtain approval of authority having jurisdiction and testing agency before proceeding.
- C. Remove and replace unsatisfactory mock-ups. Accepted mock-ups shall represent minimum standards for the Work.
- D. Accepted mock-ups may remain as part of the Work.

1.08 FIELD CONDITIONS

- A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation. Maintain minimum temperature before, during, and for 3 days after installation of materials.
- B. Provide ventilation in areas where solvent-cured materials are being installed.

PART 2 PRODUCTS

2.01 FIRESTOPPING GENERAL REQUIREMENTS

- A. Firestopping: All products shall be by one of the following acceptable manufacturers and shall be specific for each construction condition, fire-resistance requirement, and annular size. Multiple products shall not be used for the same application. Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by the firestopping manufacturer based on testing and field experience.
- B. Basis of Design: Hilti Inc.
- C. Acceptable Manufacturers:
 - 1. 3M Fire Protection Products.
 - 2. Tremco.
 - 3. AD Fire Protection Systems, Inc.
 - 4. Nelson FireStop Products.
 - 5. Specified Technologies, Inc.
 - 6. BioShield.
 - 7. Metacaulk - RectorSeal Corp
 - 8. Substitutions: See Section 01 60 00 - Products.
- D. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Type required for tested assembly design.
- E. Fire Ratings: To be field verified by the Contractor to match existing ratings for applications and at locations required to accommodate scope of work indicated.

2.02 FIRESTOPPING ASSEMBLY REQUIREMENTS

- A. Provide firestop systems manufactured and installed to resist spread of fire, resist passage of smoke and other gases, and maintain original fire-resistance rating of assembly penetrated for:
 - 1. Fire rated load-bearing walls and non-load bearing partitions.
 - 2. Fire rated floor assemblies and roof assemblies
 - 3. Fire rated smoke barriers.

- B. Penetrations in Fire-Resistance-Rated Walls: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg (2.49 Pa). Fire-resistance-rated walls include fire walls and fire-barrier walls.
 - 1. F-ratings as determined by ASTM E814, but not less than that equaling or exceeding fire resistance rating of the construction penetrated.
- C. For firestop systems exposed to view, traffic, moisture, and physical damage, provide products that after curing do not deteriorate when exposed to these conditions both during and after construction.
 - 1. For floor penetrations with annular spaces exceeding 4 inches in width and exposed to possible loading and traffic, provide firestop systems capable of supporting floor loads involved either by installing floor plates or by other means.
 - 2. For penetrations involving insulated piping, provide firestop systems not requiring removal of insulation.
 - 3. For firestop systems exposed to view, provide products with flame-spread ratings of less than 25 and smoke-developed.
- D. Provide firestop systems that are compatible with one another and the substrates they are in contact with based on testing and field experience.
- E. VOC Content: Penetration firestopping sealants and sealant primers shall comply with the VOC limit contents per 40 CFR 59, Subpart D (EPA Method 24):
 - 1. Sealants: 250 g/L.
 - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 - 3. Sealant Primers for Porous Substrates: 775 g/L.
- F. W-Rating: Provide penetration firestopping showing no evidence of water leakage when tested according to UL 1479.
- G. Mold Resistance: Provide firestopping materials with mold and mildew resistance rating of 0 as determined by ASTM G21.

2.03 OTHER MATERIALS

- A. Accessories: Provide components for each firestop system that are needed to install fill materials and to comply with performance requirements. Use only components specified by firestop system manufacturer and approved by the qualified testing and inspecting agency for firestop systems indicated. Accessories include, but are not limited to, the following items:
 - 1. Permanent forming/damming/backing materials, including the following:
 - a. Slag-/rock-wool-fiber insulation.
 - b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
 - c. Fire-rated form board.
 - d. Fillers for sealants.
 - e. Temporary forming materials.
 - f. Substrate primers.
 - g. Collars.
 - h. Steel sleeves
- B. Fiber Firestopping Insulation (Safing Insulation): Mineral fiber batt, unfaced insulation used in conjunction with elastomeric surface sealer forming airtight bond to opening; conforming to ASTM C 665 Type 1.
 - 1. Density, ASTM D1622: 4 lb/cu ft min.
 - 2. Max. Water Absorption, ASTM C 272: 0.1% by volume.
 - 3. Durability and Longevity: Permanent.
 - 4. Surface Burning Characteristics, ASTM E84: Flame spread index of 15 and Smoke developed index of 0.
- C. Latex Sealants: Single-component latex formulations that after cure do not re-emulsify during exposure to moisture.

- D. Firestop Devices: Factory-assembled collars formed from galvanized steel and lined with intumescent material sized to fit specific diameter of penetrating item.
- E. Intumescent Putties: Non-hardening dielectric, water-resistant putties containing no solvents, inorganic fibers, or silicone compounds.
- F. Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on one side.
- G. Mortars: Prepackaged dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a non-shrinking, homogeneous mortar.
- H. Pillows/Bags: Reusable heat-expanding pillows/bags.
- I. Silicone Foam: Multi-component, silicone-based liquid elastomer that, when mixed, expand and cure in place to produce a flexible, non-shrinking foam.
- J. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants, pourable (self-leveling) formulation for openings in floors and other horizontal surfaces, and non-sag formulation for openings in vertical and other surfaces requiring a non-slumping, gunnable sealant, unless indicated firestop system limits use to non-sag grade for both opening conditions.
- K. Caulking Compound (fire sealant): Material approved by the safing insulation manufacturer for sealing joints between foil backing of safing insulation and edge of concrete floor slab against smoke penetration.
- L. Safing Clips: Galvanized steel safing clips approved by the safing insulation manufacturer for holding insulation in place.
- M. Sleeves for through-penetrations shall be of non-combustible materials and securely fastened to the assembly penetrated. Sleeves through floors in exposed locations shall extend 1" above the floor surface to stop water seepage to floor below.
- N. Identification Signage: Pressure sensitive self-adhesive, preprinted vinyl labels; including the following information on labels:
 - 1. "Warning - Through Penetration Firestop System - Do Not Disturb. Notify Building Management of Any Damage."
 - 2. Contractor's name, address, phone number.
 - 3. Firestop system designation of applicable testing and inspecting agency (UL or WH).
 - 4. Date of installation.
 - 5. Firestop system manufacturer's name.
 - 6. Installer's name.
- O. Primers: Type required for tested assembly design.

2.04 FIRESTOPPING ASSEMBLY REQUIREMENTS

- A. Through Penetration Firestopping: Use any system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
 - 1. Listing by UL, FM, or Intertek in their certification directory will be considered evidence of successful testing.

2.05 FIRESTOPPING PENETRATIONS THROUGH CONCRETE AND CONCRETE MASONRY CONSTRUCTION

- A. Blank Openings:
 - 1. In Floors or Walls:
 - a. 2 Hour Construction: UL System C-AJ-0090; Hilti FS-ONE MAX Intumescent Firestop Sealant.
- B. Penetrations Through Floors or Walls By:
 - 1. Multiple Penetrations in Large Openings:

- a. 2 Hour Construction: UL System C-AJ-8143; Hilti FS-ONE MAX Intumescent Firestop Sealant.
- 2. Uninsulated Metallic Pipe, Conduit, and Tubing:
 - a. 2 Hour Construction: UL System C-AJ-1421; Hilti FS-ONE MAX Intumescent Firestop Sealant or CP 604 Self-Leveling Firestop Sealant.
- 3. Uninsulated Non-Metallic Pipe, Conduit, and Tubing:
 - a. 2 Hour Construction: UL System C-AJ-2567; Hilti FS-ONE MAX Intumescent Firestop Sealant.
- 4. Electrical Cables Not In Conduit:
 - a. 2 Hour Construction: UL System C-AJ-3216; Hilti CFS-PL Firestop Plug.
 - b. 2 Hour Construction: UL System W-J-3198; Hilti CFS-SL RK Retrofit Sleeve Kit for existing cables.
 - c. 2 Hour Construction: UL System W-J-3199; Hilti CFS-SL SK Firestop Sleeve Kit.
 - d. 2 Hour Construction: UL System C-AJ-3283; Hilti CP653 Speed Sleeve.
- 5. Cable Trays with Electrical Cables:
 - a. 2 Hour Construction: UL System C-AJ-4094; Hilti CFS-BL Firestop Block.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify openings are ready to receive the work of this Section.

3.02 PREPARATION

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter that could adversely affect bond of firestopping material.
- B. Remove incompatible materials that could adversely affect bond.
- C. Install backing materials to arrest liquid material leakage.

3.03 INSTALLATION

- A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.
- B. Coordinate with electrical, and other trades to assure that all conduits, cable trays, cables, and other items that penetrate fire-resistant construction are properly firestopped.
- C. Install dams where recommended or required by tested fire-resistive joint assemblies and through-penetration firestop systems. Combustible damming material and other accessories not indicated as permanent components of firestop systems shall be removed after appropriate curing.
- D. Install firestopping materials in conjunction with fiber firestopping insulation (firesafing insulation) as required by tested assemblies.
- E. Where cable trays penetrate fire-resistant wall assemblies, provide pillow type firestop product. All cabling /wiring sleeves whether empty or utilized for wiring through fire-resistant assemblies shall be firestopped.
- F. Do not cover installed firestopping until inspected by Authority Having Jurisdiction and/or testing agency.

3.04 IDENTIFICATION

- A. Identify all firestop system locations with pressure sensitive self-adhesive, pre-printed vinyl labels.
 - 1. Attach labels permanently to both sides of penetrated construction surfaces and joints in fire-rated construction.
 - 2. Labels shall be visible to anyone seeking to disturb or remove penetrating items or firestop system. Where possible, labels shall be installed above finished ceilings. Where installed in exposed locations, labels shall be neatly located.

3. Labels for horizontal joints shall be installed at a maximum spacing of ten (10) feet.

3.05 FIELD QUALITY CONTROL

- A. Prepare and install firestopping systems in accordance with manufacturer's shop drawings, tested assemblies and instructions
 1. Follow safety procedures recommended in Material Safety Data Sheets.
 2. Finish all firestopping surfaces that are to remain exposed in the completed Work to a uniform and level condition.
- B. Firestopping materials and installations at joints and penetrations in fire-resistive rated assemblies and smoke barrier assemblies shall not be concealed from view until inspected and approved by the Authority Having Jurisdiction **AND** by the Owner's independent testing agency. Such inspection shall include partial destructive inspection to determine compliance with tested firestop assembly requirements. All such locations shall be repaired or replaced by the Contractor at no additional cost to the Owner.
 1. All firestopping locations shall be visually inspected.
 2. At a minimum, not less than 5% of all firestopping joints and penetrations shall be inspected by removal of materials to determine conformance to assembly requirements.
- C. Inspections by the AHJ and the Owner's testing agency shall not relieve the Contractor of responsibility for providing his own inspections and quality control in compliance with specified requirements.
- D. Inspections shall be performed as required by the building code, the Contract Documents or as otherwise directed by the Architect.
- E. The Contractor shall cooperate with individuals conducting such inspections. The Contractor shall notify inspectors at least five (5) days in advance of requested inspection date. All identification labeling, firestopping and smoke sealing work shall be completed prior to inspection.
- F. Any non-compliant materials shall be removed and replaced. Any locations missing required protection shall be corrected by the Contractor and re-inspected prior to concealing such areas with other construction. Any material or workmanship that is rejected shall be corrected and /or replaced promptly by the Contractor to the satisfaction of the inspector and/or Architect, and at no additional cost to the Owner.

3.06 CLEANING

- A. Clean adjacent surfaces of firestopping materials.

3.07 PROTECTION

- A. Protect adjacent surfaces from damage by material installation.

END OF SECTION

SECTION 07 90 05
JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sealants and joint backing.
- B. Compressible fillers.
- C. Intent: Sealing of **ALL** penetrations within non-rated assemblies resulting from the demolition and/or installation of the scope of work indicated. Penetrations within rated assemblies shall be sealed per Section 07 84 00 - Firestopping.

1.02 RELATED REQUIREMENTS

- A. Section 07 84 00 - Firestopping: Sealing of rated assemblies.
- B. Division 26 – Electrical.

1.03 REFERENCE STANDARDS

- A. ASTM C834 - Standard Specification for Latex Sealants; 2014.
- B. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2012.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2013.
- E. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with other Sections referencing this Section.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Submittals, for submittal procedures.
- B. Product Data: Provide data indicating sealant chemical characteristics.
- C. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.06 QUALITY ASSURANCE

- A. Maintain one copy of each referenced document covering installation requirements on site.
- B. Applicator Qualifications: Company specializing in performing the work of this Section with minimum five years' experience. Where applicable, applicators shall be approved by their respective material manufacturers as licensed applicators. All applicators shall be skilled personnel who are thoroughly trained and experienced in the necessary skills, completely familiar with the specific requirements of the Work.

1.07 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.
- B. Do not proceed with application of materials when surface or air temperatures are less than 40 degrees F or likely to drop to below 40 degrees F in the following 24 hours after sealant installation.
- C. Do not apply materials unless surface to receive coating is clean and dry.

- D. Coordination: It shall be the responsibility of the Contractor to properly coordinate the Work of this Section with that of all other trades in order to ensure the providing of complete and continuous sealing and consistent use of products specified herein.

1.08 WARRANTY

- A. Warranties:
1. Include coverage for installed sealants and accessories which exhibit loss of adhesion or cohesion, or do not cure.
 - a. Urethane Sealants: Five years.
 - b. Silicone Sealants: Twenty years, unless otherwise indicated with product description.
 2. Provide manufacturer's non-stain warranty.
- B. The installer shall provide an installation warranty that all Sealing shall be free of defects of materials and workmanship for two (2) years; and shall repair and/or replace such defective work, during the warranty term, without extra cost to the Owner.
1. The following types of sealing failures will be considered defective Work: Leakage, loosening, loss of bond, hardening, cracking, crumbling, melting, shrinking, running, sagging, improper tooling, discoloration, or staining of adjacent work.

PART 2 PRODUCTS

2.01 SEALANTS

- A. Sealants and Primers - General: Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
1. Sealant Types:
 - a. M - Multi-component.
 - b. S- Single component.
 - c. P - Pourable or self-leveling for traffic joints
 - d. NS - Non-sage or gunnable for vertical and non-traffic joints.
 - e. FC - Fast cure.
 2. Sealant Classes:
 - a. 25, 50 and 100/50 (extension/compression) represent movement capability in percent of joint width.
 3. Sealant Uses:
 - a. T - Traffic
 - b. NT - Non-Traffic
 - c. I - Immersion
 - d. M - Mortar
 - e. A - Aluminum
 - f. O - Other (includes steel, painted surfaces, wood, brick, stone, tile)
- B. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, Type OP, Grade NF single component, paintable.
1. Applications: For minimal movement.
 - a. Interior sound sealing, non-fire rated smoke sealing where little movement is anticipated.
 - b. Other interior joints for which no other type of sealant is indicated.
 2. Note: Compatibility with materials sealant shall be in contact with shall be verified prior to use.
 3. Limitations: Not for use at joints subject to dynamic movement, submerged in water, and as otherwise limited by the manufacturer.
 4. Products:
 - a. Acrylic Latex 834 by Tremco Inc.
 - b. AC-20 + Silicone Acrylic Latex Caulking Compound by Pecora Corp.

- c. Substitutions: See Section 01 60 00 - Products.

2.02 ACCESSORIES

- A. Primer: Required, non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing (Interior): Open-cell polyurethane foam rod, diameter approximately 30% greater than width of the joint, as recommended by the sealant manufacturer.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces and joint openings are ready to receive work.
- B. Notify the Contractor of conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected by the Contractor to meet acceptable industry standards in a manner acceptable to the Architect.
- C. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Protect elements surrounding the work of this section from damage or disfigurement. Mask off adjoining surfaces as needed to prevent surface damage.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Perform acoustical sealant application work in accordance with ASTM C919.
- D. Sealing at Acoustical Construction: Seal around all conduit, cabling, and electrical box openings to gypsum wallboard or masonry as applicable.
 - 1. Note: **ALL** penetrations (not otherwise sealed for smoke per this Section or within rated assemblies per Section 07 84 00) resulting from the related demolition or installation of the scope of work indicated shall be sealed as Acoustical Construction.
- E. Non-Fire Rated Smoke Sealing: At building assemblies identified as non-fire rated smoke barriers/partitions, conduit, cabling, and electrical box openings. All openings and annular spaces shall be backed with fire safing insulation prior to installation of sealant.
- F. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
- G. Do not leave gaps between ends of joint backers. Do not twist, stretch or tear backers.
- H. Install bond breaker where joint backing is not used. Back rods shall be 25% wider than the joint width.
- I. Application of Sealant: Sealant shall be gun-applied through a nozzle opening of such diameter so that the full bead of sealant is gunned into the joint, filling the joint completely. A superficial or skin bead will not be acceptable.

1. Sealant geometry (depth to width ratios) shall be as recommended by the manufacturer for each specific application.
 2. Beads shall be tooled immediately after application to ensure firm, full contact with the inner faces of the joint. Excess material shall be struck off with a tooling stick or knife.
 3. The finished bead shall be smooth, properly contoured and flush with the adjacent surface, or as otherwise indicated.
 4. Remove all excess materials and smears adjacent to the joint as work progresses. All materials shall be used in accordance with the manufacturer's printed instructions.
- J. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- K. Apply sealant when joint is cool to minimize chances of delamination and wrinkles.
- L. Tool joints concave.
- M. Fillers: Avoid joints except at ends, corners, and intersections; seal all joints with adhesive; install with face 1/8 to 1/4 inch below adjoining surface.

3.04 FIELD QUALITY CONTROL

- A. Perform stain tests in accord with manufacturer's instructions and ASTM C1248 on mock-up joints prior to start of job installation.
- B. Perform adhesion tests in accord with manufacturer's instructions and ASTM C1193, Method A, Field Applied Sealant Joints Hand Pull Test.
1. Perform tests on mock-up joints prior to start of job installation.
 2. Perform a minimum of 1 test for every 200 linear feet of applied sealant.
 3. For sealant applied to dissimilar materials, test both sides of the joint.
- C. Sealant failing test shall be removed, surfaces cleaned, resealed and retested.
- D. Maintain a test log and submit report to the Architect indicating tests, locations, dates, results and remedial action.

3.05 CLEANING

- A. Clean adjacent soiled surfaces.

3.06 PROTECTION

- A. Protect sealants until cured.

END OF SECTION

SECTION 28 31 10

FIRE ALARM – EXISTING SYSTEM TECHNOLOGY UPGRADE

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. All of the Contract Documents including General and Supplementary Conditions shall be considered part of this Section.

1.02 DESCRIPTION OF WORK

- A. Provide technology upgrades to the existing fire alarm, and emergency communications system that currently serves the building as shown on the drawings and specified herein.
- B. The work shall include the replacement of all existing Fire Alarm Control panels, to include the latest technology panel hardware and network wiring, with temporary reprogramming, final programming and system re-acceptance testing in accordance with the original equipment manufacturer (OEM) requirements, NFPA standards and applicable code.
- C. The Base Bid work shall involve the equipment modifications outlined as follows; refer to the contract drawings and existing system documentation for additional information.
 - 1. Communications Center: The equipment currently located within the Communications Center shall be removed and replaced with new equipment, or be relocated as follows:
 - a. The existing main EST IRC-3 FACP and associated panels including the panel, graphic annunciator panels and King-Fisher Master Box Transmitter located in Communications Center room 1180 shall be removed and replaced with new equipment, which will be relocated in the Main Electric Room 1345. All existing circuits served shall be tagged and verified for proper operation and integrity, intercepted and terminated in a field wiring terminal cabinet and extended to the new equipment location.
 - b. Existing Garage System remote annunciator panel shall remain and be relocated to a new location within the Communications Center.
 - c. Existing EST IRC-3 sub-panel located in closet / Break Room 1188 shall be removed and replaced by the new equipment located in Main Electric Room 1345 to support existing circuits and wiring. All existing circuits served by the panel shall be tagged and verified for proper operation and integrity, intercepted and terminated in a field wiring terminal cabinet and extended to the new equipment location.
 - d. Upgrade the existing EST “Fireworks” primary operator’s workstation to provide full touch screen CAD graphics for point-level fire alarm annunciation, and integration with the existing Security Management System as described herein.
 - 2. Fire Command Station: Coordinate the replacement of the existing Fire Alarm control panels at the primary Fire Department response location (Main Entry / Lobby “Fire Command Station”) with new compatibly-listed equipment to support existing circuits and wiring as follows:
 - a. Replace the existing IRC-3 equipment and hardware with new equipment panels, including operator’s display, audio control/microphone, and auxiliary control switches for H-O-A control of air distribution systems.
 - b. Central Processing Unit and Network Interface
 - c. Audio Source Unit for one-way EVAC paging with 50 watt audio amplifier
 - d. System Power Supplies, including primary and standby power sources.
 - e. Annunciator Driver modules and integration with the existing adjacent Graphic Annunciator and Smoke Control panels, which are intended to remain.
 - f. Field wiring terminations: All existing circuits served by the panel shall be tagged and verified, intercepted and terminated to the new equipment.

3. Sprinkler Service Room: The equipment currently located within Sprinkler Service Room 1109 shall be removed and replaced with new equipment as follows:
 - a. Three (3) existing EST IRC-3 Panels shall be removed and replaced with new panels configured to support existing circuits and wiring, including CPU/Network interface, addressable loop interface cards, power supplies and amplifiers. All existing circuits served by the panels shall be tagged and verified, intercepted and terminated in a field wiring terminal cabinet, and extended to the new equipment panels.
 4. Main Electric Room 1345: The equipment currently located within the Main Electric Room shall be removed and replaced with new equipment to support existing circuits and wiring as follows:
 - a. Centrally-banked bulk audio amplifiers shall be removed and replaced with new panels, to include CPU/Network interface, addressable loop interface cards, power supplies and amplifiers in the new location shown. All existing circuits served shall be tagged and verified, intercepted and terminated in a field wiring terminal cabinet, and extended to the new equipment panels.
 5. Electric Room 2039: Existing EST IRC-3 sub-panel located in room 2039 (formerly 209) shall be removed and replaced by new panels, to include CPU/Network interface, addressable loop interface cards, power supplies and amplifiers in the new location shown to support existing circuits and wiring. All existing circuits served by the panel shall be tagged and verified, intercepted and terminated in a field wiring terminal cabinet, and extended to the new equipment location.
 6. Building Automation System Interface – Electric Room 1120: Maintain and re-use all existing devices, wiring, and interconnection with the HVAC/Building Automation System and Smoke Control functions, which are intended to remain.
- D. The system operation, including event annunciation, occupant notification and fire safety functions and off-premises reporting will match existing sequences. The contractor shall confirm any necessary programming changes and provide complete re-acceptance testing in accordance with NFPA 72 prior to final acceptance.
- E. All devices and their respective wiring including types, methods and color-coding shall match existing.
- F. The system shall interface with related building systems and be coordinated through MHT and their designated service contractors to ensure include all necessary hardware, software and peripheral devices to perform the following functions:
1. Fire/smoke detection and alarm
 2. One-way emergency voice communications
 3. System supervision and Supervising Station service
 4. Supervision of building sprinkler and fire suppression systems.
 5. Supervision of emergency power and communications systems
 6. Engineered smoke control.
 7. All related fire safety functions including Emergency Elevator Service, HVAC control, and integration with door hardware.
 8. Integration with the existing Communications Center operator's workstations for event reporting and annunciation,
 9. Integration with the existing Public Address systems to provide prioritized alerts to MHT employees and the general public consistent with MHT Emergency Response Plans and procedures.
 10. TCP/IP and RS-232 serial data connectivity for future integration with "Everbridge", Singlewire or similar Distributed Recipient Mass Notification System (DRMNS).
- G. Construction safeguards during construction, alteration and demolition activities shall be the responsibility of the Owner's fire safety program manager, the Construction Manager and responsible trade contractors.

- H. *The contractor/supplier shall develop a coordinated phasing and impairment plan for project execution to maintain safe operation throughout construction. The phasing plan shall include a detailed plan for the survey and tagging of all existing circuits, replacement of equipment panels and devices, cut-over procedures, and an NFPA 241 Fire Prevention Program developed in cooperation with MHT and approved by the local Fire Official to ensure construction safeguards are in place during any system impairments.*
- I. Provide design and installation of temporary protection, with associated system programming and re-programming to accommodate the phased construction, alteration and demolition activities.

1.03 ADD/ALTERNATIVE APPROACH

- A. *As an alternative to the upgrade of the existing system control panels, proposals to provide a complete new replacement system will be considered, provided the system is equal to that specified and complies with the following:*
 - 1. *Replace all existing fire alarm control equipment, including Fire Alarm Control Panels, power supplies, amplifiers, network interface hardware, operator's workstation and addressable loop interface cards with new equipment by a single-source provider.*
 - 2. *All existing field devices that are shown as "ETR" (Existing to Remain) shall be replaced with new devices. This will include all existing notification appliances, initiating devices and addressable modules.*
 - 3. *Existing circuits and wiring may be re-used, subject to confirmation that the wiring is free of any faults, complies with the current code and manufacturer's specifications.*
 - 4. *Replace the existing system integration modules, including BMS integration to smoke control and building management/HVAC systems, Emergency Elevator functions, sprinkler supervision, Emergency Generator supervision and Fire Pump supervision.*
 - 5. *Devices shown as new devices will be included in the new system replacement.*
 - 6. *The contractor/supplier shall develop a coordinated phasing and impairment plan for project execution to maintain safe operation throughout system change-over. The plan shall include a detailed plan for the survey and tagging of all existing circuits, coordination of the phased replacement of equipment panels and devices, cut-over procedures, and an NFPA 241 Fire Prevention Program developed in cooperation with MHT and approved by the local Fire Official to ensure construction safeguards are in place during any system impairments.*

1.04 BASIS OF DESIGN

- A. The following requirements shall apply to the project:
 - 1. System Design and Installation
 - a. The Contractor shall retain the services of a R.B. Allen Company or other qualified OEM-certified equipment supplier to review all certified *Tier 1* Construction Documents (including plans, specifications and Fire Protection Design Narrative), and prepare a complete system installation and design submittal that will be submitted in the form of *Tier 2* Installation Shop Drawings.
 - b. The installation design submittal shall clearly indicate all existing and new equipment and devices (type and quantity) and wiring diagrams showing circuits, cabling and wire types, detailed operational sequences, and interfaces to related systems.
 - c. System designer responsibilities will include the selection of hardware, equipment, devices and materials based on the performance criteria and project requirements shown and specified, and their proper application based on the manufacturer's limitations, operating characteristics and recommended practices.
 - d. The system designer shall coordinate the installation and system operation with the installing contractors, the current system service company of record and other designated Owner's representatives, and the work of related trades.

2. Alarm Initiation:
 - a. Automatic smoke detection shall be installed where shown and required to include at all Fire Alarm Control Units, elevator landings and machine rooms, electrical and similar equipment rooms, and unsprinklered areas, and where otherwise required to initiate fire safety functions and control the spread of smoke.
 - b. Manual pull stations shall be provided at the entrance to each floor exit, horizontal exits, and adjacent to the main Fire Alarm Control Panel. Travel distances to manual pull stations shall not exceed 200'.
 - c. All sprinkler water flow and supervisory tamper switches, and fire suppression systems that serve the building shall be supervised by the building fire alarm system for alarm, supervisory and trouble conditions.
 - d. Smoke detection will be provided to release doors located on smoke barriers that are held open or are provided with power-operators.
 - e. Duct smoke detection will be provided at the following locations:
 - 1) In all Supply air systems with a design capacity greater than 2000 CFM.
 - 2) In all Return air systems with a design capacity greater than 2000 CFM.
 - 3) At each connection to a vertical duct or riser serving two or more stories from a return air duct or plenum.
 - f. Smoke detection will be provided at all smoke dampers or combination fire/smoke dampers.
3. Occupant Notification and Event reporting
 - a. Audible notification appliances will be required to produce a minimum sound level of 15dbA above average ambient throughout all occupied areas of the building.
 - b. The average ambient sound level is anticipated to be 60dbA in all public and common use areas and 75dbA in Mechanical Equipment Rooms. Corresponding evacuation signal sound pressure levels are intended to be approximately 75-80dbA and 90-95dbA in Mechanical Equipment Rooms respectively.
 - c. Visual notification appliances will be provided in all public use areas and common use areas.
 - d. Supervising Station Service (off-premises reporting) and local event reporting to MHT personnel shall be provided to comply with the Owner's requirements, NFPA 72 and applicable Code.
4. Fire Safety Functions
 - a. Emergency elevator functions will include Phase 1 elevator recall, fire hat indicator and power disconnect in accordance with applicable Code.
 - b. The system shall include the required interface with all door hardware and security equipment to automatically disable power-operators, release held-open doors, or bypass any door hardware or special locking arrangements along egress corridors.
 - c. Manual override and control of existing smoke control or air distribution systems will be provided via hand-off-auto (HOA) switches located at the main FACP and Fire Command Station.
 - d. The existing graphic Fire Fighter's Smoke Control Panel (FSCP) and graphic annunciator panel located at the Fire Command Station shall be maintained and re-used.
5. Systems' Integration
 - a. Coordinate the integration and operation of the fire alarm and emergency communications system with other in-building communications systems, including public address, audio/visual systems, Security, and Information Technology (IT) systems to ensure event reporting and emergency alerts are transmitted in accordance with the Owner's Mass Notification and Emergency Response Plans and Procedures.

- b. Discrete supervised programmable inputs and outputs shall be provided to serve as the required interface between systems, including Division 21 fire protection systems and Division 25 building management systems. Alternative serial data, BACnet or equivalent IT-based interface between systems may be permitted where specifically shown or allowed by the Owner's representative and other Authorities Having Jurisdiction (AHJ).
 - c. The fire alarm system shall provide a web-based software interface to report fire alarm system events including status changes, alerts and notification to MHT personnel via direct-recipient messaging via SMS text messaging and SMPT email notification.
- 6. System Installation and Acceptance
 - a. All circuits, wiring, devices, and terminations shall be clearly identified and tagged, and documented on the required as-built Record Documents.
 - b. The system installer shall work with the OEM system supplier/designers to ensure all equipment is installed as shown in the Shop Drawings and manufacturer's requirements, and programmed to comply with the project requirements.
 - c. The installing contractor is responsible for coordination with related trades, and complete system acceptance testing.
 - d. The Contractor shall coordinate and track changes to the Tier 2 installation shop drawings during construction, modify the documentation, and provide complete Tier 3 as-built Record Documentation at project closeout.

1.05 RELATED WORK

- A. Work shall be closely coordinated with related trades, including Security Hardware, Fire Suppression, HVAC/building management, and related electrical work.
- B. Carefully examine all of the Contract Documents, criteria sheets record documents for requirements that affect work under this Section, whether or not such work is specifically mentioned in this Section.

1.06 REFERENCES

- A. The latest published editions of following reference standards shall be used in system design, installation, operation and maintenance unless the applicable legally referenced standard provides more stringent requirements:
 - 1. NH State Building Code BCR 300
 - 2. International Building Code (IBC 2009 Edition)
 - 3. NH State and Local Fire Prevention Regulations Saf C-6000
 - 4. NFPA 70 – National Electrical Code (2017 Edition)
 - 5. NFPA 72 - National Fire Alarm and Signaling Code (2013 Edition)
 - 6. NFPA 90A/B and 92 A/B (2015 Edition)
 - 7. NFPA 101 – Life Safety Code (2012 Edition)
 - 8. Underwriters Laboratories (UL) Listings.
 - 9. Applicable FM Global (Factory Mutual) Property Loss Data sheets.
 - 10. Londonderry Fire Department requirements.
 - 11. Americans with Disabilities Act (ADA), the Architectural Barriers Act (ABA), and the NH State Accessibility Code.
 - 12. The Owner's recognized standards, requirements and fire safety plans.
- B. Each system component shall be UL Listed and FM Approved for its' intended purpose.
- C. All control equipment shall be listed to the latest edition of ANSI/UL Standard 864 (10th Edition) - categories UOJZ, UOXX and UUKL as applicable.

1.07 QUALITY ASSURANCE

- A. Each system component shall be UL Listed for its' intended purpose and be compatibly-listed for use with the existing devices and wiring.

- B. The installing contractor shall retain the services of the existing service company of record (R.B. Allen Company) or other qualified OEM representative to coordinate the installation, programming and system reacceptance testing. Any agent conducting work under this project shall review the Tier 1 Construction Documents, survey the existing conditions, generate the required installation shop drawings and as-built Record Documents, and assume responsibility for the complete, modified system.
- C. The Owner's designated test and inspection contractor shall be retained to conduct final system reacceptance testing.

1.08 WARRANTY

- A. All work Attention is directed to provisions of the General Requirements, Supplementary General Requirements for the work under this Contract.
- B. All warranties shall begin on the Date of Substantial Completion of the entire project or the Owner's acceptance of the workmanship and/or material covered by the warranty, whichever is later. The warranty coverage shall continue for the specified period. Refer to individual specification sections for warranty period. If no specific warranty period is specified, the warranty shall extend for a minimum of 365 days.
- C. Manufacturers shall provide their standard warranties for work under the Electrical Trades. However, such warranties shall be in addition to, and not in lieu of, all other liabilities which the manufacturer and Electrical Subcontractor may have by law or by other provisions of the Contract Documents.
- D. All materials, items of equipment and workmanship furnished under the Electrical Section shall carry the standard warranty against all defects in material and workmanship. Any fault due to defective or improper material, equipment, workmanship or design which may develop shall be made good, forthwith, by and at the expense of the Electrical Subcontractor for the work under their contract, including all other damage done to areas, materials and other systems resulting from this failure.
- E. The Electrical Subcontractor shall warranty that all elements of the systems which are to be provided under his Contract, are of sufficient capacity to meet the specified performance requirements as set forth herein or as indicated.
- F. Upon receipt of notice from the Owner or Architect of failure of any part of the systems or equipment during the warranty period, the affected part or parts shall be replaced by the installing contractor for his work or any other work affected by the failure(s).
- G. Electrical Subcontractor shall furnish, before the final payment is made, a written warranty covering the above requirements in accordance with the General Requirements.

1.09 SUBMITTALS

- A. Prepare and submit shop drawings in accordance with NFPA 72 in the manner described therein, modified as noted hereinafter.
- B. Shop drawing submittals must be complete as outlined and specified herein; partial submittals may be returned as unacceptable.
- C. All shop drawings shall have clearly marked the appropriate specification number of drawing designation, for identification of the submittal.
- D. Disposition of shop drawings shall not relieve the Electrical Subcontractor from the responsibility for deviations from drawings and specifications, unless the deviations are specifically noted in writing at the time of submission and written approval from the Engineer has been received. The disposition of shop drawings shall not relieve the Electrical Subcontractor from responsibility for errors in shop drawings or schedules.

- E. Fire alarm system shop drawings shall be prepared by a qualified, factory-trained, NICET-Certified system designer (level III minimum). Complete documentation shall be provided in accordance with NFPA 72 and contain the following information:
1. Any exceptions or deviations from the specified features and functions shall be noted and justified in writing. Partial or incomplete submittals, or failure to note any deviations from the project requirements will result in disapproval.
 2. A coordinated phasing and impairment plan for project execution. The phasing plan shall include a detailed plan for the survey and tagging of all existing circuits, replacement of equipment panels and devices, cut-over procedures, to ensure construction safeguards are in place during any system impairments.
 3. Riser diagrams showing all new and existing equipment including the size, type, number and reference designations for all circuits and devices affected under this project. Each device shall be shown with address numbers or any other required field device settings, including speaker tap settings and candela rating. Riser diagrams shall consist of:
 - a. A complete one-line Network Riser Diagram showing the intended network connectivity.
 - b. Detailed point-to-point riser diagram(s) showing all new and existing equipment, devices and circuits connected to a given fire alarm control panel.
 4. Scaled drawings showing all new panels and required modifications to existing panels, showing module placement, field wiring terminations, interconnections and spare capacity allowances.
 5. A complete, itemized bill of materials being added with quantities, descriptions, and cross-reference information for each item.
 6. A complete list of new and existing addressable devices, with corresponding address or reference number, device type, and alphanumeric message nomenclature for review and coordination. Note: Final nomenclature may vary from the room designations that are currently shown on the Drawings, and will be subject to review and approval by the Owner, Architect and other Authority Having Jurisdiction prior to system programming.
 7. Sequence of Operation: Provide a complete sequence of operation in the form of an NFPA Input/Output programming matrix for the entire system as shown in NFPA 72. The matrix shall reflect each unique programmed sequence, whether the sequence is initiated by an individual device or a common group of similar devices.
 8. Original catalog data sheets for each item with submitted components noted, demonstrating compliance with these specifications. All equipment shall be subject to approval, and no equipment shall be ordered without prior approval.
 9. Floor plans showing all new and existing devices and equipment to be installed, with corresponding field settings, circuit, and device designations noted. Settings shall include the device address, candela rating and speaker-tap setting as applicable. Circuit identifiers, device numbers and symbols used shall be clearly defined and consistent between all documents.
 10. Provide battery calculations to support the size of standby power requirements specified herein reflecting all new and existing devices being supported.
 11. Provide system calculations for all notification circuits, amplifiers and power supplies submitted showing all new and existing devices being supported. Notification Appliance Circuit calculations shall be presented using the end-loading method described in NFPA recommended practices and as follows:
 - a. Demonstrate wire size, estimated circuit length, and maximum allowable wiring distance as designed.
 - b. Visual circuit calculations shall be based upon 20.4vDC battery terminal starting voltage and utilize UL maximum current draw rating for each appliance.
 - c. Visual circuits shall be designed for a maximum 4.4 volt drop.
 - d. Speaker circuits shall be designed for a maximum 3dBA loss.
 12. Provide confirmation that the current service company of record or other qualified agent will provide on-site supervision during system installation and perform system reacceptance testing and instruction.

13. Coordinate with the NFPA 241 project fire safety, phasing and impairment plan to include a schedule of project milestones and related work, and an anticipated schedule for installation, impairments, programming and all phases of final testing. As a minimum, the Contractor shall provide fire watch personnel or temporary protection as directed by the Owner when any system impairments exceed eight hours during normal business hours and as otherwise directed by the AHJ.

1.10 CLOSEOUT SUBMITTALS AND O & M MANUALS

- A. The following *Tier 3* Record Documents shall be submitted for record purposes and be compiled into in a binder prior to final payment:
 1. Final as-built drawings with all information included in the shop drawings modified to show the entire system as constructed.
 2. Any amendments to the existing operation and maintenance manuals with the following information:
 3. A printout and electronic copy of the revised site specific system program.
 4. Certified test reports and Record of Completion.

1.11 CIRCUITING CRITERIA

- A. Network Communications and vertical trunk wiring:
 1. All network wiring, audio risers and vertical communications circuits shall be Class A, Style X circuits with Level 2 survivability unless otherwise noted.
 2. Network communications and all other circuits that serve occupant notification shall be subject to the Survivability requirements of NFPA 72 and these Specifications.
- B. Addressable Signaling Line Circuit (SLC)
 1. SLC circuits shall be wired as Class A circuits to match existing.
 2. SLC wiring shall utilize fault isolation modules so that a single open or ground fault on the conductors serving one evacuation zone/floor will not affect the operation of any other area. The system shall be designed to not exceed 90% of the number of devices each SLC is capable of supporting.
- C. Speaker Circuits
 1. Speaker Notification Appliance Circuits (NAC) shall be configured as Class A circuits to match existing.
 2. The system shall be provided with the minimum listed speaker circuits as follows:
 - a. Two (2) speaker circuits for each floor level or evacuation signaling zone.
 - b. One (1) speaker circuit for each stairwell, configured as a vertical paging zone.
 - c. One (1) speaker circuit for each elevator group.
 - d. Groups of speaker circuits shall be individually selective by evacuation signaling zones.
- D. Visual Strobes
 1. Visual Notification Appliance Circuit (NAC) wiring shall be configured as Class A circuits to match existing.
 2. The system shall be provided with a minimum of twelve (12) visual strobe circuits for each evacuation zone/floor level.
 3. Visual notification appliance circuits shall emanate from panel mounted outputs; field-located addressable modules shall not be used to supervise or control visual appliance circuits, unless otherwise permitted and approved, and associated circuit survivability and supervision requirements are satisfied.

1.12 AUTOMATIC SYSTEM OPERATION

- A. Normal Operation
 1. Under normal operation the system displays shall present a "SYSTEM IS NORMAL" message and the current time and date.
 2. The system shall continually monitor all wiring and devices for changes in status and respond according to the sequences listed herein.

B. Alarm Condition

1. Any manual pull station and other designated initiating device (automatic initiating device, water flow switch, etc.) shall initiate an alarm condition to match existing sequences.
2. Alarm Condition Operation - Activation of an alarm initiating device shall immediately cause the following:
 - a. Sound an audible alarm signal and flash and alarm LED at the system control unit(s), fire command stations and system annunciators.
 - b. Display the assigned English language message text including device address, type, location and status with time and date at the main FACP, fire command stations and system annunciators.
 - c. Positive Alarm Sequence: Any alarm initiating device activation is subject to positive alarm sequencing in accordance with established MHT procedures, as permitted by NFPA 72 and the Londonderry Fire Department:
 - 1) Upon activation, the system operators shall operate acknowledge the event within 15 seconds. Once acknowledged, a timed evacuation delay sequence shall commence prior to activation of building evacuation signals.
 - 2) The acknowledgement and evacuation time delay period shall be adjustable and subject to MHT and Londonderry Fire Department approval; the existing 10-minute evacuation delay is expected to be maintained unless otherwise directed by MHT or LFD.
 - 3) Upon expiration of the evacuation time-delay sequence, the building evacuation signals (temporal Code 3 horn tone accompanied by synchronized strobes) shall activate without further delay.
 - d. Transmit the event via the current means to the Londonderry Fire Department via the Public Fire Alarm Reporting System radio transmitter.
 - e. Automatically unlock, but not unlatch, all locked stairwell doors and bypass any electrically controlled egress doors.
 - f. Activate the exterior beacon.
 - g. Upon activation of designated detectors, close associated motor operated fire and smoke shutters serving the area of alarm origin.
 - h. Activation of designated recall devices shall initiate Elevator recall functions in accordance with ANSI/ASME A17.1 and applicable code.
 - i. Transmit the corresponding alarm zone signal to the building BMS system to initiate zoned smoke control.
 - j. Transmit signal(s) to related campus communications, security and IT systems, including the Direct-Recipient Mass Notification (DRMNS) systems to provide prioritized event reporting, override and control, and support the Owner's established Emergency Response Plans and Procedures.
 - k. Activation of duct-mounted or area smoke detectors associated with ventilation systems shall report as a supervisory event and cause associated equipment to stop and/or dampers to close as applicable. Refer to details specified herein, and coordinate with the control sequencing specified in Division 25 Building Automation Controls.
3. Air Handling System Interface
 - a. The activation of duct-mounted smoke detector shall cause the associated fan or air handling unit to shut down, and associated smoke dampers to close as applicable.
 - b. Shutdown shall be initiated by supervised control signal to the associated equipment.

4. Fire/Smoke Damper Interface
 - a. Provide supervised output signals to initiate closure of each Fire/Smoke or Smoke Damper shown on the Contract Documents. Signals shall utilize a programmable output module and dedicated multi-voltage power relay, listed and rated for the application.
 - b. Provide addressable monitor modules and status feedback from each Fire/Smoke or Smoke damper to comply with the sequencing and supervision requirements stated herein.
- C. Trouble Condition
 1. Any events designated to activate a Trouble condition shall cause the specific event to display at the main Fire Alarm Control Unit(s), fire command station, remote system annunciators, DRMNS recipients and the approved Supervising Station.
- D. Supervisory Condition
 1. Events to Activate a Supervisory Condition shall include activation of any duct smoke detector, sprinkler supervisory (tamper) switch, and any other designated pre-alarm or Supervisory event.
 2. Supervisory Condition Operation: Any events designated to activate a Supervisory condition shall cause the specific event to display at the main Fire Alarm Control Unit(s), fire command center, remote system annunciators, DRMNS recipients and the approved Supervising Station.

1.13 FIRE SAFETY FUNCTIONS

- A. Emergency Elevator Functions
 1. Elevator Recall and Emergency Service shall be conducted in accordance with NFPA 72, ANSI/ASME A17.1 and applicable code.
 2. In addition to the alarm sequence described, the activation of automatic initiating devices located within elevator lobbies, elevator machine rooms or elevator hoistway shall initiate the appropriate emergency elevator functions.
 3. Recall: Each elevator cab shall be captured separately and recalled to the main egress level. If the alarm originated on the main egress level, the elevators shall be recalled to the designated alternate level.
 4. Fire Warning Indicator: The activation of any automatic detector within an elevator machine room or elevator hoistway shall flash the fire hat indicator in each associated elevator cab.
 5. Power Disconnect: The activation of a heat detector or sprinkler head located within an elevator machine room or hoist way shall initiate shut down of elevator power in accordance with applicable code. Power disconnect shall be subject to the appropriate time delay sequence, and be closely coordinated with related trades.
- B. HVAC Override:
 1. Provide supervised output signals to initiate automatic shutdown of Air Handling Units or fans upon activation of associated in-duct or area smoke detectors, and manual control of systems as required. Signals shall consist of a supervised programmable output(s) with dedicated multi-voltage power relays selected, listed and rated for the application.
 2. Provide addressable monitor modules to supervise the run status of each fan or AHU and control associated Fire/Smoke Damper control functions where required.
 3. Sequencing and control of fans, dampers and related equipment shall be closely coordinated with mechanical trades, to include shutdown of fans and timed closure of associated dampers. The Electrical Contractor and Fire Alarm system supplier shall coordinate sequencing and safeties, and the necessary number of signals with the BMS controls supplier and Mechanical Contractor.
 4. All signals and wiring shall be supervised and installed in accordance with NFPA 72, NFPA 90A and applicable code.

- C. Fire/Smoke Damper Interface
 - 1. Coordinate all work with the MHT HVAC/BMS Contractor, and provide supervised output signals to initiate control of each Fire/Smoke or Smoke Damper (F/SDs) shown on the Contract Documents. Signals shall consist of a programmable output with dedicated multi-voltage power relay selected, listed and rated for the application.
 - 2. Provide addressable monitor modules and status feedback from each F/SD to monitor actual damper status, where manual override of associated fans or programmed damper status control functions are required.
 - 3. Sequencing and control of dampers and associated air distribution equipment shall be closely coordinated with Division 25 trades. This shall include supervision of fan operation and corresponding shaft F/S damper position, whereby shaft F/SDs shall be closed whenever associated fans are Off and be commanded to the open position whenever associated fans are On or requested to start.
 - 4. Upon receipt of a request to start signal, related dampers shall be commanded open and sequenced to ensure staged equipment operation. Once fifty percent (50%) of the associated dampers have been proven open, a run permissive signal shall be sent to the fan control circuit which will allow the associated fan to run.
- D. Security System and Door Hardware Interface
 - 1. In addition to the alarm condition operation described above, the system shall send event signals, via auxiliary dry contact closure corresponding to each floor or evacuation zone to the building security system.
 - 2. Activate signals to unlock secure egress doors, disable door operators or bypass any other special locking arrangements – subject to coordination with the Owner's security requirements and applicable Code.
- E. Audio/Visual and Lighting Control System Interface
 - 1. In the event of an alarm condition, the system shall send signals to the audio/visual systems and lighting systems in auditoria, lecture halls, classrooms, etc. in the evacuation area to override sound systems and bring lighting up to full illumination.

1.14 STATUS MONITORING OF NON-SYSTEM EQUIPMENT

- A. Provide the necessary hardware, wiring and programming to show status indication of the following new equipment as applicable.
 - 1. Fire pump
 - 2. Emergency generator
 - 3. Fire protection systems, including sprinkler water flow, pressure or supervisory switches not supervised by a dedicated suppression releasing panel by individual device, and any special hazard fire suppression systems.
 - 4. Smoke control systems

1.15 SYSTEM PROGRAMMING

- A. The system supplier shall provide all required temporary reprogramming and final programming within the scope of this project.
- B. An electronic copy of the site-specific system program file shall be retained on-site and turned over to the Building Owner with the project closeout documents.

PART 2 PRODUCTS

2.01 FIRE ALARM CONTROL PANELS

- A. Provide technology upgrades to all of the existing Fire Alarm Control equipment panels to serve the scope of this project.
- B. The Contractor shall coordinate with the supplier of record to confirm the existing site conditions and system capacities to accommodate the required addressable loop, power supply, audio amplifier and standby battery capacity to support the required system operation. Each panel shall be configured to match the existing capacity with a minimum of 20% additional expansion capability.

- C. If dictated by the existing equipment limitations, provide new distributed Fire Alarm Control Units as needed to include the following:
 - 1. Central Processing Unit (CPU) with operator's display, and network interface card.
 - 2. Addressable Loop - Signaling Line Circuit (SLC) addressable loop interface module to support a minimum of 250 addressable points.
 - 3. Fifty (50) watts of primary audio amplification with backup amplifiers. Power from each amplifier shall be distributed over a minimum of three (3) individually programmable on-board speaker circuits.
 - 4. Fourteen (14) amps of 24vdc System Power to support auxiliary power, SLC circuits and visual (strobe) Notification Appliance Circuits.
 - 5. A minimum of six (6) individually programmable strobe circuits, with a total number of circuits as specified and required.
- D. Modify the main FACP and Fire Command Station to include Operator's Control, annunciation, manual override and paging microphone with audio functions and common control switches to support new and existing circuits and devices.

2.02 POWER SUPPLIES

- A. Fire Alarm System Power Supplies
 - 1. Provide additional power supply modules integrated into the local Fire Alarm Control Unit serving the work area(s) to provide adequate power to all equipment and devices being installed.
 - 2. External standalone power supplies shall not be used, unless specifically shown, specified and approved

2.03 AUDIO CONTROL AND AUDIO AMPLIFIERS

- A. Replace the existing audio controller, paging microphone and audio control select switches to serve the existing all-call and selective paging functions.
- B. Pre-recorded messages and tones shall match existing to include the following:
 - 1. Pre-signal tone.
 - 2. Pre-recorded evacuation message
 - 3. Evacuation tone (temporal code 3).
 - 4. Provide 25 VRMS audio amplifiers to match existing and operate all system speakers simultaneously, plus a total of 25% spare capacity. Amplifiers shall be sized to accommodate each speaker set at one (1) watt tap and each high output speaker at 8 watts. Each system panel shall be provided with redundant amplifiers or a floating back-up amplifier to serve audio circuits in the event of an amplifier failure.
 - 5. Provide area paging selector switches with LED indicators at the fire command station(s).
- C. Speaker circuits serving each building area or evacuation signaling zone shall be programmed as separate signaling groups capable of broadcasting a separate audio channel.

2.04 BATTERIES/BATTERY CHARGER

- A. Batteries
 - 1. Rechargeable, sealed lead-acid batteries shall be provided with reliable and repeatable discharge and recharge characteristics for use in fire alarm systems.
 - 2. Batteries shall be of identical voltage, model number, appearance and date of manufacture to allow connections in series to produce a system voltage of 24 volts DC.
- B. Battery Charger
 - 1. The battery charger shall automatically charge and monitor the condition of the batteries. The charger shall be dual-rate type with a combination high rate/float maintenance rate which is listed to recharge the batteries being provided and capable of recharging fully discharged batteries to 70% charge within 12 hours.

- C. Provided new standby batteries to support the system operation upon loss of normal power for a period of twenty-four (24) hours of supervisory operation, followed by fifteen (15) minutes of alarm.
- D. Power cable size from the batteries to the control panels served shall be determined and considered by the system supplier based on power demand and acceptable voltage drop calculations.

2.05 HVAC/ATC INTERFACE

- A. Signals and wiring between the Fire Alarm and HVAC/Building Management control systems and equipment shall operate as stated herein to provide the required supervised maintain the existing system operation in accordance with all applicable codes and standards.
- B. Interconnections between systems will take place at the existing field-located addressable modules adjacent to the existing Building Management System (BMS) Interface Cabinet.
 - 1. Addressable modules are used for all smoke control and related HVAC manual override functions to ensure compliance with the requirements for supervision and control sequence verification.
- C. Signals, sequencing and overrides shall be as follows.
 - 1. Provide discrete outputs from the Fire Alarm System to the BMS system corresponding to each automatic initiating zone and the activation each duct-mounted smoke detector.
 - 2. The fire alarm system shall monitor interconnected ventilation systems' equipment status to ensure supervision and sequencing is coordinated with related trades.
 - 3. Whenever an air handling unit is manually or automatically commanded off, the fire alarm system shall close all associated smoke dampers consistent with the existing system operation.
 - 4. Wiring from the Fire Alarm output modules to the BMS equipment controller to allow for the following operation:
 - a. When the H-O-A switch is in the "AUTO" position, the controlled equipment shall operate as directed by the BMS system.
 - b. When the H-O-A switch is in the "HAND" position, a signal shall be sent to the BMS equipment controller to bypass control of the selected equipment and turn the controlled equipment on. The controlled equipment shall continue to operate until the H-O-A switch is restored to the "AUTOMATIC" or "OFF" position.
 - c. When the H-O-A switch is in the "OFF" position, a signal shall be sent to the BMS equipment controller to bypass control of the selected equipment and turn the controlled equipment off. The controlled equipment shall remain in the off condition until the H-O-A switch is restored to the "AUTOMATIC" or "HAND" position.
 - d. Manual override signals shall be subject to all required safety functions.
- D. Initial automatic and manual control signals will be generated and sent to the controlled equipment by the Fire Alarm System. Actual control sequencing shall be conducted by the BMS System to ensure proper system operation.
- E. HVAC air handling units or fans serving as supply, return or exhaust fans shall have separate H-O-A switches for each device.
- F. HVAC air handling units or fans consisting of multiple fans, in parallel, in a common unit, shall have one H-O-A switch that is intended to control both fans simultaneously.
- G. Status signals between the Firefighter's Override Switches or Smoke Control Panel and the BMS system shall be provided for all equipment that is subject to manual override. In each instance, the BAS system shall confirm the actual equipment or sequence status (on, off, fail) and provide corresponding signals to illuminate the appropriate LED at each H-O-A switch.
- H. The Contractor shall to coordinate with the Mechanical, BMS and Fire Alarm system suppliers to ensure the proper rating (amperage and voltage) and contact types are provided between systems to accomplish the above.

- I. Coordinate life safety, smoke control, fire alarm and fire protection zoning to ensure proper signals and sequencing are affected.
- J. Wiring to all smoke control systems including but not limited to fans, dampers, and end switches shall be in conduit. Identify smoke control wiring systems with labels at all junction boxes, access points, above accessible ceilings, and every 10' of conduit run.
- K. Activation of H-O-A switches, smoke exhaust or smoke control systems shall generate a system Trouble condition as described herein.
- L. All input and output signals used to control the spread of smoke shall comply with IBC, NFPA 72, 92A and 92B, and be Listed to UL 864 category UUKL requirements.
- M. HVAC Override:
 - 1. Supervised output signals to initiate shutdown of Air Handling Units or fans upon activation of associated in-duct or area smoke detectors to maintain existing sequencing and system operation. Signals shall consist of a programmable output with dedicated multi-voltage power relay selected, listed and rated for the application.
 - 2. Provide addressable monitor modules to supervise the run status of each fan or AHU, and control associated Fire/Smoke Damper control functions where required.
 - 3. Sequencing and control of dampers and related equipment shall be closely coordinated with mechanical trades, to include shutdown of fans and timed closure of associated dampers to maintain the existing system operation. The Contractor shall coordinate sequencing and safeties, and the necessary number of signals with MHT and the Owner's designated Service Company.
 - 4. All signals and wiring shall be supervised and installed in accordance with NFPA 72, NFPA 90A and applicable code.
- N. Fire/Smoke Damper Interface
 - 1. Coordinate all work with, and provide supervised output signals to maintain control and supervision of each Fire/Smoke or Smoke Damper (F/SDs). Signals shall consist of a programmable output with dedicated multi-voltage power relay selected, listed and rated for the application.
 - 2. When the detectors used for smoke damper operation require minimum air velocity to operate, the dampers shall be closed when the associated fan(s) are shut down to comply with IBC requirements.
 - a. Provide addressable monitor modules and status feedback from each F/SD to monitor actual damper status (open and closed), where manual override of associated fans or programmed damper status control functions are required.
 - b. Sequencing and control of dampers and associated air distribution equipment shall match the existing system operation and sequencing. This shall include supervision of fan operation and corresponding shaft F/S damper position, whereby shaft F/SDs shall be closed whenever associated fans are Off and be commanded to the open position whenever associated fans are On or requested to start.

2.06 SYSTEM INTERFACE MODULES

- A. General
 - 1. Provide integration the existing addressable loop Signaling Line Circuit (SLC) capacity to support the new addressable devices being installed plus a minimum of 25% spare capacity.
 - 2. The system shall support separate, individually-isolated loops for each floor or evacuation zone. Each SLC shall originate from the local FACU serving the given area and be wired so that a single wiring fault will not affect more than 25 devices or the operation of any other evacuation signaling zone. Provide additional fault isolation modules to augment the existing as needed.
 - 3. The number of addressable devices connected to an existing communicating device module shall not exceed 75% of its capacity.

4. Each addressable device must be uniquely identified by a distinct address code with corresponding device labels consistent with the reviewed shop drawings and final signage plans.
- B. Monitor Module
1. Monitor modules shall supervise and monitor the status of non-addressable, dry contact devices such as sprinkler water flow, valve tamper (supervisory) switches, pressure switches and signals from related systems.
 2. Monitor modules that supervise concealed devices shall be wall or ceiling-mounted as directed, and be clearly marked with LED indicators visible from the floor without requiring a ladder or above-ceiling access.
- C. Control Module
1. Control modules shall provide programmable outputs to supervise the initiation and control of auxiliary devices and related fire safety functions. Functions shall include the control of building fans and dampers, emergency elevator functions, door release and any other fire safety functions shown and specified.
 2. Control modules shall provide a supervised form C output rated for 2 amps @ 30VDC (resistive) or .5 amps at 120VAC (resistive) or .25 amps @120VAC (inductive) and will serve as a pilot-duty relay intended to operate external power relays to perform auxiliary control functions.
- D. Multi-Point I/O Modules
1. Provide programmable multi-point Input/Output Modules where shown or required for a combined control output and status input monitoring to initiate fire safety functions by a single module. As a minimum, each module will provide a dry contact output rated for 2 amps @ 30VDC (resistive) or .5 amps at 120VAC (resistive) or .25 amps @120VAC (inductive), and a minimum of one status feedback monitor point capable of supervising a dry contact device.
 2. Specific multi-point input and output configurations shall be provided to meet the particular project requirements as shown on the project plans and details.
- E. Control Relays
1. Provide multi-voltage Power Relays as needed to support Fire Safety control functions and the proper isolation of control circuit wiring from addressable modules. Each power relay shall be polarized and operate from a 24VDC nominal input voltage and provide an output contact rating of 10 or 20 amps at 120VAC as needed. Relays with an output rated for 20amps shall have individually fused outputs.

2.07 INITIATING DEVICES

- A. Photoelectric Smoke Detector: Provide new analog/addressable photoelectric smoke sensors with device base and remote alarm indicator as needed to match existing.
- B. Duct Smoke Detectors
1. Provide duct mounted analog photoelectric smoke detectors to match existing, installed in accordance with the manufacturer's instructions and NFPA 72 and NFPA 90A.
 2. The system supplier shall select the appropriate detector type, quantity and configuration based on the manufacturer limitations, code requirements and the project HVAC duct configuration and system operating characteristics for air flow, velocity and environmental conditions.
 3. Traditional spot-type detectors may be used where permitted in ducts with a maximum dimension of 36" – within the manufacturer's limitations.
 4. Where sampling tubes are used, the duct smoke detector shall include housing and sampling tubes that extend into and across the duct, with all related installation hardware. When fans are operating, a continuous cross sectional sampling of air from the duct shall flow through the smoke detector in the housing after which the air shall be returned to the duct.

Detectors mounted in duct housings shall be rated for air velocities ranging from 300 to 4000 feet per minute. Where operating limits are outside a detectors' listed range, alternative detection methods (such as air-sampling detection) shall be employed.

5. Where the installation dictates that in-duct or pendant-mounting of the smoke sensor is required, provide the required sensor with electronics accessories and access panels installed in accordance with the manufacturer's instructions and applicable Code.
 6. Upon alarm actuation of the smoke detector a supervised output shall initiate shutdown the respective fan and/or close associated dampers as applicable.
 7. Each detector shall obtain its' operating power from the control unit serving the device.
 8. Each detector shall include a remote alarm indicator (LED) with a key-operated test switch located in the nearest common corridor within proximity of the duct detector. The test station shall be clearly labeled to designate which detector it is associated with and the LED will illuminate when the detector is in alarm. Operation of the key switch will simulate detector activation and activate related fire safety functions.
- C. Heat Detectors
1. Heat detectors shall be analog/addressable sensors individually programmable for either fixed temperature, rate-of-rise or combined operation, except where otherwise dictated. The fixed temperature setting shall be field-selectable for 135 or 155 degree Fahrenheit operation, and the rate-of-rise operation shall be selectable for 15 or 20 degrees/minute. Analog sensors will also provide a low temperature warning (Supervisory condition) when the ambient temperature in a protected area reaches 40 degrees F.
 2. Where ambient conditions dictate, provide conventional fixed temperature, weatherproof or explosion-proof heat detectors in lieu of analog detectors. Conventional devices shall be individually addressable via a dedicated addressable monitor module which shall be installed in an appropriately heated, ventilated location.
 3. Heat detectors shall be capable of operating a remote alarm indicator, auxiliary relay or an audible base. These devices shall be capable of being activated by the associated detector or any other detector as programmed at the control panel.
- D. Manual Pull Stations
1. Manual pull stations shall be dual action addressable devices to match existing.
 2. Where ambient conditions preclude the use of addressable devices, conventional pull stations shall be used and a dedicated addressable module shall be installed in an appropriately heat and ventilated location.

2.08 ALARM NOTIFICATION APPLIANCES

- A. Provide flush mounted audible and visual notification appliances where shown and required to match existing to the maximum extent practical. The contractor shall provide surface mount backboxes and alternate outdoor-rated appliances where site conditions dictate. Specific audible and visual characteristics shall be as follows:
1. Visual Signals: Furnish and install multi-candela, synchronized xenon strobes in compliance with NFPA 72 and rated per ANSI/UL 1971. Strobes shall have an adjustable candela rating of 15, 30, 60, 75, 110, 135 or 185 cd to accommodate field modification.
 2. Wall-mount Speakers: Provide multi-tapped cone speakers with square or rectangular grille with [red or white finish] where shown or required. Each speaker shall have selective ¼, ½, 1, or 2 watt taps. Each speaker shall produce a sound output level of 84dbA at 10' (1 watt setting).
 3. High Output Speakers: Provide high output speakers with a multiple tap setting up to 15 watts in high ambient noise areas.
- B. Provide re-entrant-type devices with the appropriate weatherproof listings and appropriate OEM-approved, color-coordinated back boxes in outdoor or wash-down areas.

2.09 SYSTEM ACCESSORIES

- A. Door Hold Open Devices: Door hold open devices shall be furnished and installed by the Construction Manager to match existing. The Electrical Subcontractor shall coordinate the proper voltage of these devices with the door hardware supplier and provide all required wiring and additional hardware to properly control doors.

2.10 EVENT REPORTING AND ANNUNCIATION

- A. Furnish and install a City of Londonderry-approved radio master box transmitter to report all system events directly to the Londonderry Public Fire Alarm Reporting System as directed by the AHJ.
 - 1. The transmitter shall be surface-mounted, and include all necessary hardware, wiring and materials to ensure a complete acceptable installation.
 - 2. Provide supervised discrete outputs from the Main Fire Alarm Control Panel to the transmitter for pre-programmed zone/event reporting. In addition to the alarm, supervisory and trouble event reporting, the transmitter shall be supervised by the protected premises Fire Alarm System for a trouble conditions (antenna fail, power supply fault, battery fail).
 - 3. Provide all necessary accessories including power transformer with secure cover, antenna with related hardware, and standby batteries for a complete operational transmitter.
 - 4. The Contractor shall be responsible for all costs associated with the antenna installation, propagation testing, and programming of the transmission and receipt of signals between the protected premises and the Public Fire Alarm Receiving Station.
- B. Primary Operator's Workstation: Provide upgrade or replacement of the existing EST 'Fireworks' workstation (to version 8.3 or later), for integration with the Security Management System at the MHT Communications Center.
 - 1. The workstation shall provide point-level annunciation and control of all network monitor and control points using an interactive graphic display based on a Windows®-based operating system.
 - 2. The workstation shall provide custom event screens with Operator response logging and graphic displays of the entire campus, including facility map, building elevations and floor plans. Provide dynamic pan/zoom and auto jump features to show individual smoke zones and point-specific device annunciation and control with minimal operator interaction.
 - 3. The workstation shall provide the following:
 - a. A rack-mount network computer with minimum Intel i7 or later 2.0 GHz CPU, two 1TB hard drives with RAID 1 controller, 4GB RAM memory, 6MB Cache memory, CD R/W Drive, RS-232 Serial data port, serial printer port, minimum 10Base-T LAN Interface Card with network hub, 42" SVGA LCD monitor with high resolution display, and the required keyboard and mouse-driven operator's control as described herein.
 - b. The workstation shall be operate under the current version of Business-grade Microsoft Windows® 10 operating system, and shall include all applicable software licenses.
 - c. The ability to import external graphic CAD files in .DWG and .DXF format, as well as field editing of operator's data screens.
 - d. Provide a dedicated Uninterruptible Power Supply (UPS) sized to support the workstation and related hardware as described herein.
 - e. Network Interface modules including Modular Network Interface Cards with accompanying Media Modules for fiber optic connections and support the specified Class A, Style 7 Network connections.

- C. External Data Integration and Connectivity: Provide a web-based software interface to report Direct-Recipient Mass Notification (DRMNS) alerts from the fire alarm system for interface with the existing facility notification platform.
1. The interface shall provide a secure, standards-compliant, plugin-free web-based interface to report all status changes, alerts and notification to MHT personnel via direct-recipient messaging via SMS text messaging and SMTP email notification.
 2. The TCP/IP Interface shall support remote access and Direct Recipient Messaging System (DRMS) to enable event reporting via direct recipient email messaging, and remote system diagnostics using both SMTP and TCP/IP protocol compatible with IEEE standard 802.3 via a fixed IP address and a secure web browser interface.
 3. The DRMS module shall be agency listed for specific interfaces and for the purpose described in this section. The use of non-listed external third party products and interfaces is not acceptable.
 4. The DRMS will utilize an EIA/TIA-568A CAT-5 (10/100-Base T) network drop, and will require a secure Internet email account and firewall access provided by MHT for messaging to up to 50 individual accounts and 5 distribution lists.
 5. The contractor will coordinate connectivity and assignment of message recipient distribution groups, and remote accessibility with the MHT security, maintenance, and Information Technology personnel.

2.11 WIRING AND RACEWAYS

- A. Wiring
1. Size and type of all system wiring shall be as recommended by the system manufacturer and documented on the shop drawings. Provide a minimum of #18 AWG wiring to match existing.
 2. Survivability: Comply with NFPA 72 requirements for circuit survivability as shown and specified herein. Cables designated to have Level 2 survivability or higher shall be a 2 hour fire-rated cable system (UL category FHIT), and be installed in conduit in accordance with the manufacturer's product listing requirements.
 3. Provide physically separated outgoing and return loops for all Class A wiring in accordance with NFPA 72 recommendation and NEC guidelines. For network and audio risers, provide a minimum of twelve inches of separation when the conduit is run vertically, and a four foot separation when the conduit is run horizontally.
- B. Raceways
1. Raceways for all fire alarm wiring specified to have Level 1 survivability or higher shall utilize Rigid Galvanized Steel, Intermediate Metal Conduit or Electrical Metallic Tubing (EMT), (minimum 3/4") subject to the restrictions of the National Electrical Code. Refer to Specification Section 260530 for additional information.

2.12 SPARE PARTS

- A. The fire alarm system shall be furnished with spare parts stored in an area approved by the Fire Department.
- B. The following list of spare parts shall be supplied:
1. Two (2) spare control modules (each type).
 2. Two (2) spare monitor modules (each type).
 3. Six (6) initiating devices – including device base and sensors as applicable (each type).
 4. Six (6) notification appliances (each type).

PART 3 EXECUTION

3.01 COOPERATION AND WORK PROGRESS

- A. The Electrical work shall be carried on under the usual construction conditions, in conjunction with all other work at the site. The Electrical Subcontractor shall cooperate with the Architect, Construction Manager, all other Subcontractors and equipment suppliers working at the site. The Electrical Subcontractor shall coordinate the work and proceed in a manner so as not to delay the progress of the project.

- B. The Electrical Subcontractor shall coordinate his work with the progress of the building and other Trades so that he will complete his work as soon as conditions permit and such that interruptions of the building functions will be at a minimum. Any overtime hours worked or additional costs incurred due to lack of or improper coordination with other Trades or the Owner by the Electrical Subcontractor shall be assumed by him without any additional cost to the Owner.
- C. The Electrical Subcontractor shall furnish information on all equipment provided under this Section but installed under another Section to the installing Subcontractor as specified herein.
- D. The Electrical Subcontractor shall provide all materials, equipment and workmanship to ensure adequate protection of all electrical equipment during the course of construction of the project. This shall also include protection from moisture and all foreign matter. The Electrical Subcontractor shall also be responsible for damage which he causes to the work of other Trades, and he shall remedy such injury at his own expense.
- E. Waste materials shall be removed promptly from the premises. All material and equipment stored on the premises shall be kept in a neat and orderly fashion. Material or equipment shall not be stored where exposed to the weather. The Electrical Subcontractor shall be responsible for the security, safekeeping and damages, including acts of vandalism, of all material and equipment stored at the job site.
- F. The Electrical Subcontractor shall be responsible for unloading all electrical equipment and materials delivered to the site. This shall also include all large and heavy items or equipment which require hoisting. Consult with the Construction Manager for hoisting/crane requirements. During construction of the building, the Electrical Subcontractor shall provide additional protection against moisture, dust accumulation and physical damage of the main service and distribution equipment. This shall include furnishing and installing temporary heaters within these units, as approved, to evaporate excessive moisture and ventilate it from the room, as may be required.
- G. It shall be the responsibility of the Electrical Subcontractor to coordinate the delivery of the electrical equipment to the project prior to the time installation of equipment will be required; but he shall also make sure such equipment is not delivered too far in advance of such required installation, to ensure that possible damage and deterioration of such equipment will not occur. Such equipment stored for an excessively long period of time (as determined in the opinion of the Architect) on the project site prior to installation may be subject to rejection by the Architect.
- H. The Electrical Subcontractor shall erect and maintain, at all times, necessary safeguards for the protection of life and property of the Owner, Workmen, Staff and the Public.
- I. Prior to installation, the Electrical Subcontractor has the responsibility to coordinate the exact mounting arrangement and location of electrical equipment to allow proper space requirements as indicated in the NEC. Particular attention shall be given in the field to group installations. If it is questionable that sufficient space, conflict with the work of other Subcontractors, architectural or structural obstructions will result in an arrangement which will prevent proper access, operation or maintenance of the indicated equipment, the Electrical Subcontractor shall immediately notify the Construction Manager and not proceed with this part of the Contract work until definite instructions have been given to him by the Architect.

3.02 INSTALLATION

- A. General
 - 1. Furnish and install the complete fire alarm system according to the drawings, specifications and all applicable Codes and Ordinances. In addition, the installation shall be consistent with the manufacturer's recommendations and the reviewed shop drawings.
 - 2. The Electrical Subcontractor shall furnish and install, in accordance with manufacturer's instructions, all wiring, conduit and outlet boxes required for the erection of a complete system as described herein and as indicated on the drawings.
 - 3. Final connections between the control equipment and wiring system shall be made under direct supervision of a representative of the manufacturer.

4. The Electrical Subcontractor shall be responsible for the proper placement of all devices to ensure proper location and spacing in accordance with the Contract Documents and applicable code.
5. Installation of equipment and devices that pertain to other work in the Contract shall be closely coordinated with the appropriate Contractors. The Electrical Subcontractor shall clean all dirt and debris from the inside and the outside of the fire alarm equipment after completion of the installation.
6. Unless specifically permitted by the Local Authority Having Jurisdiction, smoke detectors shall not be installed until after the construction cleanup of all trades is complete and final. If smoke detectors are installed for any reason during the construction period, it shall be the responsibility of the Electrical Subcontractor, at his cost, to clean and recalibrate, or replace each device in accordance with NFPA 72 - prior to final testing and the request for acceptance.
7. All miscellaneous hardware and support accessories, including support rods, nuts, bolts, screws and other such items, shall be furnished as required for proper installation of the system and shall be of a galvanized or cadmium plated finish, or of other approved rust-inhibiting coating.
8. The Electrical Subcontractor shall ensure that all concealed equipment that may require maintenance or access for any reason, are made easily accessible.

B. Raceways

1. All fire alarm system wiring shall be run in red conduit as specified in section 260530 and shall meet the requirements of NEC Article 760 and all National, State and Local Electrical Codes. Conduit sizes shall be determined by the fire alarm equipment manufacturer to support the quantities and types of wiring to be installed. Minimum $\frac{3}{4}$ " conduit.
2. Field device wiring that is run in concealed spaces or located above ceilings may be permitted to be Metal-Clad (MC) Cables in lieu of conduit or EMT. Where permitted, all MC Cables shall be independently supported by building structure and be identified and labeled as required and stated herein.
3. All pull and junction boxes shall be painted red and labeled "Fire Alarm". Conduits and metallic raceways for fire alarm system wiring shall be red or be identified by a red stripe. Wiring color code and tagging shall be maintained throughout the installation. Fire alarm cable in raceways shall be tagged every 10'-0" and be clearly labeled "Fire Alarm".

C. Wiring

1. Wiring types and sizes shall be as recommended by the equipment manufacturer. Minimum #18 AWG to match existing.
2. All wiring shall be UL listed for fire protective signaling systems and meet the requirements of NEC Article 760.
3. Color code shall be used throughout. All wires shall be tagged at all junction points, terminated on terminal blocks and shall test free from grounds or crosses between the conductors. Wire-nuts will not be permitted.
4. Wiring shall be routed to maintain sufficient distance between the feed and return loop as required by the Authority Having Jurisdiction and as specified herein.
5. Maximum wiring distances shall be within manufacturer's limitations and as directed on the approved shop drawings.
6. T-tapping of notification appliance circuit conductors shall NOT be accepted.

3.03 IMPAIRMENTS AND SAFEGUARDS

- A. Safeguarding of the building during demolition, alteration and construction shall be a joint cooperative effort involving the entire project team, including the fire protection contractor, the fire alarm contractor, the general contractor/construction manager, the Owner's representative and all other authorities having jurisdiction. The fire protection contractor shall coordinate with any and all parties as appropriate in order to achieve proper safeguarding as described in the project documents.
- B. The Contractor shall ensure proper building protection and safeguarding at all times during demolition, alteration, and construction in complete compliance with all applicable codes, regulations, standards, including but not limited to applicable Building and Fire Codes, and NFPA 241 - 2013 edition.
- C. During times when the existing, modified and/or new building fire protection systems are impaired, the contractors shall provide appropriate safeguarding of the renovation work area, and temporary heat detection or adequate alternate protection throughout the space, as coordinated with, and approved by, the tenant's and owner's fire prevention program manager, building manager, construction manager, insurance underwriters, and all authorities having jurisdiction. Safeguarding shall also apply to all related phasing, shut-downs, swing spaces, temporary facilities and relocations, etc. Detection shall be located and installed in accordance with the products' listing and manufacturer's instructions, and shall be tested and maintained until such time that the permanent building protection is restored. Alternative safeguarding such as, but not limited to, fire watch personnel, or temporary fire protection systems, may be considered if acceptable to the tenant/owner and authorities having jurisdiction. Refer to, and coordinate with, fire alarm systems documents, and safeguarding and impairments notes and specifications. Coordinate with fire alarm system contractor and all other trades.
- D. Provide and include as shop drawings submittals, a complete demolition, alteration, construction, phasing and impairment plan to include the information above, a schedule of project milestones, and an anticipated schedule for installation, impairments, programming and all phases of final testing and completion of the work. This plan shall be coordinated with all authorities having jurisdiction, the tenant's/owner's fire prevention program manager and construction manager, and shall include any and all permit information including drawings, fire protection narrative and graphics to meet the approval of the authorities having jurisdiction. The contractors shall provide firewatch personnel or temporary protection as required by any authorities having jurisdiction, the tenant/owner, or the tenant's/Owner's insurance underwriters.
- E. The above impairment plan shall be approved by all authorities, tenant/owner fire prevention program manager, tenant/owner insurance underwriters, etc., prior to any shutdowns or impairments.
- F. All costs associated with the above safeguarding during demolition, alteration, construction, phasing, shutdowns, etc. with regard to fire protection systems shall be included in the fire protection contractor's base bid.
- G. Temporary Protection
 - 1. The Contractor shall provide temporary protection while portions of the existing fire protection sprinkler system or existing fire protective signaling system are impaired or out of service during construction, alteration and demolition activities.
 - 2. Temporary protection shall be installed throughout the affected areas in accordance with the Contractor's impairment plan and Londonderry Fire Department requirements. Protection shall include, but not be limited to, the following:
 - a. Automatic fire detection equipment including smoke detectors and/or temporary heat detectors.
 - b. Notification equipment including, but not limited to, ADA compliant combination audible/visual notification appliances.
 - c. Manual fire alarm pull stations.

3. Temporary fire protective devices shall be installed in accordance with the product's labeling, manufacture's listing requirements and applicable codes.
4. Installation of temporary fire protective devices shall be coordinated with the construction, alteration and demolition conditions to provide complete coverage throughout the work area, and shall account for structural members, ductwork, piping and conduit racks as they occur or are encountered during construction.
5. Temporary fire protective devices shall be connected to the building fire alarm system and shall function as permanent until replaced with final fire protection and fire protective systems.
6. Temporary fire device layout shall be changed as necessary during construction in order to maintain proper coverage including spacing and locations of devices as work progresses and building areas are impacted.
7. Bagging or the temporary covering of smoke detectors shall not be allowed during construction, unless specifically permitted by Londonderry Fire Department. Where detectors are permitted to remain during construction, they shall be cleaned and recalibrated or replaced in accordance with NFPA 72 requirements.

3.04 ADDITIONAL DEVICE INSTALLATION REQUIREMENTS

- A. The Electrical Subcontractor shall carry within his bid the cost of materials and labor required for installing additional devices which may be required during system startup and final inspection. This shall be carried as a separate line item and unit cost associated for each item as indicated in Equipment Allowances section of this specification.
- B. The cost shall include the following additional devices:
 1. Two (2) spare control modules (each type), including conduit and wire with an average length of 20'-0".
 2. Two (2) spare monitor modules (each type), including conduit and wire with an average length of 20'-0".
 3. Six (6) initiating devices – including device base and sensors as applicable (each type), including conduit and wire with an average length of 20'-0".
 4. Six (6) notification appliances (each type), including conduit and wire with an average length of 20'-0".

3.05 MATERIALS AND WORKMANSHIP

- A. All materials and equipment shall be new and unused and shall meet requirements of the latest Standards of NFPA, UL, NEMA, IPCEA, ANSI and IEEE. Equipment shall have components required or recommended by OSHA, applicable NFPA documents and shall be UL listed and labeled.
- B. Despite references in the specifications or on the drawings to materials or pieces of equipment by name, make or catalog number, such references shall be interpreted as establishing standards of quality for materials and performance.
- C. Finish of materials, components and equipment shall not be less than Industry good practice. When material or equipment is visible or subject to corrosive or atmospheric conditions, the finish shall be as approved by the Architect.
- D. Provide proper access to material or equipment that requires inspection, replacement, repair or service. If proper access cannot be provided, confer with the Architect as to the best method of approach to minimize effects of reduced access.
- E. All work shall be installed in a neat and workmanlike manner and shall be done in accordance with all Local and State Codes and in accordance with the manufacturer's instructions.
- F. The Owner will not be responsible for material, equipment or the installation of same before testing and acceptance.

3.06 COORDINATION OF MAINTENANCE AND MONITORING

- A. It shall be the Contractor's responsibility to arrange for meetings between the Owner's representatives and representatives of the testing company responsible for the maintenance, testing and supervision of the completed fire alarm system.
- B. The Contractor shall retain a qualified system supplier to provide complete shop drawings as stated herein. The foregoing materials shall be submitted to the Engineer for approval with shop drawings, prior to the ordering of equipment or starting the installation.
- C. Authorized technical representatives of the Original Equipment Manufacturer and current service company of record shall supervise the installation, and provide necessary adjustment and testing of the system to assure a complete and fully operative facility in accordance with this specification and all Fire Department Regulations. Signed test reports and Record of Completion substantiating this shall be submitted by the system supplier.
- D. Where equipment or systems added under this Contract are found to be defective or not in accordance with the manufacturer's published data or installation shop drawings, it shall be the responsibility of the installing contractor to correct all discrepancies. It shall further be the responsibility of the Electrical Subcontractor to perform all retests and indicate to the Owner, the Fire Department and the Engineer that all systems perform as required by the Contract Drawings and specifications. Retests shall be performed in accordance with the Owner's requirements and at a time which is acceptable to the Owner and all costs for retesting and operational retesting shall be borne by the Electrical Subcontractor. The Electrical Subcontractor shall notify the Owner and Engineer (7) days in advance of the date when the system will be ready for retesting.

3.07 MANUFACTURER'S CERTIFICATION

- A. The qualified, factory trained OEM representative shall certify, in writing, that the system and equipment has been installed, adjusted, and tested in accordance with the manufacturer's recommendations.
- B. The Electrical Subcontractor shall provide three (3) copies of the manufacturer's representative's certification with the as-built Record Documents before final payment is made.

3.08 FIELD ACCEPTANCE TESTS

- A. The Owner shall not be responsible for fire alarm system material or equipment prior to testing and acceptance.
- B. Before final approval and acceptance by Building Owner, fire protection and life safety systems shall be subjected to complete integrated reacceptance testing in accordance with all applicable NFPA Codes and Standards.
- C. Tests shall be conducted by the current testing company of record, and witnessed by the representative of the Fire Department, the Owner's Building Construction Department, Risk Management Division and Security Department. Piping, wiring and accessory devices in any new portion of the system shall not be covered up or concealed permanently until they have been tested and approved. At least 48 hours' notice shall be given to aforementioned representatives before test.
- D. Test shall comprise activating and verifying the operations of each and every new device (input and output) and corresponding auxiliary functions. In addition, ten percent of the initiating devices that are not directly affected by the system changes (up to a maximum of 50 devices) shall be tested and verified in accordance with the Reacceptance testing requirements of NFPA 72.
- E. A written test log of this complete test shall be submitted prior to acceptance of the system by the Owner.
- F. Test shall include all supervising station reporting, (i.e. the public fire alarm reporting system and/or remote supervising station) as applicable.

- G. Test shall meet requirements of the following:
1. FM Global Property Loss Data Sheet 5-40
 2. NFPA 72 including, but not limited to the requirements for local protected premises systems and Supervisory Service.
 3. NFPA 72 Chapter 10 – Fundamentals and Documentation.
 4. NFPA 72 Chapter 14 – Inspection, Testing and Maintenance.
 5. NFPA 72 Chapter 26 - Supervising Station Systems
 6. NFPA 72 Chapter 27 – Public Fire Alarm Reporting Systems.
 7. Coordinated testing between related systems tested in accordance with their corresponding NFPA standards including, but not limited to NFPA 3 and 4, 13, 20, 25, 70, 90A, 92, and NFPA 110.
- H. To assure that wire size, power supply, number of devices on a circuit, etc., are suitable to support 100 percent of devices being in alarm or operated simultaneously, this test shall include the following:
1. Place all sensors and monitor modules in alarm. Each shall display its address and alarm condition. At least the first ten (10) devices on each circuit shall also have their alarm LED's lighted.
 2. Operate all control modules for the alarm or operated condition. Each module shall display its address and condition.
 3. Measure the actual voltage drop at the end of each visual Notification Appliance circuit.
 4. Reset all alarmed and operated devices. The panel shall display the address of any off-normal devices.
- I. Test each sensor for alarm verification by momentarily testing for alarm. The sensor shall not initiate an alarm. Then, test by placing the sensor in alarm such that it remains in alarm for the verification period and initiates the alarm sequence.
- J. Test each sensor for trouble by removing the sensor from its base. The address and trouble condition for each shall be displayed. Insert a different type of sensor into the base. The address and trouble condition shall be displayed. The sensor will return to normal only when the proper sensor type is reinserted in the base.
- K. Print out the English language descriptor and status of each module in the system. The printout shall also include the date and time.
- L. Upon installation, each speaker shall be set at the power setting recommended by the system supplier shown in the shop drawings.
- M. During system commissioning, audible sound levels shall be measured and recorded in all occupied spaces with the evacuation signal sounding. Following the initial measurement, the Contractor shall adjust each speaker setting to optimize system performance and produce 75dbA or 15dbA above ambient (whichever is greater), in accordance with NFPA 72 requirements.
- N. Measurements shall be recorded for each space to certify that the sound level requirements comply with these requirements in the following format:
- | "Room/Area" | "Ambient Sound Level db" | "Ambient And Evacuation Sound Level dB" |
|-------------|--------------------------|---|
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- O. Provide a final test report and Record of Completion indicating proper functioning of the system and conformance to the specifications. The test and Certificate of Completion shall be performed by factory-trained qualified technicians. Each and every device shall be tested, and standalone operation of remote panels shall be verified.
- P. The final testing, certification and documentation shall be performed by the same company that shall hold and execute the Test and Inspection contract.
- Q. The Contractor shall provide the final test reports and Record of Completion with the request for final Fire Department Acceptance Testing.

3.09 FIRE ALARM INSPECTION AND TESTING CONTRACT - (BY OWNER)

- A. Before making final connections to the Public Fire Alarm Reporting System, a new Service Contract must be in evidence to support the continued periodic testing and inspection of the modified system for the duration of the manufacturer's warranty period. The Contract shall be in effect between the Owner and a UL-certified testing company, and shall provide for periodic testing and emergency service response on a 24 hour on call basis with a 4 hour response time.

END OF SECTION