PROPOSAL CONTRACT DOCUMENTS

SPECIFICATIONS

for

GREATER BINGHAMTON AIRPORT

REHABILITATION OF HANGARS 2&3 - PHASE 2

BROOME COUNTY, NEW YORK

BID SET
September 2026

NYSDOT PIN 9A10.53
BROOME COUNTY RFB #2026-047
MJ PROJECT NO. 19090.06



Expires: 7/31/2029
Hashem Obeidallah – NYSPE

Prepared By:

McFarland Johnson

49 Court Street, Suite 240
Binghamton, NY 13901
Phone: (607) 723-9421
www.mjinc.com

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BGM REHABILITATION OF HANGARS 2&3 – PHASE 2

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INVITATION TO BID

REHABILITATION OF HANGARS 2&3 – PHASE 2

Sealed bid Proposals for the above referenced project at the Greater Binghamton Airport will be accepted at the Broome County Division of Purchasing, 60 Hawley Street, 2nd Floor, Edwin L. Crawford County Office Building, 60 Hawley Street, Binghamton, New York 13902-1766, until **2:00 P.M. local time on Wednesday, October 28, 2026**.

This project is being funded in part by the New York State Department of Transportation.

Bids must be submitted in a SEALED envelope, clearly marked with the "Broome County Department of Purchasing", project title, project NYSDOT PIN No., Broome County RFB No., the bidder's name, the bidder's address, and the time and date of the opening of bids as specified above. Bids submitted by FedEx, UPS, or other parcel delivery service shall have the SEALED envelope containing the Bid Proposal placed inside the shipping carton. Each bid shall be submitted in duplicate (one original and one exact copy). In addition to the paper copies, an electronic copy (USB Only) of the original Bid Proposal shall be included, as well.

PROJECT LOCATION: Greater Binghamton Airport, 2534 Airport Road, Johnson City, NY 13790

TYPE OF CONSTRUCTION: The project will rehabilitate Hangars 2 and 3 at the Greater Binghamton Airport to address aging infrastructure, safety concerns, and code deficiencies by upgrading outdated HVAC, electrical, plumbing, and fire alarm systems; and improving overall energy efficiency and safety. The work includes restoring damaged interiors, rehabilitating hangar bay doors, installing modern heating and ventilation solutions, and implementing ADA and current building code compliance measures such as accessible restrooms, fire-rated assemblies, CO detection, and elevator installation.

The project will be subject to Wicks law and separate contracts will be awarded for the following:

- Contract #1 - General Contractor
- Contract #2 - Plumbing Contractor
- Contract #3 - Mechanical Contractor
- Contract #4 - Electrical Contractor

PROPOSAL SURETY: All bids must be accompanied by a Proposal Surety (Bid Bond or other instrument as described in the Instructions to Bidders) in the amount of five percent (5%) of the amount of the bid. Said deposit shall be made payable to the Broome County Director of Office of Management and Budget, and shall be considered a guarantee that the bidder will enter into the Contract with the County if it is awarded to them. The retention and disposal of such Surety shall conform with Article 5A, Section 105 of the General Municipal Law, as amended.

The successful contractor shall be required to execute the Contract and comply, in all respects, with Article 5A, Section 105 of the General Municipal Law, as amended.

PROJECT BID DOCUMENTS: Copies of the Contract Documents including Plans, Specifications, Proposals, and addendums (if issued) may be viewed and downloaded by registering with the Empire State Purchasing Group at https://www.bidnetdirect.com/new-york/broome-county. No hard copies of the plans and specifications will be provided. The Empire State Purchasing Group lists bids for over 170 municipal entities in New York State, and vendors / contractors can register for a free "search only" service, or for a matching service for a small annual fee. PLEASE NOTE THAT IT IS THE BIDDER'S RESPONSIBILITY TO OBTAIN ALL BID DOCUMENTS (INCLUDING ADDENDA) ON THE EMPIRE STATE PURCHASING GROUP WEBSITE.

BID PACKAGE: REFER TO THE PROPOSAL CHECKLIST CONTAINED WITHIN THE PROPOSAL CONTRACT DOCUMENT SPECIFICATIONS FOR ALL FORMS REQUIRED FOR BID SUBMISSION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING: BID TABULATION SHEETS, BID BOND, OFFERER'S AFFIRMATION OF UNDERSTANDING, NON-COLLUSIVE BIDDING CERTIFICATIONS, MBE/WBE/SDVOB UTILIZATION GOAL FORM, CONTRACTOR'S QUALIFICATION STATEMENT, CONTRACTOR / SUBCONTRACTOR QUESTIONNAIRE, CONTRACTOR'S ELECTION LAW STATEMENT, CONTRACTOR'S GIFT STATEMENT, IRANIAN ENERGY DIVESTMENT CERTIFICATION, IRS W-9 FORM, AND BIDDERS CHECKLIST MUST BE SUBMITTED WITH EACH SIGNED PROPOSAL.

PREVAILING WAGE RATES: Minimum wage rates shall be determined by the New York State Department of Labor wage rates.

MBE/WBE/SDVOB & EEO REQUIREMENTS: Per the New York State Department of Transportation Aviation Capital Grants Program:

The Women-Owned Business Enterprise **(WBE)** Utilization Goal is **11%**.
The Minority-Owned Business Enterprise **(MBE)** Utilization Goal is **7%**.
The Service-Disabled Veteran Owned Business **(SDVOB)** utilization goal is **6%**.

The Equal Employment Opportunity (EEO) goal for the contractor's work force for Minority Participation is 1.1% and the Female Participation goal is 6.9%.

TECHNICAL / ADMINISTRATIVE QUESTIONS: Prospective Bidders, Contractors, Subcontractors, and Suppliers shall direct all technical inquiries related to this project solely to Mr. Hashem Obeidallah, Project Manager, McFarland Johnson, Inc., 607-723-9421, or hobeidallah@mjinc.com. Administrative questions may be directed to the Broome County Commissioner of Aviation, Mark Heefner, 607-763-4452.

The deadline for submitting inquiries related to this project is at **10:00 a.m. local time on Wednesday, October 21, 2026.**

PRE-BID CONFERENCE: A Pre-Bid Conference will be held at the Airfield Rescue and Fire Fighting Building at the Greater Binghamton Airport on **Wednesday, September 30, 2026** at **11:00 a.m.** A site visit will occur in conjunction with the Conference.

The **Broome County Board of Acquisition and Contracts (BAC)** reserves the right to reject any and all bid Proposals and to waive any informality in bid Proposals received.

Broome County
Board of Acquisition and Contracts

Dated September 23, 2026

INSTRUCTIONS TO BIDDERS

1. GENERAL:

This project is to be financed in part by a grant from the New York State Department of Transportation, Aviation Capital Grants Program. Award of Contract is subject to the approval of the New York State Department of Transportation and the County of Broome.

2. GENERAL PROPOSAL SURETY REQUIREMENT(S):

A. The Proposal Surety shall be as specified; only the Bid Bond as bound within these documents or a Cashier's Check is acceptable. Upon request of the bidder, the Owner may choose to accept the AIA Bid Bond form. Each separate Proposal shall be accompanied by a Cashier's Check or Proposal Bond on the form provided herein in the amount of Five Percent (5%) of the total amount bid, made payable to the Owner. If a Proposal Bond is provided in lieu of a Cashier's Check, it must be accompanied by a Surety's Bond Affidavit indicating that the person signing the bond on behalf of the Surety has full legal authority to do so.

B. If a Surety Bond is provided, the Surety Company issuing the bond shall be listed on the current United States Department of the Treasury "Department of the Treasury's listing of approved Sureties (Department Circular 570)" as authorized to do business in the State of New York Bids submitted without Bid Security will be rejected as nonresponsive.

C. 100% Contract Payment and 100% Performance Bonds shall be as specified in Section 103-03 contracts bonds of the NYSDOT Specification, and must be accompanied by a Surety's Bond Affidavit indicating that the person signing the bond on behalf of the Surety has full legal authority to do so. The Surety Company issuing the bond shall be listed on the current United States Department of the Treasury "Department of the Treasury's listing of approved Sureties (Department Circular 570)" as authorized to do business in the State of New York.

3. INSURANCE REQUIREMENTS:

Insurance Requirements shall be as specified in Supplemental General Provisions in Section SGP, and section INS (Risk Management & Insurance Requirements) herein.

4. EXAMINATION OF CONDITIONS AFFECTING WORK:

A. Prior to submitting a Proposal, each bidder shall examine and thoroughly familiarize himself with all existing conditions, including all applicable laws, codes, ordinances, rules, and regulations that will affect his work. Bidders shall visit the site, examine the grounds and all existing buildings, utilities, and roads, and shall ascertain all conditions that will in any manner affect work. Bidders shall ask the Engineer, in writing, for any additional information deemed necessary for them to be fully informed as to exactly what is to be expected prior to submitting a Proposal.

B. When boring data and/or subsurface utility data is/are provided in the Contract Documents, neither its accuracy nor its completeness is guaranteed; the Contractor shall assume the responsibility for any conclusions they may draw from such data. They may employ their own consultants to obtain information and analyze available information and shall be responsible for any conclusions drawn from that information.

5. INTERPRETATIONS:

Each Bidder shall carefully examine the plans and the Contract Documents and all Addenda or other revisions and thoroughly familiarize themselves with the detailed requirements prior to submitting a Proposal. Should a Bidder find discrepancies or ambiguities in, or omission from, the Contract Documents, or should he be in doubt as to their meaning, they shall at once, and in any event, not later than five days prior to submission of Proposal, notify the Engineer in writing who will send written Addenda to all Bidders where necessary. Bidders shall not be entitled to rely upon any oral instructions or interpretations by the Engineer. All Addenda sent to Bidders will become a part of the Contract Documents. All inquiries shall be directed as specified in the Invitation to Bid.

6. SUBSTITUTIONS:

A. The materials, products, and equipment described in the Contract Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitutions.

B. No substitutions will be considered prior to submission of Proposal unless written request for approval has been submitted in the proper format not less than seven (7) days prior to the submission of Proposal. The burden of proof of the merit of the proposed substitution is upon the Bidder. The Engineer's final decision of Approval or Disapproval of a proposed substitution is final.

C. In making requests for substitutions, the Bidder shall list the particular system, product, or material he wishes to substitute, and the justification for such a request. Requests submitted shall include any and all adjustments of that and any other work affected thereby.

D. If the Engineer approves any proposed substitution prior to the submission of Proposal, such approval will be set forth in an Addenda. Bidders shall not rely on approvals made in any other manner.

E. No substitutions will be considered after the submission of Proposal except as specifically provided for in the Contract Documents.

7. ADDENDA:

Addenda (if issued) will be available for examination and downloading as specified in the Invitation to Bid.

Addenda will be posted no later than 24 hours prior to the time of bid opening. Bidders must return delivery receipts for Addenda if requested by the Engineer and must acknowledge the receipt of Addenda on the Bid Proposal Form in the spaces provided.

8. CONTRACT DOCUMENTS:

A. Complete sets of the Contract Documents can be downloaded from the issuing office designated in the "Invitation to Bid" .

B. Bidders are expected to use complete sets of Contract Documents in preparing bid Proposals; neither the Owner nor the Engineer assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents.

9. ISSUANCE OF PROPOSAL FORMS:

The Owner reserves the right to refuse to issue a Bid Package and Proposal Form to a prospective Bidder, should such Bidder be determined by the Owner to be non-responsible. Among the criteria which the Owner may use in making such determination are the following:

A. Failure to comply with any pre-qualification requirements of the Owner, including failure to supply such information as the Owner may require in evaluating the qualifications of the Bidders or failure to supply the Owner with such documents or information as the Owner may request to assist the Owner in evaluating the responsibility and qualifications of prospective Bidders.

B. Past performance of the Bidder or any affiliated or related entity.

C. Failure of the Bidder or any affiliated or related entity to pay or satisfactorily settle all bills for labor and material on any former contract with the Owner.

D. The outstanding obligations of the Bidder, whether previously assumed or to be assumed in the future.

E. Unsatisfactory, defective, or non-conforming work on any previous contract with the Owner by the Bidder or any affiliated or related entity.

F. The present relationship between the Owner and the Bidder (or any affiliated or related entity) including the existence of any unresolved disputes arising out of past projects.

The issuance of a Bid Package and Proposal Form to a particular Bidder shall not prevent or preclude the Owner from determining at a later date that a particular Bidder or entity is non-responsible or otherwise not qualified. The Owner at all times reserves the right to refrain from issuing a Bid Package or awarding this Contract to a non-responsible entity or to any affiliated or related entity, or such Owner, as well as any successor, assignee, transferee, or majority interest holder of any non-responsible entity.

10. BIDDER'S QUALIFICATIONS:

The Owner reserves the right to investigate and determine the responsibility and qualifications of the Bidders before and after bid Proposals are received. The Owner shall not award Contract to any Bidder determined by Owner to be non-responsible. Among the criteria which Owner may use in making such determination are the following:

A. Failure to comply with any qualification requirements of the Owner, including failure to supply such accurate information as the Owner may require in evaluating the qualifications of Bidders or failure to supply the Owner with such documents or information as the Owner may request to assist the Owner in evaluating the responsibility and qualifications of prospective Bidders.

B. Past performance of the Bidder, one or more of the listed Subcontractors, or any affiliated or related entity.

C. Failure of Bidders or any affiliated or related entity to pay or satisfactorily settle all bills for labor and materials on any former contract with the Owner.

D. The outstanding obligations of the Bidder, whether previously assumed or to be assumed in the future.

E. Unsatisfactory, defective, or non-conforming work on any previous contract with the Owner by the Bidder, one or more of the listed subcontractors, or any affiliated or related entity.

F. The present relationship between the Owner and the Bidder (or any affiliated or related entity), including the existence of any unresolved disputes arising out of past projects.

G. The financial condition of the Bidder.

H. Experience of the Bidder and/or his listed Subcontractors in performing work of this nature.

11. PREPARATION AND SUBMISSION OF PROPOSAL:

A. Sealed Proposals for the construction of the Project generally described will be received until the time and date stated in the "Invitation to Bid."

B. The Proposal shall be on the "Proposal Form" provided; no other form is acceptable.

C. Due to the allocation of funds, successful Bidders will be required to provide verified breakdown of costs of work in a manner acceptable to the Engineer and Owner.

D. Each Bidder shall present his Proposal in a sealed opaque envelope. The outside of the envelope shall be labeled as described within the “Invitation to Bid”. The envelope shall contain the signed original (as applicable by document) of all items listed on the “Proposal Checklist”.

E. The Bidder must submit his Proposal on the forms furnished by the Owner. All blank spaces in the Proposal forms must be correctly filled in where indicated, and the Bidder must state the price(s) (written in ink) both in words and numerals. The words, unless obviously incorrect, will govern.

F. Proposals shall be submitted as indicated in the "Proposal Form" and shall be signed in ink by an official of the firm submitting the Proposal.

G. Erasures or other changes in a Proposal shall be explained or noted over the signature of the Bidder.

H. Proposals containing reservations, conditions, omissions, unexplained erasures or alterations, items not required in the bid, or irregularities of any kind may be rejected by the Owner.

I. Each Proposal shall indicate the full business name and address of the Bidder and shall be signed by him with his usual signature.

J. A Proposal submitted by a partnership shall list the names of all partners and shall be signed in the partnership name by one of the members of the partnership.

K. A Proposal submitted by a corporation shall be executed in the legal name of the corporation and signed by the President or Vice President. The name or each person signing the Proposal shall be typed or printed below the signature.

L. When requested by the Owner, a Power of Attorney or other satisfactory evidence of the authority of the officer signing in behalf of the corporation shall be furnished for the Owner's records.

M. The Proposal must be accompanied by Proposal Surety as described above under ”General Proposal Surety Requirement(s)”. If a Bidder withdraws its Proposal

within the period specified in the Invitation to Bid for the bids to remain valid, or if a Bidder is awarded the Contract but fails, refuses, or neglects to execute the Contract or to furnish acceptable Insurance Documents and the required Certificates of Insurance, Payment and Performance Bonds within 5 days after receipt of written Notice of Award, then the amount of this Proposal Surety shall be paid to, or retained by, the Owner as liquidated damages.

N. When sent by mail, the sealed Proposal marked as indicated in the "Invitation to Bid" shall be enclosed in an additional envelope and sent by Federal Express, UPS, or registered mail with return receipt requested. No Proposal will be considered unless received on or before the time and at the place designated in the "Invitation to Bid." The Owner will in no way be responsible for delays caused by the U.S. Postal Service or any other deliverer of the Proposal, or for delay caused by any other occurrence.

O. The Bidder must supply all information list on the “Proposal Checklist”.

P. The general contractor for this project shall perform fifty-one percent (51%) or more of the work with his own forces.

12. MODIFICATIONS AND/OR WITHDRAWAL OF PROPOSALS:

A. A Bidder may withdraw or refuse (by withdrawal of one Proposal and submission of another) a Proposal, provided that Bidder's Request for Withdrawal is received by the Owner in writing before the time specified for opening bid Proposals. Revised Proposals must be received at the place specified in the advertisement before the time specified for opening all bid Proposals. Modifications shall not reveal original amount of bids. Proposal Bonds must reflect modifications.

B. Negligence on the part of the Bidder in the preparation of his Proposal shall not be grounds for modification or withdrawal of the Proposal after the time set for bid Proposal opening.

13. REJECTION OF PROPOSALS:

A. Proposals containing any omission, alteration of form, additions or conditions not called for, conditional or alternate bids unless called for, incomplete bids, or Proposals otherwise regular which are not accompanied by the appropriate Proposal Surety will be considered irregular and may be rejected.

B. The Owner reserves the right to reject any or all bid Proposals, to waive any formalities, technicalities, or irregularities therein, to award or refrain from awarding a contract for work, and to readvertise for bid Proposals.

C. Proposals may be considered irregular for the following reasons:

(1) 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.

(2) If there are unauthorized additions, conditional or alternative pay items, or irregularities of any kind which made the Proposal incomplete, indefinite, or otherwise ambiguous.

(3) 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.

(4) If the Proposal contains unit prices that are obviously unbalanced.

(5) If the Proposal is not accompanied by the Proposal Surety, as specified by the Owner.

(6) If Bidder's qualifications are not submitted as required.

14. ESTIMATED QUANTITIES AND BID FORM:

Estimated quantities for unit price items are approximate only, being given as a basis for the uniform comparison of Bids. The Owner does not expressly nor by implication agree that the actual amount of work will correspond therewith.

The Owner reserves the right, as a condition for awarding the Contract, to increase or diminish the amount of any classes or portion of the work or to omit construction in certain locations, as may be determined by the Owner.

The Bid Form, which follows, consists of items of work for which Bid unit prices are requested and/or items of work for which Bid lump sum prices are requested. Each Bid shall state a unit price for each unit price item and a lump sum price for each lump sum item (if applicable). Each unit price shall be multiplied by the quantity of the particular item and the result stated as the total amount for the item. All such total amounts shall be added together with the sum of all lump sum prices and the grand total of the Bid when correctly calculated will be used in the comparison of Bids received.

15. REGISTERED TO DO BUSINESS IN NEW YORK:

All Bidders shall be registered to do business within the State of New York. Registration can be obtained through the Department of the State at http://www.dos.ny.gov/corps/buscorp.html.

The two (2) lowest Bidders shall provide proof of registration within 36 hours of the Bid Opening.

16. NON-DISCRIMINATION AND SEGREGATED FACILITIES:

A. Bidders must comply with the President's Executive Order No. 11246, which prohibits discrimination in employment regarding race, creed, color, sex, or national origin.

B. Bidders shall comply with the Non-Segregated Facilities requirements contained in Sections SGP of these Contract Documents.

C. Each Bidder shall complete, sign, and include in their bid Proposal a Certificate of Non-Segregated Facilities. When a determination has been made to award a Contract to a specific contractor, such contractor shall, prior to award, furnish such other pertinent information regarding his own employment policies and practices, as well as those of his proposed subcontractors as the FAA, the Sponsor, or the Secretary of Labor may require. All such information required of a subcontractor shall be furnished by the Contractor.

D. The Equal Employment Opportunity Report Statement, Certification of Non-Segregated Facilities, and all other EEO Requirements shall be included in all non-exempt subcontracts entered into by the Contractor. Subcontracts entered into by Contractor shall also include all other applicable labor provisions. No subcontract shall be awarded to a non-complying subcontractor.

E. In addition, the Contractor will also insert in each of his subcontracts a clause requiring the subcontractor to include these provisions in any lower tier subcontracts which they may enter into, together with the clause requiring this insertion in any further subcontracts that may in turn be made.

17. EQUAL EMPLOYMENT OPPORTUNITY (EEO) AND AFFIRMATIVE ACTION:

Bidders and Contractors must comply with the provisions of the Equal Opportunity Clause, Specifications, and regulations and Affirmative Action regulations as described in the Sections SGP, and SP-2 of the Contract Documents.

The Affirmative Action and EEO goals for minorities and women are listed in the Invitation to Bid.

18. COMPLIANCE WITH LAW:

A. Bidders must comply with all rules, laws and regulations as discribed in the Required Aviaiton Project Funding Agreement in Section SP-1 of these Specifications.

B. The Contractor covenants and agrees that he and his agents and employees will comply with all municipal, state and federal laws, applicable national and local codes, and Greater Binghamton Airport rules and regulations applicable to the work to be conducted under this Agreement.

19. OSHA:

Bidder certifies that all material, equipment, etc., contained in his bid Proposal meets all OSHA requirements.

20. DEBARMENT AND SUSPENSION:

Bidders and Contractors must comply with the provisions of the Debarment and Suspension regulations as described in Sections SGP, and SP-1 of the Contract Documents

21. FOREIGN TRADE RESTRICTIONS:

Bidders and Contractors must comply with the provisions of the Trade Restriction regulations as described in Sections SGP, and SP-1 of the Contract Documents.

22. MINORITY/WOMEN BUSINESS ENTERPRISE & SERVICE DISABLED VETERAN OWNED BUISNESS (M/WBE & SDVOB) PARTICIPATION:

The contractor's attention is called to the contract definitions and requirements as described in the Sections SGP, and SP-1, and SP-3 of the Contract Documents.

Per the New York State Department of Transportation Aviation Capital Grants Program, the Women-Owned Business Enterprise (WBE) Utilization Goal is **11%**. The Minority-Owned Business Enterprise (MBE) Utilization Goal is **7%**. The Service Disabled Veteran Owned Business (SDVOB) Utilization Goal is **6%.** These goals shall apply to all portions of the project identified on the plans as the Base Bid.

All Contractors and Subcontractors are encouraged to make good-faith efforts, as defined in Aviation Project Funding Agreement (SP-1) and (SP-3), that will allow all M/WBE/SDVOB's the maximum opportunity to work with them on this project.

The bidder/offeror will be required to submit the following information: (1) the names and addresses of M/WBE/SDVOB firms that will participate in the contract; (2) a description of the work that each M/WBE/SDVOB firm will perform; (3) the dollar amount of the participation of each M/WBE/SDVOB firm participating; (4) Written documentation of the bidder/offeror's commitment to use a M/WBE/SDVOB subcontractor whose participation it submits to meet the contract goal; (5) Written confirmation from the M/WBE/SVDOB that it is participating in the contract as provided in the commitment made under (4); and (6) a list of M/WBE/SVDOB's contacted, or who provided quotes as subcontractors under this bid.

23. DAVIS-BACON ACT:

Not applicable

24. PAYMENT OF STATE PREVAILING WAGES:

Bidders and Contractors must comply with the provisions of the State of New York determinations and regulations as described in the Sections SGP, SP-1, and SP-9, of the Contract Documents.

25. BUY AMERICAN PREFERENCES:

In accordance with 23 USC 313, 23 CFR 635.410, the Build America Buy America (BABA) Act in Title IX of the Bipartisan Infrastructure Law's (BIL), and Section 146 of the State Finance Law, permanently incorporated predominantly steel and/or iron materials, manufactured products, and construction materials shall be domestically produced.

Bidders and Contractors must comply with the provisions of the State of New York Department of Transportation as described in the Specification Sections 106-11 of the Contract Documents.

26. CIVIL RIGHTS MONITORING AND REPORTING

The Department approved civil rights reporting software is Equitable Business Opportunity Solution (EBO). The EBO software is a web-based system owned and maintained by the Department and provided to the Contractor at no cost. The Contractor shall use the Department approved civil rights reporting software on all contracts. The Contractor shall enter into EBO complete and accurate electronic data to the Department for each month, not later than the 15th of the following month. Data shall be current through the end of the last full payroll week for that month, or as otherwise approved by the Engineer to coordinate with contract payment submittals. See NYSDOT Spec section 105-21 for more details. Application form for EBO can be found in section SP-4.

27. EXECUTIVE ORDER 16 – CONTRACTING WITH BUSINESSES CONDUCTING BUSINESS IN RUSSIA

Executive Order No. 16 provides that "all Affected State Entities are directed to refrain from entering into any new contract or renewing any existing contract with an entity conducting business operations in Russia." The complete text of Executive Order No. 16 can be found at:

https://www.governor.ny.gov/executive-order/no-16-prohibiting-state-agencies-and-authorities-contracting-businesses-conducting

The Executive Order remains in effect while sanctions imposed by the federal government are in effect. Accordingly, vendors who may be excluded from award because of current business operations in Russia are nevertheless encouraged to respond to solicitations to preserve their contracting opportunities in case the sanctions are lifted during a solicitation or even after award in the case of some solicitations.

As defined in Executive Order No. 16, an "entity conducting business operations in Russia" means an institution or company, wherever located, conducting any commercial activity in Russia or transacting business with the Russian Government or with commercial entities headquartered in Russia or with their principal place of business in Russia in the form of contracting, sales, purchasing, investment, or any business partnership.

28. STATE FINANCE LAW §139-M GENDER-BASED VIOLENCE AND THE WORKPLACE

Effective November 5, 2025, State Finance Law §139-m requires a bidder certification on Gender-Based Violence and the Workplace for competitive New York State procurements. The certification must be subscribed to and affirmed under penalty of perjury and confirms the bidder has implemented a written policy addressing gender-based violence and the workplace and has shared that policy to all employees, directors, and board members.

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing gender-based violence and the workplace and have provided such policy to all of its employees, directors and board members. Such policy shall, at a minimum, meet the requirements of subdivision 11 of section five hundred seventy-five of the executive law.

END OF SECTION IB

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SUMMARY OF WORK

PART 1 CONTRACT DOCUMENTS

1.01 This section of these Specifications is a part of the Contract Documents as defined in the General Provisions. All applicable parts of the balance of the Contract Documents are equally as binding for this section as for all other sections.

PART 2 DESCRIPTION

2.01 PROJECT

Project Name: Rehabilitation of Hangars 2&3 – Phase 2
Owner's Name: Broome County.
The Project consists of the Rehabilitation of Hangars 2&3 at the Greater Binghamton Airport

The work includes addressing aging infrastructure, safety concerns, and code deficiencies by upgrading outdated HVAC, electrical, plumbing, and fire alarm systems; and improving overall energy efficiency and safety. Additionally, the work includes restoring damaged interiors, rehabilitating hangar bay doors, installing modern heating and ventilation solutions, and implementing ADA and current building code compliance measures such as accessible restrooms, fire-rated assemblies, CO detection, and installation of a wheelchair lift.

2.02 CONTRACT DESCRIPTION

Contract Type: Multiple prime contracts each based on a Stipulated Price as described in the Proposal Documents.
The work of each separate prime contract is identified in this section.

2.03 DESIGN/MANAGEMENT IDENTIFICATION

OWNER or SPONSOR
Broome County
Department of Aviation, Greater Binghamton Airport
2534 Airport Road
Johnson City, New York 13790

ENGINEER
McFarland Johnson
49 Court Street
Binghamton, NY 13901

ARCHITECT
Aubertine & Currier Architects, Engineers & Land Surveyors, PLLC
522 Bradley Street
Watertown, NY 13601

MEP ENGINEER
Ram-Tech Engineers
6100 Fairway Drive
Syracuse, NY 13211

2.04 SECTIONS APPLICABLE TO ALL CONTRACTS

Unless otherwise noted, all provisions of the sections listed below apply to all contracts. Specific items of work listed under individual contract descriptions constitute exceptions.

Division 01 – General Requirements

The following drawings are made part of each prime contract unless otherwise noted:

IN-01 Index and Work Description
IN-02 Major Scope Items
GN-01 Location Plan and Notes

2.05 CONTRACT NO. 1 – GENERAL CONSTRUCTION

Provide all Work except Work specifically assigned to other contractors in this Section.

Work under this Contract may generally be described to include, but not be limited to the following:

Alteration of existing office spaces to meet 2025 NYS Building Code, such as modifying layout of restrooms, retrofit of existing handrails, providing ADA-access to the second floor, and ensuring that demising wall between offices and hangars meets the qualification of a 2-hr separation. Additionally, cosmetic repairs shall also be a part of the project. These repairs include, but are not limited to, installation of new carpet tiles, replacing the entire ceiling grid and acoustical ceiling tiles, and providing new LED light fixtures.

Drawings: The Contract generally consists of all work shown on “A”, Series drawings.

Specifications: The Contract shall include all work in the following specifications unless otherwise noted:

Division 02 – Existing Conditions
Division 05 – Metals
Division 06 – Wood, Plastics, and Composites
Division 08 – Openings
Division 09 – Finishes
Division 10 – Specialties
Division 14 – Conveying Equipment
Division 31 – Earthwork
Asbestos Abetment Specs

2.06 CONTRACT NO. 2 – PLUMBING CONSTRUCTION

This contractor shall cover the following work: Plumbing trades. Specification sections listed above as applicable to all contracts.

Work under this Contract may generally be described to include, but not be limited to the following:

- Removal of existing plumbing equipment as indicated on Drawings.
- Sanitary, waste and vent piping, and domestic water piping and connections to
- existing systems where indicated on Drawings.
- Plumbing fixtures and accessories and water coolers where indicated on
- Drawings.
- Gas piping, and equipment connections.
- Insulation of all renovated Work as specified.
- Identification of systems.
- All necessary cutting, patching and firestopping.
- Cleaning and testing as specified.

Drawings: The Contract generally consists of all work shown on "PD", “PL”, and “P” Series drawings.

Specifications: This contract shall include all work in the following specification unless otherwise noted:

Divisions 22 - Plumbing

2.07 CONTRACT NO. 3 – MECHANICAL CONSTRUCTION

This contractor shall cover the following work: Mechanical trades. Specification sections listed above as applicable to all contracts.

Work under this Contract may generally be described to include, but not be limited to the following:

- Removal of existing furnaces and infrared heaters and associated controls.
- Heating & ventilation systems including air turnover units, fans, ductwork, ductwork accessories, registers, grilles, etc.
- Replacement of existing air inlet and outlets and associated ductwork and accessories.
- Control wiring to motor controllers, temperature sensors, line and low voltage thermostats, interlock wiring, control wiring to HVAC equipment, control transformers, etc.
- Temperature control system.
- Testing, adjusting and balancing.
- All necessary cutting, patching and firestopping.
- Miscellaneous items shown and/or specified.

Drawings: The Contract generally consists of all work shown on “MD” and “MH” Series drawings.

Specifications: This contract shall include all work in the following specifications unless otherwise noted:

Divisions 23 – Heating, Ventilation & Air-Conditioning (HVAC)

2.08 CONTRACT NO. 4 – ELECTRICAL CONSTRUCTION

This contractor shall cover the following work: electrical trades. Specification sections listed above as applicable to all contracts.

Work under this Contract may generally be described to include, but not be limited to the following:

- Removal of existing electrical equipment as indicated on Drawings.
- New power distribution system, including the provision of an electrical distribution system study.
- Lighting and power systems for the alterations and areas shown.
- Wiring devices and branch circuitry in areas shown.
- Power wiring systems for mechanical and miscellaneous electrical equipment etc.
- Fire Alarm System.
- All necessary cutting, patching and firestopping.
- Miscellaneous items shown and/or specified.

Drawings: The Contract generally consists of all work shown on “ED”, “EL”, “EP”, "E" Series drawings.

Specifications: This contract shall include all work in the following specification unless otherwise noted:

Division 26 – Electrical
Division 28 – Electronic Safety and Security

2.09 ALLOWANCES

A. CONTRACT NO. 1 - GENERAL CONSTRUCTION

1. Field Change Allowance: The General Contractor shall include $50,000 in the total of their lump sum bid for Field Changes as needed. Any work paid through the Field Change Allowance must receive approval by the Resident Engineer and Owner prior to be undertaken with an agreed upon scope and price. If, at the end of the project, there is additional monies left in the Field Change Allowance, it will be deducted from the total General Contract Amount.

B. CONTRACT NO. 2 – PLUMBING

1. Field Change Allowance: The Plumbing Contractor shall include $10,000 in the total of their lump sum bid for Field Changes as needed. Any work paid through the Field Change Allowance must receive approval by the Resident Engineer and Owner prior to be undertaken with an agreed upon scope and price. If, at the end of the project, there is additional monies left in the Field Change Allowance, it will be deducted from the total Plumbing Contract Amount.

C. CONTRACT NO. 3 – MECHNICAL

1. Field Change Allowance: The Mechanical Contractor shall include $10,000 in the total of their lump sum bid for Field Changes as needed. Any work paid through the Field Change Allowance must receive approval by the Resident Engineer and Owner prior to be undertaken with an agreed upon scope and price. If, at the end of the project, there is additional monies left in the Field Change Allowance, it will be deducted from the total Mechanical Contract Amount.

D. CONTRACT NO. 4 – ELECTRICAL

1. Field Change Allowance: The Electrical Contractor shall include $10,000 in the total of their lump sum bid for Field Changes as needed. Any work paid through the Field Change Allowance must receive approval by the Resident Engineer and Owner prior to be undertaken with an agreed upon scope and price. If, at the end of the project, there is additional monies left in the Field Change Allowance, it will be deducted from the total Electrical Contract Amount.

2. Utility Allowance: The General Contractor shall include $10,000 in the total of their lump sum bid for fees paid to the Utility Companies for the installation of new electrical services to the building. The amount of the allowance paid to the General Contractor will be the amount of the invoice from the Utility Company plus 5%. If, at the end of the project, there is additional monies left in the Utility Allowance, it will be deducted from the total General Contract Amount.

END OF SECTION

PROPOSAL DOCUMENTS

SPECIFICATIONS AND CONTRACT DOCUMENTS

for

GREATER BINGHAMTON AIRPORT
BROOME COUNTY, NEW YORK

REHABILITATION OF HANGARS 2&3 – PHASE 2

NYSDOT PIN 9A10.53

PREPARED FOR:

Greater Binghamton Airport
Broome County, New York

PREPARED BY:

49 Court Street, Suite 240
Binghamton, NY 13902
Phone: (607) 723-9421
Fax: (607) 723-4979

September 2026

Bidder's Name _____

Bidder's Address _____

Bidder's Phone _____ **E-mail** _____

Bid Submitted for (Circle One):

Contract 1 (GC) Contract 2 (PC) Contract 3 (MC) Contract 4 (EC)

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PROPOSAL CHECKLIST

The following material must be submitted by all bidders:

1. The envelope as described in the Instructions to Bidders shall contain the signed original (as applicable by document) of:
   - ☐ Proposal Form (Pages P-1 through P-23 including Schedule of Values)
   - ☐ Backup Information for Bidder's Qualifications
   - ☐ Proposal Surety as Specified in the Instructions to Bidders
   - ☐ Surety's Bond Affidavit / Attorney-in-Fact Certification
   - ☐ Form MJ-200 - NYSDOT Buy American Compliance Certification
   - ☐ Form MJ-201 - US Government and State of New York Certification of Taxes Paid
   - ☐ Form MJ-202 - Certificate Regarding Debarment and Suspension (Bidder or Offeror) and (Successful Bidder Regarding Lower Tier Participants)
   - ☐ Form MJ 203 - Certification of Nonsegregated Facilities
   - ☐ Form MJ 204 - Equal Employment Opportunity Report Statement as Required by 41 CFR 60-1.7(b)
   - ☐ Form MJ 205 – New York State Department of Transportation Aviation Capital Grants Program – Proposed Minority/Women Business Enterprises and Service-Disabled Veteran Owned Business (M/WBE/SDVOB) Requirements
   - ☐ Form MJ 206 - Prime Contractor – MBE/WBE/SDVOB Reporting Information Form
   - ☐ Form MJ-207 - Subcontractor / Supplier – MBE/WBE/SDVOB Reporting Information
   - ☐ Form MJ-209 - Certification of compliance for the prevention of Sexual Harassment
   - ☐ Form MJ-218 - Trade Restriction Certification
   - ☐ Form MJ-226 - Bidders List
   - ☐ Form BC-1 - Proposal Sheet
   - ☐ Form BC-2 - Non-Collusion Bidding Certificate
   - ☐ Form BC-3 - Iranian Energy Divestment Certification
   - ☐ Form BC-4 - Election Law Statement
   - ☐ Form BC-5 - Gifts Statement
   - ☐ Form BC-6 - Insurance Requirement Acknowledgement
   - ☐ Form BC-7 - W-9
   - ☐ Form BC-8 – EO-177 Offerer's Certification of Adherence to Executive Order 177 regarding Anti-Discriminatory Policies and Practices
   - ☐ Form BC-9 – EO-16 Certification Under Executive Order No. 16 Prohibiting State Agencies and Authorities from Contracting with Businesses Conducting Business in Russia
   - ☐ Form SP-6Y - Gender-Based Violence and the Workplace Certification
   - ☐ Proof of Registration with the New York Department of Labor

NOTICE: All bids received that lack 1) a signed Proposal; 2) a Non-Collusive Bidding Certificate: 3) a Bid Bond/Check, when required, or samples when required, will be rejected as being non-responsive at the formal public bid opening. The County procurement officer/s or employees conducting the bid opening will document the non-responsiveness orally and in writing. The non-responsive bid will not be publicly read and will not be returned to the bidder.

2. Within 36 hours of Bid Opening, the lowest bidder must submit:
   - ☐ Good Faith Effort Package (Including cover letter)
   - ☐ GFE Checklist
   - ☐ AAP 10 DBE/MBE/WBE/SDVOB Soliciting Log
   - ☐ AAP 19 M/WBE/SDVOB Schedule of Utilization
   - ☐ AAP 22 DBE/MBE/WBE/SDVOB Material Supplier Commitment Info. (if applicable)
   - ☐ AAP 23 DBE/MBE/WBE/SDVOB Trucking Commitment Info. (if applicable)

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PROPOSAL FORM

GREATER BINGHAMTON AIRPORT
COUNTY OF BROOME

REHABILITATION OF HANGARS 2 & 3 – PHASE 2

Date:_____

Bidders Name: _____

Bid Submitted for (Circle One):

Contract 1 (GC) Contract 2 (PC) Contract 3 (MC) Contract 4 (EC)

To: Broome County Department of Purchasing

A. The undersigned (hereinafter called the Contractor) proposes to furnish all labor, equipment and materials required for **"REHABILITATION OF HANGARS 2 & 3 – PHASE 2"** accordance with the accompanying Contract Documents as defined in the Supplemental General Provisions and prepared by McFarland Johnson, Inc., of Binghamton, New York, for the amounts listed below, subject to additions and deductions in accordance with the terms of the Specifications. It being understood that the Owner will be the sole judge as to acceptance of Bids and award of the Contract.

Bidder agrees to complete the work under this Contract within the time specified in the Invitation to Bid.

B. This Bid includes addenda:

Number	Date
_____	_____
_____	_____
_____	_____
_____	_____

C. Bidders agree to perform all of the work described in the Contract Documents and tabulated below for the following unit and lump sum prices.

It is understood that the quantities given in this Bid Form are approximate only and are given as a basis for comparison of Bids. The Owner does not expressly or by implication agree that the actual amount of work will even approximately correspond herewith, but reserves the right to increase or decrease the amount of any item of the work listed, and the unit prices quoted in the Bid shall apply without change to such variation in the quantity of each of the items, except as further clarified herein. The Owner further reserves the right to delete any item of work in whole or in part, in order to meet the available funding.

ITEMIZED BID PROPOSAL FORMS

SCHEDULE OF VALUES

Base Bid

Item No.	Description of Work	Scheduled Value
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
	Total	

Attach additional sheets as needed for additional items

Add Alternative No. 1

Item No.	Description of Work	Scheduled Value
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
	Total	

Attach additional sheets as needed for additional items

Add Alternative No. 2

Item No.	Description of Work	Scheduled Value
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
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21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
	Total	

Attach additional sheets as needed for additional items

Add Alternative No. 3

Item No.	Description of Work	Scheduled Value
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
	Total	

Attach additional sheets as needed for additional items

Add Alternative No. 4

Item No.	Description of Work	Scheduled Value
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
	Total	

Attach additional sheets as needed for additional items

Add Alternative No. 5

Item No.	Description of Work	Scheduled Value
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
	Total	

Attach additional sheets as needed for additional items

BID SUMMARY

BID CONTRACT # 1 – GENERAL CONSTRUCTION

ITEM	QUNT	UNIT	AMOUNT BID	AMOUNT BID IN WORDS
CONTRACT #1 Base Bid	1	LS	$	
FIELD CHANGE	1	DC	$50,000	Fifty Thousand Dollars and Zero Cents
CONTRACT #1 Add Alt. 1	1	LS	$	
CONTRACT #1 Add Alt. 2	1	LS	$	
CONTRACT #1 Add Alt. 3	1	LS	$	
CONTRACT #1 Add Alt. 4	1	LS	$	
CONTRACT #1 Add Alt. 5	1	LS	$	
TOTAL BID CONTRACT # 1			$	

BID CONTRACT # 2 – PLUMBING CONSTRUCTION

ITEM	QUNT	UNIT	AMOUNT BID	AMOUNT BID IN WORDS
CONTRACT #2 Base Bid	1	LS	$	
FIELD CHANGE	1	DC	$10,000	Ten Thousand Dollars and Zero Cents
CONTRACT #2 Add Alt. 1	1	LS	$	
CONTRACT #2 Add Alt. 2	NA	NA	NA	NOT APPLICABLE
CONTRACT #2 Add Alt. 3	NA	NA	NA	NOT APPLICABLE
CONTRACT #2 Add Alt. 4	1	LS	$	
CONTRACT #2 Add Alt. 5	NA	NA	NA	NOT APPLICABLE
TOTAL BID CONTRACT # 2			$	

BID CONTRACT # 3 – MECHANICAL CONSTRUCTION

ITEM	QUNT	UNIT	AMOUNT BID	AMOUNT BID IN WORDS
CONTRACT #3 Base Bid	1	LS	$	
FIELD CHANGE	1	DC	$10,000	Ten Thousand Dollars and Zero Cents
CONTRACT #3 Add Alt. 1	1	LS	$	
CONTRACT #3 Add Alt. 2	NA	NA	NA	NOT APPLICABLE
CONTRACT #3 Add Alt. 3	1	LS	$	
CONTRACT #3 Add Alt. 4	1	LS	$	
CONTRACT #3 Add Alt. 5	1	LS	$	
TOTAL BID CONTRACT # 3			$	

BID CONTRACT # 4 – ELECTRICAL CONSTRUCTION

ITEM	QUNT	UNIT	AMOUNT BID	AMOUNT BID IN WORDS
CONTRACT #4 Base Bid	1	LS	$	
FIELD CHANGE	1	DC	$10,000	Ten Thousand Dollars and Zero Cents
UTILITY ALLOWANCE	1	ALL	$10,000	Ten Thousand Dollars and Zero Cents
CONTRACT #4 Add Alt. 1	1	LS	$	
CONTRACT #4 Add Alt. 2	1	LS	$	
CONTRACT #4 Add Alt. 3	1	LS	$	
CONTRACT #4 Add Alt. 4	1	LS	$	
CONTRACT #4 Add Alt. 5	1	LS	$	
TOTAL BID CONTRACT # 4			$	

General Bidding Note:

The BASE BID shall be awarded and constructed as part of this contract. ADD ALTERNATES may be awarded at the discretion of the OWNER, subject to the availability of funds and in accordance with the requirements of the contract documents. The OWNER reserves the right to award the BASE BID only, or the BASE BID in combination with any one or more ADD ALTERNATIVES. The OWNER further reserves the right to reject any or all bids.

The Owner reserves the right to delete any item of work in whole or in part, in order to meet the available funding.

Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.

The above unit prices shall include all labor, materials, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.

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 the period as specified in the Invitation to Bid.

The undersigned further certifies under the penalties of perjury that this Bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.

The undersigned agrees that if they are selected as the Contractor they will execute a Contract in accordance with the terms of this General Bid and furnish a Performance Bond for 100% of the Contract Price and Payment Bond for 100% of the Contract Price, each of a Surety company meeting the requirements contained in the Contract Documents and satisfactory to the Owner, the premiums of which are to be paid by the Contractor and are included in the Contract amount, within five (5) calendar days, after presentation thereof by the Owner, unless otherwise directed in writing by the Owner.

Bidder proposes to provide all labor and materials to complete the work, as specified in the Contract Documents, and as is reasonably expected due to the existing conditions and required construction.

The undersigned hereby certifies that they are able to furnish labor that can work in harmony with all other elements of labor employed, or to be employed on the work, and that they will comply fully with all laws and regulations applicable to award of this contract.

The undersigned agrees to guarantee all of the work performed under this Contract to be done in accordance with the Contract Documents in a good and workmanlike manner and to renew or repair any work which may be rejected, due to defective materials or workmanship, prior to final completion and acceptance of the work.

The Bid Security attached in the sum of $_____ is to become the property of the Owner, in the event the Contract and Bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner causes thereby.

Company Name

Address

Name of Authorized Signature

Signature

Title

Date

(SEAL - if Bid is by a corporation)

BIDDERS'S QUALIFICATIONS AND CERTIFICATION

NOTE: **This section is to be notarized.**

The undersigned submits answers to the following questions to enable the Owner to judge his or her experience and ability in, and facilities for, the work proposed to be done.

1. The work, if awarded to you, will have the resident personal supervision of whom? State their special qualifications.

_____

_____

_____

2. Describe equipment you propose to use. State whether you own or rent it.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

(Insert additional sheets as necessary.)

3. How many years has your organization been in business as a Contractor under the name in which you propose to execute this Contract?

_____

4. What projects has your present organization completed of character similar to that proposed? Give the information indicated by the following tabulation:

Name and address of Owner for Whom Work Was Done:	Work done as Contractor or Subcontractor: and Dates Work Completed:	Description of Work, including Approximate Amount of Contract

(Insert Additional Sheets as Necessary)

5. Has your present organization ever failed to complete any work awarded to it? If so, state when, where and why.

_____

_____

_____

6. Give below, the name of one or more banks which have information that would enable them to advise regarding the financial ability of your company.

Name of Bank: Address: Telephone No.

_____

_____

_____

7. The names and residences of all persons and parties interested in this proposal as principals are as follows:

NOTE: In case of a corporation, give names of officers and directors; in case of a partnership, give names of all partners.

_____

_____

_____

Dated at _____ this

day of _____, 2026.

Name of Bidder: _____

By: _____

Title: _____

State of _____ ss.

County of _____

Being duly sworn, deposes and says that he/she is

_____
(Title)

of _____ and that the answers to the
(Name of Organization)

foregoing questions and statements contained therein are true and correct.

Sworn to before me this _____ day of

_____2026.

My commission expires:_____

_____
Notary Public

CERTIFICATE AS TO CORPORATE PRINCIPAL
FOR PROPOSAL

(IF A CORPORATION)

State of _____)

County of _____)

On this _____ day of _____, 2026

before me personally came _____

to me known, who being by me duly sworn, did depose and say as follows:

That they reside at _____

and are the _____

of _____

the corporation described in and which executed the foregoing instrument; that they know the corporate seal of said corporation; that the seal affixed to the foregoing instrument is such corporate seal and it was so affixed by order to the Board of Directors of said corporation; and that by the like order they signed thereto their name and official designation.

_____
Notary Public (Seal)

My Commission expires: _____

PARTNERSHIP CERTIFICATE
FOR PROPOSAL

(IF A PARTNERSHIP)

State of _____)

County of _____)

On this _____ day of _____, 2026

before me personally appeared _____

known to me and known by me to be the person who executed the above instrument, who, being by me first duly sworn, did depose and say that they are a general partner in the firm of _____;

and that said firm consists of them self and _____

_____, and that they executed the foregoing instrument on behalf of said firm for the uses and purposes stated herein.

_____
Notary Public (Seal)

My commission expires:

_____

INDIVIDUAL CERTIFICATE
FOR PROPOSAL

(IF AN INDIVIDUAL)

State of _____)

County of _____)

On this _____ day of _____, 2026

before me personally appeared _____

known to me and known by me to be the person who executed the above instrument, who, being by me first duly sworn, did depose and say that they are the owner of the

firm _____;

and that they executed the foregoing instrument on behalf of said firm for the uses and purposes stated herein.

_____
Notary Public (Seal)

My commission expires: _____

BID BOND

(Not to be filled in if a Cashier's Check is submitted)

KNOW ALL MEN BY THESE PRESENTS That the undersigned Bidder, _____ _____, as Principal, and _____ _____, as Surety, are held and firmly bound unto the **Broome County** in the sum of ____ _____ dollars ($_____) for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

THE CONDITION OF THIS OBLIGATION is such that if Principal:

1. Does not withdraw the attached Proposal of _____ dollars ($_____ _____) for the **REHABILIATION OF HANGARS 2&3 – PHASE 2 at the GREATER BINGHAMTON AIRPORT** for a period of **Sixty (60)** days after the date on which the bid Proposals are opened; and

2. Enters into the written Contract and furnishes the required Certificates of Insurance, Payment and Performance Bonds, with Surety or Sureties acceptable to the **BROOME COUNTY** within **Fifteen (15)** days after Notice that the said Proposal is accepted, then this obligation shall be void; otherwise the same shall be in full force and the full amount of this Proposal.

Bond shall be paid to the **BROOME COUNTY** as stipulated herein as liquidated damages.

Signed this _____ day of _____, 20____.

(PRINCIPAL MUST INDICATE WHETHER CORPORATION, PARTNERSHIP COMPANY, OR INDIVIDUAL)

_____

_____

Principal

THE PERSON SIGNING FOR THE PRINCIPAL SHALL, IN THEIR OWN HANDWRITING, SIGN THE PRINCIPAL'S NAME, THEIR OWN NAME, AND THEIR TITLE. WHERE THE PERSON SIGNING FOR CORPORATION IS OTHER THAN THE PRESIDENT OR VICE PRESIDENT, THEY MUST FURNISH A CORPORATE RESOLUTION SHOWING THEIR AUTHORITY TO BIND THE CORPORATION.

_____

_____

_____

(Affix Surety's Corporate Seal)

_____Surety

SURETY'S BOND AFFIDAVIT

STATE OF _____)

SS

COUNTY OF _____)

BEFORE ME, THE UNDERSIGNED AUTHORITY, PERSONALLY APPEARED _____ _____ WHO, BEING DULY SWORN, DEPOSES AND SAYS THAT THE UNDERSIGNED IS A DULY AUTHORIZED (RESIDENT) (NON-RESIDENT) INSURANCE AGENT, PROPERLY LICENSED UNDER THE LAWS OF THE STATE OF _____, OF _____, A COMPANY AUTHORIZED TO MAKE CORPORATE SURETY BONDS UNDER THE LAWS OF THE STATE OF NEW YORK

SAID _____ FURTHER CERTIFIES THAT AS ATTORNEY-IN-FACT FOR THE SAID _____, THEY HAVE SIGNED THE ATTACHED BOND IN THE SUM OF _____ _____ DOLLARS (U.S. $_____) ON BEHALF OF _____ _____ FOR

BROOME COUNTY COVERING PROJECT – **REHABILIATION OF HANGARS 2&3 – PHASE 2 at the GREATER BINGHAMTON AIRPORT**

COUNTERSIGNED:

_____ _____

NEW YORK RESIDENT AGENT AGENT AND ATTORNEY-IN-FACT

ACKNOWLEDGEMENT FOR ATTORNEY-IN-FACT

SWORN TO AND SUBSCRIBED BEFORE ME THIS _____DAY OF _____, 20___.

_____

NOTARY PUBLIC,
MY COMMISSION EXPIRES: _____

AWARD OF CONTRACT AND EXECUTION OF CONTRACT BONDS

1. Consideration of Proposals and Award of Contract

The award of the Contract, if it is awarded, will be to the lowest responsive and responsible Bidder whose qualifications indicate the award will be in the best interest of the Owner and whose Proposal complies with all the prescribed requirements. No award will be made until the Owner has concluded such investigations as it deems necessary to establish the responsibility, qualifications, and financial ability of the Bidders to do the work in accordance with the Contract Documents to the satisfaction of the Owner within the time prescribed. The Owner reserves the right to reject the bid Proposal of any Bidder who does not pass such investigation to the Owner's satisfaction. If the Contract is awarded, the Owner will give the successful Bidder written notice of the award by the Bid Valid Period date specified in the Invitation to Bid. Until the final award of the Contract, the Owner reserves the right to reject any or all Proposals, or to proceed to do the work otherwise when the best interests of the Owner will be promoted thereby.

2. Return of Proposal Surety

As soon as the Proposals have been compared, the Owner may, at its discretion, return the Proposal Surety accompanying those Proposals which, in its judgment, would not be considered in making the award. When award is made, the successful Bidder's Proposal Surety and that of the next low Bidder will be retained until the Contract has been executed and acceptable Contract Surety received, after which it will be returned to the Bidders. Should the award be delayed beyond the Bid Valid Period date specified in the Invitation to Bid, all Bidder's Proposal Surety will be returned, unless such delay is from causes beyond the control of the Owner. See the Supplemental General Provisions, Item 18 for additional information on Proposal and Contract Surety.

3. Requirements of Contract Surety

Contract Surety shall include a good and sufficient Performance Bond and labor and material Payment Bond, each in the sum of 100 percent of the awarded Contract amount, along with appropriate Power of Attorney. Contract Surety shall be delivered to the Owner within 15 calendar days from the date of Notice of Award, simultaneously with Contractor's execution of the Contract. See the Supplemental General Provisions, Item 18 for additional information on Proposal and Contract Surety.

4. Execution of Contract

The successful Bidder shall sign (execute) the Contract and associated documents and return them to the Owner, along with the fully executed Contract Surety and required insurance certificates, if applicable, within 15 calendar days from the date on the Notice of Award by the Owner. If the Contract is mailed, special handling is recommended.

5. Approval of Contract

Upon receipt of acceptable insurance certificates, Contract, Contract Surety, and associated documentation 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 documents to the Contractor. The Contract is not binding upon the Owner until it has been executed by the Owner and delivered to the Contractor.

6. Failure to Execute Contract

Failure of the successful Bidder to execute the Contract and furnish acceptable insurance certificates, Contract Surety and other required Contract documents within the 15 calendar-day period after receiving Notice of Award shall be just cause for cancellation of the award and forfeiture of the Proposal Surety, not as a penalty, but as liquidation of damages to the Owner. Award may then be made to the next best qualified Bidder, or the work re-advertised, or handled as the Owner may elect.

7. Warranty Bond

The Bidder to whom the Contract is awarded must deposit with the Owner at the date of substantial completion of the Contract a Warranty Surety Bond in a sum equal to 10 percent of the adjusted Contract amount at completion of the work, guaranteeing against defect workmanship and materials for a period of one year from the date of substantial completion. The bond shall be in the form acceptable to the Owner and shall be that of a Surety Company acceptable to the Owner and licensed to do business in the state in which the work was completed. The bidder shall be responsible for obtaining and maintaining the bond in force from the date of substantial completion until expiration of the one-year maintenance period.

STANDARD FORM CONSTRUCTION AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 20__, between the **COUNTY OF BROOME**, hereinafter referred to as "County", located at the Edwin L. Crawford County Office Building, Government Plaza, Binghamton, New York, and _____, hereinafter referred to as "Contractor", having a mailing address at _____ _____.

WHEREAS, the Board of Acquisition and Contract (BAC) advertised for bids for the **REHABILITATION OF HANGARS 2&3 – PHASE 2, GREATER BINGHAMTON AIRPORT, COUNTY OF BROOME, STATE OF NEW YORK, BROOME CO. PROJECT NO. RFB-2026-047, NYSDOT PIN: 9A10.53**, in accordance with the plans, drawings and specifications distributed to the bidders, which plans, drawings and specifications are incorporated herein and made a part of this agreement be reference, as if fully set forth herein; and

WHEREAS, partial funding for this project is being provided by **New York State Department of Transportation (NYSDOT) – Aviation Capital Program**

and this agreement is expressly made subject to the rules and regulations of the **New York State Department of Transportation (NYSDOT)**

WHEREAS, the BAC at its regularly scheduled meeting of _____, approved the "Bid Proposal" of the Contractor, a copy of which is attached hereto and made a part hereof as Exhibit "A", and

NOW, THEREFORE, in consideration of the mutual covenants, promises and agreements contained herein, the County and the Contractor do hereby agree as follows:

I. GENERAL

A. DEFINITIONS

1. **Agreement or Contract**, as used in this Agreement, the terms “Agreement” or “Contract” are interchangeable and refer to this document.

2. **B.A.C.**, as used in this Agreement, the term "B.A.C." shall refer to the Board of Acquisition and Contract as duly authorized and empowered by Article XII of the Administrative Code of Broome County.

3. **COUNTY**, as used in the Agreement, the term "County" shall refer to the County of Broome located at the Edwin L. Crawford County Office Building, Government Plaza, Binghamton, New York.

4. **DATE OF EXECUTION**, as used in this Agreement, the term "Date of Execution" shall refer to the date of execution of this Agreement and any subsequent modification of the terms, compensation or scope of services pertinent to unperformed work.

5. **CONTRACTOR**, The term "Contractor" as used in this Agreement shall refer to

   _____

   having a mailing address at : _____

   _____.

6. **EXHIBIT "A"**, The term "Exhibit "A" as used in this Agreement shall refer to the "Bid Proposal" submitted by the Contractor and approved by the B.A.C. Such "Exhibit "A" is attached hereto and made a part hereof.

7. **EXHIBIT "B",** The term "Exhibit B" as used in this agreement, shall refer to the "Insurance Requirements" form, which is attached hereto and made a part hereof.

8. The terms "FAA" and "NYSDOT" as used in this agreement, shall refer to the Federal Aviation Administration and New York State Department of Transportation

B. CAPTIONS

The Titles or Captions of articles and paragraphs of this Agreement are intended for convenience and reference purposes only and in no way define, limit or describe the scope or intent thereof or of the Agreement or in any way affect the Agreement.

C. NOMENCLATURE

Materials, equipment, methodologies or other work described in words which have a well-known, technical or trade meaning shall be interpreted as having such meaning in connection with this Agreement.

D. ENTIRE AGREEMENT

This Agreement, which includes and incorporates as if fully set forth herein all referenced exhibits, the "Information for Bidders", "Minority Business Enterprise Policy", "Minority Hiring Goals", "Exemption from Sales and Compensation Taxes", "State Prevailing Wage Rates", "General Conditions", as amended by "Supplemental General Conditions", "Special Notes", and "Technical Specifications", as set forth in the project specifications distributed to the Contractor, constitutes the entire Agreement between the parties hereto and no statement, promise condition, understanding, inducement or representation, oral or written, expressed or implied, which is not contained herein shall be binding or valid and this Agreement shall not be changed, modified or altered in any manner except by an instrument in writing executed by the parties hereto.

E. SUCCESSORS AND ASSIGNS

It is mutually understood and agreed that Contractor shall not assign, transfer, convey sublet, or otherwise dispose of the contract or the right, title, or interest therein, or his power to execute such contract, to any other person, company, or corporation without the express, previous, written consent of Broome County

This Agreement shall bind the Successors, Assigns and Representatives of the parties hereto.

F. INVALID PROVISIONS

If any term or provision of this Agreement or the application thereof to any agency, person, firm, or corporation or circumstance shall, to any extent, be invalid or unenforceable, this Agreement shall not be affected thereby and each term or provision of this Agreement shall remain valid and be enforced to the fullest extent permitted by law.

G. NOTICES

Any written notice required hereunder shall be deemed properly given, delivered and service thereof completed when said notice is deposited in any Post Office or Post Office Box in a post-paid envelope properly addressed or when said notice is sent by telegram or when said notice is delivered in person to the party to whom it is addressed or their authorized representatives, the addresses of the County and the Contractor set forth in the beginning of this Agreement shall be deemed the place to which written notice to them shall be directed; provided, however, that any such party or parties may by written notice to the others pursuant to this paragraph designate a different address to which notices to it shall be directed or designate the name and address of another person, firm or corporation to whom notices to it may be directed.

H. CONTINGENT ON APPROVALS

The parties agree that the implementation of this contract shall be contingent upon appropriate and/or necessary approvals from **NYSDOT**; or other appropriate offices of the New York State and/or the United States Government, and shall be subject to the applicable orders, rules and regulations of said agency(ies).

II. RESPONSIBILITY OF THE CONTRACTOR

A. The Contractor shall be responsible for the quality, technical accuracy, timely completion, and the coordination of all plans, studies, designs, drawings, labor, materials, construction, specifications, reports and other services furnished by the Contractor under this Agreement. The Contractor shall correct or revise any errors, omissions or other deficiencies in his plans, studies, designs, drawings, labor, materials, construction, specifications, reports and other services, without additional compensation.

B. The Contractor shall perform such services as may be necessary to accomplish the work required to be performed under this Agreement, in accordance with this Agreement and applicable County requirements in effect on the date of execution of this Agreement.

C. Approval by the County of plans, studies, labor, materials, construction drawings, designs, specifications, reports, and incidental work furnished hereunder shall not in any way relieve the Contractor of responsibility for the technical adequacy of his work. Neither the County's approval or acceptance of, nor payment for, any of the

services shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement.

III. COUNTY RESPONSIBILITY

A. Provide full information as to its requirements for this project.

B. Assist the Contractor by placing at his disposal all available information pertaining to the project including previous reports and any other data relative to the completion of this project.

C. Furnish the Contractor, as appropriate, property boundary, right-of-way, topographic and utility surveys and any other similar reports which it may have in its possession.

D. Guarantee access to any appropriate properties for any studies which the Contractor deems necessary.

E. Designate, in writing, the person to act as the County's representative with respect to work to be performed under this Agreement.

F. Give prompt written notice to the Contractor whenever the County observes or otherwise becomes aware of any defect in this project.

IV. ADMINISTRATION

A. CLAIMS AND DISPUTES

1. If the Contractor claims (1) that any work he has been ordered to do is revised work or (2) that he has performed or is going to perform revised work or (3) that any action or omission of the County is contrary to the terms and provisions of this Agreement, he shall:

   (a) Promptly comply with such order.

   (b) File with the County, within thirty (30) working days after being ordered to perform the work claimed by him to be revised work or within thirty (30) working days after commencing performance of the revised work, whichever date shall be earlier, or within thirty (30) working days after the said action or omission on the part of the County occurred, a written notice of the basis of his claim and request a determination thereof;

   (c) File with the County, within thirty (30) working days after said alleged revised work was required to be performed or said alleged revised work was commenced, whichever date shall be earlier, or said alleged action or omission by the County occurred, a verified, detailed statement, with documentary evidence, of the items and basis of his claim;

   (d) Produce for the County's examination, upon notice from the County, all his books of account, bills, invoices, payrolls, subcontracts, time books, progress records, daily reports, bank deposit books, bank statement, check-books and canceled checks, showing all of his actions and transactions in connection

with or relating to or arising by reason of his claim, and submit himself and persons in his employ and in his subcontractor's employ if appropriate, for examination under oath by any person designated by the County to investigate any claim made against the County under this Agreement, such examination to be made at the offices of the County; and

(e) Proceed diligently, pending and subsequent to the determination of the County with respect to any such disputed matter, with the performance of this Agreement and in accordance with all instructions of the County.

B. The Contractor's failure to comply with any or all parts of Sub-division (b) of Subparagraph 1 of Paragraph A of the article shall be deemed to be:

1. A conclusive and binding determination on his part that said order, work, action or omission does not involve revised work and it is not contrary to the terms and provisions of this Agreement; and

2. A waiver by the Contractor of all claims for additional compensation or damages as a result of said order, work, action, or omission. The provisions of Subdivision (b) of Subparagraph 1 of Paragraph A of this section are for the purpose of enabling the County to avoid waste of public funds by affording it promptly the opportunity to cancel or revise the effects of circumstances giving rise to a claim or take such other action as may seem desirable and to verify any claimed expenses or circumstances as they occur.

Compliance with such provisions is essential whether or not the County is aware of the circumstances which might constitute a basis for a claim and whether or not the County has indicated it will consider a claim in connection therewith.

C. No person has power to waive or modify any of the foregoing provisions and in any action against the County to recover any sum in excess of the sum certified by the County to be due under or by reason of this Agreement. The Contractor must allege in his complaint and prove at trial compliance with the provisions of this section.

D. Nothing in this section shall in any way affect the County's right to obtain an examination before trial or a discovery and inspection in any action that might be instituted by or against the County.

E. REVISION OF WORK

1. The County may, at any time, by written order, make changes within the general scope of this Agreement and the services for work to be performed. If such changes cause an increase or decrease in the Contractor's cost of, or time required for, performance of any services under this Agreement, whether or not changes by any order, an equitable adjustment shall be made in accordance with Paragraphs A and B of this Article, and subject to Article VII, Paragraph C below.

2. No services for which an additional compensation will be charged by the Contractor shall be furnished without the written authorization of the County.

3. In the event that there is a modification of requirements related to the services to be performed under this Agreement subsequent to the date of execution of this

Agreement, the increased or decreased cost of performance of the services provided for in this Agreement shall be reflected on the appropriate modification of this Agreement and shall be subject to Article VI, Paragraph D, below.

F. ACCEPTABILITY OF WORK

The Broome County Commissioner of Public Works shall, in all cases, determine the amount, quality, acceptability, and fitness of the work being performed hereunder and shall determine every question which may arise relative to the fulfillment of this Agreement on the part of the Contractor. The Commissioner's decision shall be final, conclusive, and binding upon the Contractor, except that if such decision is arbitrary or capricious, the Contractor may have such decision reviewed by a competent court of jurisdiction within the State of New York.

G. ORDERS FOR CHANGE, REVISION, TERMINATION AND COMPENSATION

All orders to the Contractor directing changes in the project, revision within the scope of services, terminations of the project, regular payments upon the project and payments representing increases and decreases in compensation due to changes, revision or termination shall be made by the County through its duly authorized Board of Acquisition and Contract.

H. SUPERVISION

Supervision of the progress of this work shall be conducted by the County through its duly-authorized Department of Public Works representative.

V. SCOPE OF SERVICES

A. GENERAL

The Services to be rendered under this Agreement shall include the **REHABILITATION OF HANGARS 2&3 – PHASE 2 , GREATER BINGHAMTON AIRPORT, COUNTY OF BROOME, STATE OF NEW YORK, BROOME CO. PROJECT NO. RFB-2026-047, NYSDOT PIN: 9A10.53, including all labor, materials and equipment necessary to complete the work required by the plans and/or specifications book.**

All materials and supplies shall be furnished to the County freight paid.

All work on this project, and all phases of such work as described in Subdivision (a) above shall be performed in accordance with the detailed description of such phases and work as contained in the "Bid Proposal" of the Contract attached to this Agreement as Exhibit "A".

VI. TIME FOR PERFORMANCE

A. DATE OF COMMENCEMENT

The Contractor agrees that he will begin the work herein embraced on or about the

time specified in Paragraph "C" below, and that he will prosecute the same with such diligence that all work covered by this Agreement shall be entirely completed and performed on or about the times specified in Paragraph "C" below.

The County shall submit to the contractor a notice of approval upon its receipt of appropriate approvals from **NYSDOT** and/or other appropriate governmental agencies of the State of New York or the United States Government.

B. BEST EFFORTS

The Contractor acknowledges that the services to be performed are essential to the effective operation of the County, that time is of the essence, and that, therefore, the Contractor will exercise his best efforts to complete the services called for under this Agreement in the minimum time possible, and within the time specified in such work orders as may be issued by the County to the Contractor. In the event that the Contractor, for good cause shown, cannot complete the services for a particular task or phase within the time agreed to, the Contractor shall make a written request to the County, in accordance with Paragraph E below.

C. SCHEDULE OF WORK

The Contractor shall not begin actual construction at the **project site until he has received the "Notice to Proceed" from the Department of Aviation. Once this Notice is given, all work required shall be substantially completed within:**

- **180 Consecutive Calendar Days for award of Base Bid and any combination of Add Alternatives 1, 2, 3, 4 and 5.**

D. NOTICE OF CONDITIONS CAUSING DELAY

1. Within ten (10) working days after the commencement of any condition which is causing or may cause delay in completion, the Contractor must notify the County in writing of the effect, if any, of such condition upon the time progress schedule, and must state and in what respects, if any, the condition is causing or may cause such delay.

2. Failure to strictly comply with this requirement may, in the discretion of the County, be deemed sufficient cause to deny any extension of time on account of delay in completion arising out of or resulting from any change, extra work, suspension, or other condition.

E. EXTENSION OF TIME

1. An extension of or extensions of time for the completion of the work may be granted by the County subject to the provisions of this section, but only upon written application therefore by the County.

2. An application for an extension of time must set forth in detail the source and nature of each alleged cause of delay in the completion of the work, the date upon which each such cause of delay began, ended, or will end, and the number of days delay attributable to each of such causes. It must be submitted prior to

completion of the work.

3. If such an application is made, the Contractor shall be entitled to an extension of time for delay and completion of the work caused solely:

   (a) By the acts of omissions of the County, its officers, agents, or employees; or

   (b) By unforeseeable supervening conditions entirely beyond the control of either party hereto (such as, but not limited to Acts of God or the public enemy, war or other national emergency making performance temporarily impossible, illegal or strikes or labor disputes.

4. Any extension of time will be limited to the number of calendar days the delay causes as determined by the County, and then only if the Contractor shall have strictly complied with all the requirements of this Paragraph and Paragraph D above. The County shall make such determination within ninety (90) calendar days after receipt of the Contractor's application for an extension of time; provided however, said application complies with the requirements of this Paragraph.

5. The Contractor shall not be entitled to receive a separate extension of time for each one of several causes of delay operating concurrently, but, if at all, only for the actual period of delay in completion of the work as determined by the County, irrespective of the number of causes to produce such delay. If one of several causes of delay operating concurrently results from any act, fault or omission of the Contractor or of his Subcontractor, if any, and would of itself (irrespective of the concurrent causes) have delayed the work, no extension of time will be allowed for the period of delay resulting from such act, fault or omission.

6. The granting of an application for an extension of time for causes of delay other than those herein referred to shall be entirely within the discretion of the County.

7. If the Contractor shall claim to have sustained any damages by reason of delays, extraordinary or otherwise, or hindrances which he claims to be due to any action, omission, direction or order by the County, the Contractor shall be entitled only an extension of time as outlined in subparagraph six of paragraph E and shall not have any claims or prosecute any suit, action, cause of action or proceeding against the County based upon such delays or hindrances.

F. FAILURE TO COMPLETE ON TIME

1. Furthermore, it is also mutually agreed between the parties hereto that in such event that the Contractor not complete all work by the time specified the Owner may retain the sum(s) as follows:

   - **$2,500 for Each Calendar Day or portion thereof in which the work items remain incomplete beyond:**
     - **180 consecutive calendar days for award of Base Bid and any combination of Add Alternatives 1, 2, 3, 4, and 5.**

as detailed in the Supplemental General Provisions of the contract specifications, until said work is complete as herein stated, not as penalty, but as liquidation of a reasonable portion of damages that will be incurred by the Owner for the failure of the Contractor to complete work within the specified time.

VII. SCHEDULE OF PAYMENTS

A. ENTIRE SUM

In no event shall the total amount of the contract exceed the sum of _____ **Dollars and** _____ **Cents $**_____, except as in accordance with Paragraph C below.

B. METHOD OF PAYMENT

On the faithful performance of the work of the contract and its acceptance by the County, the County hereby agrees to make payment to the Contractor based upon the proposal hereto attached and made a part of this contract in the following manner, to wit:

Once in each month on such date as the County may fix, the Contractor shall submit to the County a requisition for a progress payment for the work performed and material which has actually been put in place in accordance with the terms and conditions of the contract, during the preceding month, and compute the value thereof. The quantity of work done and material actually put in place and value thereof as indicated in the requisition for progress payment shall be subject to verification by the County. Upon verification by the County of the quantity of work done and material actually put in place in accordance with the terms and conditions of the contract and the value thereof, the County shall pay to the Contractor all monies due as computed upon the percentage basis prescribed by Subdivision 1, Section 106-b of the General Municipal Law. If, however the amount earned by the Contractor in any one month except the month in which the final requisition for progress payment is made should be less than ten percent (10%) of the contract amount or One Thousand Dollars ($1,000), no progress payment will be made for that month.

It is further agreed that so long as any lawful or proper direction concerning the work or material given by the BAC and Contract, or its representative, shall remain uncomplied with, the Contractor shall not be entitled to submit a requisition for a progress payment, nor shall any such requisition for a progress payment be accepted by the County on account of work done or material furnished until such lawful or proper direction aforesaid has been fully and satisfactorily complied with.

Upon satisfactory completion of the work performed hereunder, prior to final payment under this Agreement, and as a condition precedent thereto, the Contractor shall execute and deliver to the County:

1. A release of all claims against the County arising under or by virtue of this Agreement, other than such claims, if any, as may be specifically excepted by

the Contractor from the operation of the release in stated amounts to be set forth therein.

2. A release of all leans by the Contractor and/or his subcontractors against any property of the County arising in any manner out of performance of this Agreement.

3. A consent by the Contractor's surety company to release of final payment, and

4. Submission of Application for Final Payment.

C. VALUE OF REVISION OF WORK

1. The amount by which the Agreement consideration is to be increased or decreased by any revision shall be determined by the County by one or more of the following methods:

   a. By accepting an amount agreed upon by the parties, or

   b. By estimating the fair and reasonable cost of (1) Labor, including all wages, required wage supplements, and insurance required by law (Workers Compensation, Social Security, Disability, Unemployment, etc.) employed pursuant to the work; (2) materials, and (3) Equipment, or

   c. By determining the actual cost of the revision in the same manner as in the above Subdivision b. except that actual costs of the Contractor shall be utilized in lieu of estimated costs, the County shall have the option to utilize this method provided it notifies the Contractor of its intent to do so prior to the time the Contractor commences performance of such revision.

2. Irrespective of the method used or to be used by the County in determining the value of a revision, the Contractor, within thirty (30) working days after a request for the same, must submit to the County a detailed breakdown of the Contractor's estimate of the value of the revision.

3. Unless otherwise specifically provided for in a revision, the compensation specified for revised work covers any damage or expense caused the Contractor by any delays to other work to be done under this contract resulting from or on account of said revised work and the Contractor waives all rights to any other compensation for said revised work, damage or expense.

D. LIMITATION OF ACTIONS

1. No action or proceeding shall lie or be maintained by the Contractor, or anyone claiming under or through the Contractor, against the County upon any claim arising out of or based upon this Agreement or any breach hereof or by reason of any act or omission or requirement of the County or its officers, agents, servants or employees unless:

   a. Such action or proceeding is instituted in a court or competent jurisdiction in

the County of Broome, State of New York.

b. The Contractor or the person claiming under or through him shall have strictly complied with all requirements relating to the giving of notices and information with respect to such claim; and

c. Such action or proceeding shall be commenced within one (1) year after the submission to the County of the final application for payment or, if the claim is based upon monies retained for any period after the date of the final application for payment, such action is commenced within six (6) months after such monies become due and payable under the terms of this Agreement; or

d. If this Agreement is terminated or the Contractor declared in default by the County, such action is commenced within six (6) months after the date of such termination or declaration of default by the County.

2. Notwithstanding anything in the laws of the State of New York to the contrary, the Contractor or anyone claiming under or through the Contractor, shall not be entitled to any additional time to begin anew any other action if any action commenced within the times herein specified is dismissed or discontinued for any reason whatsoever.

E. NO ESTOPPEL OR WAIVER

1. The County shall not be precluded or estopped by any inspection, acceptance, application for payment or payments, final or otherwise, issued or made under this Agreement or otherwise issued or made by it, or any officer, agent or employee of the County, from showing at any time the true amount and character of the work performed, or from showing that any such inspection, acceptance, application for payment is incorrect, or was improperly issued or made; and the County shall not be precluded or estopped, notwithstanding for payment or payments, from recovering from the Contractor any damages which it may sustain by reason of any failure on his part to comply strictly with this Agreement and any monies which may be paid to him or for his account in excess of those which he is lawfully entitled.

2. Neither the acceptance of all or any part of the work covered by this Agreement, nor any payment, nor any order or application for payment issued by the County for any officer, agent or employee of the County, nor any permission or direction to continue with the performance of this Agreement before or after its specified completion date, nor any performance by the County of any of the Contractor's duties or obligations, nor any delay or omission by the County to exercise a right or remedy accruing to it under the terms of this Agreement or existing at law or in equity or by statute or otherwise, nor any other action or inaction by the County, its officers, agents, or employees, shall be deemed to be a release to the Contractor or his sureties, if any, from any obligations, liabilities, or undertakings in connections with this Agreement, or a waiver of any provision of this Agreement, or of any rights or remedies to which the County may be entitled because of any breach thereof, excepting only a written instrument expressly providing for such release or waiver. No termination, revision or annulment hereof, in whole or as to any part of this Agreement, because of any breach hereof, shall be deemed a waiver of any money damages to which the County

may be entitled because of such breach. No waiver by the County of any breach of this Agreement shall be deemed to be a waiver of any other or any subsequent breach.

VIII. TERMINATION

A. This agreement may be terminated in whole or in part in writing by either party in the event of substantial failure by the other party to fulfill its obligations under this agreement through no fault of the terminating party; provided, that no such termination may be effected unless the other party is given: 1) not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate, and 2) an opportunity for consultation with the terminating party prior to termination.

B. This agreement may be terminated in whole or in part in writing by the County for its convenience; provided, that the Contractor is given: 1) no less than twenty (20) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate, and 2) an opportunity for consultation with the terminating party prior to termination.

C. If terminating is effected by the County, the County shall reimburse the Contractor for all costs and obligations not previously paid by the County. However, if termination for default is effected by the County, any payment due to the Contractor at the time of termination may be adjusted to the extent of any additional costs occasioned to the County by reason of the Contractor's default.

D. Upon receipt of a termination action pursuant to Paragraphs "A" or "B" above, the Contractor shall: 1) promptly discontinue all services affected (unless the notice directs otherwise), and 2) deliver or otherwise make available to the County all data, plans, studies, drawings, specifications, materials, supplies, reports, estimates, summaries, and such other information and material as may have been accumulated by the Contractor in performing this agreement, whether completed or in process.

E. Upon termination pursuant to Paragraphs "A" or "B" above, the County may take over the work and prosecute the same to completion by agreement with another party or otherwise.

IX. PROVISIONS REQUIRED BY LAW

Each and every provision required by law to be inserted in this Agreement shall be deemed to be inserted herein and this Agreement shall be read and enforced as though it were included herein and in the event any such provision is not inserted or is not correctly inserted then, upon the application of either party, this Agreement shall forthwith be physically amended to make insertion or correction.

X. INSURANCE

The Contractor shall supply all insurance coverage as the County may deem necessary for any and all liability including, but not necessarily limited to, comprehensive general liability, motor vehicle, disability benefits, workers compensation benefits, owner

protection policies, and all insurance required by the laws of the County, the State of New York, and the United States Government. The Contractor shall, as to liability policies, list the County as an additional named insured. The Contractor shall provide the necessary insurance certificates setting forth the above coverage. The Contractor hereby waives any and all rights or subrogation against the County, its employees, agents, invitees, and licensees for any injury, death or property damage sustained by the Contractor, its employees, agents, invitees, and licensees to the extent covered by any insurance; and the Contractor shall require that all parties with whom it contracts in connection with this Agreement shall waive their rights to subrogation against the County, its employees, agents, invitees and licensees for any injury, death or property damage sustained by the contracting party, its employees, agents, licensees, and invitees. Contractor shall provide the necessary insurance certificate(s) setting forth the coverage required by the County, including but not limited to coverage outlined on the Insurance Requirements Form attached hereto and incorporated herein as Exhibit “B”.

XI. INDEMNIFICATION

A. RISKS ASSUMED BY THE CONTRACTOR

1. The Contractor solely assumes the following distinct and several risks whether they arise from acts or omissions (whether negligent or not and whether supervisory or otherwise), of the Contractor, of the Architect, of the Engineers, or any subcontractor, anyone directly or indirectly employed by any of them, their officers, agents and employees, or third persons, or from any other cause, including unforeseen obstacles and difficulties which may be encountered in the prosecution of the work covered by the contract, whether such risks are within or beyond the control of the Contractor and whether such risks involve a legal duty, primary or otherwise, imposed upon third parties, the Architect, or the Engineers, if any, except that the Contractor shall not be responsible for risks which arise from affirmative acts of the county committed with intent to cause the loss, damage and injuries here in below set forth:

   (a) The risk of loss or damage, direct or indirect, of whatever nature, to the work covered by the contract or to any plant, equipment, tools, materials or property furnished, used, installed or received by the County or by the Contractor or any subcontractor, materialmen or workingmen performing services or furnishing materials for the work covered hereunder. The Contractor shall bear such risk of loss or damage until the work covered by the contract has been finally accepted by the County or until completion of removal of such plant, equipment, tools, materials or property from the construction site and the vicinity thereof, whichever event occurs last. In the event of such loss or damage, the Contractor shall forthwith repair, replace and/or make good any such loss or damage without cost to the County.

   (b) The risk of claims, just or unjust, by third persons against the Contractor, or County, the Architect, Engineer or their officers, agents and their employees on account of bodily injury (including wrongful death) and property damage (direct or consequential) and loss or damage of any kind whatsoever arising or alleged to arise out of or as a result of or in connection with the performance by the Contractor of the work covered by the contract (whether actually caused by or resulting from the performance of the contract) or out of or in connection with the Contractor's operations or presence at or in the

vicinity of the construction site, whether such claims are made and whether such injury, damage or loss is sustained at any time both before and after the final acceptance by the County of all work covered by the contract.

2. The Contractor will not be responsible for risks that arise from affirmative acts of the County committed with intent to cause the loss, damage and injury.

3. The Contractor shall indemnify and save harmless the County, Architect, Engineers and their officers, agents and/or employees against all claims described above and for all costs and expenses incurred by them in the defense, settlement, or satisfaction thereof, including, attorney's fees and court costs. (If so directed, the Contractor shall, at his own expense, defend against such claims.)

4. The Contractor's obligations under this article shall not be deemed waived, limited or discharged by the enumeration or procurement of any insurance for liability for damages.

5. Neither the County's final acceptance of the work to be performed hereunder, nor the making of any payment shall release the Contractor from his obligations under this article. The enumeration elsewhere in this Agreement of particular risks assumed by the Contractor of particular claims for which he is responsible shall not be deemed to limit the effect of the provisions of this Article or to imply that it assumes or is responsible for only risks or claims of the type enumerated; and neither the enumeration in this article nor the enumeration elsewhere in the Agreement of particular risks assumed by the Contractor or of particular claims for which it is responsible shall be deemed to limit the risks which the Contractor would assume or the claims for which it would be responsible in the absence of such enumerations.

6. The obligation of the Contractor under this paragraph shall not extend to the liability of the Architect, or Engineers, or their officers, agents or employees for property damage or personal injuries of any kind arising out of 1) the preparation of approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications, or 2) the giving of or the failure to give directions or instructions by the Architect, his agents or employees, provided such giving or failure to give is the primary cause of the injury or damage.

7. The obligations of the Contractor under this paragraph shall not extend to the liability of the County, its officers, agents and employees for damage arising out of the bodily injury to persons or damage to property resulting solely from or contributed to by the negligence of either the County, its officers, agents or employees to the extent that such indemnification would violate Section 5-322.1 of the New York General Obligations Law.

8. No provisions of this contract that impose upon the Contractor directly or indirectly the responsibility, in whole or in part, for preventing injury to person or damage to property or which specifies, in whole or in part, the means to be used by the Contractor directly or indirectly, the risk of loss or damage and/or liability for or the obligation to hold the County, the Architect, the Engineer, or their officers, agents and employees harmless as to such injury and damage, shall create or give to third parties any claim or right of action against the Contractor,

County, Architect, or Engineer, their officers, agents or employees beyond such as may legally exist irrespective of such provisions.

XII. ATTORNEY'S FEES

The Contractor shall be responsible for and will pay to the County all reasonable costs and attorneys fees in the event that:

A. The Contractor breaches its duty to defend the County as set forth in Article XI herein.

B. The Contractor brings an action against the County for an alleged breach of this agreement and the Contractor fails to prevail in the litigation.

C. The County brings an action against the Contractor for an alleged breach of this agreement and the County prevails in the litigation.

XIII. COPYRIGHTS AND PATENTS

The Contractor shall defend actions or claims charging infringement of any copyright or patent by reason of the use or adoptions of any plans, studies, designs, drawings, or specifications supplied by him and hold harmless the County from any loss or damages resulting there from.

XIV. AUDIT; ACCESS TO RECORDS

The Contractor shall maintain books, records, documents and other evidence directly pertinent to performance under this Agreement in accordance with generally accepted accounting principles and practices consistently applied and in effect on the date of execution of the Agreement.

IN WITNESS WHEREOF, this Agreement has been executed by the County and the Contractor on the day and year first written above.

COUNTY OF BROOME

BY:

_____

Jason T. Garnar, Broome County Executive

_____

BY:

_____

TITLE:

_____

STATE OF NEW YORK):

COUNTY OF BROOME):

On this day of in the year 20__, before me, the undersigned, a notary public in and for said state, personally appeared Jason T. Garnar personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity, and that by her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____

Notary Public

STATE OF NEW YORK):

COUNTY OF):

On this day of in the year 20__, before me, the undersigned, a notary public in and for said state, personally appeared , personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____

Notary Public

STANDARD FORM CONSTRUCTION AGREEMENT INSERTS

The following Standard Form Construction Agreement is for your information and consideration while preparing your bid. The final Contract Agreement used to complete the Contract between Broome County and the successful low bidder will be completed with the proper inserts as shown below:

PAGE:	FOOTNOTE:	ITEMS TO BE INSERTED:
1	*N1*	REHABILITATION OF HANGARS 2&3 – PPHASE 2 GREATER BINGHAMTON AIRPORT COUNTY OF BROOME STATE OF NEW YORK BROOME CO. PROJECT NO. RFB 2026-047 NYSDOT PIN: 9A10.53
1	*N2*	New York State Department of Transportation (NYSDOT) – Aviation Capital Grant Program.
1	*N3*	Will be insert upon determination of successful bidder.
2	*N4*	FAA, Federal Aviation Administration; NYSDOT, New York State Department of Transportation
3	*N5*	NYSDOT
5	*N6*	N/A
6	*N7*	REHABILITATIONS OF HANGARS 2&3 – PHASE 2 GREATER BINGHAMTON AIRPORT COUNTY OF BROOME STATE OF NEW YORK BROOME CO. PROJECT NO. RFB 2026-047 NYSDOT PIN:9A10.53 Including all labor, materials, and equipment necessary to complete the work required by the Plans and/or Specifications.
6	*N8*	NYSDOT
7	*N9*	The Contractor shall not begin actual construction at the project site until he has received the written “Notice to Proceed” from the Department of Aviation. Once the Notice is given, substantial completion shall be no later than 180 Consecutive Calendar Days from Notice to Proceed , and final completion shall be no later than 180 Consecutive Calendar Days from Notice to Proceed.
7	*N10*	<u>Referring to the Construction Safety and Phasing Plan Drawings of the project bid documents, the project requires Phases / Durations in accordance with the following:</u> The work duration for project is 180 consecutive calendar days.

8	*N11*	Will be insert upon determination of successful bidder.

Risk Management & Insurance Specifications

Project Description or Contract Number	Rehabilitation of Hangars 2&3 Bathrooms, HVAC, Electrical updates, fire alarms, and office space renovations.
Date Issued	August 20, 2026
Vendor name ("Contractor")	TBD
County Department	Aviation Mark Heefner

Please read these specifications very carefully. These specifications are part of your contract with Broome County. It is advisable that you forward a copy of these specifications to your insurance agent. Broome County's waiver of any requirement(s) set forth herein shall not constitute a waiver of any other contract provision.

Part I. General Provisions

1. The Contractor shall procure and maintain during the term of this contract, at the Contractor's expense, the insurance policies listed in Part II with limits equal to or greater than the enumerated limits.
2. The contractor shall be solely responsible for any self-insured retention or deductible losses under each of the required policies.
3. Every required policy, including any required endorsements and any umbrella / excess policy, shall be primary insurance. Insurance carried by Broome County, its officers, or its employees, if any, shall be excess and not contributory insurance to that provided by the Contractor.
4. Every required coverage type shall be "occurrence basis".
5. The Contractor may utilize umbrella/excess liability coverage to achieve the limits required hereunder; such coverage must be at least as broad as the primary coverage (follow form).
6. All insurance certificates must be approved by the Office of Risk & Insurance Management. See section II for specific requirements regarding insurance proof.
7. The County reserves its right to request certified copies of any policy or endorsement thereto.
8. All insurance shall be provided by insurance carriers licensed & admitted to do business in the State of New York and must be rated "A–:VII" or better by A.M. Best (Current Rate Guide).
9. If the Contractor fails to procure and maintain the required coverage(s) and minimum limits such failure shall constitute a material breach of contract, whereupon Broome County may exercise any rights it has in law or equity, including but not limited to the following:
   (a) immediate termination of the contract;
   (b) withholding any / all payment(s) due under this contract or any other contract it has with the vendor (common law set-off); OR
   (c) procuring or renewing any required coverage(s) or any extended reporting period thereto and paying any premiums in connection therewith. All monies so paid by Broome County shall be repaid upon demand, or at the County's option, may be offset against any monies due to the Contractor.

Part II. Required Insurance – Minimum coverage types and amounts

1.

Coverage Type	Minimum Limits
Commercial General Liability (CGL) including: ➢ Products & completed operations shall not be excluded. ➢ Broome County shall be named additional insured. The additional insured endorsement for the insurance shall not contain any exclusion for bodily injury or property damage arising from completed operations. ➢ **Proof of additional insured coverage shall be evidenced through a carrier issued endorsement. (ISO CG 20 10 11 85 or equivalent)**	$1,000,000 / $2,000,000 Per occurrence / minimum annual aggregate limit
Umbrella Coverage (over CGL and Auto)	$1,000,000 CSL
Automobile Liability (Comprehensive Form) Must cover owned, non-owned, and hired vehicles	$1,000,000 Combined Single Limit
Workers' Compensation and Employer's Liability SEE #3 ☐ If you have no employees (sole proprietor) you may provide an affidavit of exemption. (CE-200) if the box to the left is checked.	Statutory amount / $100,000
Disability Insurance SEE #4 ☐ If you have no employees (sole proprietor) you may provide an affidavit of exemption. (CE-200) if the box to the left is checked.	Statutory limits

2. The certificate face shall:
   - indicate coverage(s) (other than Workers' Compensation & Disability) & minimum amounts required in part II.1
   - provide that the coverage(s) shall not be cancelled, terminated or materially changed (including an insurance limits reduction) unless **thirty (30) days** prior written notice has been given to the County Office of Risk & Insurance Management.
   - Disclose all policy exclusions
   - Disclose the amount of self-insured retention or deductibles.
   - Show Products & completed operation

3. Proof of Workers' Compensation Coverage must be provided on **NYS issued WCB form C-105.2 or U-26.3. Exemption should be provided on CE-200**

4. Proof of Disability Coverage must be provided on **NYS issued WCB form DB-120.1 or DB-820/829 or DB-155. Exemption should be provided on CE-200.**

5. **Proof of either Workers' Compensation Insurance or a NYS Workers' Compensation Board issued waiver of the Workers' Compensation insurance requirement is mandated by state law. There are no exceptions to this law**

6. The Additional Insured & Certificate Holder should read:

County Of Broome
Attn: Office of Risk & Insurance Management
PO Box 1766
Binghamton, NY 13902-1766

Part III Defense and Indemnification

The following provisions concerning indemnification shall not be construed to indemnify the County for damages arising from bodily injury to persons or property contributed to, caused by or resulting from the sole negligence of the County or its employees.

The Contractor agrees to indemnify and hold the County of Broome and any officer, employee and/or agent thereof free and harmless from any and all losse(s), penalty(ies), damages, settlement(s), cost(s), charge(s), professional fee(s) or other expense(s) or liability(ies) of every kind arising from or relating to any and all claim(s), lien(s), demand(s), obligation(s), action(s), proceedings or causes of action of any kind in connection with, or arising directly or indirectly from the negligent error(s) and/or omission(s) and/or act(s) of the Contractor (including Contractor's employees, agents or and/or subcontractors) in the performance of this agreement.

Without limiting the generality of the preceding paragraphs, the following shall be included in the indemnity hereunder: any and all such claims, etc., relating to personal injury, death, damage to property, or any actual or alleged violation of any applicable statute (including specifically but not limited to New York State Labor Law §§ 200; 202; 240 & 241), ordinance, administrative order, executive order, rule or regulation, or decree of any court of competent jurisdiction in connection with, or arising directly or indirectly from, errors and/or negligent acts by the Contractor, as aforesaid,.

Part IV Safety

Broome County specifically reserves the right to suspend or terminate all work under this contract whenever Contractor and/or contractor's employees or subcontractors are proceeding in a manner that threatens the life, health or safety of any of contractor's employees, subcontractor's employees, county employees or member(s) of the general public on county property. This reservation of rights by Broome County in no way obligates Broome County to inspect the safety practices of the Contractor.

If Broome County exercises its rights pursuant to this part, the contractor shall be given three days to cure the defect, unless Broome County, in its sole and absolute discretion, determines that the service cannot be suspended for three days due to Broome County's legal obligation to continuously provide contractor's service to the public or Broome County's immediate

need for completion of the Contractor's work. In such case, Contractor shall immediately cure the defect.

If the Contractor fails to cure the identified defect(s), Broome County shall have the right to immediately terminate this contract. In the event that Broome County terminates this contract, any payments for work completed by the Contractor shall be reduced by the costs incurred by Broome County in re-bidding the work and /or by the increase in cost that results from using a difference vendor.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT WE, _____,

organized under the Laws of the State of_____,

and having a usual place of business in _____,

as Principal and_____,

organized under the Laws of the State of_____,

and having a usual place of business at_____,

as surety, are holden and stand firmly bound and obligated unto the **OWNER**, as obligee, in the sum of

_____

($_____) Dollars, lawful money of the United States of America, to and for the true payment, whereof, we hereby 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 _____ entered into a Contract with the same obligee, a copy of which Agreement is attached hereto and by reference made a part hereof.

NOW, the condition of this obligation is such

THAT, if the said principal, their heirs, administrators, successors, or assigns, shall well and truly keep and perform all the agreements, terms and conditions of said agreement on their part to be kept and performed, including the guarantee in the General Conditions, then this obligation shall be void - otherwise, it shall remain in full force and virtue.

AND, the said surety, for value received, hereby stipulates and agrees that no change in, or extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder, or to the specifications accompanying the same shall in any way affect their obligations on this bond and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specifications.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, in the year _____.

PRINCIPAL -

(Seal) By: _____

SURETY -

(Seal) By: _____

IMPORTANT - Attach herewith proof of Authority of Officers or agents to sign bonds.

PERFORMANCE BOND

CERTIFICATE AS TO CORPORATE PRINCIPAL

(IF A CORPORATION)

State of _____)
SS
County of _____)

On this _____ day of _____, 20_____

before me personally came _____

to me known, who being by me duly sworn, did depose and say as follows:

That they reside at _____

and is the _____

of _____

the corporation described in and which executed the foregoing instrument; that they know the corporate seal of said corporation; that the seal affixed to the foregoing instrument is such corporate seal and it was so affixed by order to the Board of Directors of said corporation; and that by the like order they signed thereto their name and official designation.

_____
Notary Public (Seal)

My Commission expires: _____

PERFORMANCE BOND

PARTNERSHIP CERTIFICATE

(IF A PARTNERSHIP)

State of _____)
SS
County of _____)

On this _____ day of _____, 20_____ before me personally appeared _____ known to me and known by me to be the person who executed the above instrument, who, being by me first duly sworn, did depose and say that they is a general partner in the firm of _____ _____; and that said firm consists of themselves and _____, and that they executed the foregoing instrument on behalf of said firm for the uses and purposes stated herein.

_____
Notary Public (Seal)

My Commission expires: _____

PERFORMANCE BOND

INDIVIDUAL CERTIFICATE

(IF AN INDIVIDUAL)

State of _____)
SS
County of _____)

On this _____ day of _____, 20_____ before me personally appeared _____ known to me and known by me to be the person who executed the above instrument, who, being by me first duly sworn, did depose and say that they are the owner of the firm _____; and that they executed the foregoing instrument on behalf of said firm for the uses and purposes stated herein.

_____
Notary Public (Seal)

My Commission expires: _____

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT WE, _____,

organized under the Laws of the State of_____,

and having a usual place of business in _____,

as Principal and_____,

organized under the Laws of the State of_____,

and having a usual place of business at _____,

as surety, are holden and stand firmly bound and obligated unto **OWNER** as obligee, in the sum of

_____

($_____) Dollars, lawful money of the United States of America, to and for the true payment, whereof, we hereby 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 _____ entered into a Contract with the same obligee, a copy of which Agreement is attached hereto and by reference made a part hereof.

NOW, the condition of this obligation is such

THAT, if the said principal, their heirs, administrators, successors, or assigns, shall pay for all labor performed or furnished, all materials, including materials so employed which is not incorporated in the construction or repair work and is not wholly or necessarily consumed or made so worthless as to lose its identity but only to the extent of its purchase price less its fair salvage value, and for the retail or hire of vehicles, power shovels, rollers, concrete mixers, tools and other appliances and equipment employed in the work, all persons who contract with the Principal for labor and materials, all insurance premiums on said work, and the use of all patent rights, used or employed in the carrying out of said Agreement, then this obligation shall be void - otherwise it shall remain in full force and virtue. The obligation shall be in accordance with the New York State Finance Law, Section 137.

AND, the said surety, for value received, hereby stipulates and agrees that no change in, or extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder, or to the specifications accompanying the same shall in any way affect their obligations on this bond and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to be specifications.

AND that no final settlement between the **OWNER** and the principal shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, in the year _____.

PRINCIPAL -

(Seal) By: _____

SURETY -

(Seal) By: _____

IMPORTANT - Attach herewith proof of Authority of Officers or agents to sign bonds.

PAYMENT BOND

CERTIFICATE AS TO CORPORATE PRINCIPAL

(IF A CORPORATION)

State of _____)
SS
County of _____)

On this _____ day of _____, 20___

before me personally came _____

to me known, who being by me duly sworn, did depose and say as follows:

That they resides at _____

and is the _____

of _____

the corporation described in and which executed the foregoing instrument; that they know the corporate seal of said corporation; that the seal affixed to the foregoing instrument is such corporate seal and it was so affixed by order to the Board of Directors of said corporation; and that by the like order they signed thereto their name and official designation.

_____
Notary Public (Seal)

My Commission expires: _____

PAYMENT BOND

PARTNERSHIP CERTIFICATE

(IF A PARTNERSHIP)

State of _____)
SS
County of _____)

On this _____ day of _____, 20___ before me personally appeared _____ known to me and known by me to be the person who executed the above instrument, who, being by me first duly sworn, did depose and say that they is a general partner in the firm of _____ _____; and that said firm consists of themselves and _____, and that they executed the foregoing instrument on behalf of said firm for the uses and purposes stated herein.

_____
Notary Public (Seal)

My Commission expires: _____

PAYMENT BOND

INDIVIDUAL CERTIFICATE

(IF AN INDIVIDUAL)

State of _____)
SS
County of _____)

On this _____ day of _____, 20___ before me personally appeared _____ known to me and known by me to be the person who executed the above instrument, who, being by me first duly sworn, did depose and say that they are the owner of the firm _____; and that they executed the foregoing instrument on behalf of said firm for the uses and purposes stated herein.

_____
Notary Public (Seal)

My Commission expires: _____

NOTICE OF AWARD

GREATER BINGHAMTON AIRPORT
REHABILITATION OF HANGARS 2&3 – PHASE 2

Broome Co. Project No. _____
NYSDOT PIN 9A10.53

Issued to: **Company Name** _____

Company Address _____

Company City/State/Zip _____

Project Title _____

Advertisement Date _____ **Bid Opening Date** _____

Broome County has considered your bid submitted for the above entitled project, or a portion thereof as detailed on any attachment to this notice. You are required to execute the Agreement and furnish any required PERFORMANCE BOND, PAYMENT BOND, AND CERTIFICATE OF INSURANCE within ten (10) business days from the date of this Notice. If you fail to execute said Agreement and to furnish said BONDS within ten (10) business days from the date of this Notice, **OWNER** will be entitled to consider all your rights arising out of the acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The **OWNER** will be entitled to such other rights as may be granted by law or described herein. **You are required to return an acknowledged copy of this NOTICE OF AWARD within five (5) calendar days to:**

Broome County: _____

_____
Street Address City State Zip Code

_____
Telephone

By: _____
Owner's Representative Printed Name/Title

DATED the _____ day of _____, 20____.

ACCEPTANCE OF NOTICE OF AWARD

GREATER BINGHAMTON AIRPORT
REHABILITATION OF HANGARS 2&3 – PHASE 2

Broome Co. Project No. _____
NYSDOT PIN 9A10.53

NOTICE OF AWARD is hereby acknowledged and accepted.

By: _____
Authorized Signature Printed Name/Title

For: _____
Organization

DATED the _____day of _____, 20____.

NOTICE TO PROCEED

REHABILITATION OF HANGAR 2&3 – PHASE 2

NYSDOT PIN 9A10.53

Issued to: **Company Name** _____

Company Address _____

Company City/State/Zip _____

Project Title _____

Advertisement Date _____ **Bid Opening Date** _____

PLEASE BE ADVISED that work may begin on the above Contract on _____, 20___ and shall be completed on or before _____ 20____ (180 consecutive calendar days from the date of NOTICE TO PROCEED).

Owner's Representative: _____

Telephone: _____ **Email:** _____

You are required to return an acknowledged copy of this NOTICE TO PROCEED within five (5) calendar days of the date of this Notice to:

Owner: _____

_____

Street Address City State Zip Code

_____

Telephone

By: _____

Owner's Representative Printed Name/Title

DATED the _____ day of _____, 20____.

ACCEPTANCE OF NOTICE TO PROCEED

REHABILITATION OF HANGAR 2&3 – PHASE 2

NYSDOT PIN 9A10.53

NOTICE TO PROCEED is hereby acknowledged and accepted.

By: _____
Authorized Signature Printed Name/Title

For: _____
Organization

DATED the _____day of _____, 20____.

CONTRACTOR'S GUARANTEE

WHEREAS _____
(Contractor)

of _____
(Address)

hereinafter called **CONTRACTOR** has completed construction of the following project:

Owner: _____

Address of Owner: _____

hereinafter called the **OWNER**.

Title of Project: _____

_____

_____

_____

Project Number(s): _____

Location: _____

Date of Completion: _____

Date Guarantee Expires: _____

WHEREAS, at the inception of such work the **CONTRACTOR** agreed to guarantee the construction against faulty materials or workmanship for a limited period and subject to the conditions set forth:

NOW, THEREFORE, the **CONTRACTOR** hereby guarantees, subject to the conditions herein set forth, that during a period of one (1) year from the date of completion of said construction, they will, at their own cost and expense, following receipt of written notice, make or cause to be made such repairs to said construction resulting solely from faulty construction or defects in materials or workmanship applied by or through the **CONTRACTOR** as may be necessary to maintain the construction in defect-free condition.

This CONTRACTOR GUARANTEE is made subject to the following conditions:

1. Specifically excluded from this guarantee is any and all damage caused by the following: lightning, windstorm greater than 110 mph, hailstorm or other acts of God; or fire. If the construction is damaged by reason of any of the foregoing, this guarantee shall thereupon become null and void for the balance of the guarantee period unless such damage is repaired by the **CONTRACTOR** at the expense of the party requesting such repairs.

2. This CONTRACTOR GUARANTEE shall not be or become effective unless and until the **CONTRACTOR** has been paid in full for all their work.

3. This CONTRACTOR GUARANTEE runs in favor of **OWNER** only and is not transferable.

4. Additional Conditions: This CONTRACTOR GUARANTEE is in addition to all other legal and specified Warranties and Guarantees required on the Project's Contract Documents for materials, systems, and performance of the manufacturer or supplier.

In Witness Whereof, this instrument has been duly executed this

_____ day of _____, 20___.

_____

(Company Name)

By: _____

(Authorized Signature)

(Seal)

Title: _____

NOTE: Form shall bear seal if Contractor is a Corporation.

DIVISION 1 - SPECIFICATIONS

SPECIAL PROVISIONS

Supplemental General Provisions

(SGP)

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SPECIAL PROVISIONS FOR ALL AVIATION PROJECTS
STATE / FEDERALLY OBLIGATED AIRPORTS

Part A – Project Specific Clauses

1. **MBE/WBE/SDVOB.** Project is not FAA-Funded. Refer to NYSDOT requirements for MBE, WBE, and SDVOB participation.

2. **WAGE RATES.** State wage rates are also applicable to this Contract and are included in Special Provisions.

3. **CONTACT WITH THE AIRPORT.** From the time of advertising until the actual bid opening for this Contract, the only contact with the Airport will be as described in the Invitation for Bids.

4. **SUSPENSION OF WORK.** The Contractor is hereby notified that in the absence of the Engineer, the Airport Operations Staff shall have the authority to suspend work when they determine that a serious safety or environmental violation exists on the job site. The period of time when work is suspended due to a serious safety or environmental violation will not be justification for an extension of time or the award of damages to the Contractor.

5. **CONTRACT DOCUMENTS.** The Contractor's attention is directed to the following documents that make up the Contract Documents and are effective for this Contract:

Table of Contents
Invitation to Bid
Instructions to Bidders
Bid Proposal
Bid Bond
Award of Contract and Execution of Contract Bonds
Contract
Risk Management & Insurance Specification
Performance Bond
Payment Bond
Contract Forms
Division 1 – Specification
Special Provision:
Supplemental General Provisions
M/WBE/SDVOB Requirements
EEO Requirements
Forms MJ-200 through MJ-226

Buy America Requirements
EBO Requirements
State Prevailing Wage Rates
Standard Clause for New York Contracts
Division 2 - Technical Specifications
Plans
Addendums

6. **DAILY LIST OF WORKERS.** The Contractor shall provide a daily list of workers on the site in accordance with Section 57.1, Subsection vii of this section.

7. **UTILITIES.** New York State Electric & Gas (NYSEG), Town of Maine Water Department, Broome County, Verizon, and Time Warner Cable have utilities that service, or are adjacent to, this project site. The Contractor shall work cooperatively with these companies as needed, to protect and/or modify these utility services to accommodate the scope of work identified in this project.

8. **PERMIT AND REGULATION COMPLIANCE.** The Contractor shall comply with all project permits, general permits, state laws, and state and local regulations. Any fines assessed against the Airport and related expenses due to non-compliance with the permits, laws, rules, and regulations cited in the Contract Documents and caused by the Contractor and their personnel, Subcontractors and Vendors shall be paid for by the Contractor.

For permit requirements refer to the Special Provisions of the Contract Documents.

9. **WORK AREA.** Refer to construction documents.

10. **WORK AREA REQUIREMENTS.** A general outline of the safety precautions, pre-work requirements and administrative requirements required prior to being allowed to work in any of the specified work areas is provided within the contract documents. The work area requirements are not intended to describe every work element or every detail of work, but rather provide the Contractor with an outline of Airport safety measures, safety protocols and operational requirements during the progression of work.

The Contractor shall propose the actual sequencing of the work in all work areas subject to the conditions indicated below and conditions specified within the contract documents. If requested, the Contractor shall make necessary changes in the sequencing in order to facilitate Airport operation and safety. All work shall be completed within the specified contract time.

The contract work time for each work area is not intended to be sequential. The contractor may sequence that time, with coordination with the Airport and the Engineer as required as long as that time falls within the total contract time.

11. **PROJECT DURATION.** Upon execution of the Contract, the Owner will issue a written "Notice to Proceed" which will specify an effective date for the Contractor to begin work at

the site. All work under this Contract must be completed within Total Contract Time of the date specified in the "Notice to Proceed".

With the approval of the Owner and Engineer, the calendar days shown above need not be consecutive for all work areas as long as aircraft operations are not affected by any temporary stoppage in the Contract time. It shall be understood that it is the Contractor's responsibility to schedule and request stoppages in contract time for each respective work area. Further, it is understood that if it is determined to be in the best interest of the Owner and the Airport, the request for a Contract time stoppage can and will be denied. During a Contract time stoppage, no work may commence in that work area until a request is made to resume work and Contract time. If work is performed without an official restart of the Contract time it is agreed that the work performed is at the Contractor's expense and is not eligible for measurement of payment.

It shall be clearly understood that the Contract time is contractual, and if the time is exceeded, liquidated damages will be assessed. Requests for additional Contract time will only be granted for the following reasons:

1) Additional work is authorized by change order.
2) Delays or postponements of critical path work per the approved construction schedule are requested by the Owner.
3) Material delivery delays, which are documented and are beyond the Contractor's control. Material delivery delays, which are not documented, and not accounted for or identified in the Contractor's schedule, will not be considered a valid justification to extend the Contract time.

12. LIQUIDATED DAMAGES. If the work remains incomplete after the times specified in the Project Duration Section above, the Contractor agrees to pay the Owner as liquidated damages the following:

- The **amount of Two Thousand Five Hundred Dollars ($2,500)** per day for **each and every calendar day or portion thereof** that the work remains incomplete beyond the Total Contract Time listed in the Project Duration section, above.

13. FAILING QUALTIY ASSURANCE TEST RESULTS. The Contractor is required to establish a Quality Control Program that controls the production and installation of all contract materials to ensure conformance with all project requirements. Upon determination that the materials have been installed in accordance with the requirements, the Contractor shall request the Engineer to conduct Quality Assurance testing to confirm the acceptability of the materials installed. Should the material fail to meet the specified requirements, the Contractor shall, at the Engineer's discretion, be required to reimburse the Owner for the costs of failed Quality Assurance tests. The Contractor will not be responsible for Quality Assurance tests completed by the Engineer's testing agency that meets the requirements at the time of the testing.

The Contractor's independent quality control testing firm shall not be the same firm utilized by the Engineer for Quality Assurance testing. The Contractor shall identify their Quality Control firm within 10 days of the Contract Award.

14. MONTHLY WBE/MBE/SDVOB REPORTING. The Contractor shall submit monthly Women Business Enterprise (WBE), Minority Business Enterprise (MBE), and Service Disabled Veteran Owned Business (SDVOB) reports in accordance with NYSDOT the requirements indicated in Form MJ-205.

15. COORDINATION OF CONTRACT DOCUMENTS.

(a) General. The various sections of the Contract Documents are essential parts of the Contract; a requirement occurring in one is as binding as though occurring in all. The Contract Documents are complementary and intended to describe and provide for a complete work product. In case of discrepancy, precedence of the Contract Documents will be determined in the following order:

Contract Document Precedence

1. Project Permits. In the event of a conflict between permit requirements, the more protective or stringent shall take precedence as determined by the Engineer.
2. Contract
3. Invitation to Bid
4. Special Provisions – Supplemental General Provisions
5. Other Special Provisions documents.
6. Technical Specifications
7. Contract Plans
    a. Calculated Dimensions
    b. Scaled Dimensions
8. Cited Standards for Materials or Testing
9. Cited FAA Advisory Circulars and Orders
10. Any Other Specifications Adopted by Reference

Addendum items take on the precedence of the item they are revising or the section into which they are added.

(b) No Advantage from Errors or Omissions in Contract Documents. Neither the Contractor nor the Owner shall take advantage or be afforded any benefit as the result of apparent error(s) or omission(s) in the Contract Documents. If either party discovers error(s) or omission(s), it shall immediately notify the other. Failure of a bidder to notify the Owner or apparent error(s) or omission(s) in the Contract Documents during the bid process may result in their bid being determined to be non-responsive.

(c) Corrections to Contract Documents. The Engineer will make corrections and interpretations deemed necessary and appropriate to fulfill the intent of the Contract Documents. When there is an apparent absence or mention of a detail or an apparent omission of a detailed description in the Contract Documents, the detail or description shall be interpreted/understood/determined using the best general engineering and construction practice.

(d) Effect of Other Specifications/Standards. Referenced standards, including but not limited to ASTM, NDS, CRSI, and ACI, shall apply where the Work or materials are not otherwise specifically addressed in the Contract Documents.

The 2025 New York State Uniform Fire Prevention and Building Code and all standards referenced therein shall govern the Work. Where the 2025 New York State Codes prescribe a specific standard or edition, that standard or edition shall apply. For standards not specifically prescribed by the Code or Contract Documents, the latest edition in effect at the time of Contract Advertisement shall apply.

Nothing herein shall be construed to supersede or modify the requirements of the 2025 New York State Codes.

16. BID VALID PERIOD. No bids may be withdrawn by the Bidder prior to the date listed in the Invitation to Bid.

17. SPECIALTY ITEMS. None.

18. GENERAL SURETY REQUIREMENTS:

The Proposal Surety shall be as specified in the Invitation to Bid; only the Bid Bond as bound within these documents or a Cashier's Check is acceptable. Upon request of the bidder, the Owner may choose to accept the AIA Bid Bond form. Each separate Proposal shall be accompanied by a Cashier's Check or Proposal Bond on the form provided herein in the amount of Five Percent (5 %) of the total amount bid, made payable to the Owner. If a Proposal Bond is provided in lieu of a Cashier's Check, it must be accompanied by a Surety's Bond Affidavit indicating that the person signing the bond on behalf of the Surety has full legal authority to do so.

If a Surety Bond is provided, the Surety Company issuing the bond shall be listed on the current United States Department of the Treasury "Department of the Treasury's listing of

approved Sureties (Department Circular 570)" as authorized to do business in the State of New York. Bids submitted without Bid Security will be rejected as nonresponsive.

100% Contract Payment and 100% Performance Bonds shall be as specified here: 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. And must be accompanied by a Surety's Bond Affidavit indicating that the person signing the bond on behalf of the Surety has full legal authority to do so. The Surety Company issuing the bond shall be listed on the current United States Department of the Treasury "Department of the Treasury's listing of approved Sureties (Department Circular 570)" as authorized to do business in the State if New York. These Bonds are required from the Contractor guaranteeing that the Contract, including the various guarantee periods thereunder, will be faithfully performed and that Contractor will promptly make payment to all persons supplying them labor, materials, supplies, and services used directly or indirectly by the Contractor in the prosecution of the work provided for in the Contract.

If, at any time after the execution of the Contract and the Contract Bonds, as above required, the Owner deems the Surety or Sureties upon such Bond or Bonds is unsatisfactory, or if, for any reasons, such Bond or Bonds cease(s) to be adequate to cover the performance of the work or prompt payment as above specified, Contractor shall, at its expense and within 15 days written notice from the Owner to do so, furnish additional Bond or Bonds in such form and amount and with such Surety and Sureties as shall be satisfactory to the Owner. In such event, no further payment to the Contractor shall be deemed due under the Agreement until such new or additional bond or bonds are furnished in a manner and form satisfactory to the Owner.

The Owner shall retain from all payments due the contractor the amount of 10% of the completed work. To facilitate the relaease of retained monies, the Bidder to whom the Contract is awarded must deposit with the Owner at the date of substantial completion of the Contract a Maintenance Surety Bond in a sum equal to 10 percent of the adjusted Contract amount at completion of work, guaranteeing the work against defective workmanship and materials for a period of one year from the date of substantial completion. The bond shall be in the form acceptable to the Owner and the Surety Company issuing the bond shall be listed on the current United States Department of the Treasury "Department of the Treasury's listing of approved Sureties (Department Circular 570)" as authorized to do business in the State of New York. The Contractor shall be responsible for obtaining and maintaining the Bond in force from the date of substantial completion until the expiration of the one year maintenance period.

19. PAYMENT FOR EXTRA WORK

The Contractor will be compensated for extra work under existing unit prices in accordance with NYSDOT Specification section 109-02 Compensation for Altered Quantities, by agreed price in accordance with NYSDOT Specification Section 109-05A Agreed Price Work, or by force account in accordance with NYSDOT Specification 109-05B Force Account Work.

20 to 54. Not Used

Part B – General Aviation Clauses

55. FORMS

The Special Provisions Section of these Specifications contains most of the forms required for use during the project and referenced throughout the Contract Documents. Most of the forms have been assigned unique form numbers to assist the Contractor in locating the correct form. After award of the Contract, the Prime Contractor may request electronic copies of some or all of the forms contained in Special Provision Section.

56. SHOP DRAWINGS AND SUBMITTALS

56.1 Submittals shall include but not be limited to: shop drawings, schedules, samples, and manufacturer's literature as required by the Specifications or requested by the Resident Engineer.

No work shall be fabricated until such approval has been received. Work performed without shop drawing approval is at the Contractor's own risk.

56.2 All submissions shall include a Form MJ-213 "CONTRACTOR SUBMITTAL FORM" as a cover sheet to the submittal information. For submittals generated from Subcontractors, two (2) submittal forms are required, one (1) Form MJ-213 from the Contractor and one (1) From MJ-214 “SUBCONTRACTOR SUBMITTAL FORM” from the Subcontractor. Submittals received without the completed submittal form(s) will be returned to the Contractor as incomplete and not reviewed. Contractor submittal forms shall be printed on colored paper of the Contractor's choice and shall remain the same color throughout the project.

Contractor submittal forms MJ-213 and MJ-214 are provided in “Forms” as referenced above.

56.3 Submissions made directly by Subcontractors will not be accepted. All business concerning approval will be conducted through the Contractor.

The Contractor shall submit for the approval of the Resident Engineer, the following number of submittal copies:

- Four (4) copies for the Resident Engineer
- Plus the number of copies required by the Contractor/Subcontractor

With approval of the Engineer, the Contractor shall submit Submittals via ACC Autodesk Forma on Adobe Acrobat (.pdf) format. Access to ACC Autodesk Forma shall be provided to the Contractor by the Engineer.

56.4 Submissions shall be made sufficiently in advance of construction requirements to allow ample time for checking, resubmitting and rechecking without causing delay in the work. Failure to submit shop drawings in a timely manner shall not be considered as a valid reason for a Contract time extension.

56.5 Each submission, including the submission of Subcontractors shall be checked by the Contractor for accuracy and compliance with the Contract Documents. The certification on the submittal form shall constitute as evidence of such checking and coordination. Submissions without this certification will not be considered for review by the Resident Engineer.

Submittal certification shall include one (1) of the following:

1. Submitted "as specified" for the product
2. Submitted "AS EQUAL" to the product specified
3. Submitted "IN SUBSTITUTION" for the product specified
4. "OTHER"

1. Submitted "as specified" shall mean the Contractor is certifying that the submittal item or system is of the same manufacture and model number, or performance standard as specified and is in all ways identical to the Contract Documents in form and function. For these items, manufacturer's data sheets shall be attached to the Contractor submittal form.

2. Submitted "AS EQUAL" to the product or system specified shall mean the Contractor is certifying the proposed submittal, although supplied by a manufacturer other than the one specified for the item meets or exceeds the physical requirements, function, specifications, quality, speed, reliability, service life, safety, and/or maintenance costs of the product specified, and is capable of being incorporated into the overall project without design revisions and will perform equally or better than the specified item. For these items, manufacturer's data sheets shall be attached to the Contractor submittal to

demonstrate that the performance, durability and/or maintenance standards of the product are as specified.

3. Submitted "IN SUBSTITUTION" to the product or system specified means the Contractor is proposing an item or system of different physical requirements, specifications, quality, reliability, and/or maintenance costs, than the product specified. For a submission "IN SUBSTITUTION" of the product or system specified, the following information and procedure shall be followed to determine if the Owner's requirements will be satisfied:

   a. Design the system to meet or exceed the operational requirements, physical requirements, specifications, quality, reliability, maintenance costs, and ease of operation of the specified system.

   b. Submit full Specifications for the system and all components in the form of shop drawings for review by the Owner and the Engineer.

   c. Submit a revised design for the system, stamped by a licensed Professional Engineer within the state in which the work is to be performed.

   d. Submit revised details for any and all components of the proposed system that are different than those of the specified system. A licensed Professional Engineer within the state in which the work is to be performed shall stamp details.

   e. Demonstrate the proposed system to the satisfaction of the Owner and Engineer.

   f. Reimburse the Engineer at the rate of $170.00 per hour for Project Managers and $130.00 per hour plus expenses for Project Engineers for all time spent reviewing, discussing and otherwise being involved with the substitute system. The payment shall be made based on an estimate of the time required and shall be paid in advance of the review. If the estimated amount is exceeded, additional amounts must be provided by the Contractor for the review to continue. Upon completion of the review, a summary invoice will be provided to the Contractor indicating the hours spent and amount billed. Any money not spent on the review will be returned to the Contractor.

   g. Provide a credit satisfactory to the Owner for any cost savings associated with the substitution. The Contractor should anticipate providing a credit equal to one-half of the cost differential between the specified system and the system proposed for substitution.

   Acceptance of any alternate item or system will be at the discretion of the Owner. Upon acceptance or rejection of a system or component thereof, the Engineer shall provide a written response to the Contractor in the form of a shop drawing review.

4. Submitted Certified as "OTHER". The Contractor shall provide information to demonstrate the proposed item or system will satisfy the design intent and provide the Owner performance, reliability and maintenance ease over its anticipated service life that exceeds that of the specified product. The final determination of suitability shall be the sole responsibility of the Owner.

56.6 Changes on the submitted shop drawings that deviate from the Project Plans and Specifications must be brought to the Owner's and Resident Engineer's attention, in writing, prior to review. Changes must be clearly visible on the shop drawings in the form of written notation, ballooning, or highlighting the intended change. A written description for the proposed change must also be included and submitted on company letterhead. Changes to drawings and details not submitted in accordance with these requirements will not be recognized as an approved deviation from the Design of Record. Construction repairs, renovations, or replacements required as a result of shop drawing and submittal deviations that are not documented in accordance with these requirements are subject to removal and/or replacement by the Contractor, at the sole cost of the Contractor. The Contractor shall not be relieved of responsibility for errors or omissions in shop drawings, product data, samples or similar submittals by the Resident Engineer's actions.

56.7 Shop drawings for pipe, fittings, and masonry items shall consist of certificates of conformance of affidavits from the manufacturer's signifying that all materials conform to the Specifications.

56.8 The Contractor shall allow for sufficient time within the project schedule for shop drawing review and processing. Items requiring long lead times which impact the start or completion of the project shall be identified, brought to the Engineer's attention and noted on the shop drawing submission. Additional Contract time will not be provided for failure to submit shop drawings for approval in a timely manner.

56.9 The Owner reserves the right to back charge the Contractor for expenses incurred in reviewing and returning incomplete shop drawings. Expenses shall include the costs of the Engineer at the rate of $170.00 per hour for Project Managers and $130.00 per hour plus expenses for Project Engineer's for the actual time incurred. The Contractor will be provided documentation of the expenses incurred. Contractor back charges will be deducted from payments due to the Contractor.

56.10 The Contractor shall submit all required Buy American Preferences documentation with each shop drawing as outlined in Appendix Y of FAA Order 5100-38D (AIP Handbook) dated September 30, 2015 included in this Specification (Section SP-1 – Required Federal Contract Provisions for AIP and Obligated Sponsors) and as required by the Owner or the Resident Engineer. Delays caused by the Buy American Preferences program shall be expected and the Contractor agrees to make no monetary claim for delays, interferences or hindrances of any kind in the performance of this Contract occasioned by any act or omission to act of the Owner or any of its Representatives.

Each shop drawing and submittal shall be accompanied by a signed copy of Form MJ-212 "Contractor / Subcontractor / Supplier Buy American Certification." A blank copy of this form is included in the "Forms" Section referenced above.

56.11 The contractor shall submit all documents via ACC AutoDesk Forma.

57. DISADVANTAGED BUSINESS ENTERPRISE (DBE) AND SMALL BUSINESS PROGRAMS

57.1 Not used.

58. SUBLETTING WORK TO SUBCONTRACTORS AND SUPPLIERS OR ASSIGNMENT OF CONTRACT

58.1 GENERAL: The Contractor shall not sublet, assign, sell, transfer, or otherwise dispose of the Contract or any portion thereof, or of its right, title, or interest therein to any individual, firm, corporation, or other entity without the written consent of the Greater Binghamton Airport. The Contractor must file with the Greater Binghamton Airport copies of all executed subcontracts and other documents. An approved subcontractor shall not in turn sublet or assign any of the work pertaining to the subcontract without the Contractor obtaining further permission from the Greater Binghamton Airport. In no event shall the Greater Binghamton Airport approval release the Contractor from responsibility and liability under the Contract and bonds.

Any work or material supply that costs $10,000 or more and is included in this project that the Prime Contractor wants to sublet to another firm must be approved by the Greater Binghamton Airport in writing. Any Subcontractors or Suppliers that will be doing work or supplying material that is sublet and approved by the Greater Binghamton Airport must have a signed contract with the Prime Contractor or a lower tier Subcontractor or Supplier before they may begin work or deliver material to the project site. The Greater Binghamton Airport reserves the right to reject the use of any Subcontractor or Supplier that they feel is not in best interests of the Greater Binghamton Airport.

58.2 PERFORMANCE OF THE CONTRACT WORK: The Contractor shall perform Contract work with its own organization amounting to at least **51 percent** of the total Contract work amount, minus "Specialty Items." The Contractor's own organization includes only workers employed and paid directly by the Contractor and equipment owned, leased, or rented by it from a non-debarred individual or entity, with or without operators. The term "own organization" does not include employees or equipment of a subcontractor, assignee, agent, or supplier of the Contractor. When determining whether the Contractor is in compliance with this 50 percent requirement, the following shall apply:

(1) The cost of materials and manufactured products to be purchased or produced under the Contract shall be included in the amount upon which the 50 percent requirement is computed.

(2) The percentage of subcontracted work shall be based on the Contract, rather than subcontract, unit prices. If only a part of a Contract item is to be sublet, its proportional value shall be determined on the same basis.

(3) When a firm sells materials to a Contractor and performs the work of incorporating the materials into the project, these actions must be considered in combination and as constituting a single subcontract.

58.3 "SPECIALTY" ITEMS: Not Used.

58.4 PERFORMANCE REQUIREMENTS: The Contractor and its subcontractor(s) shall, in the staffing and administration of the Contract, comply with the following performance requirements:

(1) Commercially Useful Function. The Contractor and all subcontractor(s) must each perform a "commercially useful function." This means that the Contractor/subcontractor is responsible for the execution of a distinct element of the work of a Contract and carries out its responsibilities by actually performing, managing, and supervising the work involved. The Contractor/subcontractor must have the latitude to independently:

a. Select contracts to be bid;

b. Determine prices to be quoted;

c. Select material suppliers;

d. Hire, fire, supervise, and pay employees; and

e. Direct or cause the direction of the management and policies of the firm.

The Contractor/subcontractor may not broker work for another firm or act as a bidding conduit.

(2) Contractor to Furnish Competent Representative; Safety Officer; Others. To ensure that any subcontracted work is performed in accordance with the Contract requirements, the Contractor shall be required to furnish:

a. A competent, reliable, English-speaking representative employed by the Contractor who has full authority to direct performance of the work in accordance with the Contract requirements and who is responsible for all construction operations on the project regardless of who performs the work.

b. A competent, reliable, English-speaking employee designated as the safety officer who is authorized to receive orders and to issue binding directions concerning safety to all persons except Owner representatives associated with

the project, whether employed by the Contractor, subcontractors, or material suppliers.

c. Such other individual(s) from the Contractor's organization as the Owner's Construction Engineer determines are necessary to ensure the performance of the Contract, e.g., supervisory, managerial and engineering personnel.

(3) Employees on Payroll. The Contractor/subcontractor is not permitted to place on the payroll the employees of another firm for the purpose of avoiding Federal or State regulations or the provisions of the Contract.

58.5 SUBLETTING WORK TO SUPPLIERS: Suppliers that the Contractor or a lower tier Subcontractor or Supplier plans to sublet work to must be approved by the Owner. The Prime Contractor must submit a package of information to the Owner through the Resident Engineer at least 14 days prior to the date that the supplier will be supplying material to the project site.

The Supplier Sublet package shall include the following correctly filled out and executed forms:

i. Form MJ-211 – "Transmittal Request for Consent to Sublet";
ii. Form MJ-217 – "EEO Officer Notification and Program Compliance Certification";
iii. EEO Appointment Letter;
iv. EEO Policy Statement;
v. Form MJ-203 – "Certificate of Non-Segregated Facilities"; and
vi. Form MJ-207 – "Subcontractor/Supplier – DBE/Small Business Reporting Information Form".

58.6 SUBLETTING WORK TO SUBCONTRACTORS: Subcontractors that the Contractor or a lower tier Subcontractor or Supplier plans to sublet work to must be approved by the County of Broome. The Prime Contractor must submit a package of information to the County of Broome through the Resident Engineer at least 14 days prior to the date that the supplier will be supplying material to the project site.

The Subcontractor Sublet package shall include the following correctly filled out and executed forms:

i. Form MJ-211 – "Transmittal Request for Consent to Sublet";
ii. Form MJ-217 – "EEO Officer Notification and Program Compliance Certification";
iii. EEO Appointment Letter;
iv. EEO Policy Statement;
v. Form MJ-203 – "Certificate of Non-Segregated Facilities";
vi. Form MJ-207 – "Subcontractor/Supplier – DBE/Small Business Reporting Information Form"; and
vii. Form MJ-204 – "Equal Employment Opportunity Report Statement as Required by 41 CFR 60-1.7(b)".

Form MJ-209 must be resubmitted by the Prime Contractor and each Subcontractor annually by January 15th.

59. PROOF OF PROMPT PAYMENT

Prompt payment of suppliers and subcontractors is required as outlined in Section 13 above.

With each Periodic Cost Estimate (PCE), the Prime Contractor shall provide proof of payment of all Subcontractors and Suppliers whose work was included in the previous PCE. Proof of payment shall consist of a copy of a cancelled check or a certificate of payment signed by the Subcontractor or Supplier. The Owner may provide the Contractor with one or more forms to be filled out and returned to the Owner to monitor and track payments.

To track work by Subcontractors and Suppliers, the Prime Contractor shall submit copies of Form MJ-216 "Subcontractor / Supplier Disadvantage Business Enterprise (DBE) and Small Business – Project Expenditure Report" for EVERY approved Subcontractor and Supplier with each PCE even if the Subcontractor or Supplier did not do any work on the project or supply any materials to the project during the period covered by the PCE.

If the Contractor is in violation of this prompt payment requirement, the Owner may withhold the amount due to the Subcontractor or Supplier from future payments due to the Contractor until satisfactory proof of payment is received. If the Contractor is in violation of this prompt payment requirement four (4) or more times, the Owner may terminate the Contract for cause and/or may require the Contractor to pay some or all of their Subcontractors or Suppliers and provide proof of payment before the Subcontractor's or Supplier's work can be included on a PCE.

60. EQUAL EMPLOYMENT OPPORTUNITY (EEO) / AFFIRMATIVE ACTION (AF) / NON-DISCRIMINATION

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 in Section 15, above. The Contractor and all Subcontractors and Suppliers shall comply with the EEO, AF, and Non-Discrimination requirements in the "Required Federal Contract Provisions for AIP and Obligated Sponsors" contained in Section VTA-I, 41 CFR 60-4 (two sections are contained in Special Provisions Section R-I), and federal Executive Order 11246. If the federal requirements and the state requirements conflict, the federal requirements shall govern. Requirements include, but are not limited to:

60.1 SF-100: The Contractor and all first tier Subcontractors must file SF-100 (EEO-1) by September 30th of each year but in no case later than the start of this project if they employ 50 or more employees at all locations and they have contracts of $50,000 or more. The Contractor shall confirm these requirements prior to the start of work.

60.2 MINORITY AND FEMALE EMPLOYEE PARTICIPATION: The Contractor and all Subcontractors must comply with 41 CFR Part 60-4 and federal Executive Order 11246 in regards

to goals for minority and female employees in federally funded projects. Participating Contractors and Subcontractors must:

i. Take specific actions as outlined in 41 CFR Part 60-4 to ensure EEO;
    1. Minority Goal: 1.1% as defined by New York State EEO requirements.
    2. Women Goal: 6.9% as defined by New York State EEO requirements
ii. Have an EEO / AF Plan;
iii. Designate an EEO / AF Officer;
iv. Periodically notify and train supervisors and others on the Plan;
v. Recruit minorities and females;
vi. Maintain EEO / AF records;
vii. Develop or participate in on-the-job training programs;
viii. Disseminate their Plan;
ix. Post their Plan;
x. Annually evaluate all minorities for promotion; and
xi. Annually review supervisors' adherence to their Plan.

60.3 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 contained in the Invitation for Bids.

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 shall 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.

60.4 The contractor shall provide written notification to the US Department of Labor. Director, 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 subcontract; and the geographical area in which the subcontract is to be performed.

60.5 As used in this notice and in the contract resulting from this solicitation, the "covered area" is the State of New York, County of Broome.

61. MATERIALS, SERVICES, AND FACILITIES

It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide at no cost to the Owner all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the work for the specified item.

Any work to be performed after regular hours, on Sundays or on Legal Holidays, shall be performed without additional expense to the Owner. This includes but is not limited to paying for additional Resident Engineering cost incurred by the Owner.

62. CONTRACTOR'S TITLE TO MATERIALS

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 sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants that he /she has good title to all materials and supplies used by him/her in the work free from all liens, claims or encumbrances.

63. LUMP SUM AND UNIT PRICES

Only those items for which unit prices are shown in the Bid Form will be considered for separate payment. Compensation for all other work shall be included in the appropriate Contract items.

Quantities listed in the Bid Form are estimated for Bidding purposes only and do not necessarily represent the exact amount of work to be done. Payment for unit price items will be based on the unit prices specified or Bid and the actual amount of work performed.

64. "OR EQUAL" CLAUSE

Whenever materials are identified on the Plans or in the Specifications by reference to manufacturer's or vendors' names, trade names, catalogue numbers, etc., it is intended merely to establish a standard; and any material of other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the materials so proposed are, in the opinion of the Engineer, of equal substance and function. Such materials shall not be purchased or installed by the Contractor without the Engineer's written approvals through the Shop Drawing process.

65. REPRESENTATIONS OF THE CONTRACTOR

The Contractor represents and warrants:

a. that they are financially solvent and that they are experienced in and competent to perform the type of work or to furnish the plant, materials, supplies or equipment, to be so performed or furnished by him/her; and

b. that they are familiar with all Federal, State, municipal and Owner laws, ordinances and regulations, which may in any way affect the work or those employed therein, including but not limited to, rulings or actions specifically relating to the work or to the project of which it is a part; and

c. that such temporary and permanent work provided by the Contract Documents as is to be done by them can be satisfactorily constructed and used for the purpose for which it is intended, and that such construction will not injure any person or damage any property; and

d. that they have carefully examined the Plans, Specifications and site of the work, and that from their own investigations, they have satisfied themselves as to the nature and location of the work, the character, quality and quantity of equipment and other facilities needed for the performance of the work, the general and local conditions and all other materials which may in any way affect the work or its performance.

66. PROTECTION OF WORK AND PROPERTY AND EMERGENCIES

66.1 PROTECTION OF WORK AND PROPERTY: The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this Contract. The Contractor shall at all times safeguard and protect their own work and adjacent property from damage. The Contractor shall correct any such damage, loss or injury unless such is caused directly by errors contained in the Contract or caused by the Owner, or the Owner's duly authorized representative.

66.2 EMERGENCIES: In case of an emergency which threatens loss or injury of property, and/or safety of life, the Contractor will be allowed to act, without previous instructions from the Resident Engineer, in a diligent manner. The Contractor shall notify the Resident Engineer immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted to the Resident Engineer for approval.

Where the Contractor has not taken action but has notified the Engineer of any emergency threatening injury to persons or damage to the work or any adjoining property, the Contractor shall act as instructed or authorized by the Resident Engineer.

Any Contractor whose place of business is located outside of the boundary of the city or town where the airport is located and who does not maintain local headquarters 24 hours a day within that city or town must make satisfactory arrangements with the Engineer for taking care of emergencies or complaints which may occur at night, over the weekend, or when the job is shut down. If they do not, the Owner may make arrangements and the cost will be charged to the Contractor. Before the final estimate is certified for payment, the Contractor shall make similar arrangements to cover the guarantee period.

67. PROTECTION AND RESTORATION OF PROPERTY

67.1 GENERAL: These requirements are in addition to those contained in NYSDOT Specification

The Contractor shall:

(1) Not enter upon private property for any purpose without obtaining written permission;

(2) Use every precaution necessary to prevent damage or injury to public and private property;

(3) Protect all trees, shrubs, and other plants not marked by the Engineer for removal from damage by construction operations.

67.2 PROTECTION OF EXISTING INFRASTRUCTURE: The Contractor shall make sure that any portions of the existing airport, roadway and existing structures which are to be retained for public use or travel are left in as good condition as when the Contractor commenced work. The Contractor shall not move or use equipment on any pavement or structure in a manner that may or does cause damage

67.3 CONTRACTOR'S RESPONSIBILITY: The Contractor's responsibility shall not be released until the work has been completed and accepted and the applicable statute of limitations has expired.

67.4 RESTORATION OF DAMAGED PROPERTY: When 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 on the part of the Contractor, such property shall be restored at the Contractor's expense to a condition similar or equal to that existing before such damage or injury was done or the Contractor shall make good such damage or injury in an acceptable manner.

67.5 CLEANING TRAFFIC SIGNALS, STREET LIGHTING, AND AIRFIELD LIGHTING: When the Contractor's operations compromise the functionality of existing traffic signals and/or street or airfield lighting equipment, the Engineer may require the Contractor to clean said equipment prior to project completion. Cleaning of traffic signals shall include all vehicle and pedestrian signal face lenses (inside and outside). Further, the inside of the controller cabinet shall be vacuumed and any vent filter shall be replaced; cleaning of streetlights shall include both the lens (inside and outside) and the reflector. The cleaning of electrical equipment shall be done by a traffic signal/electrical contractor. Any equipment that is damaged in the cleaning process shall be repaired or replaced at the Contractor's expense. The costs for cleaning will not be paid for directly, but will be considered incidental to other items in the Contract.

67.6 GROUND VIBRATION LIMITS: The maximum Peak Particle Velocity (PPV) of ground vibration in any of the three mutually perpendicular components of particle velocity for the following structure types shall be limited as follows:

PPV IN MM/S (IN/SEC)

Type of Structure	Frequencies < 40 Hz	Frequencies > or = 40 Hz
Modern Homes (drywall interior)	19 (0.75)	50 (2.0)
Older Homes (plaster on wood or lath)	13 (0.50)	50 (2.0)
Non-Residential Structures Underground Utilities	13 (0.50)	50 (2.0)

The Owner reserves the right to lower the PPV limit in areas where there may be structures or elements with a higher sensitivity to ground vibration. Adherence to this specification does not waive the Contractor's responsibility for damage as specified in this Subsection and in Item 35 of this Section.

68. PUBLIC CONVENIENCE AND SAFETY

68.1 GENERAL: The Contractor shall conduct all work so as to ensure the least possible obstruction to traffic. The safety and convenience of the general public and the residents along the highway within the construction area and the protection of persons and property shall be provided for by the Contractor.

68.2 DUST CONTROL: The Contractor shall use all necessary dust control on haul road(s) and maintenance yard(s) in the same manner as required for materials sources and disposal areas. Dust control on haul road(s) and maintenance yard(s) shall be performed in accordance with NYSDOT Specification, and will not be paid for directly, but will be considered incidental to all other Contract items. The Contractor shall perform all dust control directed by the Engineer on the haul road(s) and/or maintenance yard(s); unless otherwise provided, dust control will not be paid for directly, but will be considered incidental to all other Contract items.

The Engineer will direct the use of all necessary dust control within the limits of the construction performed under the Contract. Under those contracts which contain pay items for dust control, the dust control within the construction area shall be performed in accordance with the requirements of NYSDOT Specification and will be paid for under the appropriate Contract item(s). Under those contracts which do not contain pay items for dust control, the necessary dust control shall be performed in accordance with the requirements of NYSDOT Specification and the cost will not be paid for directly, but will be considered incidental to all other Contract items.

68.3 STORED MATERIALS: Materials stored within the construction area shall be placed so as to cause a minimum obstruction to the facility users, the traveling public and snow removal operations. Materials shall not be store in any areas regulated by ANR or in buffers unless approved by the Resident Engineer.

68.4 FIRE HYDRANTS: Fire hydrants located within the construction area shall be kept accessible to fire apparatus at all times and no material or obstruction shall be placed within 15 feet of any such hydrants.

68.5 ADJOINING WAYS: Sidewalks, gutters, drainage inlets, and portions of highways adjoining the construction shall be obstructed only when necessary. If a sidewalk is obstructed, temporary pedestrian access meeting the requirements of ADA and the MUTCD shall be provided around the obstructed area.

68.6 VEHICLE LANE RESTRICTIONS: When the total useable width of a traveled way will be decreased to 14 feet or less for a period longer than one working day, the Contractor shall notify the Engineer of the date of the first day and the anticipated period of time such a lane restriction will be in effect. This notification shall be provided at least two weeks prior to the beginning of the lane restriction so that the Engineer may provide proper notification to the Oversized/Overweight Section of the Commercial Vehicle Enforcement Unit of the Department of Motor Vehicle and the Owner's Communications Section. When the date of the removal of the restriction becomes known, the Contractor shall notify the Engineer so that notification can be provided to these entities.

69. USE OF EXPLOSIVES

69.1 GENERAL: The Contractor shall use the utmost care to protect life and property and, whenever directed by the Engineer, shall reduce the number and size of explosive charges. Blasting mats shall be used when required by regulation or deemed necessary. The Contractor shall notify each person, company, corporation, or public utility that owns, leases, or occupies property or structures near the site of the work of plans to use explosives; notice shall be given sufficiently in advance to enable people to take such steps to protect their property or structure from injury as they may deem necessary. Provision of notice shall not relieve the Contractor of responsibility for any damage resulting from the Contractor's blasting operations. All persons within the danger zone of blasting operations shall be warned, a warning whistle shall be sounded, and the zone cleared just prior to blasting. A sufficient number of flaggers shall be stationed outside the danger zone to stop all approaching traffic during blasting operations. Explosives shall be used only during daylight hours and shall be handled only by competent, trained workers; particular care shall be taken to ensure that no unexploded charges remain in the work area unattended and when constructions operations cease for the day. All explosives shall be stored securely, all storage locations shall be clearly marked "DANGEROUS-EXPLOSIVES," and all storage locations shall be supervised and controlled by a competent, trained person at all times. All explosives and highly flammable materials shall be stored and used in strict conformity with all Federal, State, and local laws, rules, and regulations. Attention is directed to VOSHA *Safety and Health Standards for* Construction, Subpart U, Blasting and the Use of Explosives.

69.2 LIABILITY: Each of the insurance policies required for a project shall include coverage for injury to persons and injury or destruction of any property arising out of the storage and use of explosives.

69.3 INSURANCE: The Contractor acknowledges full responsibility and assumes full liability for any and all damage or injury to persons or property caused either directly or indirectly by the Contractor's or a subcontractor's use of explosives. The liability of the Contractor shall apply equally to damages or injury to persons or property whether said injury or damage occurs within or outside of the right-of-way. The cost of all precautionary measures shall not be paid for directly, but all costs therefore shall be included in the bid prices for the pay items under the Contract.

69.4 BLASTING CAP DANGER: The Contractor and/or the Contractor's agents shall take all precautions necessary to prevent premature explosions of electric blasting caps individually or when they are connected into a circuit.

The Contractor and/or the Contractor's agents acknowledge and are hereby advised of the potential hazard of a premature explosion of electric blasting caps due to propagation of radio frequency energy by transmitters of radio and the related radio services such as television and radar. Mobile and fixed radio, cellular telephone, radar, television, and related transmitters are in general use in the project area, including police departments, fire departments, political subdivisions, utility companies, commercial carriers, private and public enterprises, and individuals.

69.5 WARNING SIGNS; COSTS INCIDENTAL: Prior to blasting operations the Contractor shall install warning signs in conformance with the MUTCD. Warning signs shall be located in prominent positions at least 1,200 feet from the point of blasting and visible to any person approaching the blasting point. Payment for furnishing, erecting and maintaining warning signs shall be considered incidental to other items in the Contract.

69.6 DOCUMENTATION OF STRUCTURE CONDITION: It shall be the responsibility of the Contractor to document the existing condition of all structures that have potential for damage. This documentation shall be in the form of a video or pictures, with sufficient description, and shall be supplied to the Engineer prior to any blasting on the project. The costs of preparing this documentation will not be paid for directly, but shall be considered incidental to all Contract items.

69.7 BLAST SURVEYS: The Contractor shall monitor all blasts and provide a report to the Engineer that shall indicate the Peak Particle Velocity (PPV) of the blast. The PPV sensitivity as reported shall range from less than 0.5 mm/s (0.02 in/s) to more than 125 mm/s (5.0 in/s). The Engineer reserves the right to request more than one instrument to monitor the blasting if there is a need for monitoring in more than one direction from the blasting area. The costs of the monitoring and preparing the reports will not be paid for directly, but shall be considered incidental to all Contract items.

70. PROTECTION AND RESTORATION OF UTILITIES AND SERVICES

70.1 GENERAL. The Contractor shall take proper precaution during construction to avoid damage to public and private services. These services include, but are not limited to gas, water, sewer and drainage pipes, springs, wells, septic tanks, cesspools, telephone, telegraph, television, and other communication and electrical services. Services may be located on or adjacent to the project, above, on, or under the ground, and may not be shown on the Plans.

70.2 DIG-SAFE. The Contractor shall comply with the requirements of Dig-Safe laws in the state in which the work will take place.

70.3 NOTICE OF WORK. At commencement or resumption of construction, the Contractor shall notify the owners, operators, occupants, or lessees of all the public or private services of any work to be done on, over, under, adjacent to, or in proximity to said utilities during the construction of the project. Further, the Contractor shall again notify the aforesaid parties seven (7) to fourteen (14) calendar days in advance of starting such work to enable them to take steps as they may deem necessary to protect their property or structures from damage. Provision of notice shall not relieve the Contractor of its responsibility for any damages resulting from the Contractor's work.

70.4 OWNER ACCESS. Owners, employees, or agents of public or private services located within the project limits shall be allowed free and full access with the tools, materials, and equipment necessary to install, operate, maintain, place, replace, relocate, and remove service facilities. No compensation will be paid to the Contractor for any inconvenience caused by working with these parties or around or with their services.

70.5 SERVICE RELOCATION. The exact location of any service facility relocated within the project limits shall be as directed by the Engineer.

70.6 COOPERATION. The Contractor shall cooperate with the owners of any of the aforementioned services in order that the service removal and/or relocation operation will progress in a reasonable manner, that duplication or temporary relocation work may be reduced to a minimum, and that services rendered by the concerned parties will not be unnecessarily interrupted.

70.7 SERVICE INTERRUPTION. If in connection with the work interruption in service occurs, the Contractor shall promptly notify the owner or the owner's authorized representative and cooperate with the owner to promptly restore service. In no case shall interruption to water or sewer service be allowed to exist outside of normal working hours without the substitution of acceptable alternate service.

70.8 FIRE HYDRANTS. No work shall be undertaken around fire hydrants until provisions for continued service have been approved by the local fire authority.

70.9 RESPONSIBILITY FOR DAMAGE. The Contractor shall be responsible for all damages done to services from the beginning of construction to the satisfactory completion of the

project, including all damages to water supplies and sewage systems, including but not limited to damage to springs and wells, septic tanks, cesspools, and underground pipes, whether located within or outside the project area or whether or not shown on the Plans, except as otherwise provided in the Contract.

70.10 WATER; INVESTIGATION OF CLAIMS. The Owner will receive and investigate all claims relating to damage to springs, wells, and water supply systems. The Contractor will be notified of the results of the investigation. If it is determined that the damage is the responsibility of the State, the Contractor will not be liable and will be reimbursed by the State for expenses incurred in providing temporary water service and repairing the damage.

70.11 RESTORATION OF SERVICE BY OWNER. If the Contractor fails to restore a service or to make good on a damage or injury to service(s), the Engineer may proceed to repair, rebuild, or otherwise restore the service as deemed necessary and the cost thereof will be deducted from any monies due, or which may become due, the Contractor under the Contract.

71. RESPONSIBILITY FOR DAMAGE CLAIMS

These requirements are in addition to those contained in NYSDOT Specification.

71.1 GENERAL. The State shall notify the Contractor in the event of any claim or suit pursuant to the items listed in NYSDOT Specification, and the Contractor shall immediately retain counsel and otherwise provide a complete defense against the entire claim or suit.

After a final judgment or settlement the Contractor may request recoupment of specific defense costs and may file suit in the Court having jurisdiction, requesting recoupment. The Contractor shall be entitled to recoup costs only upon a showing that such costs were entirely unrelated to the defense of any claim arising from an act or omission of the Contractor.

The Contractor shall indemnify the Owner and its officers and employees in the event that the Owner, its officers or employees become legally obligated to pay any damages or losses arising from any act or omission of the Contractor.

71.2 SUBMISSION OF DAMAGE CLAIMS. With regard to each and every damage claim, the Contractor shall:

(1) Provide the claimant with a damage claim form for the submission of damage claims to the Contractor and Owner;

(2) Pay, settle, or otherwise resolve the claim;

(3) Submit the claim to the insurance carrier, with a copy to the Owner;

(4) Treat all claimants with respect.

72. SCHEDULES.

These requirements are in addition to those contained in NYSDOT Specification.

PM PROGRESS SCHEDULE: Within ten calendar days after the award of the Contract, the Contractor shall submit to the Engineer for approval a CPM progress schedule. The CPM progress schedule shall show the proposed sequence of work and when the Contractor proposes to complete the various items of work within the time(s) established in the Contract. During the progress of the work, the Contractor shall confer with the Engineer concerning performance of the work in accordance with the approved schedule. The approved schedule shall be used as a basis for establishing major construction operations and for checking the progress of the work.

73. CHARACTER OF WORKERS, METHODS, AND EQUIPMENT

"Electrical Work. All electrical work shall be performed by or under the supervision of a licensed electrician (master or journeyman). Electrical work shall be defined as any work which involves making connections to electrical components or splices in wiring that are, or will be, carrying 100 V or more. "Under the supervision of" means that the licensed electrician employed on the project shall be physically present on the project and must be actively supervising the work.

Removal of Machinery and Equipment. The Contractor shall not remove from the project any item of machinery or equipment after it has been placed on the project without the prior consent of the Engineer, which consent shall not be unreasonably withheld. Reasonableness shall be tested by the needs of the project and not by the needs of any other project in which the Contractor may be engaged."

74. LIQUIDATED DAMAGES

The amount to be assessed as Liquidated Damages in accordance with NYSDOT Specification

$2,500 per day beyond the contract completion time as stated in the contract.

On Working Day contracts, should the Contractor elect to work on Saturdays, Sundays, or Holidays after the Contract Completion Date, the Contractor will be charged liquidated damages for such days worked.

Liability for Liquidated Damages. The Contractor covenants and agrees that should the amount of monies due or that may become due the Contractor be less than the amount of ascertained liquidated damages, the Contractor and the Contractor's surety shall be liable to the State for the deficiency.

75. RETAINAGE

The Owner shall withhold ten percent (10%) retainage on the Contract.

76. DEFINITIONS.

10-13 CONTRACT. The written agreement between the Owner and the Contractor setting forth the obligations of the parties relative to the performance of the work.

The Contract includes those documents listed as Contract Documents in the Supplemental General Provisions, and any supplemental agreements that are required to complete the work in an acceptable manner.

10-16 CONTRACTOR. The individual, partnership, firm, corporation, any acceptable combination thereof, or a joint venture which is primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work and is a party to the Contract with the Owner which is undertaking the performance of the work under the terms of the Contract and acting directly or through its agent(s) or employee(s) to complete the Contract work. The term "Contractor" means the prime Contractor as differentiated from a subcontractor. The Contractor will act in an independent capacity and not as officers or employees of the Owner.

10-49 SURETY. The individual, partnership, firm, or corporation, or any acceptable combination thereof, other than the Contractor, executing the bond or bonds furnished by the Contractor. The Surety Company issuing the bond(s) shall be listed on the current United States Department of the Treasury "Department of the Treasury's listing of approved Sureties (Department Circular 570)" as authorized to do business in the State in which the project is located.

10-07A ACCEPTANCE. All Contracts require proper acceptance of the described goods or services by the Owner. Proper acceptance shall be understood to include inspection of goods and certification of acceptable performance of services by Authorized Representative(s) of the Owner to insure that the goods or services are complete and are as specified in the Contract.

10-06A AIRPORT OPERATOR. The person or entity representing the Owner and having operational responsibility for the Airport.

10-13A CONTRACT DOCUMENTS. All the documents that comprise the awarded Contract as defined in Item 10-13 of this Section.

10-25A GOODS. Hard goods, supplies, or materials.

10-25B HE, SHE, HE/SHE, HER, HERS, HIS/HER, HIM, AND HIS. These terms shall be gender-neutral and shall be applied without regard to gender.

10-45A SUBCONTRACTOR. An individual or legal entity to whom or which the Contractor sublets part of the work. A Supplier can also be considered a Subcontractor

10-48A SUPPLIER. An individual or legal entity with which the Contractor enters an agreement to provide Goods for use in the Project.

77. CLAIMS FOR ADJUSTMENT

77.1 EXTRA WORK: Work identified as Extra Work by the Contractor shall be identified as such by the Contractor before the work is undertaken in order to allow the Engineer and Owner the ability to review the work in detail and negotiate a cost with the Contractor to complete the extra work. If the work is determined by the Owner to be part of the existing contract no additional compensation will be afforded the Contractor.

If the Owner deems the work to be outside of the original scope of work identified in the contract the Contractor shall substantiate the cost of the extra work. The contractor shall provide a detailed cost estimate to complete the work, utilizing existing contract unit prices where applicable. If existing unit prices do not exist for this work, the Contractor shall provide a detailed estimate of the Direct Labor Costs, Fringe Benefits, Equipment and Materials required to complete the work. The Contractor will be provided an allowance for overhead and profit not to exceed 20% of the direct labor and material costs when the work is completed by the prime contractor, or a total of 25% of direct labor and material costs if the work is completed by a subcontractor. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is provided. If the Engineer and Owner approve the detailed costs provided, the work will be tracked and compensated utilizing said costs.

If the Owner and Engineer do not approve the costs breakdown provided by the Contractor, or if the work is deemed to be time sensitive to the completion of the Contract, the work may proceed utilizing Force Account procedures. Force account work will require the agreement by the Contractor and Engineer on a daily basis, with each indicating approval of the daily accounting through signatures on the daily force account form. Allowances for overhead and profit for force account work shall be the same as noted above. No payment will be made for work performed on a force account basis until the Contractor has furnished the Engineer with copies of itemized statements of force account costs including:

(1) Name, Classification, date, daily hours, total hours and extension for each laborer
(2) Designation, dates, daily hours, total hours, rental rate, and extension for each unit of equipment. Rental rates shall be based upon a recognized reference for the industry.
(3) Quantities of materials, invoices, pricing and extensions.
(4) Material transportation costs.
(5) Cost of property damage, liability, and worker's compensation insurance premiums, unemployment insurance contributions, and social security tax.

77.2 NOTICE REQUIREMENTS: In order to bring a claim for additional compensation not clearly covered by the Contract for conditions substantially different than represented by the Contract and not ordered by the Engineer as Extra Work as defined herein, the Contractor must provide written notice ("the Notice of Intent to File a Claim" or the "Notice") to the Engineer before conducting any work or purchasing any materials subject to the claim (the "Claim"). The words "Notice of Intent to File a Claim" must appear in large print at the top of the document. The Notice must specify the basis for the Claim, including the nature of the Claim, the reason

why the Contractor believes that the Owner is responsible for payment of the Claim, and a description of the additional compensation, including reference to each activity associated with the work and/or materials, including reference to any impacts to the Contractor's Progress Schedule (Critical Path). If the Contractor fails to provide the Notice as specified herein, the Contractor waives its right to bring the Claim under the Contract.

77.3 NOTICE DOCUMENTATION REQUIREMENTS: Upon providing the Notice of Intent to File a Claim, the Project Superintendent must commence daily records for all labor hours, equipment hours (idle and operating), and materials involved with the work or materials at issue in the Notice. The Contractor must submit such records to the Engineer on a daily basis. Such records must include a written analysis of how the work and/or materials at issue in the Notice impact/s the Critical Path. If the Contractor fails to provide such records to the Engineer as required herein, the Contractor waives its right to bring the Claim.

77.4 CLAIMS PROCEDURE: The Engineer's written acknowledgement of the Notice and receipt of the Contractor's daily reporting under this Subsection shall not be construed as an approval by the Owner of the merits of the Claim. Claims are evaluated by the Resident Engineer, the Owner, the FAA, and any other agency contributing funding to the project. If the Owner decides in favor of the Contractor, the Claim will be allowed, in whole or in part, and paid as provided in the Contract. If the Owner denies the Claim, in whole or in part, the Contractor may appeal to the Owner one time for review of the decision. Notwithstanding any other provision of law, case law, regulation, or the Contract, an appeal from the decision of the Engineer shall be made within 30 calendar days of denial, and not thereafter.

77.5 CLAIMS DOCUMENTATION REQUIREMENTS: The Contractor must provide the Engineer with the following documentation in support of the Claim:

(1) A detailed statement of the Claim, including all necessary dates, location, and work and material items at issue in the Claim;

(2) The date on which the Contractor first became aware of the actions or conditions giving rise to the Claim;

(3) A copy of the Notice of Intent to File a Claim;

(4) A list of the names of all Owner employees and agents, including consultants, the Contractor believes have knowledge or information concerning the facts giving rise to the Claim;

(5) A list of the names of all Contractor employees and agents, including subcontractors, whom the Contractor believes have knowledge or information concerning the facts giving rise to the Claim;

(6) A list of the specific provisions of the Contract that the Contractor believes support the Claim, and a description of why the Contractor believes those provisions support the Claim;

(7) A list of all documents and all oral statements that the Contractor believes support the Claim;

(8) A statement as to whether additional compensation and/or a time extension are being requested in the Claim;

(9) If a time extension is being requested in the Claim, a statement as to the specific number of days being requested, supported with reference to how the facts underlying the Claim affected the Contractor's performance schedule, including how such facts affected the Critical Path;

(10) A description of the amount of additional compensation being sought, itemized by category of work, including delays associated with performing the work, work items, materials costs, and any and all other costs at issue in the Claim. Such documentation includes, but is not limited to, invoices for rented equipment, a Blue Book analysis for owned equipment; and subcontractor agreements.

(11) If additional compensation for delays associated with performing the work is included in the Claim, the Contractor must provide a description of the operations that were delayed, the reasons for the delay, the impact of the delay on the operations, and how the delay impacted the Contractor's progress schedule, including the Critical Path. The Contractor must review the Contract for the project as claims for delays must be in accordance with the Contract terms.

(12) For every claim seeking additional compensation in excess of $50,000, the Contractor must provide a separate document certifying that the documentation provided in support of the Claim and that the amount of additional compensation sought in the Claim is accurate and that the Contractor has a good faith basis for believing that the Owner is responsible for payment of the Claim (the "Claims Certification"). The Claims Certification shall be notarized and executed by a senior officer of the Contractor with legal authority to bind the Contractor, or if the Contractor is a sole proprietor, by the proprietor. The Claims Certification may be used in any proceeding under the False Claims Act, 18 U.S.C. 1020, and/or 23 CFR 635.119.

77.6 APPEAL TO THE OWNER: Appeals will be judged by the OWNER in accordance with their policies. Should an appeal be judged in favor of the Contractor, it will be allowed and paid as provided for in the Contract. Should an appeal be denied by the Owner, the Contractor may not appeal this claim again.

77.7 TIME FOR CLAIMS; APPEALS. Notwithstanding any other provision of law, case law, regulation, or the Contract, all claims by the Contractor shall be submitted in writing within 30 calendar days after the Acceptance Date of the project or within 30 calendar days of the Notice of Intent to File a Claim, whichever occurs first, and not thereafter (the "Claim Filing Period"). Such claims must meet the requirements set forth above, including but not limited to complete documentation supporting the Claim. If the Contractor fails to meet these requirements, the Owner may grant the Contractor additional time to meet the requirements. Any additional time granted for such purpose shall not be the subject of any demand for interest payments or for attorneys' fees and/or other costs. If the Contractor fails to file the Claim within the Claim Filing Period, the Contractor waives its right to bring the Claim. If the disputed work continues to be performed beyond the Claim Filing Period, the Contractor must submit a written request to extend the Claim Filing Period prior to the expiration of the Claim Filing Period. The Contractor shall submit such requests for extension of the Claims Filing Period every 30 calendar days until the disputed work is completed.

78. INSPECTION BY OWNER AND PUBLIC AGENCIES

The authorized representatives and agents of the Owner shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. Representatives of the Owner shall have access to the work wherever it is in preparation or progress and the Contractor shall provide facilities for such access and inspection.

79. REPORTS, RECORDS AND DATA

The Contractor shall submit to the Owner such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data, as the Owner may request concerning work performed or to be performed under this Contract.

80. GENERAL GUARANTEE

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 an 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 of the date of final acceptance of the work unless a longer period is specified. The Owner will give notice of observed defects with reasonable promptness.

81. NOTICE AND SERVICE THEREOF

Any notice to any Contractor from the Owner relative to any part of this Contract shall be in writing and considered delivered and the service thereof completed when said notice is posted, by certified or registered mail, or by Fed-Ex or other express shipping to the said Contractor at their last given address, or delivered in person to said Contractor or their authorized representative.

82. PRE-CONSTRUCTION CONFERENCE

A Pre-construction Conference shall be held. The purpose of this conference is to go over the Contractor's proposed job organization, equipment and preliminary work schedule and to review Specification requirements. The order of construction shall be discussed with the Engineer and shall meet with their approval. The Contractor, prior to starting work, shall submit to the Engineer a written description of the methods they plan to use in doing the work.

A pre-construction conference for permitting may also be required by the Owner or the project permits. This may be concurrent with the regular pre-construction conference or separate at the discretion of the Owner.

83. REQUIRED PROVISIONS DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion or correction.

84. RECORD "AS BUILT" PLANS

In addition to any other requirements in the Plans and Specifications pertaining to “As-Built” Plans and surveys:

1) The Contractor shall, during the progress of the work, keep a master set of prints on the job site, on which they shall keep a careful and neat record of all deviations from the Contract Plans prepared by the Engineer which are made during the course of the work.

2) Upon completion of the project, these "as built" prints shall be certified as to their correctness by the signature of the Contractor and turned over to the Engineer for use in the preparation of a permanent set of "As Built" Plans.

85. AIRPORT OPERATIONS AND SAFETY REQUIREMENTS DURING CONSTRUCTION

The Contractor's attention is directed to the FAA Advisory Circular (AC) 150/5370-2G, OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, dated 29 September 2011 as amended or superseded.

The Contractor has been provided with a copy of the Construction Safety and Phasing Plan CSPP as part of the Plans. The Contractor must review the CSPP and file a Safety Plan Compliance Document Certification (Form MJ-208) indicating that they understand the plan and will comply with it throughout construction.

86. PERMITS AND APPROVALS

It is the Contractor's responsibility to secure, obtain and pay for any Permits, Licenses, Approvals and all other legal or administrative prerequisites to their performance of the Contract.

87. LIABILITY OF PUBLIC OFFICIALS

To the full extent permitted by law, no official, employee, agent or representative of the Owner shall be individually or personally liable on any obligation of the Owner under this Contract.

88. OSHA TRAINING

All employees to be employed at the job site shall have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration (OSHA) that is ten (10) hours in duration at the time the employee begins work.

The Contractor shall furnish documentation of successful completion of said course by either a copy of the OSHA card or a letter or certificate of completion from the person or company that administered the course. OSHA documentation shall be provided prior to any person beginning work on the site. It is recommended that Contractors and Subcontractors provide a copy of OSHA documentation for all employees prior to the start of work.

Periodic Cost Estimates will not be accepted for payment unless all OSHA documentation has been received. Final payment for the Project will not be made until all Project OSHA cards have been submitted to and approved by the Engineer.

89. PROJECT CLOSEOUT

In addition to the project closeout requirements, the Owner shall require the following documentation be provided as part of the project closeout:

(1) Written guarantee on the Contractor’s letterhead of all work as called for in the Contract
(2) Contractor’s Affidavit of Payment of Debts and Claims, AIA Document G706
(3) Contractor’s Affidavit of Release of Liens, AIA Document G706A, for the Contractor.
(4) Contractor’s Affidavit of Release of Liens, AIA Document G706A, for the Subcontractor.
(5) Consent of Surety Form, AIA Document G707
(6) Broome County Release of Claims Form
(7) Broome County Affidavit of Payment of Employees Form
(8) Broome County Employment Utilization Report
(9) MBE/WBE/SDVOB Final Utilization Form.
(10) Broome County Articles of Agreement (with Schedule A-B as needed)
(11) Final Change Order
(12) AIA G702 – Final Payment Application
(13) Any other closeout documents requested by the Owner and NYSDOT

END OF SUPPLEMENTAL GENERAL PROVISIONS

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DIVISION 1 - SPECIFICATIONS

SPECIAL PROVISIONS

EEO Requirements

(SP-2)

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EQUAL EMPLOYMENT OPPORTUNITY (EEO)

This Section is taken from and references NYSDOT Standard Specification. All parts of NYSDOT Section 102-11 and any referenced sections of the NYSDOT Standard Specifications or updates to the NYSDOT Specification shall apply to this contract at the time of bidding.

Note: This contract is a Non-Federal (State Only) funded project

Failure to comply with EEO requirements will result in delayed or non-payment to contractor for work performed on the project.

102-11 EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS.

The Department seeks to ensure nondiscrimination in employment under all Department contracts. The Contractor shall comply with the following Equal Employment Opportunity (EEO) requirements. Goals for Equal Opportunity Employment Participation are listed in the required contract provisions section of the contract proposal.

For Federal-Aid contracts, Equal Employment Opportunity provisions are also found on Form FHWA 1273 Required Contract Provisions Federal-Aid Construction Contracts, or Form FHWA 1316 Required Contract Provisions Appalachian Development Highway System and Local Access Roads Construction Contracts, one of which is incorporated in the required contract provisions section of the contract proposal.

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).

A. Statutory Authority. The Federal statutory authority for Equal Employment Opportunity provisions is contained in 23 U.S.C. 140, Title VII of the Civil Rights Act of 1964,and Federal Aid Highway Act of 1968 . State statutory authority is contained in Section 85 of the Highway Law, Section 428 of the Transportation Law, and NYS Executive Law Articles 15 and 15-A, Regulations have been promulgated under 23 CFR 200, 23 CFR 230, 41 CFR 60, 49 CFR 21, and 5 NYCRR 140-145.

B. Definitions.

1. For Federal-Aid contracts, a minority group member is defined under this subsection as someone who is, and can demonstrate membership in, one of the following groups:
   a. Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
   b. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
   c. 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
   d. 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. For non Federal-Aid contracts, a minority group member is defined under this subsection as a United States citizen or permanent resident alien who is, and can demonstrate membership in, one of the following groups:

a. Black persons having origins in any of the Black African racial groups;
b. Hispanic persons of Mexican, Puerto Rican, Dominican, Cuban, Central or South American descent of either Indian or Hispanic origin, regardless of race;
c. Asian and Pacific Islander persons having origins in any of the Far East countries, South East Asia, the Indian subcontinent, or the Pacific Islands;
d. Native American or Alaskan native persons having origins in any of the original peoples of North America.

C. Equal Opportunity Clause. The Contractor shall develop and implement an EEO policy in accordance with Form FHWA 1273 Required Contract Provisions Federal-Aid Construction Contracts for Federal-Aid contracts and in accordance with §102-08 Standard Clauses for All New York State Contracts for non Federal-Aid contracts.

1. **Non-Discrimination.** The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability. The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

   To the extent required by Article 15 of the Executive Law and all other State and Federal statutory and constitutional non-discrimination provisions, the Contractor shall not discriminate against any employee or applicant for employment because of military status, predisposing genetic characteristics, marital status, familial status, or domestic violence victim status; and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest.

   Such actions 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 shall post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Department setting forth the provisions of this non-discrimination clause.

2. Solicitations. The Contractor shall state in all solicitations or advertisements for employees placed by or on behalf of the Contractor, that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, military status, disability, predisposing genetic characteristics, marital status, or domestic violence victim status

3. Compensation Information. The Contractor shall not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an

investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Contractor's legal duty to furnish information.

4. Collective Bargaining Agreements. The Contractor shall 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' representative of the Contractor's commitments to equal employment opportunities, under the Equal Opportunity Clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

5. Furnishing Information. The Contractor shall furnish all information and reports required by rules, regulations, and orders of the U.S. Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by the Department and the U.S. Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

6. Non-Compliance. In the event of the Contractor's non-compliance 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 and such other sanctions may be imposed and remedies invoked as provided by rule, regulation, or order of the U.S. Secretary of Labor, or as otherwise provided by law.

7. Subcontracts/Purchase Orders. The Contractor shall include the provisions of §102-11C Equal Opportunity Clause in every subcontract or purchase order so that such provisions will be binding upon each subcontractor or vendor. The Contractor shall take such action with respect to any subcontract or purchase order as may be directed by the U.S. Secretary of Labor 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, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

D. Employment Goals. An employment goal(s) for minorities and a separate goal for women are presented in the contract documents. The Contractor shall provide equal employment opportunity and shall take affirmative action for all minority groups, both male and female; and women, both minority and non-minority. The covered area is the county or counties in which the work is located. The Contractor may be in violation if a 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 if a specific minority group of women is underutilized).

The Contractor shall not use the goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, sexual orientation, gender identity, national origin, age, military status, disability, predisposing genetic characteristics, marital status, or domestic violence victim status.

If the Contractor performs work outside of the covered area, it shall apply the goals established for the county where the work is actually performed. The Department will monitor the Contractor’s attainments towards EEO goals in accordance with §105-21 Civil Rights Monitoring and Reporting.

The goals set for the contract 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. The Contractor is expected to make substantially uniform progress in meeting its goals in each trade.

The hours of minority and female employment and training shall 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 contracts. The transfer of minority or female employees, apprentices, or trainees from contractor to contractor or from contract to contract for the sole purpose of meeting the Contractor's goals is a violation of the contract and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed. 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.

The Contractor shall not enter into any subcontract with any person or firm debarred from government contracts.

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. Contractor records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, classification (e.g., supervisor, journeyworker, apprentice, or trainee), 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.

The Contractor's compliance with 41 CFR 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by these specifications and its efforts to meet the goals.

E. Affirmative Action Steps. The Contractor shall take specific affirmative actions to promote 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 efforts to ensure equal employment opportunity. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

1. 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, shall assign two or more women to each construction contract. The Contractor shall specifically ensure that all forepersons, 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.

2. 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.

3. 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.

4. Provide immediate written notification to the Department when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman 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.

5. 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 either the NYS Department of Labor or the US Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under E.2. above.

6. 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 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.

7. 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, forepersons, etc., prior to the initiation of construction work at any contract 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.

8. 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.

9. 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.

10. 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 the Contractor's work force.

11. Validate all tests and other selection requirements in accordance with state and Federal laws, rules and regulations.

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

13. Ensure that seniority practices, labor 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. 14. 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.

15. 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.

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

F. Complaints of Alleged Discrimination. The Contractor shall promptly investigate all complaints of alleged discrimination made to the Contractor in connection with its obligations under this contract, shall attempt to resolve such complaints, and shall take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, corrective action shall include such other persons. Upon completion of each investigation, the Contractor shall inform every complainant of all available avenues of appeal.

G. Associations. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations. The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling one or more of its obligations, provided that the Contractor actively participates in the group, makes every effort to ensure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the 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

H. Hometown Plans (Federal-Aid Contracts Only). If a Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the USDOL 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 participating in Hometown Plans shall be able to demonstrate their participation and document their compliance with the provision of the Hometown Plan. Each Contractor participating in an approved plan is individually required to comply with its obligation 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 toward a goal in an approved plan does not excuse any covered Contractor's failure to take good faith efforts to achieve the Plan goals and timetables

DIVISION 1 - SPECIFICATIONS

SPECIAL PROVISIONS

M/WBE/SDVOB Requirements

(SP-3)

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This Section is taken from and references NYSDOT Standard Specification. All parts of NYSDOT Section 102-12 and any referenced sections of the NYSDOT Standard Specifications or updates to the NYSDOT Specification shall apply to this contract at the time of bidding.

Note: This contract is a Non-Federal (State Only) funded project

Failure to comply with MBE/WBE/SDVOB requirements will result in delayed or non-payment to contractor for work performed on the project.

102-12 DBE/MBE/WBE/SDVOB PARTICIPATION

DBE/MBE/WBE/SDVOB is a general term that refers to a Disadvantaged Business Enterprise (DBE), a Minority Business Enterprise (MBE), a Women's Business Enterprise (WBE), or a Service-Disabled Veteran-Owned Business (SDVOB). The DBE program applies to Federal-Aid contracts and the MBE/WBE (M/WBE) and SDVOB programs apply to Non-Federal-Aid contracts. The Department seeks to:

- Ensure nondiscrimination in award and administration of Department contracts; • Create a level playing field on which DBE/MBE/WBE/SDVOBs can fairly compete for Department contracts; • Ensure that the Department's DBE Program operates in a nondiscriminatory manner and without regard to race or sex, while maximizing efficiency of service;
- Ensure that only firms that fully meet DBE/MBE/WBE/SDVOB eligibility standards are permitted to participate as DBE/MBE/WBE/SDVOBs;
- Help remove barriers to the participation of DBE/MBE/WBE/SDVOBs in the performance of Department contracts; and
- Assist in the development of firms that can compete successfully in the marketplace outside the DBE/MBE/WBE/SDVOB programs.

The parties to this contract shall take all necessary and reasonable steps in accordance with the laws, rules and regulations cited in this subsection to promote the objectives outlined above. The Contractor shall comply with the applicable laws, rules and regulations and the DBE/MBE/WBE/SDVOB Program Assurances stated below.

DBE/MBE/WBE/SDVOB Program Assurances.

The Contractor or Subcontractor shall not discriminate on the basis of race, color, national origin, sex, sexual orientation, and/or gender identity in the award and performance of Department contracts. The Contractor shall carry out the applicable requirements of 49 CFR 26 in the award and administration of Federal-Aid contracts. The Contractor shall carry out the applicable requirements of Article 15-A of the New York State Executive Law, Article 3 of the Veteran Services Law, and the regulations promulgated under 5 NYCRR 140-145 and 9 NYCRR 252.2 in the award and administration of Non-Federal-Aid 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 Department deems appropriate, which may include, but is not limited to: (1) withholding contract payments; (2) assessing sanctions; (3) liquidated damages; and/or (4) finding the Contractor a non-responsible bidder. The Contractor shall not use the requirements of these specifications to discriminate against any qualified company or group of companies. These requirements shall be made a part of all subcontracts and agreements entered into as a result of this contract.

A. Statutory Authority.

1. Disadvantaged Business Enterprise (DBE) Program. The Federal statutory authority for the DBE Program is contained in the Intermodal Surface Transportation Efficiency Act of 1991 (Public Law 102-240); the Transportation Equity Act of the 21st Century (TEA-21), (Public Law 105-178); the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), (Public Law 109-59); the Moving Ahead for Progress in the 21st Century Act (MAP-21), (Public Law 112-141); and the Fixing America's Surface Transportation (FAST) Act (Public Law 114-94). New York State has enacted Section 85 of the Highway Law and Section 428 of the Transportation Law. Regulations have been promulgated under 49 CFR 21, 49 CFR 26 and 17 NYCRR §35.

2. Minority/Women's Business Enterprise (M/WBE) Program. The State's statutory authority to effectuate the M/WBE requirements are set forth in Section 428 of the Transportation Law and Executive Law Article 15-A and regulations promulgated at 5 NYCRR §140-145.

3. Service-Disabled Veteran-Owned Business (SDVOB) Program. The State's statutory authority to effectuate the SDVOB requirements are set forth in Article 3 of the Veteran Services Law and regulations promulgated at 9 NYCRR §252.2.

B. DBE/MBE/WBE/SDVOB Goal(s). Federal-aid contracts have a single DBE goal. Non-FederalAid contracts have three separate and distinct goals, one for MBEs, one for WBEs, and one for SDVOBs which cannot be combined. The Department will monitor the Contractor's commitments towards DBE/MBE/WBE/SDVOB goals and attainments in accordance with §105-21 Civil Rights Monitoring and Reporting.

1. Established Goal(s). Contract participation goal(s) for DBE/MBE/WBE/SDVOBs are expressed as a percentage of the total contract bid price. The goal(s) are stated in the Contract Proposal and remain in effect throughout the life of the contract. In executing the contract or bid documents the Bidder declares that it subscribes to the participation goal(s) and shall meet the goal(s) or demonstrate that it could not meet them despite its best efforts. Failure to provide commitments to meet the established goal(s) for the contract or failure to meet the good faith efforts may be grounds for rejection of the bid as non-responsive.

2. Zero Percent Goal(s). If a zero goal for participation by DBE/MBE/WBE/SDVOBs is established, the Contractor shall promote the objectives of the DBE/MBE/WBE/SDVOB Programs by providing opportunities for DBE/MBE/WBE/SDVOBs to participate in these areas, with such participation to be credited towards the DBE/MBE/WBE/SDVOB-neutral component of the Department's DBE/MBE/WBE/SDVOB Programs.

C. Eligibility. DBEs are eligible to be used to meet the goal on Federal-Aid contracts. MBEs, WBEs, and SDVOBs are eligible to be used to meet the goal on Non-Federal-Aid contracts. The programs are separate, and eligibility in one program does not provide eligibility in the other.

1. DBE Eligibility. Only those DBE firms that are certified under the New York State Unified Certification Program are eligible under the DBE Program. Only the work, services or products provided by DBE Firms under NAICS code(s) which the DBE is certified for, at the time the DBE enters into a contract with the Contractor, can be credited towards the contract goal. Program participants must rely on, and not depart from, the plain meaning of NAICS code descriptions in determining the scope of a firm's certification. DBE certification is not an endorsement of the

quality or performance of the business but simply an acknowledgment of the firm's status as a DBE. A directory of currently certified firms is available on the NYS Unified Certification Program website at https://nysucp.newnycontracts.com.

2. M/WBE Eligibility. Only those M/WBE firms that are certified by the NYS Department of Economic Development are eligible under the M/WBE Program. Only the work, services or products provided by M/WBE firms under code(s) which the M/WBE is certified for, at the time the M/WBE enters into a contract with the Contractor, can be credited towards the contract goal. M/WBE certification is not an endorsement of the quality or performance of the business but simply an acknowledgment of the firm's status as an M/WBE. A directory of certified firms is available on the Empire State Development website at https://ny.newnycontracts.com/FrontEnd/searchcertifieddirectory.asp.

3. SDVOB Eligibility. Only those SDVOB firms that are certified by the NYS Office of General Services' Division of Service-Disabled Veteran's Business Development are eligible under the SDVOB Program. Only the work, services or products provided by SDVOB Firms under the directory code(s) which the SDVOB is certified for, at the time the SDVOB enters into a contract with the Contractor, can be credited towards the contract goal. SDVOB certification is not an endorsement of the quality or performance of the business but simply an acknowledgment of the firm's status as an SDVOB. A directory of certified firms is available on the NYS Office of General Services website at https://sdves.ogs.ny.gov/business-search.

D. Counting DBE/MBE/WBE/SDVOB Participation Towards the DBE/MBE/WBE/SDVOB Goal(s). The value of the work performed by a DBE/MBE/WBE/SDVOB, including that of a DBE/MBE/WBE/SDVOB Prime Contractor, with its own equipment, with its own forces, and under its own supervision will be counted toward the goal(s), provided the participation is a commercially useful function. A DBE/MBE/WBE/SDVOB Prime Contractor shall still provide opportunities for participation by other DBE/MBE/WBE/SDVOBs in all types of contracts and procurement activities. Work performed by DBE/MBE/WBE/SDVOBs on the contract will be counted as set forth below. If the Department determines that some or all of a DBE/MBE/WBE/SDVOB's work does not constitute a commercially useful function in accordance with §102-12E. Commercially Useful Function, only the portion of the work considered to be a commercially useful function will be credited toward the goal(s).

The participation of a firm that is certified as an MBE cannot be counted toward a WBE goal, and the participation of a firm that is certified as a WBE cannot be counted toward an MBE goal. The participation of a firm that is certified as both an MBE and a WBE will only be counted toward one goal for each contract pay item performed by the firm in its entirety and cannot be divided between the two goals. The participation of a firm that maintains more than one certification may only be counted toward one goal (i.e., MBE, WBE, or SDVOB) for each contract pay item in the contract. A joint venture between a DBE/MBE/WBE/SDVOB and a non-DBE/MBE/WBE/SDVOB is allowed however only work performed independently by the DBE/MBE/WBE/SDVOB, not the Joint Venture, will be counted toward the DBE/MBE/WBE/SDVOB goal(s) based on the total dollar value of the clearly defined portion of the work that the DBE/MBE/WBE/SDVOB performs with its own forces. The joint venture agreement is subject to approval by the Department, a copy of which is to be furnished by the Contractor before execution of the contract. For purposes of Commercially Useful Function (CUF) review, the DBE/MBE/WBE/SDVOB must comply with the provisions of §102-12E. Commercially Useful Function.

The Bidder is responsible to verify the information provided by the DBE/MBE/WBE/SDVOB and ensure that the counting of the DBE/MBE/WBE/SDVOB's participation is accurate. Any shortfall caused by errors in counting are the responsibility of the Bidder.

1. Subcontractors. A Subcontractor is any individual, firm, or corporation to whom the Contractor, with written consent of the Department, sublets any part of the contract. A Subcontractor is approved by the Department in accordance with §108-05 Subletting or Assigning the Contract to perform on-site work specifically required for the performance of the contract.

100% of the value of the work performed by a DBE/MBE/WBE/SDVOB Subcontractor will be counted toward the DBE/MBE/WBE/SDVOB goal(s), including the cost of materials and supplies purchased by the DBE/MBE/WBE/SDVOB, except the cost of supplies or equipment rented or leased from the Contractor or its affiliates will not be counted.

If a DBE/MBE/WBE/SDVOB Subcontractor is part of a joint venture, their participation will be counted as indicated above in §102-12D. Counting DBE/MBE/WBE/SDVOB Participation Towards the DBE/MBE/WBE/SDVOB Goal(s).

2. Manufacturers/Fabricators. A Manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles or equipment required under the contract and of the general character described by the specifications. Manufacturing includes blending or modifying raw materials or assembling components to create the product to meet contract specifications.

A Fabricator is a firm that assembles, constructs or otherwise substantially alters materials or supplies into assemblies, components, or finished items for inclusion into the work prior to resale.

100% of the cost of the materials or supplies from a DBE/MBE/WBE/SDVOB Manufacturer or Fabricator will be counted toward the DBE/MBE/WBE/SDVOB goal(s). Manufacturers or Fabricators may provide materials to the Contractor or a Subcontractor working on the contract for installation. When a DBE/MBE/WBE/SDVOB makes minor modifications to the materials, supplies, articles, or equipment, the DBE/MBE/WBE/SDVOB is not a manufacturer. Minor modifications are additional changes to a manufactured product that are small in scope and add minimal value to the final product.

3. Material Suppliers. A Material Supplier, also known as a regular dealer, is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles, or equipment of the general character described in the specifications required for the performance of the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. A Material Supplier is an established, regular business that engages in, as its principal business, and under its own name, the purchase and sale or lease of the products in question.

A DBE supplier performs a commercially useful function as a regular dealer and receives credit for 60 percent of the cost of materials or supplies (including transportation cost) when all, or at least 51 percent of, the items under a purchase order or subcontract are provided from the DBE's inventory, and when necessary, any minor quantities delivered from and by other sources are of the general character as those provided from the DBE's inventory.

60% of the cost of the materials or supplies from a M/WBE Material Supplier will be counted toward the M/WBE goal(s). 100% of the cost of the materials or supplies from an SDVOB Material Supplier will be counted toward the SDVOB goal. Equipment rental or equipment leasing is considered to be a type of material supply activity and is credited at 60% for DBE/MBE/WBEs and 100% for SDVOBs. Material Suppliers may provide materials to the Contractor or a Subcontractor working on the contract for installation. Credit determination awarded to a firm for the provision of materials and supplies (i.e., whether the firm is acting as a material supplier or broker) will be determined on a contract-by-contract basis. If it is determined that the material supplier is acting as a broker, the participation will be credited accordingly.

A Material Supplier who deals in bulk items such as petroleum products, steel, cement, gravel, stone, or asphalt, and items that are not typically stocked due to their unique characteristics (e.g., limited shelf life or items ordered to specification), need not own, operate nor maintain a store, warehouse, or other establishment, if it owns and operates distribution equipment for the products. This can be accomplished by either maintaining stock of the product or through delivery of the materials, to the job site or Contractor's designated location, by using the Material Supplier's own trucks. Any supplementing of Material Suppliers' own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis. To be considered valid, the long-term lease shall include the lessor's name, list of trucks to be leased by vehicle identification number (VIN), and the agreed upon amount of the cost and method of payment. Third party haulers do not qualify as a long-term lease. The operator shall be an employee of the DBE/MBE/WBE/SDVOB. It shall be the responsibility of the DBE/MBE/WBE/SDVOB to provide the operator's fuel, maintenance and insurance for all leased trucks.

Some bulk items may be drop-shipped due to the specific needs in a contract and the MBE/WBE/SDVOB must take legal possession of the items in the chain of distribution at all times after acceptance of the item. However, the MBE/WBE/SDVOB will receive credit as a Broker not as a Material Supplier (See §102-12D.5 Brokers/Manufacturer's Representatives).

4. Distributor (Federal-Aid Contracts Only). A DBE Distributer is an established business that engages in the regular sale or lease of the items specified by the contract. A DBE Distributor assumes responsibility for the items it purchases once they leave the point of origin (e.g., a Manufacturer's facility), making it liable for loss or damage not covered by the carrier's insurance.

If the materials or supplies are purchased from a DBE Distributor that neither maintains sufficient inventory nor uses its own distribution equipment for the products in question, 40% of the cost of materials or supplies (including transportation costs) will be credited.

A DBE Distributor performs a CUF when it demonstrates ownership of the items in question and assumes all risk for loss or damage during transportation, evidenced by the terms of the purchase order or a bill of lading (BOL) from a third party, indicating Free on Board (FOB) at the point of origin or similar terms that transfer responsibility of the items in question to the DBE Distributor. Where a Distributor "drop ships" materials without assuming risk or does not operate in accordance with its distributorship agreement, credit is limited to fees or commissions

5. Brokers/Manufacturer's Representatives. A Broker / Manufacturer's Representative is a firm that arranges or expedites transactions for materials.

100% of the expenditures for fees or commissions charged for assistance in the procurement of, or fees for transportation charges for the delivery of, materials or supplies provided by a DBE/MBE/WBE/SDVOB Broker/Manufacturer's Representative will be counted toward the DBE/MBE/WBE/SDVOB goal(s), provided they are determined by the Department to be reasonable and not excessive as compared with fees customarily allowed for similar services. The cost of the materials and supplies themselves will not be counted. A Broker / Manufacturer's Representative may arrange or expedite transactions for materials to the Contractor or Subcontractor working on the contract.

6. Services. A Service is a firm that provides an economic benefit, such as professional, technical, consultant, or managerial service, or provides bonds or insurance specifically required for the performance of the contract.

100% of the expenditure for fees charged by a DBE/MBE/WBE/SDVOB Service will be counted toward the DBE/MBE/WBE/SDVOB goal(s), provided the fee is reasonable and not excessive as compared with fees customarily allowed for similar services.

7. Trucking Firms. A DBE/MBE/WBE/SDVOB trucking firm shall own and operate at least one fully licensed, insured, and operational truck used on the contract and shall be responsible for the management and supervision of the trucking operation, and the arrangement cannot be contrived solely for the purpose of meeting the DBE/MBE/WBE/SDVOB goal(s). The DBE/MBE/WBE/SDVOB trucking firm shall control the day-to-day DBE/MBE/WBE/SDVOB trucking operations and shall be responsible for: (1) Negotiating and executing rental/leasing agreements; (2) Controlling the work force; (3) Coordinating the daily trucking needs with the Contractor or Subcontractor; and (4) Scheduling and dispatching trucks.

100% of the value of the trucking operations the DBE/MBE/WBE/SDVOB provides on the contract using trucks it owns or leases on a long-term basis that are registered, insured, and operated by the DBE/MBE/WBE/SDVOB using drivers it employs, will be counted toward the DBE/MBE/WBE/SDVOB goal(s). A lease shall indicate that the DBE/MBE/WBE/SDVOB has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE/MBE/WBE/SDVOB, so long as the lease gives the DBE/MBE/WBE/SDVOB absolute priority for use of the leased truck. Leased trucks shall display the name and identification number of the DBE/MBE/WBE/SDVOB

E. Commercially Useful Function. A DBE/MBE/WBE/SDVOB's participation will only be counted toward meeting the DBE/MBE/WBE/SDVOB contract goal(s), when it performs a commercially useful function. In order to be considered as performing a commercially useful function, a DBE/MBE/WBE/SDVOB shall be responsible for the execution of a distinct element of work on the contract and carry out its responsibilities by actually performing, managing, and supervising the work involved in accordance with normal industry practice. This applies to all work performed by a DBE/MBE/WBE/SDVOB including Subcontractors, Manufacturers/Fabricators, Material Suppliers, DBE Distributors, Brokers/Manufacturer's Representatives, Services and Trucking Firms regardless of whether the DBE/MBE/WBE/SDVOB's participation is intended to count towards the goals(s). With respect to supplying materials to be used on the contract, the DBE/MBE/WBE/SDVOB shall assume the responsibility for negotiating price, determining quality and quantity, ordering the material, and paying for the materials.

Regardless of whether an arrangement between the Contractor and the DBE/MBE/WBE/SDVOB represent standard industry practice, if the arrangement erodes the ownership, control or independence of the DBE/MBE/WBE/SDVOB or in any other way does not meet the commercially useful function requirement, the Contractor will receive no credit toward the goal(s). If the reduction in credit results in the DBE/MBE/WBE/SDVOB participation to fall below the Contractor's commitment, the Contractor shall make every effort to find another DBE/MBE/WBE/SDVOB to make up the shortfall to meet their commitments, in accordance with §102-12H. Good Faith Efforts.

A DBE/MBE/WBE/SDVOB does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction or contract through which funds are passed in order to obtain the appearance of DBE/MBE/WBE/SDVOB participation. The arrangement cannot be contrived solely for the purpose of meeting the DBE/MBE/WBE/SDVOB goal(s). The Contractor shall not seek credit toward the goal(s) through any arrangements or actions of others where the Contractor knows, or should have known, based upon the evidence and circumstances present, that a DBE/MBE/WBE/SDVOB is not performing a commercially useful function.

1. Work Force. The DBE/MBE/WBE/SDVOB shall employ its own work force, (including administrative and clerical) separate and apart from that employed by the Contractor, other Subcontractors on the contract, or their affiliates. The DBE/MBE/WBE/SDVOB must use its workforce to perform or exercise responsibility for its portion of the contract. This does not preclude the employment by the DBE/MBE/WBE/SDVOB of an individual that has been previously employed by another firm involved in the contract, provided that the

DBE/MBE/WBE/SDVOB can demonstrate it maintains an employer-employee relationship with the employee by being responsible for hiring, firing, training, assigning, and otherwise controlling the on-the-job activities of the employees, as well as ultimate responsibility for wage and tax obligations related to the employee. The routine transfer of work crews from another employer to the DBE/MBE/WBE/SDVOB will not be allowed.

2. Supervision. All work performed by the DBE/MBE/WBE/SDVOB shall be controlled and supervised by the DBE/MBE/WBE/SDVOB without duplication of supervisory personnel from the Contractor, other Subcontractors on the contract, or their affiliates. This does not preclude routine communication between the supervisory personnel of the DBE/MBE/WBE/SDVOB and other supervisors necessary to coordinate the contract work.

3. Materials. DBE/MBE/WBE/SDVOBs shall negotiate price, determine quality and quantity, order, install (where applicable) and pay for the material(s) required to perform the work when material supply is included in their scope of work.

4. Equipment. DBE/MBE/WBE/SDVOBs may supplement their equipment by renting or leasing additional equipment in accordance with customary industry practice, provided the equipment is not rented/leased from the Prime Contractor or its affiliate, except as noted below. Before supplementing their equipment, the DBE/MBE/WBE/SDVOB must first own and operate at least one operational business-critical piece of equipment capable of independently providing a service under the contract. There may be rare instances in which a DBE/MBE/WBE/SDVOB may use a Prime Contractor's equipment, supplies, etc. to a limited degree (e.g., the DBE/MBE/WBE/SDVOBs backhoe breaks down and the DBE/MBE/WBE/SDVOB uses the Prime Contractor's backhoe for the rest of the day; use of a crane; etc.). Such limited use must be approved by the Department. Consequently, if a charge for the use of a Prime Contractor's equipment (distinct from the DBE/MBE/WBE/SDVOB's labor in operating the equipment) is part of the cost of the DBE/MBE/WBE/SDVOB's contract, it would be subtracted from the DBE/MBE/WBE/SDVOB credit allowed for the contract. Should back charges result in DBE/MBE/WBE/SDVOB participation falling below the goal(s), the Contractor shall be required to backfill.

F. Submission of Proposals. (Applicable only to Federal-Aid contracts). In submitting a proposal, a Bidder declares that it shall make commitments to those qualified DBEs whose participation the Bidder submits to meet the contract goal(s).

Unless a zero goal for DBE participation is established, all Bidders shall submit a complete DBE Participation Package with their bid proposal. The DBE Participation Package shall include a summary of the confirmed DBE commitments (i.e., electronic entry in Project Bids or AAP 14 for paper bids); DBE confirmation on Department provided forms (i.e., AAP 20, AAP 22, and AAP23) for each DBE firm for the type and amount of work shown in the summary of commitments; and sufficient good faith effort documentation (if required). Confirmed DBE commitments are commitments where the proposed DBE participation is firm, the work is clearly defined, the correct NAICS codes have been identified, the DBE firm is certified to perform the work, and the proposed commitments have been verified by the DBE firm. The Bidder's summary of commitments shall include DBE name, DBE address, work category, and commitment amount.

In addition, per 49 CFR 26.11, all Bidders shall submit with their bid proposal a Bidder's List (i.e., CONR 80 Bidder's List) which contains information for all Subcontractors, both DBEs and nonDBEs, who provided quotes on the contract. The Bidder's List shall include the Subcontractor's name and work code applicable to each scope of work the Subcontractor sought to perform in its quote. Failure to submit the required Bidders List information may result in rejection of the bid.

G. DBE/MBE/WBE/SDVOB Participation Package.

1. DBE Participation Package. For Federal-Aid contracts, except where a zero goal for DBE participation is established, all Bidders shall submit a complete DBE Participation Package to the Department with their proposal. The DBE Participation Package shall include confirmed DBE commitments; DBE confirmation, on Department provided forms (i.e., AAP 20, AAP 22, and AAP23), for each DBE firm for the kind and amount of work shown in the Bidder's commitments; and good faith effort documentation (if required). No additions, substitutions or deductions to the DBE commitments identified at time of letting will be considered as part of the DBE Participation Package. A commitment to a DBE is expressed as a dollar amount agreed to by both the Bidder and the DBE for the performance of identified work, services or products. Commitments are for quantities of contract pay items, or associated to contract pay items for work, services or products that are not measured in the same manner as the contract pay item. Commitments for less than the full scope of the contract pay item shall be indicated as such in the DBE Participation Package. For each DBE Subcontractor, the Bidder shall indicate, in the DBE confirmation form (i.e., AAP 20 DBE Subcontractor / Work Service / Professional Service Commitments / Confirmation), the contract pay item number(s) of the work to be performed. For each DBE Manufacturer, Fabricator, Material Supplier (including equipment rental without operator), Distributor, or Broker, the Bidder shall be responsible for the collection, review and submission of a fully executed DBE confirmation form (i.e., AAP 22 DBE/MBE/WBE/SDVOB Material Commitments / Confirmation) affirming that the responses received in the questionnaire, by its proposed DBE, indicate the performance of a commercially useful function, will be consistent with the preliminary counting of such participation toward the contract goal. A separate AAP 22 must be submitted for each separate and distinct contract pay item number(s) of the materials, supplies, articles, or equipment to be manufactured, fabricated, supplied, or otherwise provided. If the material, supplies, articles, equipment or service does not
correspond to a specific contract pay item, the Bidder shall use a contract pay item(s) to which the activity relates.

For each DBE Service, the Bidder shall indicate, in the DBE confirmation form (i.e., AAP 20 DBE Subcontractor / Work Service / Professional Service Commitments / Confirmation), the contract pay item number(s) of the service to be provided. If the Service does not correspond to a specific Department contract pay item, the Bidder shall use a contract pay item(s) to which the activity relates.

For each DBE Trucking Firm, the Bidder shall indicate, in the DBE confirmation form (i.e., AAP 23 DBE/MBE/WBE/SDVOB Trucking Commitments / Confirmation), the contract pay item number(s) for which the trucking operations are to be performed. If the trucking operation does not correspond to a specific contract pay item, the Bidder shall use a contract pay item(s) to which the activity relates. The Bidder shall indicate the type of trucking operation to be performed, the number of trucks owned/leased, the number of trucks working on-site or off-site, rate per hour/ton/load/etc., duration or amount, and total dollar value of the proposed DBE commitment. The Bidder shall provide copies of all lease agreements utilized by the DBE Trucking Firm.

If the Bidder meets or exceeds the established DBE goal(s) for the contract with commitments to certified DBEs, it is not necessary for the Bidder to submit documentation of good faith efforts. However, if after review by the Department, a Bidder's commitments fall below goal, no additional time will be given to submit good faith efforts.

If the contract goal(s) is not met in full, then the Bidder shall provide documentation of its good faith efforts with their proposal, in accordance with §102-12H. Good Faith Efforts that demonstrate that the Bidder attempted but could not meet the goal(s).

If the Low Bidder fails to submit a complete DBE Participation Package (i.e., DBE commitments, DBE confirmation, and/or GFE) at time of letting they may be deemed non-responsive by the Department.

For tracking and oversight purposes, after the Low Bidder's commitments and/or good faith efforts have been accepted by the Department, the Low Bidder will be notified by email to input their DBE Participation Package, as submitted with their proposal, in EBO within 5 calendar days. On Design Bid Build Best Value contracts, notification will be sent upon designation. For those items of work where a DBE Subcontractor is performing less than 100% of a contract pay item, the Bidder shall explain, in writing, the scope of work to be performed by the DBE and shall indicate those items as such in EBO (i.e., split item).

Once the Low Bidder has completed all entries in EBO, they shall notify the Construction Pre-Award Unit at construction.civilrights@dot.ny.gov. Once the Low Bidder has received notification by the Department that their entries have been accepted, each DBE shall acknowledge the commitment in EBO within 10 calendar days.

The Contractor shall execute subcontracts, agreements, or purchase orders, as appropriate, with each DBE for the type and amount of work identified in the approved AAP19 DBE/MBE/WBE/SDVOB Schedule of Participation, no later than 10 days after contract award.

2. MBE/WBE/SDVOB Participation Package. For Non-Federal-Aid contracts, within 10 calendar days, the Low Bidder shall submit a complete MBE/WBE/SDVOB Participation Package, as outlined below, to the Office of Construction using the Department approved civil rights reporting software, Equitable Business Opportunity Solution (EBO). The time period is measured starting the day after the Letting for Design Bid Build Low Bid contracts and the day after designation for Design Bid Build Best Value contracts. If the last day is a Saturday, Sunday, State holiday or Federal holiday, the period is extended to the next day that State offices are open.

A commitment to an MBE/WBE/SDVOB is expressed as a dollar amount agreed to by both the Bidder and the MBE/WBE/SDVOB for the performance of identified work, services or products. Commitments are for quantities of contract pay items, or associated to contract pay items for work, services or products that are not measured in the same manner as the contract pay item. Commitments for less than the full scope of the contract pay item shall be indicated as such in EBO (i.e., split item).

For each MBE/WBE/SDVOB Subcontractor, the Low Bidder shall indicate the contract pay item number(s) of the work to be performed in EBO. For those items of work where the MBE/WBE/SDVOB Subcontractor is performing less than 100% of a contract pay item, the Low Bidder shall explain, in writing, the scope of work to be performed by the MBE/WBE/SDVOB.

For each MBE/WBE/SDVOB Manufacturer, Fabricator, Material Supplier (including equipment rental without operator), or Broker, the Low Bidder shall indicate the contract pay item number(s) of the service to be provided in EBO. In addition, the Low Bidder shall be responsible for the collection, review and submission of a fully executed MBE/WBE/SDVOB confirmation form (i.e., AAP 22 DBE/MBE/WBE/SDVOB Material Commitments / Confirmation) affirming that the responses received in the questionnaire, by its proposed MBE/WBE/SDVOB, indicate the performance of a commercially useful function, will be consistent with the preliminary counting of such participation toward the contract goal. A separate AAP 22 must be submitted for each separate and distinct contract pay item number(s) of the materials, supplies, articles, or equipment to be manufactured, fabricated, supplied, or otherwise provided. If the material, supplies, articles, equipment or service does not correspond to a specific contract pay item, the Low Bidder shall use a contract pay item(s) to which the activity relates.

For each MBE/WBE/SDVOB Service, the Low Bidder shall indicate the contract pay item number(s) of the service to be provided in EBO. If the service does not correspond to a specific Department contract pay item, the Low Bidder shall use a contract pay item(s) to which the activity relates. For each MBE/WBE/SDVOB Trucking Firm, the Low Bidder shall indicate, in EBO, the contract pay item number(s) for which the trucking operations are to be performed. If the trucking operation does not correspond to a specific contract pay item, the Low Bidder shall use a contract pay item(s) to which the activity relates. For each MBE/WBE/SDVOB Trucking Firm, the Low Bidder shall indicate, in the MBE/WBE/SDVOB confirmation form (i.e., AAP 23 DBE/MBE/WBE/SDVOB Trucking Commitments / Confirmation), the type of trucking operation to be performed, the number of trucks owned/leased, the number of trucks working on-site or offsite, rate per hour/ton/load/etc., duration or amount, and total dollar value of the proposed MBE/WBE/SDVOB commitment. The Low Bidder shall provide copies of all lease agreements utilized by the MBE/WBE/SDVOB Trucking Firm.

Once the Low Bidder has completed all entries in EBO, they shall notify the Construction Pre-Award Unit at construction.civilrights@dot.ny.gov. Once the Low Bidder has received notification by the Department that their entries have been accepted, each DBE shall acknowledge the commitment in EBO within 10 calendar days. If the Low Bidder meets or exceeds the established MBE/WBE/SDVOB goal(s) for the contract with commitments to certified MBE/WBE/SDVOBs, it is not necessary for the Low Bidder to submit documentation of good faith efforts.

If the contract goal(s) is not met in full, then the Bidder shall provide documentation of its good faith efforts within the 10 calendar days in accordance with §102-12H. Good Faith Efforts that demonstrate that the Bidder attempted but could not meet the goal(s).

The Contractor shall execute subcontracts, agreements, or purchase orders, as appropriate, with each MBE/WBE/SDVOB for the type and amount of work identified in the approved AAP19 DBE/MBE/WBE/SDVOB Schedule of Participation, no later than 10 days after contract award.

H. Good Faith Efforts. If the Low Bidder fails to meet the DBE/MBE/WBE/SDVOB contract goal(s), the Department will evaluate the good faith efforts the Bidder made to obtain DBE/MBE/WBE/SDVOB participation to determine if the efforts are sufficient to recommend award of the contract. Efforts to obtain DBE/MBE/WBE/SDVOB participation that are merely pro forma are not good faith efforts, nor are efforts that, even if they are sincerely motivated, given all relevant circumstances, they could not reasonably be expected to produce a level of DBE/MBE/WBE/SDVOB participation sufficient to meet the goal(s).

If the Bidder has not met the DBE/MBE/WBE/SDVOB goal(s), it shall submit sufficient documentation that substantiates good faith efforts. Such documentation shall include, at a minimum, the AAP10 DBE/MBE/WBE/SDVOB Solicitation Log, all forms of solicitation inquiries that were returned as undeliverable, quotations submitted by DBE/MBE/WBE/SDVOBs that were not selected for participation, quotations submitted by non-DBE/MBE/WBE/SDVOBs that were selected for comparison, and an explanation for the Bidder’s action in each case.

In order to evaluate the Bidder's good faith efforts, the Department will consider the quality, quantity, and intensity of the different kinds of efforts that the Bidder has made.

Below is a list of the types of actions which the Department will consider as part of the Bidder's good faith efforts to obtain DBE/MBE/WBE/SDVOB participation. It is not intended to be a mandatory checklist, nor is it intended to be exhaustive or exclusive. Other factors or types of efforts may be relevant in appropriate cases.

1. Securing participation by certified DBE/MBE/WBE/SDVOB firms for work that they are listed to perform that is in the contract. Only DBEs certified by the NYS Unified Certification Program (NYSUCP) shall be used to fulfill the established goal on Federal-Aid contracts. Only M/WBEs

certified by the NYS Department of Economic Development and SDVOBs certified by the NYS Office of General Services' Division of Service-Disabled Veteran's Business Development shall be used to fulfill the established goal(s) on Non-Federal-Aid contracts.

2. For all work, soliciting, at a minimum, certified DBE/MBE/WBE/SDVOBs within 100 miles of the contract location.

3. The Bidder shall conduct market research to identify small business contractors and suppliers and solicit, through all reasonable and available means, the interest of all certified DBE/MBE/WBE/SDVOBs that have the capability to perform the work of the contract. This may include attendance at pre-bid and business matchmaking meetings and events; advertising and/or written notices; posting of notices of sources sought and/or requests for proposals, written notices or emails to all certified DBE/MBE/WBE/SDVOBs listed in the appropriate directory of certified firms that specialize in the areas of work desired and which are located in the area or surrounding area.

The Bidder shall solicit this interest as early in the bidding process as practicable, to allow the DBE/MBE/WBE/SDVOBs to respond to the solicitation and submit a timely offer. The Bidder shall determine with certainty if the DBE/MBE/WBE/SDVOBs are interested by taking appropriate steps, including following up the initial solicitation with at least one additional solicitation via a different media. The Bidder shall keep records of efforts to solicit and negotiate with DBE/MBE/WBE/SDVOBs as evidence of good faith efforts, using the Solicitation Log as a continuing record.

4. Selecting portions of the work to be performed by DBE/MBE/WBE/SDVOBs in order to increase the likelihood that the DBE/MBE/WBE/SDVOB goal(s) will be achieved. This includes, where appropriate, either breaking down operations or combining like or related operations into logistically and economically feasible units to facilitate DBE/MBE/WBE/SDVOB participation, even when the Contractor might prefer to perform these work items with its own forces. This may include, where possible, establishing flexible time frames for performance and delivery schedules in a manner that encourages and facilitates DBE/MBE/WBE/SDVOB participation.

5. Providing interested DBE/MBE/WBE/SDVOBs with adequate information on where and how to obtain the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation with their timely offer.

6. a. Negotiating in good faith with interested DBE/MBE/WBE/SDVOBs. It is the Bidder's responsibility to make a portion of the work available to DBE/MBE/WBE/SDVOB firms and to select those portions of the work or material needs consistent with the available DBE/MBE/WBE/SDVOB firms, so as to facilitate DBE/MBE/WBE/SDVOB participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE/MBE/WBE/SDVOBs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE/MBE/WBE/SDVOBs to perform the work.

b. Additional Costs. The fact that there may be some additional costs involved in finding and using DBE/MBE/WBE/SDVOBs is not in itself sufficient reason for a Bidder's failure to meet the contract DBE/MBE/WBE/SDVOB goal(s), as long as such costs are reasonable. The ability or desire of a Bidder to perform the work of a contract with its own organization does not relieve the Bidder of the responsibility to make good faith efforts.

Bidders are not, however, required to accept higher quotes from DBE/MBE/WBE/SDVOBs if the Department determines the price difference to be excessive or unreasonable.

7. a. Not rejecting DBE/MBE/WBE/SDVOBs as unqualified. The Bidder shall not reject DBE/MBE/WBE/SDVOBs as unqualified without sound reasons based on a thorough investigation of their capabilities. The Bidder's standing within its industry, membership in specific groups, organizations or associations, and political or social affiliations (for example union vs. non-union status) are not legitimate causes for rejection or non-solicitation of proposals in the Bidder's efforts to meet the contract goal. Rejection of the DBE/MBE/WBE/SDVOB because its quotation for the work was not the lowest received is not considered good faith effort. Nothing in this paragraph shall be construed to require the Bidder to accept unreasonable quotes in order to satisfy contract goals.

b. Replacement Prices. A prime contractor's inability to find a replacement DBE/MBE/WBE/SDVOB at the original price is not alone sufficient to support a finding that good faith efforts have been made to replace the original DBE/MBE/WBE/SDVOB. The fact that the contractor has the ability and/or desire to perform the contract work with its own forces does not relieve the contractor of the obligation to make good faith efforts to find a replacement DBE/MBE/WBE/SDVOB, and it is not a sound basis for rejecting a prospective replacement DBE/MBE/WBE/SDVOB's reasonable quote

8. Making efforts to assist interested DBE/MBE/WBE/SDVOBs in obtaining bonding, lines of credit or insurance as required by the Department or the Bidder.

9. Making efforts to assist interested DBE/MBE/WBE/SDVOBs in obtaining necessary equipment, supplies, materials, or related assistance.

10. Where available, effectively using the services of trade associations, and contractor groups; local, state, and Federal business assistance offices; and other organizations as allowed on a caseby-case basis to provide assistance in the recruitment and placement of DBE/MBE/WBE/SDVOBs.

11. Stating future commitments to use the DBE/MBE/WBE/SDVOBs after contract award is not considered to be responsive to the contract solicitation requirements or to constitute good faith efforts.

A Bidder shall also submit a detailed explanation identifying any circumstances unique to the contract that were deterrents to meeting the goal(s) (e.g., night work, small quantities over multiple locations, specialized work, etc.); detailed rationale as to why a specific scope of work is not considered to be a subcontract item and therefore was not solicited; and a detailed explanation for any scope of work deemed "self-performing" without the intent to split the work.

I. Pre-Award Approval. In order to award a contract to a Bidder that has failed to meet the DBE/MBE/WBE/SDVOB contract goal(s), the Department must determine that the Bidder's good faith efforts were those that a Bidder actively and aggressively seeking to meet the goal(s) would make given all relevant circumstances.

If the Department determines that the Low Bidder has failed to meet the goal(s) and good faith effort requirements, the Department may issue a finding of non-responsiveness. Before awarding the contract to a subsequent bidder, the Department will provide the Low Bidder an opportunity for administrative reconsideration by an official who did not take part in the original determination

J. Administrative Reconsideration. If the Low Bidder is deemed non-responsive due to failure to meet the civil rights requirements, and believes they have good cause, they shall have 5 calendar days from notification to request an Administrative Reconsideration. The Low Bidder will have the opportunity to provide argument and written documentation of good faith efforts made prior to letting, and to meet in person with the Department's reconsideration official upon notification concerning the issue of whether it met the goal or made adequate good faith efforts to do so. The Department will send the Low Bidder a written decision on reconsideration, explaining the basis for finding that the Low Bidder did or did not meet the goal or make adequate good faith efforts to do so.

K. Notice of Deficiency. (Applicable only to Non-Federal-Aid contracts) The Department will review the submitted MBE/WBE/SDVOB Participation Plan and advise the Low Bidder of Department acceptance or issue a notice of deficiency within 20 business days after receipt.

If a notice of deficiency is issued, the Bidder shall respond to the notice of deficiency, within 7 business days of receipt, by submitting to the Department a written remedy in response to the notice of deficiency. Failure of the Contractor to submit a written remedy may result in the disqualification of the Contractor. If the Contractor's written remedy is not timely or is found by the Department to be inadequate, the Department may disqualify the Bidder as non-responsive or the Department may request the Contractor to submit, within 5 business days of notification by the Department, a request for a partial or total waiver of M/WBE and/or SDVOB participation goals on the Department's waiver form.

The Department may deem a Bidder's proposal non-responsive if the Bidder fails to submit an MBE/WBE/SDVOB Participation Plan; fails to submit a written remedy to a notice of deficiency; fails to submit a waiver in a timely manner; or if the Department determines that the Bidder failed to document sufficient good faith efforts.

L. Pre-Award Waivers. (Applicable only to Non-Federal-Aid contracts) Prior to submission of a request for a partial or total waiver, the Low Bidder shall contact the Department by email at construction.civilrights@dot.ny.gov.

In accordance with 5 NYCRR 140-145 and 9 NYCRR 252.2, a Bidder that is able to document good faith efforts to meet the M/WBE and SDVOB goal requirements, respectively, may submit a request for a partial or total waiver on the Department's waiver form, accompanied by supporting documentation. A Bidder may submit a request for waiver at the same time they submit their MBE/WBE/SDVOB Participation Plan. If a request for waiver is submitted with the MBE/WBE/SDVOB Participation Plan and is not accepted by the Department at that time, the provisions of §102-12K Notice of Deficiency will apply. For M/WBE participation, if a Contractor is found non-responsive or non-responsible by the Department, the request for a waiver shall be deemed moot. For SDVOB participation, if the documentation included with the Bidder's waiver request is complete, the Department will evaluate the request and issue a written notice of acceptance or denial within 20 business days of receipt.

M. Bidder's Compliance with DBE Program Requirements. (Applicable only to Federal-Aid contracts.) The Department's acceptance of the Low Bidder's proposal is conditioned upon the Low Bidder's fulfillment of the DBE participation requirements. Except where a zero goal for DBE participation is established, failure by the Low Bidder to submit a complete DBE participation package or to provide commitments to meet the established goal without adequate good faith efforts may be grounds

for rejection of the proposal as non-responsive and the bid deposit may be subject to forfeiture pursuant to §103-02 Execution of Contract.

N. Bidder's Compliance with M/WBE and SDVOB Program Requirements. (Applicable only to Non-Federal-Aid contracts.) The Department's acceptance of the Low Bidder's proposal is conditioned upon the Low Bidder's fulfillment of the M/WBE and SDVOB participation requirements. Failure by the Low Bidder to submit a complete MBE/WBE/SDVOB participation package within 10 calendar days after letting for Design Bid Build Low Bid contracts or within 10 calendar days after designation for Design Bid Build Best Value contracts, or failure to provide commitments to meet the established goal prior to award, without adequate good faith efforts sufficient to support a goal waiver request, may be grounds for rejection of the proposal as non-responsive and the bid deposit may be subject to forfeiture pursuant to §103-02 Execution of Contract.

OFFICE OF DIVERSITY AND OPPORTUNITY

AGENCY GOAL REVIEW CHECKLIST

Project Name:	Contract #:

To assist with the review of this request, please make sure submissions are sent to goalreviewodo@dot.ny.gov
Please be sure completed forms, attachments and necessary information are included in the submission.
Forms are available at NYSDOT: Forms and Applications

1. MBE/WBE Goal Reduction (Waiver)

Forms:

- ☐ MWBE Goal Reduction Request (Pre-RFP) ☐ MWBE Goal Assessment Checklist
- ☐ Contractor MWBE Waiver Request (Post-Award)

Attachments:

- ☐ Engineer's Estimate
- ☐ Directory Searches for all sub-contractable work

Information needed:

- ☐ Region, Municipality, or Authority
- ☐ Contract or PIN #
- ☐ Original goal percentage
- ☐ Contract Value
- ☐ Contract type, i.e., Single Operation, JOC, Single Source, etc
- ☐ Recommended reduced goal(s)
- ☐ Clear, concise justifications, including any tools used to support request.

2. DBE Assessment

Forms:

- ☐ Construction Contract DBE Goal Assessment form

Attachments:

- ☐ Engineer's Estimate
- ☐ Directory Searches for all sub-contractable work

Information needed:

- ☐ Original Goal percentage & Recommended Reduced Goal
- ☐ Region, Municipality, or Authority
- ☐ Contract or PIN #
- ☐ Contract Value
- ☐ Contract type, i.e., Single Operation, JOC, Single Source, etc
- ☐ Clear, concise justifications, including any tools used to support request

3. In Year Exclusion

Forms:

☐ MWBE In Year Exclusion Request

Information needed:

☐ Region, Municipality, or Authority
☐ Contract or PIN #
☐ Contract Value
☐ Contract type, i.e., Single Operation, JOC, Single Source, etc
☐ Clear, concise justifications, including any tools used to support request.
☐ Directory Searches for all sub-contractable work

4. EEO Goal Review

Form:

☐ Equal Employment Opportunity Review form

Information needed:

☐ Contractor Information
☐ Region, Municipality, or Authority
☐ County Goal
☐ Contract or PIN #
☐ Clear, concise justifications, documenting why goal was not reached.
☐ Training Item
☐ Contract Value
☐ Contract type, i.e., Single Operation, JOC, Single Source, etc

5. SDVOB Goal Reduction (Waiver)

Forms:

☐ SDVOB Waiver Request form

Attachments:

☐ Engineer's Estimate
☐ Directory Searches for all sub-contractable work

Information needed:

☐ Region, Municipality, or Authority
☐ Contract or PIN #
☐ Original goal percentage
☐ Contract Value
☐ Contract type, i.e., Single Operation, JOC, Single Source, etc
☐ Recommended reduced goal(s)
☐ Clear, concise justifications, including any tools used to support request.

6. Good Faith Effort

☐ GFE Checklist (completed, as applicable)

NOTES

GFE Checklist

Date Received by Office of Diversity and Opportunity (ODO):

Contract #: **PIN #:** **Agreement:**

Contact Name: if applicable (i.e., DOT01-D040448-3900283)

Project Description:

Contract in EBO? Yes ☐ or No ☐ **Contract Amount:** $

Advertised Goal: ——— **%MBE** ——— **% WBE** ____ **% DBE** ——— **%SDVOB**

Attached Good Faith Efforts Documents

Please check all that apply:

1. Completed AAP-10 Solicitation Log. *(This log should list only those firms that were directly solicited.)*
2. Detailed explanation identifying any circumstances unique to the contract that were deterrents to meeting the goal(s). *(E.g., night work, small quantities over multiple locations, specialized work, PLA, etc.)*
3. Copies of ads placed for solicitation.
4. Copies of all registry searches preformed including those searches that resulted in no certified firms for a specific scope of work. **Registry searches to be by NAICS codes**.
5. Copies of emails and/or faxes that show 'direct" scope of what you solicited the subcontractor/supplier, fabricator etc. to do or provide **and** their responses.
6. Evidence that off-site firms and services were solicited*(E.g., material suppliers, trucking, fabricator, manufacturer, etc.)*
7. Copies of documentation showing negotiations took place between apparent low bidder and prospective subcontractor or other firms i.e., supplier, manufacturer, fabricator, etc. when certified firm's quote was deemed unreasonable or excessive.
8. Quotes from the selected firms and quotes from non-selected firms when certified firm's quote was deemed unreasonable or excessive.
9. Detailed explanation for any scope of work deemed "self-performing" without intent to split or assign the work when there are DBE or MBE/WBE/SDVOB availability and goal has not been met.
10. List of the general circulations, trade and D/M/W/DBE-oriented publications and dates of publications soliciting for certified D/M/WBE/SDOVB participation as subcontractors/suppliers and copies of such solicitations.
11. Descriptions of the contract documents /plans/specifications made available to certified D/M/W/SDVOBs by the contractor when soliciting their participation
12. Steps taken to structure the scope of work to maximize subcontracting opportunities including obtaining supplies from certified D/M/WBE/SDVOBs

GFE Checklist

13. . Detailed explanation identifying any circumstances unique to the contract that were deterrents to meeting the goal(s). E*.g., night work, small quantities over multiple locations, specialized work, PLA, etc*

ODO has determined that the GFE documentation submitted for review is adequate to concur to award.

Yes ☐ or No ☐

If No:

If ODO has determined that the GFE documentation submitted for review is not adequate to concur to award. Please submit the following:

If Yes:

Sign, date, and return to ODO for record:

I , of agree to continue to solicit M/WBE participation if additional subcontracting opportunities become available during the completion of this contract. I understand that liquidated damages may be assessed if adequate GFE are not made to meet the contract goals when additional opportunities for subcontracting become available.

Signed:

Date:

If you have any questions, please feel free to contact : goalreviewodo@dot.ny.gov

Reviewed By:

NYSDOT Office of Diversity and Opportunity

AAP 10 (12/2019)

DBE/MBE/WBE/SDVOB Solicitation Log

Contract No: | Contract Type: | County: | Region: | Letting Date: | Date 1st Submitted: | Date Resubmitted: | Page | of | Total

Contractor Name and Address:

Contact Name: | E-mail: | Phone: | ◯ Pre-Award ◯ Post Award | GFE Attached: ◯ Yes ◯ No | Funding Source: ◯ Federal ◯ State

	Firm Name and Address	Program	Contact Person	Contract Pay Item(s)	NYSDOT Code NACIS/NIGP	Date(s) of Contact	Method(s) of Contact	Contact Phone/Fax and/or E-mail Addresses	DBE/MBE/WBE/SDVOB Response/Status	Bidder Action	Notes
1											
2											
3											
4											
5											
6											
7											
8											

Do not click the "Make Form Read-Only" button until data entry is complete. Read-Only locks the data entered and cannot be undone.
Recommend saving one copy that is not locked for editing after first submission. Save a second copy to lock and submit to NYSDOT.

AAP 10 Form Instructions

Please complete the DBE/MBE/WBE/SDVOB Solicitation Log with the following information detailing the solicitation of DBE/MBE/WBE/SDVOB's for utilization on said contract. All required information is in compliance with Standard Specifications102-12 DBE/MBE/WBE/SDVOB Participation and Federal Regulations 49 CFR 21 & 49 CFR 26, 17 NYCRR 35, 5 NYCRR 140-145.

Heading Instructions

1. Enter the Contract Number (D#).
2. Select the Contract Type from the drop down.
3. Select the Contract's County from the drop down.
4. Select the Contract's Region from the drop down.
5. Select the Letting Date from the drop down calendar.
6. If this is the first submission, select the Date Submitted from the drop down calendar.
7. If this is a Re-Submission, select the Date Resubmitted from the drop down calendar.
8. Enter the current page number out of the total number of pages. Ex. if there is only one page, "Page 1 of 1"; if there are multiple pages, "Page 1 of 2"; "Page 2 of 2", etc.
9. Enter the Prime Contractor's name and address.
10. Enter the Contact person representing the Prime Contractor.
11. Enter the e-mail address of the Contact person representing the Prime Contractor.
12. Enter the phone number of the Contact person representing the Prime Contractor.
13. Select the radio button for Pre-Award or Post Award.
14. Is Good Faith Effort (GFE) attached? Select radio button for Yes or No.
15. Select the radio button for the Funding Type, Federal (DBE) or State (MBE/WBE/SDVOB).

Data Entry Instructions

Note: Each numbered group of three rows represents a separate DBE/MBE/WBE/SDVOB that was solicited and allows for the documenting of the types and results of consecutive contact.

1. Enter the firm Name and Address of the DBE/MBE/WBE/SDVOB.
2. Select the firm's Program from the drop down.*
3. Enter the name of the Contact person representing the firm.
4. Select Contract Pay Items the Prime solicited the D/M/WBE/SDVOB for. *
   Note: Select from the drop down Item Description that best represents the item solicited for.
5. Enter the corresponding NYSDOT/NAICS/NIGP Work Codes.
6. Select the date or dates of contact from the calendar drop down.
7. Select the method or methods of contact from the drop down.*
   Note: Per Standard Specification 102-12 G (2) Good Faith Efforts, more than one form of contact is required.
8. Enter the Contact Information.
9. Select the DBE/MBE/WBE/SDVOB's response from the drop down.*
   Note: If a response does not appear as a selection from the drop down, then describe in the Notes section.
10. Select action taken by the Bidder from the drop down for each consecutive contact.
11. Enter brief notes regarding the solicitation of the D/M/WBE/SDVOB, longer notes can be entered on page 3.*
12. Add additional AAP10 and Notes pages as needed by clicking the "Add a Page" button on the AAP10 and Notes pages.
13. Once the form is complete, click on the "Make Form Read-Only button" to lock the data entered. **Note: Once the data has been locked to Read-Only, it cannot be undone.**

*Drop down includes a selection of "Blank" to **ONLY** be selected for selections made in error.

AAP10 Notes

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INSTRUCTIONS - AAP 19LL NYS

Contract No:	Enter the Sponsor's contract number.
PIN:	Enter the Project Identification Number.
Project Sponsor:	Enter the name of the Sponsor who released the contract (e.g., Albany County).
County(ies):	Enter the name(s) of the county(ies) where the contract is located (e.g., Albany County).
Initial:	Place a check mark if this is the initial schedule for contract award.
Amendment:	Place a check mark if this is a schedule amending utilization after contract award.
Contractor Name:	Enter the business name for the prime contracting firm.
Contractor Fed ID No:	Enter the Federal Identification number associated with the prime contracting firm.
Contract Bid Amount:	Enter the contract's low bid amount in US dollars.
Contract MBE or WBE or SDVOB Goal %:	Enter the DBE or MBE or WBE or SDVOB goal that is assigned to this contract, expressed as a percentage.
Contract MBE or WBE or SDVOB Goal $:	The DBE or MBE or WBE or SDVOB goal will be expressed in US dollars; *Excel will calcuate and fill automatically.*

UTILIZATION INFORMATION SECTION

MBE or WBE or SDVOB Name:	Enter the business name for the DBE or MBE or WBE or SDVOB firm.
Fed ID No:	Enter the Federal Identification number associated with the DBE or MBE or WBE or SDVOB firm.
Work Category:	This field has a drop down menu; select one category from the list.
MBE or WBE or SDVOB Utilization:	Enter the total amount of the work assigned to the DBE or MBE or WBE or SDVOB in US dollars.
Total Commitments:	The DBE or MBE or WBE or SDVOB total utilization will be expressed in US dollars; *Excel will calcuate and fill automatically.*
Contract MBE or WBE or SDVOB Goal:	The DBE or MBE or WBE or SDVOB goal will be expressed in US dollars; *Excel will copy from above section and fill automatically.*
Difference:	The difference between utilization and the goal expressed in US dollars; *Excel will calcuate and fill automatically.*

M/WBE/SDVOB SCHEDULE OF UTILIZATION
Part 1 - MBE Utilization

Contract No.	PIN	Project Sponsor	
County(ies):			
_____ Initial	_____ Amendment	Contractor Name	
Contract Bid Amount:			
Contract MBE Goal %:		Contractor Fed ID No.	
Contract MBE Goal $:			

UTILIZATION INFORMATION			
MBE Name	Fed ID No.	Work Category	MBE Utilization
		Total Commitments:	
		Contract MBE Goal:	
		Difference:	

TO BE COMPLETED BY PROJECT SPONSOR			
The Bidder _____has _____ has not demonstrated good faith efforts to secure MBE utilization in satisfaction of the contract goal as required by the contract specification.			
Signature		Date	

M/WBE/SDVOB SCHEDULE OF UTILIZATION
Part 2 - WBE Utilization

Contract No.	PIN	Project Sponsor	
County(ies):			
_____ Initial	_____ Amendment	Contractor Name	
Contract Bid Amount:			
Contract WBE Goal %:		Contractor Fed ID No.	
Contract WBE Goal $:			

UTILIZATION INFORMATION			
WBE Name	Fed ID No.	Work Category	WBE Utilization
		Total Commitments:	
		Contract WBE Goal:	
		Difference:	

TO BE COMPLETED BY PROJECT SPONSOR			
The Bidder _____has _____ has not demonstrated good faith efforts to secure WBE utilization in satisfaction of the contract goal as required by the contract specification.			
Signature		Date	

M/WBE/SDVOB SCHEDULE OF UTILIZATION
Part 3 - SDVOB Utilization

Contract No.	PIN	Project Sponsor
County(ies):		
_____ Initial	_____ Amendment	Contractor Name
Contract Bid Amount:		
Contract SDVOB Goal %:		Contractor Fed ID No.
Contract SDVOB Goal $:		

UTILIZATION INFORMATION			
SDVOB Name	Fed ID No.	Work Category	SDVOB Utilization
		Total Commitments:	
		Contract SDVOB Goal:	
		Difference:	

TO BE COMPLETED BY PROJECT SPONSOR			
The Bidder _____has _____ has not demonstrated good faith efforts to secure SDVOB utilization in satisfaction of the contract goal as required by the contract specification.			
Signature		Date	

AAP 22
(5/2020)

DBE/MBE/WBE/SDVOB Material Supplier Commitment Information

This form identifies how the DBE/MBE/WBE/SDVOB Material Supplier commitment was established. The Prime Contractor is responsible for ensuring that the form is completed accurately.

◯ **Pre-Award** ◯ **Post Award** Contract #: Date Submitted: Region:

Prime Name:

DBE/MBE/WBE/SDVOB Supplier:

DBE/MBE/WBE/SDVOB: Owner's Name:

Contact Information
Phone #:

Address: E-mail:

Material Work Code/Type of Material: Associated Contract NYSDOT Pay Item (3 digit code)

Description of Materials:

Are these materials? ☐ Stockpiled OR ☐ Special Ordered

If Special Order, does the Supplier also sell these items on a retail basis? ☐ Yes OR ☐ No

Will these materials be delivered to the contract site? ☐ Yes OR ☐ No

If Yes, how will the materials be delivered to the contract site? ◯ By Material Supplier via Owned or Leased Trucks ◯ By Material Supplier via Transportation Company with whom the Material Supplier has an executed long term lease.

If No, who will be picking up the items?

Material Work Code/Type of Material: Associated Contract NYSDOT Pay Item (3 digit code)

Description of Materials:

Are these materials? ☐ Stockpiled OR ☐ Special Ordered

If Special Order, does the Supplier also sell these items on a retail basis? ☐ Yes OR ☐ No

Will these materials be delivered to the contract site? ☐ Yes OR ☐ No

If Yes, how will the materials be delivered to the contract site? ◯ By Material Supplier via Owned or Leased Trucks ◯ By Material Supplier via Transportation Company with whom the Material Supplier has an executed long term lease.

If No, who will be picking up the items?

Total Commitment Dollar Amount for Materials Identified Above:

Post Award Only

Identify Prime to Supplier Purchase Order #:
**attach copy of P.O.*

For Special Order, Identify Supplier to Manufacturer Purchase Order #:
**attach a copy of P.O.*

Notes/Comments

Do not click the "Make Form Read-Only" button until data entry is complete.
Read-Only locks the data entered and cannot be undone.

AAP 23
5/2020

DBE/MBE/WBE/SDVOB Trucking Commitment Information

Contract D#:

Prime Contractor Name:

Region:

Program: ◯ DBE ◯ MBE ◯ WBE ◯ SDVOB

◯ Pre-Award ◯ Post Award

Date Submitted:

DBE/MBE/WBE/SDVOB Supervisor of the day-to-day DBE/WBE/MBE/SDVOB trucking operation is:

DBE/MBE/WBE/SDVOB Trucking Firm:

Number of Trucks Owned: + Leased: = Total:

Number of Trucks Performing Work On-Site: Off-Site:

of Trucks from other Firms supplementing your fleet by adding them to your payroll: How many are owner/operators?

Names of Supplemental Trucking Firms:

Rate: Per: X Duration/Number: = Commitment:

NYSDOT Item # Trucking Assigned to: Description of the Material Being Hauled:

Comments:

DBE/MBE/WBE/SDVOB Supervisor of the day-to-day DBE/MBE/WBE/SDVOB trucking operation is:

DBE/MBE/WBE/SDVOB Trucking Firm:

Number of Trucks Owned: + Leased: = Total:

Number of Trucks Performing Work On-Site: Off-Site:

of Trucks from other Firms supplementing your fleet by adding them to your payroll: How many are owner/operators?

Names of Supplemental Trucking Firms:

Rate: Per: X Duration/Number: = Commitment:

NYSDOT Item # Trucking Assigned to: Description of the Material Being Hauled:

Comments:

This form identifies how the DBE/MBE/WBE/SDVOB Trucking commitment was established. The Prime Contractor is responsible for ensuring that the form is completed accurately. A copy of all lease agreements are required to be submitted, along with this form, for any long term leased trucks.

Do not click the "Make Form Read-Only" button until data entry is complete. Read-Only locks the data entered and cannot be undone.

DIVISION 1 - SPECIFICATIONS

SPECIAL PROVISIONS

EBO Requirements

(SP-4)

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EBO Requirements

This Section is taken from and references NYSDOT Standard Specification. All parts of NYSDOT Section 105-21 and any referenced sections of the NYSDOT Standard Specifications or updates to the NYSDOT Specification shall apply to this contract at the time of bidding.

Note: This contract is a Non-Federal (State Only) funded project

Failure to comply with EBO requirements will result in delayed or non-payment to contractor for work performed on the project.

105-21 CIVIL RIGHTS MONITORING AND REPORTING.

The Department approved civil rights reporting software is Equitable Business Opportunity Solution (EBO). The EBO software is a web-based system owned and maintained by the Department and provided to the Contractor at no cost. The Contractor shall use the Department approved civil rights reporting software on all contracts. The Contractor shall enter into EBO complete and accurate electronic data to the Department for each month, not later than the 15th of the following month. Data shall be current through the end of the last full payroll week for that month, or as otherwise approved by the Engineer to coordinate with contract payment submittals.

A. Civil Rights Officer(s). The Contractor shall designate a Corporate Civil Rights Officer, a Corporate DBE/MBE/WBE/SDVOB Representative, and a contract site Equal Employment Opportunity (EEO) Representative; and each Subcontractor and DBE/MBE/WBE/SDVOB shall designate a Corporate Civil Rights Officer, and a contract site Equal Employment Opportunity (EEO) Representative in the Department approved civil rights reporting software to generate the Form AAP15 Designation of Affirmative Action Representatives by Contractors/Subcontractors . The designated individuals shall have the responsibility to and shall be capable of effectively administering and promoting an active program of equal employment opportunity and who shall be assigned adequate authority and responsibility to do so. A single individual may fulfill multiple roles. The Contractor shall update the Department approved civil rights reporting software within 10 calendar days of any changes in these roles.

B. Workforce Participation Plan. At the Pre-Construction Meeting, the Contractor shall submit a Workforce Participation Plan covering the Contractor's workforce and the workforce of its Subcontractors with subcontracts over $10,000, together and coordinated with the contract progress schedule, that addresses the Equal Employment Opportunity goals. The Contractor shall not start work until the Department has reviewed and accepted the Workforce Participation Plan. The Contractor shall submit a revised plan when a significant work force build-up or reduction will substantially affect goal attainment, or when a revised schedule is requested by the Department. Such revised Workforce Participation Plan must be agreed upon by the Department or the original will remain in effect.

C. Equal Employment Opportunity (EEO) Monitoring and Reporting. The Contractor's compliance with the EEO Requirements will be based on its Employment Utilization, affirmative action steps and its good faith efforts to meet the goals. The Department, in evaluating the Contractor's good faith efforts to meet the EEO goal(s), will first analyze the Contractor's goal attainment on an individual contract. If the Contractor is not meeting the goal(s) for a single trade

or contract, the Department will analyze, progressively, the Contractor's goal attainment on all contracts held by the Contractor within the county, the Region, and/or the State. This method of analysis shall be applied primarily but not solely to contracts with small population numbers. Other factors to be considered include but are not limited to: the location of the contracts, the relative proximity of the contracts to each other, and the nature of the work.

1. Employee Utilization Data. The Contractor shall input employee utilization data into the Department approved civil rights reporting software for its workforce and for each Subcontractor with a subcontract exceeding $10,000 to the Department on a monthly basis, not later than the 15th of the following month. Data shall be submitted showing the total hours for each payroll week, separately through the end of the last full payroll week for that month. Payroll data is captured using the last date of the payroll. Therefore, a payroll week only partially in a month shall be submitted for the next month. Payroll weeks are determined based on the firm's established payroll end date. Data shall include gender, ethnicity, and hours worked by trade(s) and classification. Employment utilization percentages are determined using data from the start of work up to and including the month being reported. For the purpose of determining utilization percentages, the hours of female and minority employment are tabulated separately and attainment percentages are calculated separately.

2. Federal-Aid Highway Construction Contractors Annual EEO Report. The Contractor shall submit all required employee utilization data into the Department approved civil rights reporting software to produce a Form FHWA 1391 Federal-Aid Highway Construction Contractors Annual EEO Report to the Department annually not later than August 15th, reflecting the work force during all or any part of the last full payroll period worked in July, for all ongoing Federal-Aid contracts. The data shall indicate the number of minority men, minority women, non-minority men, and non-minority women employees currently engaged in each trade.

3. Monthly Training Progress Report. When training is required under §102-11 Equal Employment Opportunity Requirements and/or Training Special Provisions, the Contractor shall submit a monthly training progress report to the Engineer not later than the 15th of each month. In addition to each Monthly Training Progress Report, the Contractor shall provide the Engineer a summary of hours required to complete the various work elements of the training program, hours completed this period, and hours completed to date. This summary shall be provided in sufficient detail to allow the Engineer to determine whether the hours in the previous period are qualified hours under this pay item.

4. Contractor Compliance with EEO Requirements. If the Contractor fails to meet the EEO goals for minorities or women, or fails to demonstrate good faith efforts, the Department may require training of minorities and women to satisfy the employment goals. If the Contractor fails to meet the EEO goals, fails to demonstrate good faith efforts, or is in noncompliance with the nondiscrimination clauses, the Department may suspend additional contract payments in accordance with Article 8 No Payment on Contractor's Non-Compliance of the contract agreement, the Contractor may be directed to attend a hearing before the Contract Review Unit, or the Department may follow any other lawful procedure upon due notice in writing to the Contractor, including cancellation, termination, or suspension in whole or in part in accordance with Article 11 Right to Suspend Work and Cancel Contract of the contract agreement. The Contractor may also be referred to the U.S. Department of Labor, Office of Federal Contract Compliance Programs (OFCCP),

which has the sole authority to determine compliance with implementing regulations. OFCCP may declare the Contractor ineligible for further Federal-Aid contracts and such other sanctions may be imposed and remedies invoked as provided by rule, regulation, or order of the U.S. Secretary of Labor, or as otherwise provided by law.

D. DBE/MBE/WBE/SDVOB Monitoring and Reporting. The Contractor shall utilize the DBE/MBE/WBE/SDVOBs committed to at pre-award to perform the work or supply materials for which each is listed. The Engineer will monitor the work to ensure that the identified DBE/MBE/WBE/SDVOBs perform the work as identified in the Contractor's commitments. Attainments will be measured based on payments made to DBE/MBE/WBE/SDVOBs.

If the Contractor has not executed a subcontract with a DBE/MBE/WBE/SDVOB before the DBE/MBE/WBE/SDVOB is notified of removal of its eligibility by the certifying agency , the Contractor may not make commitments to use the firm on the contract as a DBE/MBE/WBE/SDVOB, and attainments will not be credited toward the contract goal. The Contractor shall replace the DBE/MBE/WBE/SDVOB with another DBE/MBE/WBE/SDVOB or provide sufficient Good Faith Effort documentation.

If the Contractor has executed a subcontract with a DBE/MBE/WBE/SDVOB before the DBE/MBE/WBE/SDVOB is notified of removal of its eligibility by the certifying agency , the Contractor may continue to use the DBE/MBE/WBE/SDVOB on the contract in accordance with the executed subcontract, and attainments will be credited toward the contract goal. Any new or extra work performed by the ineligible DBE/MBE/WBE/SDVOB not covered under the scope of the original executed subcontract will not be credited toward the contract goal. However, if the DBE/MBE/WBE/SDVOB is decertified because they were acquired by or merged with another firm that is not certified (i.e., Non-DBE/MBE/WBE/SDVOB), the portion of work that was performed after the firm was decertified will not count towards the goal, even if the Contractor has executed a subcontract with the decertified firm. If the loss of credit towards the goal affects the Prime Contractor's ability to meet the overall contract goal, the Contractor shall make up for the shortfall or provide sufficient Good Faith Effort documentation. When a contract is awarded with DBE/MBE/WBE/SDVOB commitment(s) that is less than the contract goal(s), the Contractor shall continue good faith efforts. The Contractor shall periodically review items that are available for DBE/MBE/WBE/SDVOB participation, typically before the beginning of a new construction season and when significant new items of work are added to the contract, and conduct additional DBE/MBE/WBE/SDVOB solicitation.

If a Contractor, in order to meet the DBE contract goal or other DBE program requirements, uses or attempts to use, on the basis of false, fraudulent or deceitful statements or representations or under circumstances indicating a serious lack of business integrity or honesty, a DBE that does meet the eligibility criteria of 49 CFR Subpart D, the U.S. Department of Transportation may initiate suspension or debarment proceedings against that firm under 2 CFR Parts 180 and 1200.

1. Report of Payments to Subcontractors and DBE/MBE/WBE/SDVOBs. The Contractor shall enter payment data into EBO for all Subcontractors and for all DBE/MBE/WBE/SDVOBs that are due a payment or have received a payment, within 14 days of receipt of payment from the Department, in order to measure DBE/MBE/WBE/SDVOB goal attainment and to monitor Contractor compliance with the requirements of §109-07 Prompt Payments by the Contractor.

The Subcontractor or DBE/MBE/WBE/SDVOB shall acknowledge receipt of payment not later than 7 calendar days after receipt. The date of receipt is: (1) the date the payment was made by electronic transfer to an account identified and agreed to by both parties; (2) the date the envelope containing the payment was date stamped by the U.S. Postal Service; or (3) the date the payment was physically provided to a previously authorized representative of the Subcontractor or DBE/MBE/WBE/SDVOB, either by the Contractor or by a delivery service.

The Contractor shall enter the final payment to each Subcontractor or DBE/MBE/WBE/SDVOB and designate it as such when the final payment is made, or as a separate $0.00 entry indicating final payment has been made, prior to contract final acceptance, excepting those payments due from work contained in a change order(s) that have not been approved. The Subcontractor or DBE/MBE/WBE/SDVOB shall acknowledge receipt of final payment not later than 7 calendar days after receipt or by notification by the Contractor that a separate $0.00 entry indicating final payment was entered in the civil rights reporting software.

2. Monitoring Commercially Useful Function (CUF) by DBE/MBE/WBE/SDVOBs. The Contractor shall monitor the work of the DBE/MBE/WBE/SDVOBs to ensure each performs a Commercially Useful Function (CUF) and can be properly counted towards the Contractor's DBE/MBE/WBE/SDVOB commitments. Upon request, the Contractor shall provide the Engineer one week notification for work to be performed by a DBE/MBE/WBE/SDVOB.

The Department will review the work, services or products provided by each DBE/MBE/WBE/SDVOB to verify the performance of a CUF in accordance with §102-12E Commercially Useful Function. To determine whether a DBE/MBE/WBE/SDVOB has performed a CUF, the Department may also examine similar transactions, particularly those in which DBE/MBE/WBE/SDVOBs do not participate.

If the Department determines that some or all of a DBE/MBE/WBE/SDVOBs work does not constitute a CUF in accordance with §102-12E. Commercially Useful Function, only the portion of the work considered to be a CUF will be credited toward the goal(s).

Upon request, each DBE/MBE/WBE/SDVOB Subcontractor shall provide additional documentation to the Engineer for the purposes of monitoring CUF. Such documentation may include, but not be limited to: confirmation that the workforce provided meets the requirements of §102-12E.1. Work Force; a copy of purchase order(s) for all material incorporated into the work in order to confirm that the DBE/MBE/WBE/SDVOB has met the requirements of §102-12E.3. Materials; and a copy of a rental agreement for all non-owned equipment used to perform the work to the Engineer in order to confirm that the DBE/MBE/WBE/SDVOB has met the requirements of §102-12E.4. Equipment.

Upon request, the Contractor shall provide a copy of a purchase order(s) for all material, supplies, articles, or equipment provided by a DBE/MBE/WBE/SDVOB Manufacturer, Fabricator, or Material Supplier and a copy of a scope of services that details the work product(s) provided from each DBE/MBE/WBE/SDVOB Professional Service and Work Service to the Engineer.

A DBE/MBE/WBE/SDVOB may present evidence to rebut a determination by the Department that the DBE/MBE/WBE/SDVOB is not performing a CUF. For DBEs, CUF determinations by the Department are subject to review by the Federal Highway Administration (FHWA) but the determination may not be administratively appealed to USDOT. An M/WBE may rebut a determination by the Department that the M/WBE is not performing a CUF to the NYS Department of Economic Development. An SDVOB may rebut a determination by the Department that the SDVOB is not performing a CUF to the NYS Office of General Services' Division of Service-Disabled Veteran's Business Development.

3. Revisions to DBE/MBE/WBE/SDVOB Participation. The Contractor shall obtain Department approval for substantial revisions, as defined below, in DBE/MBE/WBE/SDVOB participation prior to implementing any proposed change through submission of Form AAP16 Request to Modify DBE/MBE/WBE/SDVOB Participation. Once approval is granted by the Department, the Contractor shall submit a revised AAP19 DBE/MBE/WBE/SDVOB Schedule of Participation using the Department approved civil rights reporting software. Unless approval for

the revision is granted, the Contractor will not be entitled to any payment for work or material committed to a DBE/MBE/WBE/SDVOB unless it is performed or supplied by the approved DBE/MBE/WBE/SDVOB.

If the reduction of the DBE/MBE/WBE/SDVOB's work or the removal of the DBE/MBE/WBE/SDVOB causes the DBE/MBE/WBE/SDVOB participation to fall below the goal(s), the Contractor shall make good faith efforts in accordance with §102-12H Good Faith Efforts to find another DBE/MBE/WBE/SDVOB to substitute for the original DBE/MBE/WBE/SDVOB to perform at least the remaining sum of work as the DBE/MBE/WBE/SDVOB that was terminated, to the extent needed to meet the contract goal(s). This includes when the DBE/MBE/WBE/SDVOB fails to complete its work on the contract for any reason, including when work committed to a DBE/MBE/WBE/SDVOB cannot be credited toward goal attainment, reduced due to overestimations made prior to award, or due to commercially useful function violations.

Upon request, the Contractor shall provide documentation of good faith efforts within 7 days which may be extended for an additional 7 days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

A DBE/MBE/WBE/SDVOB may be substituted if the work committed to the DBE/MBE/WBE/SDVOB is deleted or reduced by the Department and enough work remains to substitute an equal commitment amount to the affected DBE/MBE/WBE/SDVOB. If not enough work remains, the Department may relieve the Contractor from attaining that portion of the commitments.

The following modifications will be considered a substantial revision in DBE/MBE/WBE/SDVOB participation:

- Removing or substituting a DBE/MBE/WBE/SDVOB
- Adding new item(s) of work to a DBE/MBE/WBE/SDVOB within a core (3 digit) contract pay item number (i.e., 606 – Guide Railing).
- Reducing the dollar value of or eliminating the DBE/MBE/WBE/SDVOB's item(s) of work or a portion of the work.
- Changes in participation due to major differences between estimated quantities and actual work performed.

The following modifications will not be considered a substantial revision in DBE/MBE/WBE/SDVOB participation:

- Adding a DBE/MBE/WBE/SDVOB to perform work and/or provide materials on the contract, where such addition is not intended to remove or substitute for other DBE/MBE/WBE/SDVOB work.
- Increasing the dollar value of an item(s) of work or adding new item(s) of work within the same core (3 digit) contract pay item number (i.e., 606 – Guide Railing) to a DBE/MBE/WBE/SDVOB. • Substituting similar dollar values of work within a currently approved core (3 digit) contract pay item number (i.e., 606 – Guide Railing).
- Changes in participation due to minor differences between estimated quantities and actual work performed.

The Contractor shall not terminate a DBE/MBE/WBE/SDVOB listed on the approved DBE/MBE/WBE/SDVOB Participation Plan without the prior written consent of the Department. This includes, but is not limited to, instances in which a Contractor seeks to perform work

originally designated for a DBE/MBE/WBE/SDVOB subcontractor with its own forces or those of an affiliate, a non-DBE/MBE/WBE/SDVOB firm, or with another DBE/MBE/WBE/SDVOB firm

The Department will consent only if the Prime Contractor has good cause to terminate the DBE/MBE/WBE/SDVOB firm. Good cause includes, at a minimum, one the following circumstances:

- The listed DBE/MBE/WBE/SDVOB fails or refuses to execute a written contract;
- The listed DBE/MBE/WBE/SDVOB fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;
- The listed DBE/MBE/WBE/SDVOB fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements.
- The listed DBE/MBE/WBE/SDVOB becomes bankrupt, insolvent, or exhibits credit unworthiness;
- The listed DBE/MBE/WBE/SDVOB is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law;
- The Department has determined that the listed DBE/MBE/WBE/SDVOB is not a responsible Contractor; • The listed DBE/MBE/WBE/SDVOB voluntarily withdraws from the project and provides to the Department written notice of its withdrawal;
- The listed DBE/MBE/WBE/SDVOB is ineligible to receive credit for the type of work required; • A DBE/MBE/WBE/SDVOB owner dies or becomes disabled with the result that the firm is unable to complete its work on the contract;
- Other documented good cause that the Department determines compels the termination of the DBE/MBE/WBE/SDVOB. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE/MBE/WBE/SDVOB it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE/MBE/WBE/SDVOB was engaged or so that the Contractor can substitute another DBE/MBE/WBE/SDVOB or nonDBE/MBE/WBE/SDVOB contractor after contract award.

Before submitting its request to terminate and/or substitute a DBE/MBE/WBE/SDVOB to the Department, the Contractor shall give notice in writing to the DBE/MBE/WBE/SDVOB subcontractor, with a copy to the Engineer, of its intent to request to terminate and/or substitute, and the reason for the request.

The Contractor shall give the DBE/MBE/WBE/SDVOB five days to respond to the notice and advise the Department and the Contractor of the reasons, if any, why the DBE/MBE/WBE/SDVOB objects to the proposed termination of its subcontract and why the Department should not approve the Contractor's action. If required in a particular case as a matter of public necessity (e.g., safety), the Department may approve a response period shorter than five days.

Failure of a Contractor to obtain Department approval prior to reduction, termination or substitution of a DBE/MBE/WBE/SDVOB may be deemed a breach of contract subject to appropriate actions such as, but not limited to, a responsibility review, withholding contract payments, and/or loss of credit towards the DBE/MBE/WBE/SDVOB goals.

4. Contractor’s Compliance with DBE Program Requirements. If the Contractor fails to meet the DBE participation commitment(s), to exert a good faith effort, or otherwise fails to comply

with the DBE Program requirements, the Department will take appropriate actions. Such actions may include, but not be limited to: suspension of contract payments in accordance with Article 8 No Payment on Contractor's Non-Compliance of the contract agreement; direction to the Contractor to attend a hearing before the Department's Contract Review Unit; or any other lawful procedure upon due notice in writing to the Contractor, including cancellation, termination, or suspension in whole or in part in accordance with Article 11 Right to Suspend Work and Cancel Contract of the contract agreement.

Where the Department determines that the Contractor is not in compliance with the requirements of the contract and the Contractor refuses to comply with such requirements, or if the Contractor is found to have willfully and intentionally failed to comply with the DBE participation goal, the Contractor will be obligated to pay to the Department Liquidated Damages.

Such Liquidated Damages for failure to meet the DBE requirements shall be calculated as an amount equaling the difference between the amount committed to the DBEs by the Contractor at award and the amount actually paid to the DBEs for creditable work performed or materials supplied under the Contract, not including any amount for work deleted by the Department or work which a DBE declined or failed to reasonably perform. For Response Contracts, such Liquidated Damages for failure to meet the DBE requirements shall be calculated as an amount equaling the difference between the goal amount based on the Contractor's total bid price and the amount actually paid to the DBEs for creditable work performed or materials supplied under the Contract.

If a determination has been made which requires the payment of Liquidated Damages and such identified sums have not been withheld by the Department, the Contractor shall pay such Liquidated Damages to the Department within sixty (60) days after they are assessed.

The Contractor may also be referred to the USDOT for possible suspension or debarment as provided in 49 CFR 26 and such other sanctions as may be imposed and remedies invoked as provided under the authority of 49 CFR 26, or by rule, regulation, or order of the Commissioner or as otherwise provided by law.

5. Contractor's Compliance with M/WBE Program Requirements. If the Contractor fails to meet the M/WBE participation commitments, to exert a good faith effort, or otherwise fails to comply with the M/WBE Program requirements, the Department will take further actions.

Such actions may include, but not be limited to, suspension of contract payments in accordance with Article 8 No Payment Due to Contractor's Non-Compliance of the contract agreement; the Contractor may be directed to attend a hearing before the Department's Contract Review Unit; or any other lawful procedure upon due notice in writing to the Contractor, including cancellation, termination, or suspension in whole or in part in accordance with Article 11 Right to Suspend Work and Cancel Contract of the contract agreement. If the Contractor does not meet the M/WBE participation goals, the Contractor will submit to the Engineer a request for a partial or total waiver in accordance with 5 NYCRR 142.7.

a. The Contractor will submit a waiver request documenting such good faith efforts and providing sufficient justification as to why the M/WBE goals should be waived or reduced based upon the following factors: The number and types of certified M/WBEs available to perform on any subcontractable scopes of the contract;
b. The total dollar value of the contract;
c. The contract scope of work to be performed;
d. The project size;
e. The project term; f. The availability of other business enterprises located in the region qualified to do the work to be performed;
f. The ability of certified M/WBEs located outside the region to perform the contract; and

g. The extent to which the Contractor's own actions, including but not limited to, any failure by the Contractor to discharge the Contractor's duties pursuant to this Part or Article 15- A of the Executive Law, contributed to the Contractor's inability to meet the maximum feasible portion of the contract goals.

Where the Department determines that the Contractor is not in compliance with the requirements of the Contract and the Contractor refuses to comply with such requirements, or if the Contractor is found to have willfully and intentionally failed to comply with the M/WBE participation goals, the Contractor shall be obligated to pay to the Department Liquidated Damages.

Such Liquidated Damages for failure to meet the M/WBE requirements shall be calculated as an amount equaling the difference between the amount committed to the M/WBEs by the Contractor at award, and the amount actually paid to the M/WBEs for creditable work performed or materials supplied under the Contract, not including any amount for work deleted by the Department. For Response Contracts, such Liquidated Damages for failure to meet the DBE requirements shall be calculated as an amount equaling the difference between the goal amount based on the Contractor's total bid price and the amount actually paid to the DBEs for creditable work performed or materials supplied under the Contract.

If a determination has been made which requires the payment of Liquidated Damages and such identified sums have not been withheld by the Department, the Contractor shall pay such Liquidated Damages to the Department within sixty (60) days after they are assessed, unless prior to the expiration of such sixtieth day, the Contractor has filed a complaint with the Director of the Division of Minority and Woman Business Development pursuant to Subdivision 8 of Section 313 of the Executive Law in which event the Liquidated Damages shall be payable if Director renders a decision in favor of the Department.

The Department may file a complaint with the NYS Department of Economic Development, Division of Minority and Women's Business Development pursuant to Executive Law Article 15- A, or other sanctions may also be imposed and remedies invoked as provided under the authority of Executive Law Article 15A, 5 NYCRR 140-145, or by rule, regulation, or order of the Commissioner or as otherwise provided by law.

6. Contractor's Compliance with SDVOB Program Requirements. If the Contractor fails to meet the SDVOB participation commitments, to exert a good faith effort, or otherwise fails to comply with the SDVOB Program requirements, the Department will take further actions.

Such actions may include, but not be limited to, suspension of contract payments in accordance with Article 8 No Payment on Contractor's Non-Compliance of the Contract Agreement; the Contractor may be directed to attend a hearing before the Department's Contract Review Unit; or any other lawful procedure upon due notice in writing to the Contractor, including cancellation, termination, or suspension in whole or in part in accordance with Article 11 Right to Suspend Work and Cancel Contract of the Contract Agreement.

If the Contractor does not meet the SDVOB participation goals, the Contractor shall submit to the Engineer a request for a partial or total waiver under the Department's authority as set forth in 9 NYCRR 252.2(m).

Where the Department determines that the Contractor is not in compliance with the requirements of the Contract and the Contractor refuses to comply with such requirements, or if the Contractor is found to have willfully and intentionally failed to comply with the SDVOB participation goals, the Contractor shall be obligated to pay to the Department Liquidated Damages.

Such Liquidated Damages for failure to meet the SDVOB requirements shall be calculated as an amount equaling the difference between the amount committed to the SDVOBs by the

Contractor at award, and the amount actually paid to the SDVOBs for creditable work performed or materials supplied under the Contract, not including any amount for work deleted by the Department. For Response Contracts, such Liquidated Damages for failure to meet the DBE requirements shall be calculated as an amount equaling the difference between the goal amount based on the Contractor's total bid price and the amount actually paid to the DBEs for creditable work performed or materials supplied under the Contract.

If a determination has been made which requires the payment of Liquidated Damages and such identified sums have not been withheld by the Department, the Contractor shall pay such Liquidated Damages to the Department within sixty (60) days after they are assessed, unless prior to the expiration of such sixtieth day, the Contractor has filed a complaint with the Director of the Division of Service-Disabled Veteran's Business Development pursuant to Article 3 of the Veteran Services Law in which event the Liquidated Damages shall be payable if the Director renders a decision in favor of the Department.

The Department may file a complaint with the NYS Office of General Services' Division of Service-Disabled Veteran's Business Development pursuant to Veteran Services Law Article 3, or other sanctions may also be imposed and remedies invoked as provided under the authority of Veteran Services Law Article 3, 9 NYCRR 252.2(s), or by rule, regulation, or order of the Commissioner or as otherwise provided by law.

E. Compliance Reviews. The Department conducts annual civil rights contract compliance reviews of selected Federal-Aid contracts in accordance with 23 CFR 230.409. A compliance review consists of a thorough review of all civil rights contract requirements, including Nondiscrimination in Labor/Employment, EEO, Training, and DBE requirements. A Contractor will typically not be selected for more than one compliance review per year statewide. Based on contract monitoring and/or the results of compliance review(s), the Department may conduct a review of some or all ongoing contracts with a single Contractor, regardless of funding source.

EBO Login (6/25)

Equitable Business Opportunity (EBO) Login and Password Application
Signature Certification for Corporations, Sole Proprietorships, Joint Ventures, and other Business Entities

Please note:

A. Refer to EBO Login Application instructions on page 2. Application must be completed in Adobe Reader

B. The "Firm" is the vendor requesting an EBO Login for its use. Applicant cannot request an EBO Login for another Firm

C. The "User" must be a Principal Officer of the Company, Firm, Partnership, Joint Venture, or business entity(s) with binding contractual authority. For Joint Ventures, a Principal Officer from both firms must sign and authorize application

d. The User is also responsible as the EBO Account Manager. The EBO Account Manager creates and maintains EBO logins and passwords for employees who require EBO access, including a day to day Administrator.

e. Promptly after the Principal Officer separates from the firm, the firm is required to notify NYSDOT and submit an EBO Login Application, signed by the new Principal Officer.

f. All EBO users are required to login through NY.gov ID for 2-step verification. If you do not already have a NY.GovID account, please create an account at https://my.ny.gov/.

◯ New EBO Vendor Application ◯ Updated EBO Vendor Application

Firm's or Joint Venture's Legal Name: _____

Firm's or Joint Venture's DBA Name (if different): _____

Firm's or Joint Venture's Federal ID Number: _____

Gender	Race	Contract Type	Program (D/M/WBE & SDVOB)

Principal Officer's Name of Firm or Joint Venture (Primary Account Holder) _____ Principal Officer's Title _____

Business Phone: _____ Ext: _____ Principal Officer's Direct E-Mail _____

Mailing Address 1: _____ Mailing Address 2: _____

Town/City: _____ State: _____ Zip Code: _____

Secondary Contact Person:

If there is no secondary contact person for contract information please check box ☐

Name: _____ Title: _____

E-Mail: _____ Phone: _____ Ext: _____

Affirmation of Truth Statement

On behalf of the above-listed Company, Firm, Partnership, Joint Venture, or business entity, I hereby agree to comply with the terms and conditions of access to and use of the Internet Government Solutions (IGS) Equitable Business Opportunities (EBO) system set forth in the System User Agreement attached to this application form.

Signature of Applicant (A Principal Officer of the Company, Firm, Partnership, Joint Venture, or business entity(s) with binding contractual authority. For Joint Ventures, a Principal Officer from both firms must sign and have application notarized).

I affirm this _____ day of _____ , _____ , under the penalties of perjury under the laws of New York, which may include a fine or imprisonment, that the foregoing is true, and I understand that this document may be filed in any action or proceeding in a court of law

_____

Print Name Signature Title

Joint Venture Only - Secondary Affirmation of Truth Statement

On behalf of the above-listed Company, Firm, Partnership, Joint Venture, or business entity, I hereby agree to comply with the terms and conditions of access to and use of the Internet Government Solutions (IGS) Equitable Business Opportunities (EBO) system set forth in the System User Agreement attached to this application form.

Signature of Applicant (A Principal Officer of the Company, Firm, Partnership, Joint Venture, or business entity(s) with binding contractual authority. For Joint Ventures, a Principal Officer from both firms must sign and have application notarized).

I affirm this _____ day of _____ , _____ , under the penalties of perjury under the laws of New York, which may include a fine or imprisonment, that the foregoing is true, and I understand that this document may be filed in any action or proceeding in a court of law

_____

Print Name Signature Title

NYSDOT EQUITABLE BUSINESS OPPORTUNITIES

(EBO) SYSTEM USER AGREEMENT

This System User Agreement is an integral part of each application to the New York State Department ofTransportation (NYSDOT) for obtaining log-in/ password access to the Equitable Business Opportunities (EBO) System maintained and operated by NYSDOT. By signing and submitting such an application, you agree to be bound by the terms of this System User Agreement.

This System User Agreement governs the terms and conditions upon which your firm, and your firm's authorized users (referred to collectively as "User") will be allowed to access and use NYSDOT's Civil Rights Reporting Software, EBO.

NYSDOT authorizes the User, and the User agrees, to access and use the EBO System solely for official business purposes associated with the User's participation in contracts and other procurement opportunities awarded by NYSDOT or other Federal Aid sub-recipients. Such purposes include the administration of Equal Employment Opportunity (EEO) requirements; and Disadvantaged Business Enterprise (DBE), Minority and Woman-owned Business Enterprise (M/WBE) requirement, or Service Disabled Veteran-owned Business (SDVOB) requirement.

NYSDOT requires, and the User agrees, that in accessing and using the EBO System, the User will comply with NYSDOT's Information Security policies, procedures and directives, to the full extent required by NYSDOT's Information Security Officer, NYSDOT's Information Technology Division (ITD), and NYSDOT's EBO System Administrator. Such policies and requirements include the following:

1. The User's Primary Log-in ID Holder shall be personally responsible for usage of NYSDOT's EBO System by any and all of the User's other authorized users, including compliance with this System User Agreement and NYSDOT Information Security requirements, and shall exercise oversight over usage of the EBO System by such other authorized users.
2. The User will access and use the EBO System solely for the official business purposes indicated above. The User will not use access to the EBO System to access or use any other portion of NYSDOT's information technology (IT) Systems
3. The User will maintain the confidentiality and security of the User's EBO System log-in ID and password, will provide such password only to authorized users within the User's business organization, and will not disclose such password to any persons other than authorized users who are officers or employees of the user
4. The User's Primary Log-in Holder shall promptly deactivate the system access of any former employee, or other formerly authorized user, whom the User no longer authorizes to have access to the EBO System. When the User separates from service, the EBO Administrators should be notified, and a new login application completed for the new User.
5. The User shall maintain the confidentiality and security of the Social Security Numbers (SSNs) of the User's employees, and any other confidential information obtained or submitted to NYSDOT in connection with use of the EBO System

EBO Login Application Instructions

1. Select the radio button for New Vendor Login Application or Updated Vendor Login Application.
2. Enter the legal name of the Firm or Joint Venture
3. Enter the D/B/A name of the Firm or Joint Venture (if applicable).
4. Enter the Federal ID of the Firm or Joint Venture
5. Make a selection from each drop down that applies to the Firm's ownership. Note: DBE/MBE/WBE and SDVOB Firms must be NYS Certified.
6. Enter the business phone number (and extension, if applicable) of the Firm or Joint Venture.
7. Enter the name and direct e-mail address of the Principal Officer.
8. Enter the mailing address of the Firm. *Note: In State box, Canadian firms can manually enter Provinces.*
9. Affirmation of Truth Statement required for the Principal Officer.
10. If a Joint Venture, Affirmation of Truth Statement signature for second Principal Officer required
11. For faster processing, the application can be scanned and e-mailed. The original EBO Login Application with wet signature is required to be mailed to:

NYS Department of Transportation Office of Construction, ATTN: EBO Administrator 50 Wolf Road, 5th Floor POD 5-1 Albany, NY 12232

12. All EBO users are required to login through NY.gov ID for 2-step verification. Please create a NY.gov ID login at https://my.ny.gov/, if you do not already have one.

DIVISION 1 - SPECIFICATIONS

SPECIAL PROVISIONS

Buy America Requirements

(SP-5)

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BUY AMERICA

This Section is taken from and references NYSDOT Standard Specification. All parts of NYSDOT Section 106-11 and any referenced sections of the NYSDOT Standard Specifications or updates to the NYSDOT Specification shall apply to this contract at the time of bidding.

Note: This contract is a Non-Federal (State Only) funded project

BUY AMERICA.

In accordance with 23 USC 313, 23 CFR 635.410, the Build America Buy America (BABA) Act in Title IX of the Bipartisan Infrastructure Law's (BIL), and Section 146 of the State Finance Law, permanently incorporated predominantly steel and/or iron materials, manufactured products, and construction materials shall be domestically produced.

A. Control of Materials.

To qualify as domestic, all manufacturing processes, including melting, manufacturing, fabricating, grinding, drilling, welding, finishing, and coating of any product containing steel and/or iron materials, must have been performed in the United States. A domestic product is a manufactured steel and/or iron material/product and/or construction material that was produced in one of the 50 States, the District of Columbia, or in the territories and possessions of the United States. Raw materials used in the steel and/or iron materials may be imported. Raw materials are materials such as raw iron ore and waste products which are used in the manufacturing process to produce the steel and/or iron material/product. The FHWA has granted a nationwide waiver for pig iron and processed, pelletized and reduced iron ore. Waste products include scrap (i.e., steel no longer useful in its present form from old automobiles, machinery, pipe, railroad rail, steel trimmings from mills or product manufacturing). Extracting, crushing, and handling the raw materials which are customary to prepare them for transporting are exempt from Buy America. The use of foreign source steel billets or iron ingots are not acceptable under Buy America. All items, regardless of origin, shall comply with their individual specification requirements and with the requirements stated elsewhere in this subsection. The Contractor shall ensure the domestic steel and/or iron materials are supplied in conformance with the above referenced laws.

The Buy America provisions only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies brought to the construction site and removed at or before the completion of the infrastructure project, such as temporary scaffolding. In addition, it does not apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project but are not an integral part of or permanently affixed to the structure.

Non-Federal-Aid Contracts.

For Non-Federal-Aid contracts, the Contractor shall provide structural steel, structural iron, reinforcing steel and/or other major steel items to be permanently incorporated in the work produced or made in whole or substantial part in the United States, its territories or possessions. In the case of a structural iron or structural steel product, all manufacturing must take place in the United States, its territories or possessions, from the initial melting stage through the application of coatings, except metallurgical processes involving the refinement of steel additives.

B. Waivers

Non-Federal-Aid Contracts.

The Contractor may request a waiver if it can be demonstrated that the use of domestic steel and/or iron materials would not be in the public interest, would result in unreasonable costs, or that such iron or steel, including without limitation structural iron and structural steel, cannot be produced or made in the Unites States in sufficient and reasonably available quantities and of satisfactory quality. The Contractor shall submit a waiver request to the Engineer which includes copies of all documentation verifying the unavailability of the material or product, and/or justification. Waiver requests will be reviewed by the affected Department program areas and approved by the Deputy Chief Engineer, Construction (DCEC).

C. Certifications.

A Manufacturer's Certification is required to certify that the material / product is of domestic origin. Acceptable statements are: "Conforms (or Does not conform) to the requirements of NYSDOT Standard Specifications §106-11 Buy America" (acceptable for steel/iron, manufactured products and construction materials) or "Conforms (or Does not conform) to the requirements of 23 CFR 635.410 Buy America Requirements" (acceptable for steel/iron and manufactured products only) or "Conforms (or Does not conform) to the requirements of the Build America, Buy America Act" (acceptable for construction materials only). Certifications shall comply with §106-04 Material Acceptance Records.

DIVISION 1 - SPECIFICATIONS

SPECIAL PROVISIONS

Forms

(SP-6)

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NYSDOT BUY AMERICAN COMPLIANCE CERTIFICATION

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with their proposal. The bidder or offeror must indicate how they intend to comply with 23 CFR 635.410 by selecting one on the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (not both) by inserting a checkmark (✓) or the letter "X".

☐ Bidder or offeror hereby certifies that it will comply with 23 CFR 635.410 by:

a) Only installing steel and manufactured products produced in the United States, or;

b) To qualify as domestic, all manufacturing processes (including the fabrication of any product containing steel and/or iron) must have been performed in the United States. To further define the coverage, a domestic product is a manufactured steel and/or iron construction material that was produced in one of the 50 States, the District of Columbia, Puerto Rico, or in the territories and possessions of the United States. Raw material used in the steel and/or iron may be imported. All manufacturing processes to produce steel and/or iron products must occur domestically.

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

1. To provide to the Owner evidence that documents the source, origin, and manufacturing location of the steel and manufactured product.
2. To faithfully comply with providing US domestic product
3. To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the NYSDOT determines justified.

☐ The bidder or offeror hereby certifies it chooses not to comply with the Buy American Preferences of 23 CFR 635.410 but instead chooses to submit a bid based upon foreign source materials showing the total project bid using foreign source materials is 25% less than the total bid using domestic materials. By selecting this certification statement, the apparent bidder or offeror with the apparent low bid agrees:

1. To submit two bids contained within the same envelope: One Bid based upon all domestic steel and iron; and a Second Bid based upon foreign sourced steel and iron.
2. The Bidder Agree to legibly print on the Foreign Sourced Bid the following in ink on the proposal cover and at the bottom of the proposal sheet which contains the phrase "Total gross sum written in words": TOTAL BID BASED UPON USING FOREIGN STEEL AND/OR IRON.
3. When bids are submitted based upon domestic and foreign steel and/or iron, both bids are to be submitted in the same envelope.

False Statements: 23 CFR 635.410, this certification concerns a matter within the jurisdiction of the NYSDOT and FHA 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

US GOVERNMENT AND STATE
BIDDER'S CERTIFICATION OF TAXES PAID

The following certification statement is to be signed by the Bidder.

I hereby certify that I am a _____ (title of Officer

of the company) and duly authorized representative

of _____ (name of company), whose

address is _____ and that neither I nor

the above company I here represent has:

a. Employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any company or person (other than bona fide employee working solely for me or the above company) to solicit or secure this Contract,

b. Agreed, as an express or implied condition for obtaining this Contract to employ or retain the services of any company or person in connection with carrying out the Contract, or

c. Paid, or agreed to pay, to any company, organization or person (other than a bona fide employee working solely for me or the above company) any fee, contribution, donation, or consideration of any kind for, or in connection with, procuring or carrying out the Contract;

I acknowledge that this certification is to be furnished to the NYSDOT or other branches of the New York State Government, and the State in which this project is located in connection with this Contract involving participation of funds, and subject to applicable State and Federal laws, both criminal and civil.

I certify under the penalty of perjury that the firm or corporation referenced above, to the best of my knowledge and belief, has filed all US Government and State Tax Returns and paid all Federal and State taxes required under law.

FEDERAL I.D. NO. _____

BIDDER'S NAME: _____

BY: _____

TITLE: _____

DATED: _____

DEBARMENT AND SUSPENSION (BIDDER OR OFFEROR) CERTIFICATION

By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that at the time the bidder or offeror submits its proposal that neither it nor its principals are presently debarred or suspended by any New York State department or agency from participation in this transaction.

CERTIFICATION REGARDING DEBARMENT AND SUSPENSION (SUCCESSFUL BIDDER REGARDING LOWER TIER PARTICIPANTS)

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 NYS Department of Labor Debarment Database at website: https://labor.ny.gov/workerprotection/publicwork/PWDebarmentInformation.shtm
2. Collecting a certification statement similar to the Certificate Regarding Debarment and Suspension (Bidder or Offeror), above.
3. Inserting a clause or condition in the covered transaction with the lower tier contract

If the NYSDOT later determines that a lower tier participant failed to tell a higher tier that it was excluded or disqualified at the time it entered the covered transaction, the NYSDOT may pursue any available remedy, including suspension and debarment.

_____
Name and Title (Please Print or Type)

_____ _____
Signature Date

NON-SEGREGATED FACILITIES CERTIFICATION

41 CFR PART 60-1.8
Notice to Prospective Federally Assisted Construction Contractors

1. A Certification of Non-segregated Facilities shall be submitted prior to the award of a federally assisted construction contract exceeding $10,000 which is not exempt from the provisions of the Equal Opportunity Clause.

2. Contractors receiving federally-assisted construction contract awards exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of the following notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed $10,000 and are not exempt from the provisions of the Equal Opportunity Clause.

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

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

1. A Certification of Non-segregated Facilities shall be submitted prior to the award of a subcontract exceeding $10,000, which is not exempt from the provisions of the Equal Opportunity Clause.

2. Contractors receiving subcontract awards exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of this notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed $10,000 and are not exempt from the provisions of the Equal Opportunity Clause.

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

CERTIFICATION OF NON-SEGREGATED FACILITIES:

> *The undersigned federally-assisted construction contractor certifies that she or he does not maintain or provide, for his employees, any segregated facilities at any of his establishments and that she or he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally-assisted construction contractor certifies that she or he will not maintain or provide, for his employees, segregated facilities at any of his establishments and that she or he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The federally-assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract.*
>
> *As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms, and washrooms, restaurants and other eating areas, timeclocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directives or are, in fact, segregated on the basis of race, color, religion, or national origin because of habit, local custom, or any other reason. The federally-assisted construction contractor agrees that (except where*

she or he has obtained identical certifications from proposed subcontractors for specific time periods) she or he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity Clause and that she or he will retain such certifications in his files.

Signed and submitted on this date: _____

By this (circle one): Contractor, Subcontractor, or Supplier

Business Name: _____

Address: _____

_____

Telephone Number: _____

Fax Number: _____

E-mail Address: _____

Name and Title (Printed): _____

Owner or Authorized Signature: _____

Note to Subcontractors and Suppliers: This form shall be returned to the Prime Contractor who will forward it to the Engineer.

EQUAL EMPLOYMENT OPPORTUNITY REPORT STATEMENT CERTIFICATION
as required by 41 CFR 60-1.7(b)

The Bidder (Proposer) shall complete the following statement by checking the appropriate boxes. Failure to complete these blanks may be grounds for rejection of the bid Proposal.

1. The Bidder (Proposer) has □ has not □ developed and has on file at each establishment Affirmative Action Programs pursuant to 41 CFR 60-1.4 and 41 CFR 60-2.

2. The Bidder (Proposer) has □ has not □ participated in any previous Contract or Subcontract subject to the Equal Opportunity Clause prescribed by Executive Order 11246, as amended.

3. The Bidder (Proposer) has □ has not □ filed with the Joint Reporting Committee the Annual Compliance Report on Standard Form 100 (EEO-1 Report).

4. The Bidder (Proposer) does □ does not □ employ fifty (50) or more employees.

_____
(Name of Bidder)

By: _____
Signature *

Title: _____

Date: _____

*Must be same signature on bid Proposal.

NEW YORK STATE DEPARTMENT OF TRANSPORTION
AVIATION CAPITAL GRANTS PROGRAM

M/WBE/SDVOB REQUIREMENTS

Refer to NYSDOT Standard Specification. All parts of NYSDOT Section 102-12 and any referenced sections of the NYSDOT Standard Specifications shall apply to this contract

NEW YORK STATE DEPARTMENT OF TRANSPORTION
AVIATION CAPITAL GRANTS PROGRAM

PROPOSED WOMEN BUSINESS ENTERPRISE (WBE), MINORITY BUSINESS ENTERPRISE (MBE), SERVICE DISABLED VETRAN OWNED BUISNESS (SDVOB) PROJECTS

The undersigned Bidder/Offeror has made a good faith effort to make subcontracting and supplier opportunities available to all firms including, but not limited to, MBE and WBE. As a result of these efforts:

- The Bidder/Offeror is committed to a minimum of _____% **WBE** utilization on this Contract.
- The Bidder/Offeror is committed to a minimum of _____% **MBE** utilization on this Contract.
- The Bidder/Offeror is committed to a minimum of _____% **SDVOB** utilization on this Contract.

Name of Bidder/Offeror's firm:_____

NYSDOT PIN:_____

By:_____ _____
Signature Title

MBE / WBE / SDVOB Subcontractor or Supplier

Name of Firm: _____

☐ WBE ☐ MBE ☐ SDVOB (Check One)

Proposed Work: _____
(Be brief, i.e. electrical or excavation)

Dollar Amount of Work: _____

☐ Letter of Intent attached ☐ Firm is a Supplier.

(Attach additional sheets as needed for additional firms)

NEW YORK STATE DEPARTMENT OF TRANSPORTION
AVIATION CAPITAL GRANTS PROGRAM

PROPOSED WOMEN BUSINESS ENTERPRISE (WBE), MINORITY BUSINESS ENTERPRISE (MBE), SERVICE DISABLED VETRAN OWNED BUISNESS (SDVOB) PROJECTS

MBE / WBE / SDVOB Subcontractor or Supplier

Name of Firm: _____

☐ WBE ☐ MBE ☐ SDVOB (Check One)

Proposed Work: _____
(Be brief, i.e. electrical or excavation)

Dollar Amount of Work: _____

☐ Letter of Intent attached ☐ Firm is a Supplier.

MBE / WBE / SDVOB Subcontractor or Supplier

Name of Firm: _____

☐ WBE ☐ MBE ☐ SDVOB (Check One)

Proposed Work: _____
(Be brief, i.e. electrical or excavation)

Dollar Amount of Work: _____

☐ Letter of Intent attached ☐ Firm is a Supplier.

MBE / WBE / SDVOB Subcontractor or Supplier

Name of Firm: _____

☐ WBE ☐ MBE ☐ SDVOB (Check One)

Proposed Work: _____
(Be brief, i.e. electrical or excavation)

Dollar Amount of Work: _____

☐ Letter of Intent attached ☐ Firm is a Supplier.

(Attach additional sheets as needed for additional firms)

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PRIME CONTRACTOR
MBE/WBE/SDVOB REPORTING INFORMATION FORM

(To be filled out by the bidder and submitted with their bid package)

Project Name: _____

Airport: _____

NYSDOT PIN: _____

Prime Contractor Information

Company Name: _____

Contact Person: _____

Address 1: _____

Address 2: _____

Address 3: _____

City / Town: _____

State: _____

Zip Code: _____

Phone: _____

Fax: _____

E-Mail: _____

NAICS Code: _____

WBE Status:	□ Non-WBE □ Certified WBE (Check one)
MBE Status:	□ Non-MBE □ Certified MBE (Check one)
SDVOB Status:	□ Non-SDVOB □ Certified SDVOB (Check one)

If Prime Contractor is a WBE, MBE or SDVOB, complete the following section:

States you are WBE/MBE/SDVOB Certified in:	(If not a DBE leave blank)
Age of Firm:	_____ Years
Annual Gross Receipts (Avg. over last 3 years per SBA regs.):	□ less than $500,000 (Check one) □ $500,000 to $999,999 □ $1,000,000 to $1,999,999 □ $2,000,000 to $4,999,999 □ $5,000,000 to $9,999,999 □ $10,000,000 to $14,999,999 □ $15,000,000 to $19,999,999 □ $20,000,000 to $23,980,000 □ more than $23,980,000

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SUBCONTRACTOR / SUPPLIER
WBE/MBE/SDVOB BUSINESS REPORTING INFORMATION FORM

(To be filled out by the Subcontractor / Supplier and submitted with the bid package and the Request for Consent to Sublet package)

Project Name: _____

Airport: _____

NYSDOT PIN: _____

Subcontractor / Supplier Information

Company Name: _____

Contact Person: _____

Address 1: _____

Address 2: _____

Address 3: _____

City / Town: _____

State: _____

Zip Code: _____

Phone: _____

Fax: _____

E-Mail: _____

NAICS Code: _____

WBE Status:	□ Non-WBE □ Certified WBE (Check one)
MBE Status:	□ Non-MBE □ Certified MBE (Check one)
SDVOB Status:	□ Non-SDVOB □ Certified SDVOB (Check one)
Project Role:	□ Subcontractor □ Supplier □ Other _____(Check one)

If Subcontractor / Supplier is a MBE, WBE, or SDVOB complete the following section:

States you are MBE/WBE/SDVOB Certified in:	(If not a MBE/WBE/SDVOB leave blank)
Age of Firm:	_____ Years
Annual Gross Receipts (Avg. over last 3 years per SBA regs.):	□ less than $500,000 (Check one) □ $500,000 to $999,999 □ $1,000,000 to $1,999,999 □ $2,000,000 to $4,999,999 □ $5,000,000 to $9,999,999 □ $10,000,000 to $14,999,999 □ $15,000,000 to $19,999,999 □ $20,000,000 to $23,980,000 □ more than $23,980,000

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CERTIFICATION OF COMPLIANCE FOR THE PREVENTION OF SEXUAL HARASSMENT

Pursuant to State Finance Law §139-l of the State of New York, effective January 1, 2019, where competitive bidding is required for certain public contracts, every bid must contain the following statement affirming that the bidder has implemented a written policy addressing sexual harassment prevention and that the bidder provides annual sexual harassment prevention training, which statement must be signed by the bidder and affirmed by such bidder under the penalty of perjury:

[Please Check One]

BIDDER'S CERTIFICATION

☐ By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all of its employees. Such policy shall, at a minimum, meet the requirements of section two hundred one-g of the labor law.

☐ I am unable to certify that I, or my employer, have implemented a written policy addressing sexual harassment prevention in the workplace. The reason(s) why neither I nor my employer can make such certification is/are:

_____
_____.

Dated: _____, 20___.

STATE OF)
COUNTY OF) ss:

The undersigned, being duly sworn, says: (a) I am duly authorized to execute this Certification and (b) I hereby certify, under penalty of perjury, that the forgoing Certification is in all respects true and accurate.

_____
Signature

_____
Printed Name

_____
Title

Subscribed and sworn to before me this ____
day of _____, 20___.

_____
Notary Public

TRANSMITTAL REQUEST FOR CONSENT TO SUBLET:

McFarland Johnson
49 Court St. – Suite 240
Binghamton, NY 13901
Telephone (607) 723-9421
Fax (607) 723-4979

☐ **SUBCONTRACTOR**

☐ **LOWER TIER SUBCONTRACTOR**

☐ **MATERIAL SUPPLIER (MS)**

** ☐ **THIS COMPANY IS A WBE / MBE / SDVOB ** (Circle one)**

Prime Contractor:_____
(Name and Address)

Subcontractor/MS:_____
(Name and Address)

Lower-tier Subcontractor/MS:_____
(Name and Address)

Project Name:_____

All contract items sublet are to be shown in the following tabulation. Estimated or agreed dollar amounts must be shown individually in the appropriate **PARTIAL** or **COMPLETE** column.

ITEM NUMBER	DESCRIPTION OF ACTUAL WORK TO BE PERFORMED (Use a separate spreadsheet if needed and list total below)	PARTIAL WORK ON ITEM	COMPLETE ITEM

TOTAL SUBCONTRACT AMOUNT: $ _____

By: _____ _____
Signature and Title of Prime Contractors Agent **Date**

Signatory agrees and understands that subcontracts will contain, by inclusion or reference, all the pertinent provisions of the Prime Contract. It is further agreed and understood that consent to sublet shall not under any circumstance relieve the Prime Contractor or surety of any of their obligations under the Contract or bonds as specified in the Project Specifications.

FOR ENGINEER / OWNER OFFICE USE ONLY

Effective Date:	**Recommended by Engineer:**
Total Sublet to Date:	
Percent Sublet to Date:	(Sign Here)
WBE/MBE/SDVOB Commitment % to Date:	**Approved by Owner:**
Consent Number:	
Company Code:	(Sign Here)

Copy to (check): ☐ **RESIDENT ENGINEER** ☐ **HIGHER TIER SUB / MS** ☐ **OTHER:**_____

Submittal Number: _____
Revision Number: _____

CONTRACTOR / SUBCONTRACTOR / SUPPLIER
BUY AMERICAN CERTIFICATION
(Attach to all Shop Drawing Submittals)

Job Name: _____

_____

_____

PIN No. _____ **MJ Job No.** _____

Contractor / Subcontractor / Supplier: _____

Address: _____

Contractor's Contact: _____ **Phone Number:** _____

Reviewed By: _____ **Date Submitted:** _____

Item No.: _____

Specification Section and Paragraph: _____

Description: _____

The undersigned certifies that (check the item that applies):

☐ 1. The above referenced products or materials are wholly produced in the United States of America (US) of US produced materials.

☐ 2. A waiver for the use of non-US produced products or production outside of the US has been granted by the FAA for this product or material and a copy of the waiver is attached.

☐ 3. All the above referenced products or materials being used on the project are on the Nationwide Buy American conformance list located at (attach copy of list): http://www.faa.gov/airports/aip/buy_american/

☐ 4. A waiver for the use of non-US produced products or production outside of the US is being requested as part of this submission (see FAA AIP Handbook Appendix Y in the Federal Contract Provisions section of the Supplemental General Provisions for guidance on waiver types and requirements).

CONTRACTOR / SUBCONTRACTOR / SUPPLIER
BUY AMERICAN CERTIFICATION

Dated at _____ this _____ day of _____, _____.
(Location Signed) (Day) (Month) (Year)

Name of Bidder: _____(print name)

By: _____ (signature)

Title: _____(print title)

McFarland Johnson

Received By MJ on:

SUBMITTAL / SHOP DRAWING COVER SHEET

PROJECT NAME: **REHABILITATION OF HANGARS 2&3**

LOCATION: **GREATER BINGHAMTON AIRPORT** **SUBMITTAL NO.:** _____

CONTRACTOR: _____ **DATE**:_____

_____

_____

FUNDING AGENCY NO.: **NYSDOT PIN 9A10.53** **M-J PROJ.NO.:** **19090.06**

SPECIFICATION NO.	DESCRIPTION	M-J ACTION

NOTE: ONLY ONE TECH SPEC. ITEM PER SUBMITTAL PLEASE.

TECH SPECIFICATION NO.:_____

M-J ACTION: **NET** – NO EXCEPTIONS TAKEN **REJ** – REJECTED
R&R – REVISE AND RESUBMIT **SSI** – SUBMIT SPECIFIED ITEM
MCN – MAKE CORRECTIONS NOTED

REVIEW COMMENTS:

CONTRACTOR'S CERTIFICATION:

THE CONTRACTOR CERTIFIES THAT THEY HAVE REVIEWED THE ENCLOSED DOCUMENTS AND THEY ARE IN GENERAL CONFORMANCE WITH THE PROJECT DOCUMENTS.

Date _____

By _____

Title _____

THIS REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND THE INFORMATION GIVEN IN THE CONSTRUCTION DOCUMENTS. CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. APPROVAL OF A SPECIFIC ITEM SHALL NOT INCLUDE APPROVAL OF AN ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. THE CONTRACTOR IS RESPONSIBLE FOR; DIMESIONS TO BE CONFIRMED AND CORRELATED AT THE JOBSITE: INFORMATION THAT PERTAINS SOLELY TO THE FABRICATION PROCESS OR TO THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION; COORDINATION OF THE WORK WITH THAT OF ALL OTHER TRADES AND PERFORMING ALL WORK IN A SAFE AND SATISFACTORY MANNER

McFarland Johnson

Date _____ By _____

Submittal Number: _____
Revision Number:_____

SUBCONTRACTOR SUBMITTAL FORM

Job Name: _____

AIP No. _____

MJ Job No. _____

Subcontractor: _____

Address: _____

Subcontractor's Contact: _____ **Phone Number:** _____

Reviewed By: _____ **Date Submitted:** _____

☐ **Check here if submittal is from a Subcontractor**

Item No.: _____

Specification Section and Paragraph: _____

CERTIFICATION

I HEREBY CERTIFY that the attached submittal has been reviewed under the terms of the Contract Documents and is in conformity with the requirements of the Plans and Specifications unless specifically noted otherwise. It is understood that the Contractor is responsible for dimensions and quantities to be confirmed and correlated at the site, for information that pertains solely to the fabrication process or to the means, methods, techniques, sequences and procedures of construction, and for coordination of the Work of all trades.

☐ 1- Submitted as specified

☐ 2 - Submitted "AS EQUAL" to the product specified

☐ 3 - Submitted "IN SUBSTITUTION" to the product specified

☐ 4 - Subcontractor submittal form included

☐ 5 - Other

Description of Submittal Components: _____

_____

_____

_____

Submittal will not be approved without an acceptable Form MJ-212 "Contractor / Subcontractor / Supplier Buy American Certification."

(For additional comments attach and number additional pages)

SUBCONTRACTOR / SUPPLIER
WOMEN BUSINESS ENTERPRISE (WBE),
MINORITY BUSINESS ENTERPRISE (MBE), AND SERVICE-DISABLED VETERAN OWNED BUISNESS (SDVOB)
LETTER OF INTENT

(To be filled out by the Contractor and the Subcontractor / Supplier and submitted within 36 hours of the bid opening by the two lowest bidders)

Project Name: _____

Airport: _____

NYSDOT PIN: _____

Prime Contractor

Company Name: _____

Subcontractor / Supplier Contractor

Company Name: _____

WBE Status:	☐ Non-WBE ☐ Certified WBE (Check one)
MBE Status:	☐ Non-MBE ☐ Certified MBE (Check one)
SDVOB Status	☐ Non-SDVOB ☐ Certified SDVOB (Check one)

(Check Here) ☐ **Form MJ-206 or MJ-207 is attached (required)**

1. The undersigned MBE, WBE, or SDVOB firm intends to perform work in connection with the above referenced project as:

   (Check One)
   ☐ an individual ☐ a partnership ☐ a corporation

   ☐ a joint venture with _____

   ☐ other _____
   attach other sheets if necessary

2. If an WBE, MBE, or SDVOB the undersigned affirms that they are a duly authorized official representing the proposed Women Business Enterprise or Minority Business Enterprise and affirms that its certification has not expired nor been revoked (Attach a copy of certification letter)
3. If the bidder is awarded the Contract, the undersigned intend to enter into a Subcontract to perform the work described on the following sheet for the prices indicated.

LETTER OF INTENT/SCHEDULE OF PARTICIPATION

(Attach Additional Sheets if Needed)

Contract Item No.	Description of Work To Be Performed by WBE / MBE/SDVOB Contractor / Subcontractor / Supplier	Estimated Quantity	Unit Price	Item Subtotal
Total Amount Credited to WBE / MBE / SDVOB:				
Total Project Bid Amount:				
Percent of WBE / MBE / SDVOB:				

The undersigned certifies that they will enter into a formal agreement upon execution of the Contract for the above referenced project pursuant to all conditions noted in the attached Contract Documents, swearing and affirming under the pains and penalties of perjury, that the foregoing information and appropriate attachments are true to the best of their knowledge.

NAME OF SUBCONTRACTOR / SUPPLIER: _____

AUTHORIZED SIGNATURE: _____

PRINTED NAME AND TITLE: _____

DATE: _____

NAME OF PRIME CONTRACTOR: _____

AUTHORIZED SIGNATURE: _____

PRINTED NAME AND TITLE: _____

DATE: _____

Note: If the Prime Contractor is a MBE, WBE, or SDVOB, the Prime Contractor should fill out and submit a copy of this form listing themselves as the Prime Contractor and the Subcontractor / Supplier.

Periodic Cost Estimate No.: _____

SUBCONTRACTOR / SUPPLIER
WOMEN BUSINESS ENTERPRISE (WBE),
MINORITY BUSINESS ENTERPRISE (MBE) AND SERVICE DISABLED VETERAN OWNED BUISNESS (SDVOB)
PROJECT EXPENDITURE REPORT

(To be filled out by the Contractor and the Subcontractor / Supplier and submitted with each Periodic Cost Estimate)

Project Name: _____

Airport: _____

NYSDOT PIN: _____

Prime Contractor

Company Name: _____

Subcontractor / Supplier Contractor

Company Name: _____

WBE Status:	□ Non-WBE □ Certified WBE (Check one)
MBE Status:	□ Non-MBE □ Certified MBE (Check one)
SDVOB Status:	□ Non-SDVOB □ Certified SDVOB (Check one)

Contract Item No.	Description of Work Performed by Subcontractor / Supplier	Estimated Quantity	Unit Price	Item Amount
Total amount requested by Subcontractor / Supplier this Invoice:				
Total amount previously requested by Subcontractor / Supplier:				
Total amount requested by Subcontractor / Supplier to date:				

(Attach additional sheets if needed)

Periodic Cost Estimate No.: _____

SUBCONTRACTOR / SUPPLIER
WOMEN BUSINESS ENTERPRISE (WBE),
MINORITY BUSINESS ENTERPRISE (MBE) AND SERVICE-DISABLED VETERAN OWNED BUISNESS (SDVOB)
PROJECT EXPENDITURE REPORT

The undersigned certifies that the Subcontractor / Supplier has successfully completed the above referenced work associated with this project and further assures that the Subcontractor / Supplier will be paid in full for the amount indicated above for said services in accordance with the Contract Documents.

NAME OF SUBCONTRACTOR / SUPPLIER: _____

AUTHORIZED SIGNATURE: _____

PRINTED NAME AND TITLE: _____

DATE: _____

NAME OF PRIME CONTRACTOR: _____

AUTHORIZED SIGNATURE: _____

PRINTED NAME AND TITLE: _____

DATE: _____

Note: If the Prime Contractor is a MBE, WBE, and SDVOB, the Prime Contractor should fill out and submit a copy of this form listing themselves as the Prime Contractor and the Subcontractor / Supplier.

TRADE RESTRICTION CERTIFICATION

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

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

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

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

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

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

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

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

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

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

Date	Signature
Company Name	Title

BIDDERS MUST RETURN THIS SHEET WITH THE PROPOSAL FORMS

BIDDERS LIST

All firms bidding or quoting on subcontracts for this NYSDOT-assisted project are listed below.

Firm Name	Address	Certified MBE, WBE or SDVOB (Y or N, and list which)	Age of Firm	GRS*

Note: This form is not necessary if the recipient establishes a bidders list using another methodology (e.g., statistically sound survey of firms, widely disseminated request of firms to report information to the recipient, etc.), as defined in the recipient's WBE/MBE/SDVOB plan.

*GRS – Annual Gross Receipts
Enter 1 for less than $1 million
Enter 2 for more than $1 million, less than $5 million
Enter 3 for more than $5 million, less than $10 million
Enter 4 for more than $10 million, less than $15 million
Enter 5 for more than $15 million

BROOME COUNTY
DIVISION OF PURCHASING
PROPOSAL SHEET

Greater Binghamton Airport Rehabilitation of Hangars 2&3 – Phase 2

The undersigned proposes and offers to furnish and deliver, for Broome County, **Greater Binghamton Airport Rehabilitation of Hangars 2&3 – Phase 2 Project** the specifications for which are attached. This proposal and offer is guaranteed to fulfill the minimum specifications as prepared by Broome County.

** This submission constitutes a certification that no Broome County Officer or employee has any interest herein. In the event that any Broome County Officer or employee has any such interest, the full nature thereof shall be disclosed.

NAME OF COMPANY: _____

ADDRESS OF COMPANY: _____

_____

NAME & TITLE OF OFFICER OR PERSON SIGNING THIS BID: _____

SIGNATURE:  _____ 

DATE: _____

TELEPHONE NUMBER: _____

FAX NUMBER: _____

800 NUMBER: _____

E-MAIL ADDRESS: _____

The guaranteed delivery date shall be _____ days from the date of placement of order(s) (ARO) by Broome County. In no event shall the guaranteed delivery date exceed two (2) working days from said placement of order.

BIDDERS MUST SUBMIT THIS ORIGINAL SHEET AND AN EXACT, CLEAR DUPLICATE.

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NON-COLLUSION BIDDING CERTIFICATE

Greater Binghamton Airport Rehabilitation of Hangars 2&3 – Phase 2

NON-COLLUSIVE BIDDING CERTIFICATION:

"(a) By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:

(1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

(2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and

(3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition."

_____

NAME OF COMPANY





_____

SIGNATURE & TITLE OF SIGNER

NOTE:

A bid shall not be considered for award nor shall any award be made where (a) (1), (2) and (3) above have not been complied with; provided, however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reason therefore. Where (a) (1), (2) and (3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

The fact that a bidder (a) has published price lists, rates or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publication of new or revised price lists for such items, or (c) has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of subparagraph one (a).

Any bid hereafter made to any political subdivision of the state or any public department, agency or official thereof by a corporate bidder for work or services performed or to be performed or goods sold or to be sold, where competitive bidding is required by statute, rule, regulation, or local law, and where such bid contains the certification referred to in subdivision one of this section, shall be deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation.

BIDDERS MUST SUBMIT THIS ORIGINAL SHEET AND AN EXACT, CLEAR DUPLICATE.

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IRANIAN ENERGY DIVESTMENT CERTIFICATION

Pursuant to Section 103-g
Of the New York State
General Municipal Law

A. By submission of this bid/proposal, each bidder/proposer and each person signing on behalf of any bidder/proposer certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the New York State Finance Law.

B. A Bid/Proposal shall not be considered for award, nor shall any award be made where the condition set forth in Paragraph A above has not been complied with; provided, however, that in any case the bidder/proposer cannot make the foregoing certification set forth in Paragraph A above, the bidder/proposer shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where Paragraph A above cannot be complied with, the Purchasing Unit to the political subdivision, public department, agency or official thereof to which the bid/proposal is made, or his designee, may award a bid/proposal, on a case by case business under the following circumstances:

1. The investment activities in Iran were made before April 12, 2012, the investment activities in Iran have not been expanded or renewed after April 12, 2012, and the Bidder/Proposer has adopted, publicized and is implementing a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran; or

2. The political subdivision makes a determination that the goods or services are necessary for the political subdivision to perform its functions and that, absent such an exemption, the political subdivision would be unable to obtain the goods or services for which the contract is offered. Such determination shall be made in writing and shall be a public document.



_____
(Signature)

_____
Title

BIDDERS MUST SUBMIT THIS ORIGINAL SHEET AND AN EXACT, CLEAR DUPLICATE.

Form BC-3

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ELECTION LAW STATEMENT:

I, _____ state that I am the _____ of
(Type or print name of individual) (Position)

_____. In the calendar year immediately preceding the date of this
(Vendor)

Statement, _____ has not made a contribution which exceeded
(Vendor)

the permitted thresholds (thresholds limits are available at the Broome County Board of

Elections) set forth in Article 14 of the Election Law of the State of New York.

Dated:_____

By: _____
(Signature of individual)

BIDDERS MUST SUBMIT THIS ORIGINAL SHEET AND AN EXACT, CLEAR DUPLICATE.

GIFTS STATEMENT

Gifts signed statement: The County shall require a signed statement for any contract or agreement that requires formal bidding under the New York State General Municipal Law, the Broome County Charter or Local Law of Broome county that discloses all gifts given, if any, by the bidding professional business entity (the bidder) to any officer or employee of the County of Broome.

CERTIFICATION

I, _____ state that I am the _____ of
(Print or type name of individual) (Position)

_____. In the calendar year immediately preceding
(Vendor)

the date of this Statement, _____ has made the following gifts
(Vendor)

to Officers and / or Employees of the County of Broome:

Name of County Officer / Employee and item description	Value of Gift
_____	$_____
_____	$_____
_____	$_____
_____	$_____
_____	$_____
_____	$_____
_____	$_____

(add additional sheets if necessary)

_____ I did not provide gifts to Officers or Employees of Broome Co.

Dated:_____

By: _____
(Signature of individual)

BIDDERS MUST SUBMIT THIS ORIGINAL SHEET AND AN EXACT, CLEAR DUPLICATE.

Form BC-5

INSURANCE ACKNOWLEDGEMENT

THE FOLLOWING INSURANCE ACKNOWLEDGEMENT MUST BE COMPLETED AND SIGNED AND SUBMITTED WITH BID EVEN IF THE BIDDER IS UNABLE TO PROVIDE THEIR CERTIFICATE OF INSURANCE WITH THEIR BID.

THE CERTIFICATE OF INSURANCE AND RELATED ENDORSEMENT MUST STILL BE PROVIDED PRIOR TO THE ISSUANCE OF A CONTRACT OR PURCHASE ORDER.

The _____, if a successful bidder, agrees to provide
(Company Name)
an insurance certificate w/endorsement, in compliance with the insurance requirements set forth in this bid:

BID TITLE:

Authorized Signature  _____ 

Name & Title of
Authorized Signer: _____

Dated: _____

Insurance Agency: _____

Address of Agency: _____

_____

Contact Person
at Agency: _____

Phone Number
of Agency: _____

BIDDERS MUST SUBMIT THIS ORIGINAL SHEET AND AN EXACT, CLEAR DUPLICATE.

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Form **W-9**
(Rev. December 2014)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See **Specific Instructions** on page 2.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification; check only **one** of the following seven boxes:

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____

Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.)

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number

			–			–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here **Signature of U.S. person** ▶ **Date** ▶

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at *www.irs.gov/fw9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code* on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships* above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.ssa.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: *A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.*

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor[2]
4. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee[1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner[1]
5. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	**Give name and EIN of:**
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity[4]
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 2.

***Note.** Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov.* You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: *spam@uce.gov* or contact them at *www.ftc.gov/idtheft* or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

Offerer's Certification of Adherence to Executive Order 177 regarding Anti-Discriminatory Policies and Practices

The New York State Human Rights Law, Article 15 of the Executive Law, prohibits discrimination and harassment based on age, race, creed, color, national origin, sex, pregnancy or pregnancy-related conditions, sexual orientation, gender identity, disability, marital status, familial status, domestic violence victim status, prior arrest or conviction record, military status or predisposing genetic characteristics.

The Human Rights Law may also require reasonable accommodation for persons with disabilities and pregnancy-related conditions. A reasonable accommodation is an adjustment to a job or work environment that enables a person with a disability to perform the essential functions of a job in a reasonable manner. The Human Rights Law may also require reasonable accommodation in employment on the basis of Sabbath observance or religious practices.

Generally, the Human Rights Law applies to:

- all employers of four or more people, employment agencies, labor organizations and apprenticeship training programs in all instances of discrimination or harassment;
- employers with fewer than four employees in all cases involving sexual harassment; and,
- any employer of domestic workers in cases involving sexual harassment or harassment based on gender, race, religion or national origin.

In accordance with Executive Order No. 177, the Bidder hereby certifies that it does not have institutional policies or practices that fail to address the harassment and discrimination of individuals on the basis of their age, race, creed, color, national origin, sex, sexual orientation, gender identity, disability, marital status, military status, or other protected status under the Human Rights Law.

Executive Order No. 177 and this certification do not affect institutional policies or practices that are protected by existing law, including but not limited to the First Amendment of the United States Constitution, Article 1, Section 3 of the New York State Constitution, and Section 296(11) of the New York State Human Rights Law.

Offerer Certification:

I certify adherence to Executive Order No. 177.

Signature:_____ Date:_____

Printed Name: _____

Title: _____

Contractor Name: _____

Contractor Address: _____

Certification Under Executive Order No. 16
Prohibiting State Agencies and Authorities from Contracting with Businesses Conducting Business in Russia

Executive Order No. 16 provides that "all Affected State Entities are directed to refrain from entering into any new contract or renewing any existing contract with an entity conducting business operations in Russia." The complete text of Executive Order No. 16 can be found here.

The Executive Order remains in effect while sanctions imposed by the federal government are in effect. Accordingly, vendors who may be excluded from award because of current business operations in Russia are nevertheless encouraged to respond to solicitations to preserve their contracting opportunities in case the sanctions are lifted during a solicitation or even after award in the case of some solicitations.

As defined in Executive Order No. 16, an "entity conducting business operations in Russia" means an institution or company, wherever located, conducting any commercial activity in Russia or transacting business with the Russian Government or with commercial entities headquartered in Russia or with their principal place of business in Russia in the form of contracting, sales, purchasing, investment, or any business partnership.

Is Vendor an entity conducting business operations in Russia, as defined above? Please answer by checking one of the following boxes:

1. No, Vendor does not conduct business operations in Russia within the meaning of Executive Order No. 16.

2.a. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but has taken steps to wind down business operations in Russia or is in the process of winding down business operations in Russia. (Please provide a detailed description of the wind down process and a schedule for completion.)

2.b. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but only to the extent necessary to provide vital health and safety services within Russia or to comply with federal law, regulations, executive orders, or directives. (Please provide a detailed description of the services being provided or the relevant laws, regulations, etc.)

3. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16.

The undersigned certifies under penalties of perjury that they are knowledgeable about the Vendor's business and operations and that the answer provided herein is true to the best of their knowledge and belief.

Vendor Name: (legal entity) _____

By: (signature) _____

Name: _____

Title: _____

Date: _____

NEW YORK STATE | Office for the Prevention of Domestic Violence

Gender-Based Violence and the Workplace Certification

New York State Finance Law §139-M requires bidders on competitive state procurements to certify that they have a written policy addressing gender-based violence and the workplace and that such policy meets the following minimum requirements:

- **Share Information:** Employers must provide information regarding gender-based violence where employees can see and access it, including displaying the NYS Domestic and Sexual Violence Hotline information and a gender-based violence and the workplace poster.
- **Refer Employee-Survivors to Services:** The policy must require that the employer refer employees who disclose current or past victim status to the NYS Domestic and Sexual Violence Hotline and/or a local service provider. For bidders outside of New York State, referrals should be made to a local provider or statewide hotline. While referrals are required to be provided by the employer, it is not required for the employee to access services.
- **Prohibit Retaliation:** The policy must clearly state that discrimination or retaliation against employees who identify as victims or survivors of gender-based violence is prohibited.
- **Comply with Laws:** Ensure your policy follows State law. For employers based in New York State, this means that the policy must follow the SAFE Leave Act, New York State Human Rights Law, and any other relevant laws and regulations.
- **Offer Implementation Support:** OPDV is able to assist employers in developing and implementing this policy. Employers must provide information to supervisors and human resources, where available, about this technical assistance from OPDV. OPDV can be contacted at workplace@opdv.ny.gov.

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing gender-based violence and the workplace and has provided such policy to all of its employees, directors and board members. Such policy shall, at a minimum, meet the requirements of subdivision 11 of section five hundred seventy-five of the executive law.

Organization's signature below certifies its compliance with State Finance Law §139-M.

Organization: _____

By (signature): _____

Name (Please Print): _____

Title: _____

Date: _____

This form must be signed by an authorized executive or legal representative.

If the organization cannot make the above certification, they must provide an attached statement with their bid detailing the reasons therefor.

DIVISION 1 - SPECIFICATIONS

SPECIAL PROVISIONS

FAA Advisory Circular (AC) 150/5370-2G, Operational Safety on Airports during Construction

(SP-7)

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U.S. Department
of Transportation
Federal Aviation
Administration

Advisory Circular

Subject: Operational Safety on Airports During Construction	**Date:** 12/13/2017 **Initiated By:** AAS-100	**AC No:** 150/5370-2G **Change:**

1 **Purpose.**

This AC sets forth guidelines for operational safety on airports during construction.

2 **Cancellation.**

This AC cancels AC 150/5370-2F, *Operational Safety on Airports during Construction*, dated September 29, 2011.

3 **Application.**

This AC assists airport operators in complying with Title 14 Code of Federal Regulations (CFR) Part 139, *Certification of Airports*. For those certificated airports, this AC provides one way, but not the only way, of meeting those requirements. The use of this AC is mandatory for those airport construction projects receiving funds under the Airport Improvement Program (AIP). See Grant Assurance No. 34, *Policies, Standards, and Specifications*. While we do not require non-certificated airports without grant agreements or airports using Passenger Facility Charge (PFC) Program funds for construction projects to adhere to these guidelines, we recommend that they do so to help these airports maintain operational safety during construction.

4 **Related Documents.**

ACs and Orders referenced in the text of this AC do not include a revision letter, as they refer to the latest version. Appendix A contains a list of reading material on airport construction, design, and potential safety hazards during construction, as well as instructions for obtaining these documents.

5 **Principal Changes.**

The AC incorporates the following principal changes:

1. Notification about impacts to both airport owned and FAA-owned NAVAIDs was added. See paragraph 2.13.5.3, NAVAIDs.

2. Guidance for the use of orange construction signs was added. See paragraph 2.18.4.2, Temporary Signs.
3. Open trenches or excavations may be permitted in the taxiway safety area while the taxiway is open to aircraft operations, subject to restrictions. See paragraph 2.22.3.4, Excavations.
4. Guidance for temporary shortened runways and displaced thresholds has been enhanced. See Figure 2-1 and Figure 2-2.
5. Figures have been improved and a new Appendix F on the placement of orange construction signs has been added.

Hyperlinks (allowing the reader to access documents located on the internet and to maneuver within this document) are provided throughout this document and are identified with underlined text. When navigating within this document, return to the previously viewed page by pressing the "ALT" and " ←" keys simultaneously.

Figures in this document are schematic representations and are not to scale.

6 **Use of Metrics.**

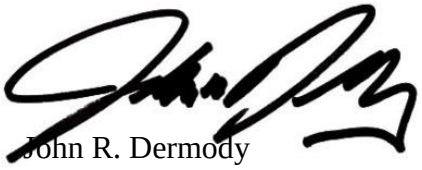
Throughout this AC, U.S. customary units are used followed with "soft" (rounded) conversion to metric units. The U.S. customary units govern.

7 **Where to Find this AC.**

You can view a list of all ACs at http://www.faa.gov/regulations_policies/advisory_circulars/. You can view the Federal Aviation Regulations at http://www.faa.gov/regulations_policies/faa_regulations/.

8 **Feedback on this AC.**

If you have suggestions for improving this AC, you may use the Advisory Circular Feedback form at the end of this AC.



John R. Dermody
Director of Airport Safety and Standards

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CHAPTER 1. PLANNING AN AIRFIELD CONSTRUCTION PROJECT

1.1 Overview.

Airports are complex environments, and procedures and conditions associated with construction activities often affect aircraft operations and can jeopardize operational safety. Safety considerations are paramount and may make operational impacts unavoidable. However, careful planning, scheduling, and coordination of construction activities can minimize disruption of normal aircraft operations and avoid situations that compromise the airport's operational safety. The airport operator must understand how construction activities and aircraft operations affect one another to be able to develop an effective plan to complete the project. While the guidance in this AC is primarily used for construction operations, the concepts, methods and procedures described may also enhance the day-to-day airport maintenance operations, such as lighting maintenance and snow removal operations.

1.2 Plan for Safety.

Safety, maintaining aircraft operations, and construction costs are all interrelated. Since safety must not be compromised, the airport operator must strike a balance between maintaining aircraft operations and construction costs. This balance will vary widely depending on the operational needs and resources of the airport and will require early coordination with airport users and the FAA. As the project design progresses, the necessary construction locations, activities, and associated costs will be identified and their impact to airport operations must be assessed. Adjustments are made to the proposed construction activities, often by phasing the project, and/or to airport operations to maintain operational safety. This planning effort will ultimately result in a project Construction Safety and Phasing Plan (CSPP). The development of the CSPP takes place through the following five steps:

1.2.1 Identify Affected Areas.

The airport operator must determine the geographic areas on the airport affected by the construction project. Some, such as a runway extension, will be defined by the project. Others may be variable, such as the location of haul routes and material stockpiles.

1.2.2 Describe Current Operations.

Identify the normal airport operations in each affected area for each phase of the project. This becomes the baseline from which the impact on operations by construction activities can be measured. This should include a narrative of the typical users and aircraft operating within the affected areas. It should also include information related to airport operations: the Aircraft Approach Category (AAC) and Airplane Design Group (ADG) of the airplanes that operate on each runway; the ADG and Taxiway Design Group (TDG)[1] for each affected taxiway; designated approach visibility minimums;

[1] Find Taxiway Design Group information in AC 150/5300-13, *Airport Design.*

available approach and departure procedures; most demanding aircraft; declared distances; available air traffic control services; airport Surface Movement Guidance and Control System (SMGCS) plan; and others. The applicable seasons, days and times for certain operations should also be identified as applicable.

1.2.3 Allow for Temporary Changes to Operations.

To the extent practical, current airport operations should be maintained during the construction. In consultation with airport users, Aircraft Rescue and Fire Fighting (ARFF) personnel, and FAA Air Traffic Organization (ATO) personnel, the airport operator should identify and prioritize the airport's most important operations. The construction activities should be planned, through project phasing if necessary, to safely accommodate these operations. When the construction activities cannot be adjusted to safely maintain current operations, regardless of their importance, then the operations must be revised accordingly. Allowable changes include temporary revisions to approach procedures, restricting certain aircraft to specific runways and taxiways, suspension of certain operations, decreased weights for some aircraft due to shortened runways, and other changes. An example of a table showing temporary operations versus current operations is shown in Appendix E.

1.2.4 Take Required Measures to Revise Operations.

Once the level and type of aircraft operations to be maintained are identified, the airport operator must determine the measures required to safely conduct the planned operations during the construction. These measures will result in associated costs, which can be broadly interpreted to include not only direct construction costs, but also loss of revenue from impacted operations. Analysis of costs may indicate a need to reevaluate allowable changes to operations. As aircraft operations and allowable changes will vary widely among airports, this AC presents general guidance on those subjects.

1.2.5 Manage Safety Risk.

The FAA is committed to incorporating proactive safety risk management (SRM) tools into its decision-making processes. FAA Order 5200.11, *FAA Airports (ARP) Safety Management System (SMS)*, requires the FAA to conduct a Safety Assessment for certain triggering actions. Certain airport projects may require the airport operator to provide a Project Proposal Summary to help the FAA determine whether a Safety Assessment is required prior to FAA approval of the CSPP. The airport operator must coordinate with the appropriate FAA Airports Regional or District Office early in the development of the CSPP to determine the need for a Safety Risk Assessment. If the FAA requires an assessment, the airport operator must at a minimum:

1. Notify the appropriate FAA Airports Regional or District Office during the project "scope development" phase of any project requiring a CSPP.
2. Provide documents identified by the FAA as necessary to conduct SRM.
3. Participate in the SRM process for airport projects.
4. Provide a representative to participate on the SRM panel.

5. Ensure that all applicable SRM identified risks elements are recorded and mitigated within the CSPP.

1.3 **Develop a Construction Safety and Phasing Plan (CSPP).**

Development of an effective CSPP will require familiarity with many other documents referenced throughout this AC. See Appendix A for a list of related reading material.

1.3.1 List Requirements.

A CSPP must be developed for each on-airfield construction project funded by the Airport Improvement Program (AIP) or located on an airport certificated under Part 139. For on-airfield construction projects at Part 139 airports funded without AIP funds, the preparation of a CSPP represents an acceptable method the certificate holder may use to meet Part 139 requirements during airfield construction activity. As per FAA Order 5200.11, projects that require Safety Assessments do not include construction, rehabilitation, or change of any facility that is entirely outside the air operations area, does not involve any expansion of the facility envelope and does not involve construction equipment, haul routes or placement of material in locations that require access to the air operations area, increase the facility envelope, or impact line-of-sight. Such facilities may include passenger terminals and parking or other structures. However, extraordinary circumstances may trigger the need for a Safety Assessment and a CSPP. The CSPP is subject to subsequent review and approval under the FAA's Safety Risk Management procedures (see paragraph 1.2.5).

1.3.2 Prepare a Safety Plan Compliance Document (SPCD).

The Safety Plan Compliance Document (SPCD) details how the contractor will comply with the CSPP. Also, it will not be possible to determine all safety plan details (for example specific hazard equipment and lighting, contractor's points of contact, construction equipment heights) during the development of the CSPP. The successful contractor must define such details by preparing an SPCD that the airport operator reviews for approval prior to issuance of a notice-to-proceed. The SPCD is a subset of the CSPP, similar to how a shop drawing review is a subset to the technical specifications.

1.3.3 Assume Responsibility for the CSPP.

The airport operator is responsible for establishing and enforcing the CSPP. The airport operator may use the services of an engineering consultant to help develop the CSPP. However, writing the CSPP cannot be delegated to the construction contractor. Only those details the airport operator determines cannot be addressed before contract award are developed by the contractor and submitted for approval as the SPCD. The SPCD does not restate nor propose differences to provisions already addressed in the CSPP.

1.4 Who Is Responsible for Safety During Construction?

1.4.1 Establish a Safety Culture.

Everyone has a role in operational safety on airports during construction: the airport operator, the airport's consultants, the construction contractor and subcontractors, airport users, airport tenants, ARFF personnel, Air Traffic personnel, including Technical Operations personnel, FAA Airports Division personnel, and others, such as military personnel at any airport supporting military operations (e.g. national guard or a joint use facility). Close communication and coordination between all affected parties is the key to maintaining safe operations. Such communication and coordination should start at the project scoping meeting and continue through the completion of the project. The airport operator and contractor should conduct onsite safety inspections throughout the project and immediately remedy any deficiencies, whether caused by negligence, oversight, or project scope change.

1.4.2 Assess Airport Operator's Responsibilities.

An airport operator has overall responsibility for all activities on an airport, including construction. This includes the predesign, design, preconstruction, construction, and inspection phases. Additional information on the responsibilities listed below can be found throughout this AC. The airport operator must:

1.4.2.1 Develop a CSPP that complies with the safety guidelines of Chapter 2, Construction Safety and Phasing Plans, and Chapter 3, Guidelines for Writing a CSPP. The airport operator may develop the CSPP internally or have a consultant develop the CSPP for approval by the airport operator. For tenant sponsored projects, approve a CSPP developed by the tenant or its consultant.

1.4.2.2 Require, review and approve the SPCD by the contractor that indicates how it will comply with the CSPP and provides details that cannot be determined before contract award.

1.4.2.3 Convene a preconstruction meeting with the construction contractor, consultant, airport employees and, if appropriate, tenant sponsor and other tenants to review and discuss project safety before beginning construction activity. The appropriate FAA representatives should be invited to attend the meeting. See AC 150/5370-12, *Quality Management for Federally Funded Airport Construction Projects.* (Note "FAA" refers to the Airports Regional or District Office, the Air Traffic Organization, Flight Standards Service, and other offices that support airport operations, flight regulations, and construction/environmental policies.)

1.4.2.4 Ensure contact information is accurate for each representative/point of contact identified in the CSPP and SPCD.

1.4.2.5 Hold weekly or, if necessary, daily safety meetings with all affected parties to coordinate activities.

1.4.2.6 Notify users, ARFF personnel, and FAA ATO personnel of construction and conditions that may adversely affect the operational safety of the airport via Notices to Airmen (NOTAM) and other methods, as appropriate. Convene a meeting for review and discussion if necessary.

1.4.2.7 Ensure construction personnel know applicable airport procedures and changes to those procedures that may affect their work.

1.4.2.8 Ensure that all temporary construction signs are located per the scheduled list for each phase of the project.

1.4.2.9 Ensure construction contractors and subcontractors undergo training required by the CSPP and SPCD.

1.4.2.10 Ensure vehicle and pedestrian operations addressed in the CSPP and SPCD are coordinated with airport tenants, the airport traffic control tower (ATCT), and construction contractors.

1.4.2.11 At certificated airports, ensure each CSPP and SPCD is consistent with Part 139.

1.4.2.12 Conduct inspections sufficiently frequently to ensure construction contractors and tenants comply with the CSPP and SPCD and that there are no altered construction activities that could create potential safety hazards.

1.4.2.13 Take immediate action to resolve safety deficiencies.

1.4.2.14 At airports subject to 49 CFR Part 1542, *Airport Security*, ensure construction access complies with the security requirements of that regulation.

1.4.2.15 Notify appropriate parties when conditions exist that invoke provisions of the CSPP and SPCD (for example, implementation of low-visibility operations).

1.4.2.16 Ensure prompt submittal of a Notice of Proposed Construction or Alteration (Form 7460-1) for conducting an aeronautical study of potential obstructions such as tall equipment (cranes, concrete pumps, other), stock piles, and haul routes. A separate form may be filed for each potential obstruction, or one form may be filed describing the entire construction area and maximum equipment height. In the latter case, a separate form must be filed for any object beyond or higher than the originally evaluated area/height. The FAA encourages online submittal of forms for expediency at https://oeaaa.faa.gov/oeaaa/external/portal.jsp. The appropriate FAA Airports Regional or District Office can provide assistance in determining which objects require an aeronautical study.

1.4.2.17 Ensure prompt transmission of the Airport Sponsor Strategic Event Submission, FAA Form 6000-26, located at https://oeaaa.faa.gov/oeaaa/external/content/AIRPORT_SPONSOR_STRATEGIC_EVENT_SUBMISSION_FORM.pdf, to assure proper coordination for NAS Strategic Interruption per Service Level Agreement with ATO.

1.4.2.18 Promptly notify the FAA Airports Regional or District Office of any proposed changes to the CSPP prior to implementation of the change. Changes to the CSPP require review and approval by the airport operator and the FAA. The FAA Airports Regional or District office will determine if further coordination within the FAA is needed. Coordinate with appropriate local and other federal government agencies, such as Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), Transportation Security Administration (TSA), and the state environmental agency.

1.4.3 Define Construction Contractor's Responsibilities.

The contractor is responsible for complying with the CSPP and SPCD. The contractor must:

1.4.3.1 Submit a Safety Plan Compliance Document (SPCD) to the airport operator describing how it will comply with the requirements of the CSPP and supply any details that could not be determined before contract award. The SPCD must include a certification statement by the contractor, indicating an understanding of the operational safety requirements of the CSPP and the assertion of compliance with the approved CSPP and SPCD unless written approval is granted by the airport operator. Any construction practice proposed by the contractor that does not conform to the CSPP and SPCD may impact the airport's operational safety and will require a revision to the CSPP and SPCD and re-coordination with the airport operator and the FAA in advance.

1.4.3.2 Have available at all times copies of the CSPP and SPCD for reference by the airport operator and its representatives, and by subcontractors and contractor employees.

1.4.3.3 Ensure that construction personnel are familiar with safety procedures and regulations on the airport. Provide a point of contact who will coordinate an immediate response to correct any construction-related activity that may adversely affect the operational safety of the airport. Many projects will require 24-hour coverage.

1.4.3.4 Identify in the SPCD the contractor's on-site employees responsible for monitoring compliance with the CSPP and SPCD during construction. At least one of these employees must be on-site when active construction is taking place.

1.4.3.5 Conduct sufficient inspections to ensure construction personnel comply with the CSPP and SPCD and that there are no altered construction activities that could create potential safety hazards.

1.4.3.6 Restrict movement of construction vehicles and personnel to permitted construction areas by flagging, barricading, erecting temporary fencing, or providing escorts, as appropriate, and as specified in the CSPP and SPCD.

1.4.3.7 Ensure that no contractor employees, employees of subcontractors or suppliers, or other persons enter any part of the air operations area (AOA) from the construction site unless authorized.

1.4.3.8 Ensure prompt submittal through the airport operator of Form 7460-1 for the purpose of conducting an aeronautical study of contractor equipment such as tall equipment (cranes, concrete pumps, and other equipment), stock piles, and haul routes when different from cases previously filed by the airport operator. The FAA encourages online submittal of forms for expediency at https://oeaaa.faa.gov/oeaaa/external/portal.jsp.

1.4.3.9 Ensure that all necessary safety mitigations are understood by all parties involved, and any special requirements of each construction phase will be fulfilled per the approved timeframe.

1.4.3.10 Participate in pre-construction meetings to review construction limits, safety mitigations, NOTAMs, and understand all special airport operational needs during each phase of the project.

1.4.4 Define Tenant's Responsibilities.

If planning construction activities on leased property, Airport tenants, such as airline operators, fixed base operators, and FAA ATO/Technical Operations sponsoring construction are strongly encouraged to:

1. Develop, or have a consultant develop, a project specific CSPP and submit it to the airport operator. The airport operator may forgo a complete CSPP submittal and instead incorporate appropriate operational safety principles and measures addressed in the advisory circular within their tenant lease agreements.
2. In coordination with its contractor, develop an SPCD and submit it to the airport operator for approval issued prior to issuance of a Notice to Proceed.
3. Ensure that construction personnel are familiar with safety procedures and regulations on the airport during all phases of the construction.
4. Provide a point of contact of who will coordinate an immediate response to correct any construction-related activity that may adversely affect the operational safety of the airport.
5. Identify in the SPCD the contractor's on-site employees responsible for monitoring compliance with the CSPP and SPCD during construction. At least one of these employees must be on-site when active construction is taking place.
6. Ensure that no tenant or contractor employees, employees of subcontractors or suppliers, or any other persons enter any part of the AOA from the construction site unless authorized.
7. Restrict movement of construction vehicles to construction areas by flagging and barricading, erecting temporary fencing, or providing escorts, as appropriate, as specified in the CSPP and SPCD.
8. Ensure prompt submittal through the airport operator of Form 7460-1 for conducting an aeronautical study of contractor equipment such as tall equipment (cranes, concrete pumps, other), stock piles, and haul routes. The FAA encourages online submittal of forms for expediency at https://oeaaa.faa.gov/oeaaa/external/portal.jsp.
9. Participate in pre-construction meetings to review construction limits, safety mitigations, NOTAMs, and understand all special airport operational needs during each phase of the project.

CHAPTER 2. CONSTRUCTION SAFETY AND PHASING PLANS

2.1 Overview.

Aviation safety is the primary consideration at airports, especially during construction. The airport operator's CSPP and the contractor's Safety Plan Compliance Document (SPCD) are the primary tools to ensure safety compliance when coordinating construction activities with airport operations. These documents identify all aspects of the construction project that pose a potential safety hazard to airport operations and outline respective mitigation procedures for each hazard. They must provide information necessary for the Airport Operations department to conduct airfield inspections and expeditiously identify and correct unsafe conditions during construction. All aviation safety provisions included within the project drawings, contract specifications, and other related documents must also be reflected in the CSPP and SPCD.

2.2 Assume Responsibility.

Operational safety on the airport remains the airport operator's responsibility at all times. The airport operator must develop, certify, and submit for FAA approval each CSPP. It is the airport operator's responsibility to apply the requirements of the FAA approved CSPP. The airport operator must revise the CSPP when conditions warrant changes and must submit the revised CSPP to the FAA for approval. The airport operator must also require and approve a SPCD from the project contractor.

2.3 Submit the CSPP.

Construction Safety and Phasing Plans should be developed concurrently with the project design. Milestone versions of the CSPP should be submitted for review and approval as follows. While these milestones are not mandatory, early submission will help to avoid delays. Submittals are preferred in 8.5 × 11 inch or 11 × 17 inch format for compatibility with the FAA's Obstruction Evaluation / Airport Airspace Analysis (OE / AAA) process.

2.3.1 Submit an Outline/Draft.

By the time approximately 25% to 30% of the project design is completed, the principal elements of the CSPP should be established. Airport operators are encouraged to submit an outline or draft, detailing all CSPP provisions developed to date, to the FAA for review at this stage of the project design.

2.3.2 Submit a CSPP.

The CSPP should be formally submitted for FAA approval when the project design is 80 percent to 90 percent complete. Since provisions in the CSPP will influence contract costs, it is important to obtain FAA approval in time to include all such provisions in the procurement contract.

2.3.3 Submit an SPCD.

The contractor should submit the SPCD to the airport operator for approval to be issued prior to the Notice to Proceed.

2.3.4 Submit CSPP Revisions.

All revisions to a previously approved CSPP must be re-submitted to the FAA for review and approval/disapproval action.

2.4 Meet CSPP Requirements.

2.4.1 To the extent possible, the CSPP should address the following as outlined in Chapter 3, Guidelines for Writing a CSPP. Details that cannot be determined at this stage are to be included in the SPCD.

1. Coordination.
    a. Contractor progress meetings.
    b. Scope or schedule changes.
    c. FAA ATO coordination.
2. Phasing.
    a. Phase elements.
    b. Construction safety drawings.
3. Areas and operations affected by the construction activity.
    a. Identification of affected areas.
    b. Mitigation of effects.
4. Protection of navigation aids (NAVAIDs).
5. Contractor access.
    a. Location of stockpiled construction materials.
    b. Vehicle and pedestrian operations.
6. Wildlife management.
    a. Trash.
    b. Standing water.
    c. Tall grass and seeds.
    d. Poorly maintained fencing and gates.
    e. Disruption of existing wildlife habitat.
7. Foreign Object Debris (FOD) management.
8. Hazardous materials (HAZMAT) management.
9. Notification of construction activities.

a. Maintenance of a list of responsible representatives/ points of contact.

b. NOTAM.

c. Emergency notification procedures.

d. Coordination with ARFF Personnel.

e. Notification to the FAA.

10. Inspection requirements.

a. Daily (or more frequent) inspections.

b. Final inspections.

11. Underground utilities.

12. Penalties.

13. Special conditions.

14. Runway and taxiway visual aids. Marking, lighting, signs, and visual NAVAIDs.

a. General.

b. Markings.

c. Lighting and visual NAVAIDs.

d. Signs, temporary, including orange construction signs, and permanent signs.

15. Marking and signs for access routes.

16. Hazard marking and lighting.

a. Purpose.

b. Equipment.

17. Work zone lighting for nighttime construction (if applicable).

18. Protection of runway and taxiway safety areas, object free areas, obstacle free zones, and approach/departure surfaces.

a. Runway Safety Area (RSA).

b. Runway Object Free Area (ROFA).

c. Taxiway Safety Area (TSA). Provide details for any adjustments to Taxiway Safety Area width to allow continued operation of smaller aircraft. See paragraph 2.22.3.

d. Taxiway Object Free Area (TOFA). Provide details for any continued aircraft operations while construction occurs within the TOFA. See paragraph 2.22.4.

e. Obstacle Free Zone (OFZ).

f. Runway approach/departure surfaces.

19. Other limitations on construction.

a. Prohibitions.

b. Restrictions.

2.4.2 The Safety Plan Compliance Document (SPCD) should include a general statement by the construction contractor that he/she has read and will abide by the CSPP. In addition, the SPCD must include all supplemental information that could not be included in the CSPP prior to the contract award. The contractor statement should include the name of the contractor, the title of the project CSPP, the approval date of the CSPP, and a reference to any supplemental information (that is, "I, (Name of Contractor), have read the (Title of Project) CSPP, approved on (Date), and will abide by it as written and with the following additions as noted:"). The supplemental information in the SPCD should be written to match the format of the CSPP indicating each subject by corresponding CSPP subject number and title. If no supplemental information is necessary for any specific subject, the statement, "No supplemental information," should be written after the corresponding subject title. The SPCD should not duplicate information in the CSPP:

1. Coordination. Discuss details of proposed safety meetings with the airport operator and with contractor employees and subcontractors.
2. Phasing. Discuss proposed construction schedule elements, including:
   a. Duration of each phase.
   b. Daily start and finish of construction, including "night only" construction.
   c. Duration of construction activities during:
      i. Normal runway operations.
      ii. Closed runway operations.
      iii. Modified runway "Aircraft Reference Code" usage.
3. Areas and operations affected by the construction activity. These areas and operations should be identified in the CSPP and should not require an entry in the SPCD.
4. Protection of NAVAIDs. Discuss specific methods proposed to protect operating NAVAIDs.
5. Contractor access. Provide the following:
   a. Details on how the contractor will maintain the integrity of the airport security fence (gate guards, daily log of construction personnel, and other).
   b. Listing of individuals requiring driver training (for certificated airports and as requested).
   c. Radio communications.
      i. Types of radios and backup capabilities.
      ii. Who will be monitoring radios.
      iii. Who to contact if the ATCT cannot reach the contractor's designated person by radio.

d. Details on how the contractor will escort material delivery vehicles.

6. Wildlife management. Discuss the following:
   a. Methods and procedures to prevent wildlife attraction.
   b. Wildlife reporting procedures.
7. Foreign Object Debris (FOD) management. Discuss equipment and methods for control of FOD, including construction debris and dust.
8. Hazardous Materials (HAZMAT) management. Discuss equipment and methods for responding to hazardous spills.
9. Notification of construction activities. Provide the following:
   a. Contractor points of contact.
   b. Contractor emergency contact.
   c. Listing of tall or other requested equipment proposed for use on the airport and the timeframe for submitting 7460-1 forms not previously submitted by the airport operator.
   d. Batch plant details, including 7460-1 submittal.
10. Inspection requirements. Discuss daily (or more frequent) inspections and special inspection procedures.
11. Underground utilities. Discuss proposed methods of identifying and protecting underground utilities.
12. Penalties. Penalties should be identified in the CSPP and should not require an entry in the SPCD.
13. Special conditions. Discuss proposed actions for each special condition identified in the CSPP.
14. Runway and taxiway visual aids. Including marking, lighting, signs, and visual NAVAIDs. Discuss proposed visual aids including the following:
   a. Equipment and methods for covering signage and airfield lights.
   b. Equipment and methods for temporary closure markings (paint, fabric, other).
   c. Temporary orange construction signs.
   d. Types of temporary Visual Guidance Slope Indicators (VGSI).
15. Marking and signs for access routes. Discuss proposed methods of demarcating access routes for vehicle drivers.
16. Hazard marking and lighting. Discuss proposed equipment and methods for identifying excavation areas.
17. Work zone lighting for nighttime construction (if applicable). Discuss proposed equipment, locations, aiming, and shielding to prevent interference with air traffic control and aircraft operations.

18. Protection of runway and taxiway safety areas, object free areas, obstacle free zones, and approach/departure surfaces. Discuss proposed methods of identifying, demarcating, and protecting airport surfaces including:
    a. Equipment and methods for maintaining Taxiway Safety Area standards.
    b. Equipment and methods to ensure the safe passage of aircraft where Taxiway Safety Area or Taxiway Object Free Area standards cannot be maintained.
    c. Equipment and methods for separation of construction operations from aircraft operations, including details of barricades.
19. Other limitations on construction should be identified in the CSPP and should not require an entry in the SPCD.

2.5 **Coordination.**

Airport operators, or tenants responsible for design, bidding and conducting construction on their leased properties, should ensure at all project developmental stages, such as predesign, prebid, and preconstruction conferences, they capture the subject of airport operational safety during construction (see AC 150/5370-12, *Quality Management for Federally Funded Airport Construction Projects*). In addition, the following should be coordinated as required:

2.5.1 Progress Meetings.

Operational safety should be a standing agenda item for discussion during progress meetings throughout the project developmental stages.

2.5.2 Scope or Schedule Changes.

Changes in the scope or duration at any of the project stages may require revisions to the CSPP and review and approval by the airport operator and the FAA (see paragraph 1.4.2.17).

2.5.3 FAA ATO Coordination.

Early coordination with FAA ATO is highly recommended during the design phase and is required for scheduling Technical Operations shutdowns prior to construction. Coordination is critical to restarts of NAVAID services and to the establishment of any special procedures for the movement of aircraft. Formal agreements between the airport operator and appropriate FAA offices are recommended. All relocation or adjustments to NAVAIDs, or changes to final grades in critical areas, should be coordinated with FAA ATO and may require an FAA flight inspection prior to restarting the facility. Flight inspections must be coordinated and scheduled well in advance of the intended facility restart. Flight inspections may require a reimbursable agreement between the airport operator and FAA ATO. Reimbursable agreements should be coordinated a minimum of 12 months prior to the start of construction. (See paragraph 2.13.5.3.2 for required FAA notification regarding FAA-owned NAVAIDs.)

2.6 **Phasing.**

Once it has been determined what types and levels of airport operations will be maintained, the most efficient sequence of construction may not be feasible. In this case, the sequence of construction may be phased to gain maximum efficiency while allowing for the required operations. The development of the resulting construction phases should be coordinated with local Air Traffic personnel and airport users. The sequenced construction phases established in the CSPP must be incorporated into the project design and must be reflected in the contract drawings and specifications.

2.6.1 Phase Elements.

For each phase the CSPP should detail:

- Areas closed to aircraft operations.
- Duration of closures.
- Taxi routes and/or areas of reduced TSA and TOFA to reflect reduced ADG use.
- ARFF access routes.
- Construction staging, disposal, and cleanout areas.
- Construction access and haul routes.
- Impacts to NAVAIDs.
- Lighting, marking, and signing changes.
- Available runway length and/or reduced RSA and ROFA to reflect reduced ADG use.
- Declared distances (if applicable).
- Required hazard marking, lighting, and signing.
- Work zone lighting for nighttime construction (if applicable).
- Lead times for required notifications.

2.6.2 Construction Safety Drawings.

Drawings specifically indicating operational safety procedures and methods in affected areas (i.e., construction safety drawings) should be developed for each construction phase. Such drawings should be included in the CSPP as referenced attachments and should also be included in the contract drawing package.

2.7 **Areas and Operations Affected by Construction Activity.**

Runways and taxiways should remain in use by aircraft to the maximum extent possible without compromising safety. Pre-meetings with the FAA ATO will support operational simulations. See Appendix E for an example of a table showing temporary operations versus current operations. The tables in Appendix E can be useful for coordination among all interested parties, including FAA Lines of Business.

2.7.1 Identification of Affected Areas.

Identifying areas and operations affected by the construction helps to determine possible safety problems. The affected areas should be identified in the construction safety drawings for each construction phase. (See paragraph 2.6.2.) Of particular concern are:

2.7.1.1 **Closing, or Partial Closing, of Runways, Taxiways and Aprons, and Displaced Thresholds.**

When a runway is partially closed, a portion of the pavement is unavailable for any aircraft operation, meaning taxiing, landing, or takeoff in either direction on that pavement is prohibited. A displaced threshold, by contrast, is established to ensure obstacle clearance and adequate safety area for landing aircraft. The pavement prior to the displaced threshold is normally available for take-off in the direction of the displacement and for landing and takeoff in the opposite direction. Misunderstanding this difference, may result in issuance of an inaccurate NOTAM, and can lead to a hazardous condition.

2.7.1.1.1 Partially Closed Runways.

The temporarily closed portion of a partially closed runway will generally extend from the threshold to a taxiway that may be used for entering and exiting the runway. If the closed portion extends to a point between taxiways, pilots will have to back-taxi on the runway, which is an undesirable operation. See Figure 2-1 for a desirable configuration.

2.7.1.1.2 Displaced Thresholds.

Since the portion of the runway pavement between the permanent threshold and a standard displaced threshold is available for takeoff and for landing in the opposite direction, the temporary displaced threshold need not be located at an entrance/exit taxiway. See Figure 2-2.

2.7.1.2 Closing of aircraft rescue and fire fighting access routes.

2.7.1.3 Closing of access routes used by airport and airline support vehicles.

2.7.1.4 Interruption of utilities, including water supplies for fire fighting.

2.7.1.5 Approach/departure surfaces affected by heights of objects.

2.7.1.6 Construction areas, storage areas, and access routes near runways, taxiways, aprons, or helipads.

Figure 2-1. Temporary Partially Closed Runway

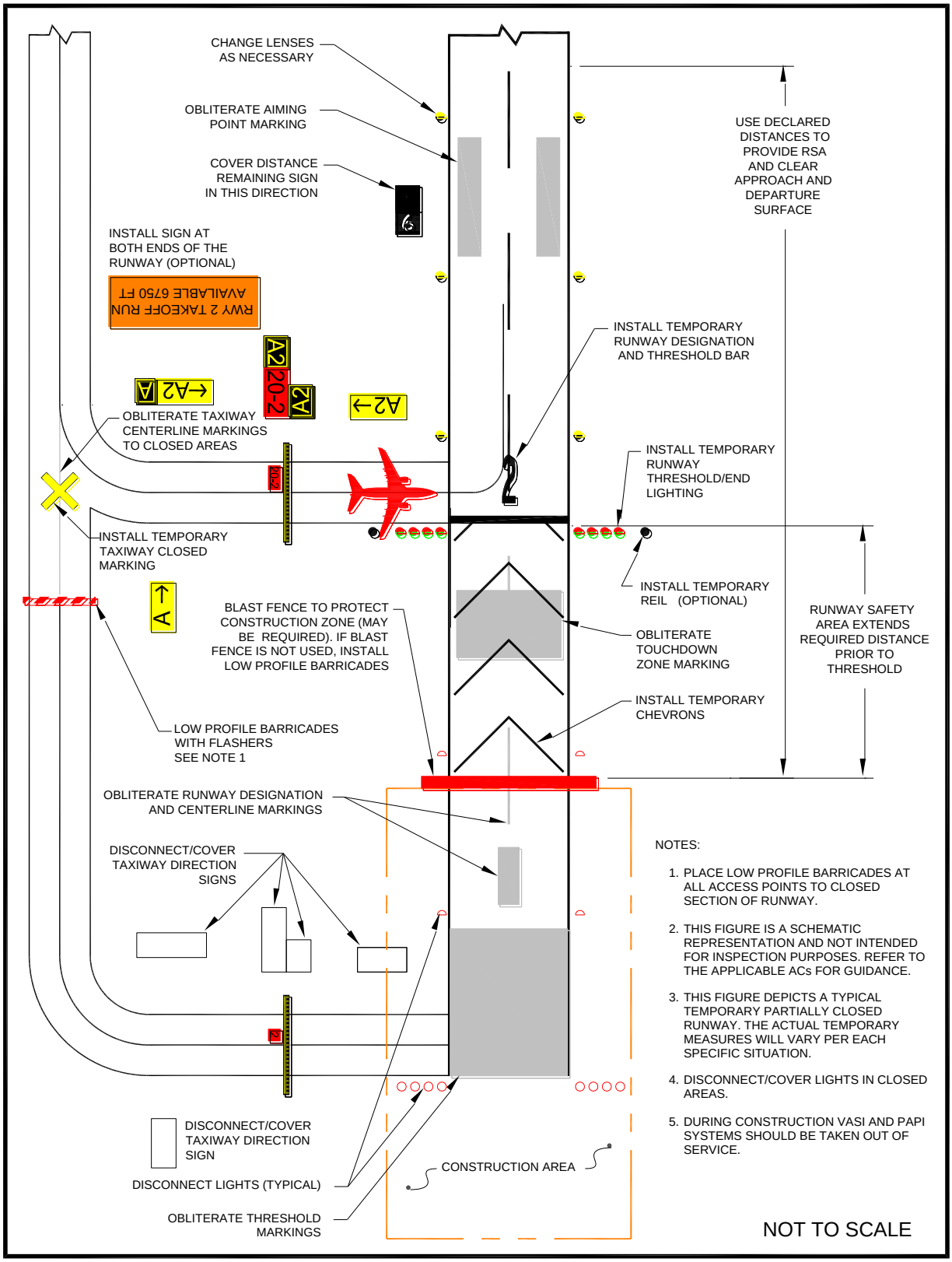
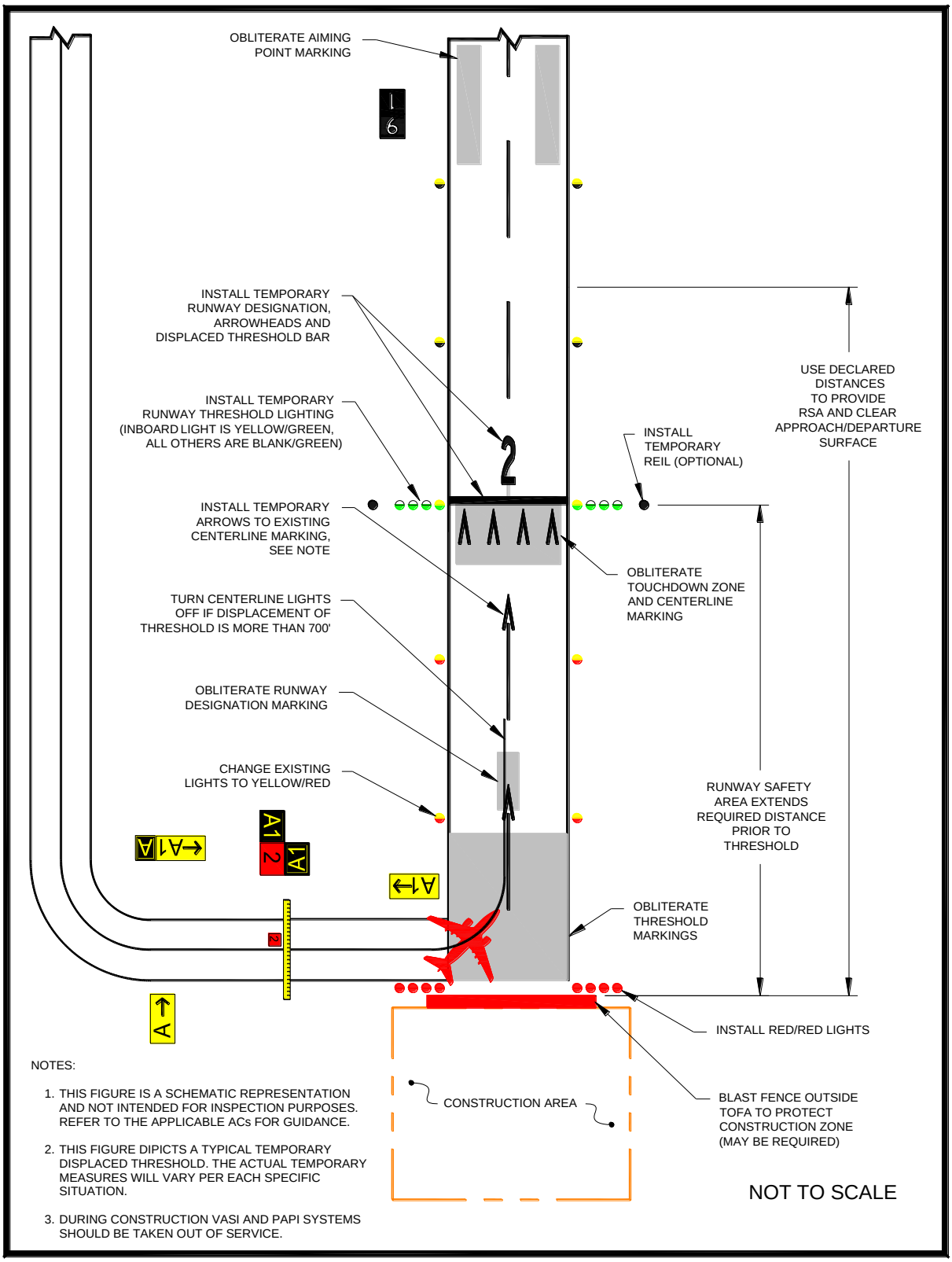


Figure 2-2. Temporary Displaced Threshold



Note: See paragraph 2.18.2.5.

2.7.2 Mitigation of Effects.

Establishment of specific procedures is necessary to maintain the safety and efficiency of airport operations. The CSPP must address:

2.7.2.1 Temporary changes to runway and/or taxi operations.

2.7.2.2 Detours for ARFF and other airport vehicles.

2.7.2.3 Maintenance of essential utilities.

2.7.2.4 Temporary changes to air traffic control procedures. Such changes must be coordinated with the ATO.

2.8 Navigation Aid (NAVAID) Protection.

Before commencing construction activity, parking vehicles, or storing construction equipment and materials near a NAVAID, coordinate with the appropriate FAA ATO/Technical Operations office to evaluate the effect of construction activity and the required distance and direction from the NAVAID. (See paragraph 2.13.5.3.) Construction activities, materials/equipment storage, and vehicle parking near electronic NAVAIDs require special consideration since they may interfere with signals essential to air navigation. If any NAVAID may be affected, the CSPP and SPCD must show an understanding of the "critical area" associated with each NAVAID and describe how it will be protected. Where applicable, the operational critical areas of NAVAIDs should be graphically delineated on the project drawings. Pay particular attention to stockpiling material, as well as to movement and parking of equipment that may interfere with line of sight from the ATCT or with electronic emissions. Interference from construction equipment and activities may require NAVAID shutdown or adjustment of instrument approach minimums for low visibility operations. This condition requires that a NOTAM be filed (see paragraph 2.13.2). Construction activities and materials/equipment storage near a NAVAID must not obstruct access to the equipment and instruments for maintenance. Submittal of a 7460-1 form is required for construction vehicles operating near FAA NAVAIDs. (See paragraph 2.13.5.3.)

2.9 Contractor Access.

The CSPP must detail the areas to which the contractor must have access, and explain how contractor personnel will access those areas. Specifically address:

2.9.1 Location of Stockpiled Construction Materials.

Stockpiled materials and equipment storage are not permitted within the RSA and OFZ, and if possible should not be permitted within the Object Free Area (OFA) of an operational runway. Stockpiling material in the OFA requires submittal of a 7460-1 form and justification provided to the appropriate FAA Airports Regional or District Office for approval. The airport operator must ensure that stockpiled materials and equipment adjacent to these areas are prominently marked and lighted during hours of restricted visibility or darkness. (See paragraph 2.18.2.) This includes determining and

verifying that materials are stabilized and stored at an approved location so as not to be a hazard to aircraft operations and to prevent attraction of wildlife and foreign object damage from blowing or tracked material. See paragraphs 2.10 and 2.11.

2.9.2 Vehicle and Pedestrian Operations.

The CSPP should include specific vehicle and pedestrian requirements. Vehicle and pedestrian access routes for airport construction projects must be controlled to prevent inadvertent or unauthorized entry of persons, vehicles, or animals onto the AOA. The airport operator should coordinate requirements for vehicle operations with airport tenants, contractors, and the FAA air traffic manager. In regard to vehicle and pedestrian operations, the CSPP should include the following, with associated training requirements:

2.9.2.1 **Construction Site Parking.**

Designate in advance vehicle parking areas for contractor employees to prevent any unauthorized entry of persons or vehicles onto the AOA. These areas should provide reasonable contractor employee access to the job site.

2.9.2.2 **Construction Equipment Parking.**

Contractor employees must park and service all construction vehicles in an area designated by the airport operator outside the OFZ and never in the safety area of an active runway or taxiway. Unless a complex setup procedure makes movement of specialized equipment infeasible, inactive equipment must not be parked on a closed taxiway or runway. If it is necessary to leave specialized equipment on a closed taxiway or runway at night, the equipment must be well lighted. Employees should also park construction vehicles outside the OFA when not in use by construction personnel (for example, overnight, on weekends, or during other periods when construction is not active). Parking areas must not obstruct the clear line of sight by the ATCT to any taxiways or runways under air traffic control nor obstruct any runway visual aids, signs, or navigation aids. The FAA must also study those areas to determine effects on airport design criteria, surfaces established by 14 CFR Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace (Part 77), and on NAVAIDs and Instrument Approach Procedures (IAP). See paragraph 2.13.1 for further information.

2.9.2.3 **Access and Haul Roads.**

Determine the construction contractor’s access to the construction sites and haul roads. Do not permit the construction contractor to use any access or haul roads other than those approved. Access routes used by contractor vehicles must be clearly marked to prevent inadvertent entry to areas open to airport operations. Pay special attention to ensure that if construction traffic is to share or cross any ARFF routes that ARFF right of way is not impeded at any time, and that construction traffic on haul

roads does not interfere with NAVAIDs or approach surfaces of operational runways. Address whether access gates will be blocked or inoperative or if a rally point will be blocked or inaccessible.

2.9.2.4 Marking and lighting of vehicles in accordance with AC 150/5210-5, *Painting, Marking, and Lighting of Vehicles Used on an Airport.*

2.9.2.5 Description of proper vehicle operations on various areas under normal, lost communications, and emergency conditions.

2.9.2.6 Required escorts.

2.9.2.7 **Training Requirements for Vehicle Drivers to Ensure Compliance with the Airport Operator's Vehicle Rules and Regulations.**

Specific training should be provided to vehicle operators, including those providing escorts. See AC 150/5210-20, *Ground Vehicle Operations on Airports*, for information on training and records maintenance requirements.

2.9.2.8 **Situational Awareness.**

Vehicle drivers must confirm by personal observation that no aircraft is approaching their position (either in the air or on the ground) when given clearance to cross a runway, taxiway, or any other area open to airport operations. In addition, it is the responsibility of the escort vehicle driver to verify the movement/position of all escorted vehicles at any given time. At non-towered airports, all aircraft movements and flight operations rely on aircraft operators to self-report their positions and intentions. However, there is no requirement for an aircraft to have radio communications. Because aircraft do not always broadcast their positions or intentions, visual checking, radio monitoring, and situational awareness of the surroundings is critical to safety.

2.9.2.9 **Two-Way Radio Communication Procedures.**

2.9.2.9.1 General.

The airport operator must ensure that tenant and construction contractor personnel engaged in activities involving unescorted operation on aircraft movement areas observe the proper procedures for communications, including using appropriate radio frequencies at airports with and without ATCT. When operating vehicles on or near open runways or taxiways, construction personnel must understand the critical importance of maintaining radio contact, as directed by the airport operator, with:

1. Airport operations
2. ATCT

3. Common Traffic Advisory Frequency (CTAF), which may include UNICOM, MULTICOM.
4. Automatic Terminal Information Service (ATIS). This frequency is useful for monitoring conditions on the airport. Local air traffic will broadcast information regarding construction related runway closures and "shortened" runways on the ATIS frequency.

2.9.2.9.2 Areas Requiring Two-Way Radio Communication with the ATCT.

Vehicular traffic crossing active movement areas must be controlled either by two-way radio with the ATCT, escort, flagman, signal light, or other means appropriate for the particular airport.

2.9.2.9.3 Frequencies to be Used.

The airport operator will specify the frequencies to be used by the contractor, which may include the CTAF for monitoring of aircraft operations. Frequencies may also be assigned by the airport operator for other communications, including any radio frequency in compliance with Federal Communications Commission requirements. At airports with an ATCT, the airport operator will specify the frequency assigned by the ATCT to be used between contractor vehicles and the ATCT.

2.9.2.9.4 Proper radio usage, including read back requirements.

2.9.2.9.5 Proper phraseology, including the International Phonetic Alphabet.

2.9.2.9.6 Light Gun Signals.

Even though radio communication is maintained, escort vehicle drivers must also familiarize themselves with ATCT light gun signals in the event of radio failure. See the FAA safety placard "Ground Vehicle Guide to Airport Signs and Markings." This safety placard may be downloaded through the Runway Safety Program Web site at http://www.faa.gov/airports/runway_safety/publications/ (see "Signs & Markings Vehicle Dashboard Sticker") or obtained from the FAA Airports Regional Office.

2.9.2.10 **Maintenance of the secured area of the airport, including:**

2.9.2.10.1 Fencing and Gates.

Airport operators and contractors must take care to maintain security during construction when access points are created in the security fencing to permit the passage of construction vehicles or personnel. Temporary gates should be equipped so they can be securely closed and locked to prevent access by animals and unauthorized people. Procedures should be in place to ensure that only authorized persons and vehicles have access to the AOA and to prohibit "piggybacking" behind another person or vehicle. The Department of Transportation (DOT) document DOT/FAA/AR-

00/52, *Recommended Security Guidelines for Airport Planning and Construction*, provides more specific information on fencing. A copy of this document can be obtained from the Airport Consultants Council, Airports Council International, or American Association of Airport Executives.

2.9.2.10.2 Badging Requirements.

Airports subject to 49 CFR Part 1542, *Airport Security*, must meet standards for access control, movement of ground vehicles, and identification of construction contractor and tenant personnel.

2.10 Wildlife Management.

The CSPP and SPCD must be in accordance with the airport operator's wildlife hazard management plan, if applicable. See AC 150/5200-33, *Hazardous Wildlife Attractants On or Near Airports,* and CertAlert 98-05, *Grasses Attractive to Hazardous Wildlife.* Construction contractors must carefully control and continuously remove waste or loose materials that might attract wildlife. Contractor personnel must be aware of and avoid construction activities that can create wildlife hazards on airports, such as:

2.10.1 Trash.

Food scraps must be collected from construction personnel activity.

2.10.2 Standing Water.

2.10.3 Tall Grass and Seeds.

Requirements for turf establishment can be at odds with requirements for wildlife control. Grass seed is attractive to birds. Lower quality seed mixtures can contain seeds of plants (such as clover) that attract larger wildlife. Seeding should comply with the guidance in AC 150/5370-10, *Standards for Specifying Construction of Airports,* Item T-901, Seeding. Contact the local office of the United Sates Department of Agriculture Soil Conservation Service or the State University Agricultural Extension Service (County Agent or equivalent) for assistance and recommendations. These agencies can also provide liming and fertilizer recommendations.

2.10.4 Poorly Maintained Fencing and Gates.

See paragraph 2.9.2.10.1.

2.10.5 Disruption of Existing Wildlife Habitat.

While this will frequently be unavoidable due to the nature of the project, the CSPP should specify under what circumstances (location, wildlife type) contractor personnel should immediately notify the airport operator of wildlife sightings.

2.11 Foreign Object Debris (FOD) Management.

Waste and loose materials, commonly referred to as FOD, are capable of causing damage to aircraft landing gears, propellers, and jet engines. Construction contractors must not leave or place FOD on or near active aircraft movement areas. Materials capable of creating FOD must be continuously removed during the construction project. Fencing (other than security fencing) or covers may be necessary to contain material that can be carried by wind into areas where aircraft operate. See AC 150/5210-24, *Foreign Object Debris (FOD) Management.*

2.12 Hazardous Materials (HAZMAT) Management.

Contractors operating construction vehicles and equipment on the airport must be prepared to expeditiously contain and clean-up spills resulting from fuel or hydraulic fluid leaks. Transport and handling of other hazardous materials on an airport also requires special procedures. See AC 150/5320-15, *Management of Airport Industrial Waste.*

2.13 Notification of Construction Activities.

The CSPP and SPCD must detail procedures for the immediate notification of airport users and the FAA of any conditions adversely affecting the operational safety of the airport. It must address the notification actions described below, as applicable.

2.13.1 List of Responsible Representatives/points of contact for all involved parties, and procedures for contacting each of them, including after hours.

2.13.2 NOTAMs.

Only the airport operator may initiate or cancel NOTAMs on airport conditions, and is the only entity that can close or open a runway. The airport operator must coordinate the issuance, maintenance, and cancellation of NOTAMs about airport conditions resulting from construction activities with tenants and the local air traffic facility (control tower, approach control, or air traffic control center), and must either enter the NOTAM into NOTAM Manager, or provide information on closed or hazardous conditions on airport movement areas to the FAA Flight Service Station (FSS) so it can issue a NOTAM. The airport operator must file and maintain a list of authorized representatives with the FSS. Refer to AC 150/5200-28, *Notices to Airmen (NOTAMs) for Airport Operators,* for a sample NOTAM form. Only the FAA may issue or cancel NOTAMs on shutdown or irregular operation of FAA owned facilities. Any person having reason to believe that a NOTAM is missing, incomplete, or inaccurate must notify the airport operator. See paragraph 2.7.1.1 about issuing NOTAMs for partially closed runways versus runways with displaced thresholds.

2.13.3 Emergency notification procedures for medical, fire fighting, and police response.

2.13.4 Coordination with ARFF.

The CSPP must detail procedures for coordinating through the airport sponsor with ARFF personnel, mutual aid providers, and other emergency services if construction requires:

1. The deactivation and subsequent reactivation of water lines or fire hydrants, or
2. The rerouting, blocking and restoration of emergency access routes, or
3. The use of hazardous materials on the airfield.

2.13.5 Notification to the FAA.

2.13.5.1 **Part 77.**

Any person proposing construction or alteration of objects that affect navigable airspace, as defined in Part 77, must notify the FAA. This includes construction equipment and proposed parking areas for this equipment (i.e., cranes, graders, other equipment) on airports. FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, can be used for this purpose and submitted to the appropriate FAA Airports Regional or District Office. See Appendix A to download the form. Further guidance is available on the FAA web site at oeaaa.faa.gov.

2.13.5.2 **Part 157.**

With some exceptions, Title 14 CFR Part 157, *Notice of Construction, Alteration, Activation, and Deactivation of Airports*, requires that the airport operator notify the FAA in writing whenever a non-Federally funded project involves the construction of a new airport; the construction, realigning, altering, activating, or abandoning of a runway, landing strip, or associated taxiway; or the deactivation or abandoning of an entire airport. Notification involves submitting FAA Form 7480-1, *Notice of Landing Area Proposal*, to the nearest FAA Airports Regional or District Office. See Appendix A to download the form.

2.13.5.3 **NAVAIDs.**

For emergency (short-notice) notification about impacts to both airport owned and FAA owned NAVAIDs, contact: 866-432-2622.

2.13.5.3.1 Airport Owned/FAA Maintained.

If construction operations require a shutdown of 24 hours or greater in duration, or more than 4 hours daily on consecutive days, of a NAVAID owned by the airport but maintained by the FAA, provide a 45-day minimum notice to FAA ATO/Technical Operations prior to facility shutdown, using Strategic Event Coordination (SEC) Form 6000.26 contained within FAA Order 6000.15, *General Maintenance Handbook for National Airspace System (NAS) Facilities*.

2.13.5.3.2 FAA Owned.

1. The airport operator must notify the appropriate FAA ATO Service Area Planning and Requirements (P&R) Group a minimum of 45 days prior to implementing an event that causes impacts to NAVAIDs, using SEC Form 6000.26.
2. Coordinate work for an FAA owned NAVAID shutdown with the local FAA ATO/Technical Operations office, including any necessary reimbursable agreements and flight checks. Detail procedures that address unanticipated utility outages and cable cuts that could impact FAA NAVAIDs. Refer to active Service Level Agreement with ATO for specifics.

2.14 **Inspection Requirements.**

2.14.1 Daily Inspections.

Inspections should be conducted at least daily, but more frequently if necessary to ensure conformance with the CSPP. A sample checklist is provided in Appendix D, Construction Project Daily Safety Inspection Checklist. See also AC 150/5200-18, *Airport Safety Self-Inspection.* Airport operators holding a Part 139 certificate are required to conduct self-inspections during unusual conditions, such as construction activities, that may affect safe air carrier operations.

2.14.2 Interim Inspections.

Inspections should be conducted of all areas to be (re)opened to aircraft traffic to ensure the proper operation of lights and signs, for correct markings, and absence of FOD. The contractor should conduct an inspection of the work area with airport operations personnel. The contractor should ensure that all construction materials have been secured, all pavement surfaces have been swept clean, all transition ramps have been properly constructed, and that surfaces have been appropriately marked for aircraft to operate safely. Only if all items on the list meet with the airport operator's approval should the air traffic control tower be notified to open the area to aircraft operations. The contractor should be required to retain a suitable workforce and the necessary equipment at the work area for any last minute cleanup that may be requested by the airport operator prior to opening the area.

2.14.3 Final Inspections.

New runways and extended runway closures may require safety inspections at certificated airports prior to allowing air carrier service. Coordinate with the FAA Airport Certification Safety Inspector (ACSI) to determine if a final inspection will be necessary.

2.15 **Underground Utilities.**

The CSPP and/or SPCD must include procedures for locating and protecting existing underground utilities, cables, wires, pipelines, and other underground facilities in excavation areas. This may involve coordinating with public utilities and FAA ATO/Technical Operations. Note that "One Call" or "Miss Utility" services do not include FAA ATO/Technical Operations.

2.16 **Penalties.**

The CSPP should detail penalty provisions for noncompliance with airport rules and regulations and the safety plans (for example, if a vehicle is involved in a runway incursion). Such penalties typically include rescission of driving privileges or access to the AOA.

2.17 **Special Conditions.**

The CSPP must detail any special conditions that affect the operation of the airport and will require the activation of any special procedures (for example, low-visibility operations, snow removal, aircraft in distress, aircraft accident, security breach, Vehicle / Pedestrian Deviation (VPD) and other activities requiring construction suspension/resumption).

2.18 **Runway and Taxiway Visual Aids.**

This includes marking, lighting, signs, and visual NAVAIDs. The CSPP must ensure that areas where aircraft will be operating are clearly and visibly separated from construction areas, including closed runways. Throughout the duration of the construction project, verify that these areas remain clearly marked and visible at all times and that marking, lighting, signs, and visual NAVAIDs that are to continue to perform their functions during construction remain in place and operational. Visual NAVAIDs that are not serving their intended function during construction must be temporarily disabled, covered, or modified as necessary. The CSPP must address the following, as appropriate:

2.18.1 General.

Airport markings, lighting, signs, and visual NAVAIDs must be clearly visible to pilots, not misleading, confusing, or deceptive. All must be secured in place to prevent movement by prop wash, jet blast, wing vortices, and other wind currents and constructed of materials that will minimize damage to an aircraft in the event of inadvertent contact. Items used to secure such markings must be of a color similar to the marking.

2.18.2 Markings.

During the course of construction projects, temporary pavement markings are often required to allow for aircraft operations during or between work periods. During the design phase of the project, the designer should coordinate with the project manager,

airport operations, airport users, the FAA Airports project manager, and Airport Certification Safety Inspector for Part 139 airports to determine minimum temporary markings. The FAA Airports project manager will, wherever a runway is closed, coordinate with the appropriate FAA Flight Standards Office and disseminate findings to all parties. Where possible, the temporary markings on finish grade pavements should be placed to mirror the dimensions of the final markings. Markings must be in compliance with the standards of AC 150/5340-1, *Standards for Airport Markings*, except as noted herein. Runways and runway exit taxiways closed to aircraft operations are marked with a yellow X. The preferred visual aid to depict temporary runway closure is the lighted X signal placed on or near the runway designation numbers. (See paragraph 2.18.2.1.2.)

2.18.2.1 **Closed Runways and Taxiways.**

2.18.2.1.1 Permanently Closed Runways.

For runways, obliterate the threshold marking, runway designation marking, and touchdown zone markings, and place an X at each end and at 1,000-foot (300 m) intervals. For a multiple runway environment, if the lighted X on a designated number will be located in the RSA of an adjacent active runway, locate the lighted X farther down the closed runway to clear the RSA of the active runway. In addition, the closed runway numbers located in the RSA of an active runway must be marked with a flat yellow X.

2.18.2.1.2 Temporarily Closed Runways.

For runways that have been temporarily closed, place an X at each end of the runway directly on or as near as practicable to the runway designation numbers. For a multiple runway environment, if the lighted X on a designated number will be located in the RSA of an adjacent active runway, locate the lighted X farther down the closed runway to clear the RSA of the active runway. In addition, the closed runway numbers located in the RSA of an active runway must be marked with a flat yellow X. See Figure 2-3. See also paragraph 2.18.3.3.

2.18.2.1.3 Partially Closed Runways and Displaced Thresholds.

When threshold markings are needed to identify the temporary beginning of the runway that is available for landing, the markings must comply with AC 150/5340-1. An X is not used on a partially closed runway or a runway with a displaced threshold. See paragraph 2.7.1.1 for the difference between partially closed runways and runways with displaced thresholds. Because of the temporary nature of threshold displacement due to construction, it is not necessary to re-adjust the existing runway centerline markings to meet standard spacing for a runway with a visual approach. Some of the requirements below may be waived in the cases of low-activity airports and/or short duration changes that are measured in days rather than weeks. Consider whether the presence of an airport traffic

control tower allows for the development of special procedures. Contact the appropriate FAA Airports Regional or District Office for assistance.

Figure 2-3. Markings for a Temporarily Closed Runway



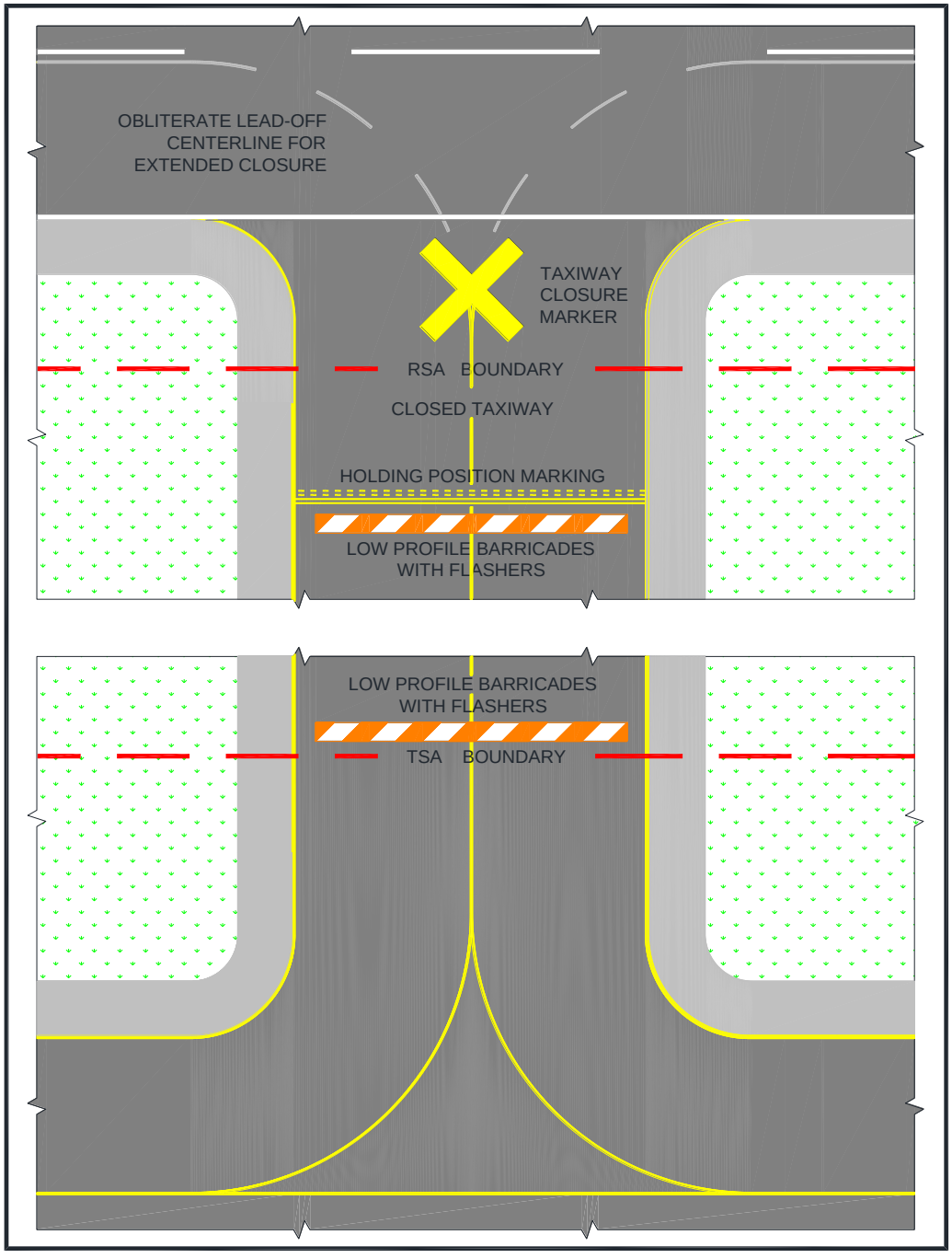
1. **Partially Closed Runways.** Pavement markings for temporary closed portions of the runway consist of a runway threshold bar, runway designation, and yellow chevrons to identify pavement areas that are unsuitable for takeoff or landing (see AC 150/5340-1). Obliterate or cover markings prior to the moved threshold. Existing touchdown zone markings beyond the moved threshold may remain in place. Obliterate aiming point markings. Issue appropriate NOTAMs regarding any nonstandard markings. See Figure 2-4.

2. **Displaced Thresholds.** Pavement markings for a displaced threshold consist of a runway threshold bar, runway designation, and white arrowheads with and without arrow shafts. These markings are required to identify the portion of the runway before the displaced threshold to provide centerline guidance for pilots during approaches, takeoffs, and landing rollouts from the opposite direction. See AC 150/5340-1. Obliterate markings prior to the displaced threshold. Existing touchdown zone markings beyond the displaced threshold may remain in place. Obliterate aiming point markings. Issue appropriate NOTAMs regarding any nonstandard markings. See Figure 2-2.

2.18.2.1.4 Taxiways.

1. **Permanently Closed Taxiways.** AC 150/5300-13 *Airport Design*, notes that it is preferable to remove the pavement, but for pavement that is to remain, place an X at the entrance to both ends of the closed section. Obliterate taxiway centerline markings, including runway leadoff lines, leading to the closed taxiway. See Figure 2-4.

Figure 2-4. Temporary Taxiway Closure



2. **Temporarily Closed Taxiways.** Place barricades outside the safety area of intersecting taxiways. For runway/taxiway intersections, place an X at the entrance to the closed taxiway from the runway. If the taxiway will be closed for an extended period, obliterate taxiway centerline markings, including runway leadoff lines and taxiway to taxiway turns, leading to the closed section. Always obliterate runway lead-off lines for high speed exits, regardless of the duration of the closure. If the centerline markings will be reused upon reopening the taxiway, it is preferable to paint over the marking. This will result in less damage to the pavement when the upper layer of paint is ultimately removed. See Figure 2-4.

2.18.2.1.5 Temporarily Closed Airport.

When the airport is closed temporarily, mark all the runways as closed.

2.18.2.2 If unable to paint temporary markings on the pavement, construct them from any of the following materials: fabric, colored plastic, painted sheets of plywood, or similar materials. They must be properly configured and appropriately secured to prevent movement by prop wash, jet blast, or other wind currents. Items used to secure such markings must be of a color similar to the marking.

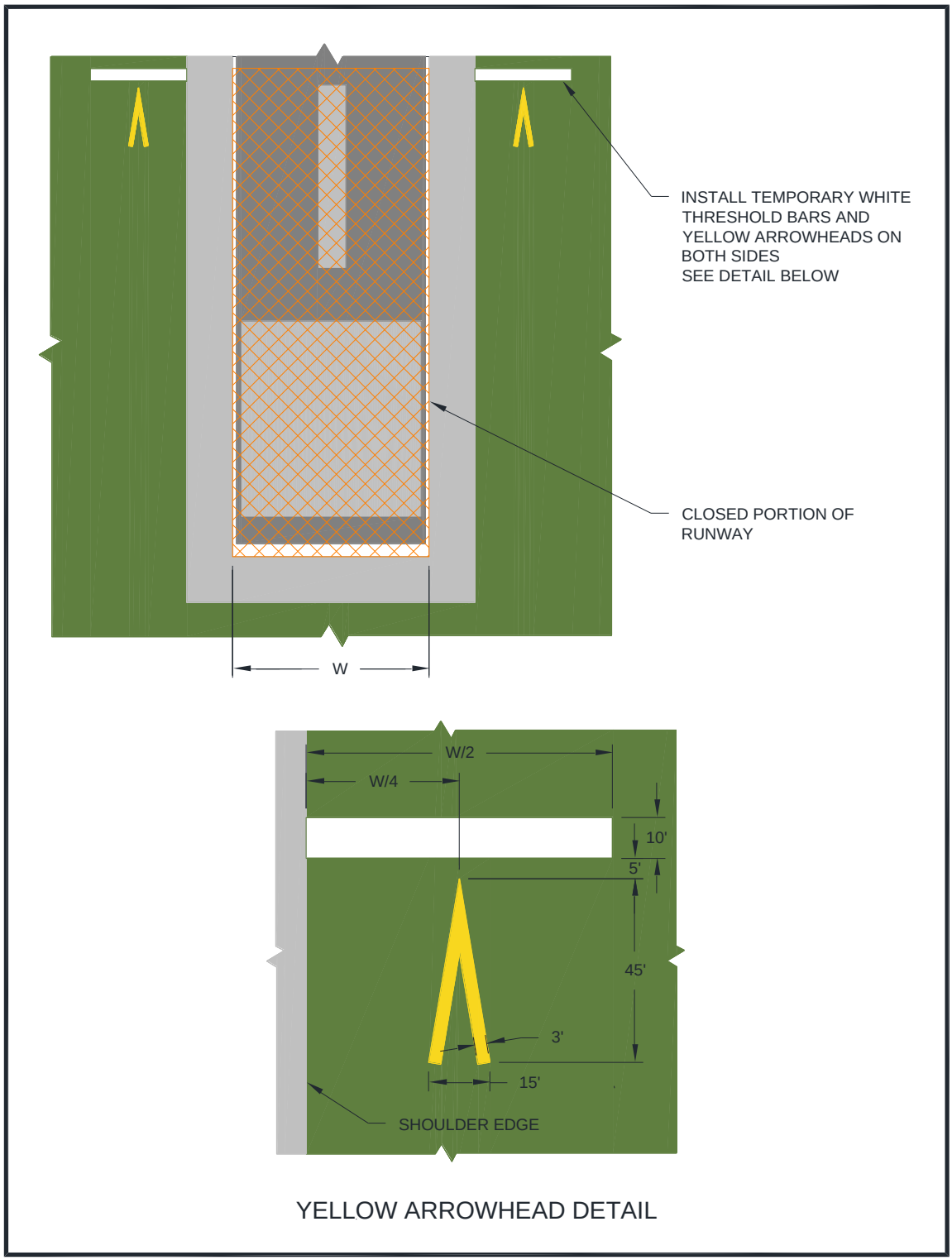
2.18.2.3 It may be necessary to remove or cover runway markings, including but not limited to, runway designation markings, threshold markings, centerline markings, edge stripes, touchdown zone markings and aiming point markings, depending on the length of construction and type of activity at the airport. When removing runway markings, apply the same treatment to areas between stripes or numbers, as the cleaned area will appear to pilots as a marking in the shape of the treated area.

2.18.2.4 If it is not possible to install threshold bars, chevrons, and arrows on the pavement, "temporary outboard white threshold bars and yellow arrowheads", see Figure 2-5, may be used. Locate them outside of the runway pavement surface on both sides of the runway. The dimensions must be as shown in Figure 2-5. If the markings are not discernible on grass or snow, apply a black background with appropriate material over the ground to ensure they are clearly visible.

2.18.2.5 The application rate of paint to mark a short-term temporary runway and taxiway markings may deviate from the standard (see Item P-620, "Runway and Taxiway Painting," in AC 150/5370-10), but the dimensions must meet the existing standards. When applying temporary markings at night, it is recommended that the fast curing, Type II paint be used to help offset the higher humidity and cooler temperatures often experienced at night. Diluting the paint will substantially increase cure time and is not recommended. Glass beads are not recommended for temporary markings. Striated markings may also be used for certain temporary markings. AC

150/5340-1, *Standards for Airport Markings*, has additional guidance on temporary markings.

Figure 2-5. Temporary Outboard White Threshold Bars and Yellow Arrowheads



2.18.3 Lighting and Visual NAVAIDs.

This paragraph refers to standard runway and taxiway lighting systems. See below for hazard lighting. Lighting installation must be in conformance with AC 150/5340-30, *Design and Installation Details for Airport Visual Aids,* and fixture design in conformance with AC 150/5345-50, *Specification for Portable Runway and Taxiway Lights.* When disconnecting runway and taxiway lighting fixtures, disconnect the associated isolation transformers. See AC 150/5340-26, *Maintenance of Airport Visual Aid Facilities*, for disconnect procedures and safety precautions. Alternately, cover the light fixture in such a way as to prevent light leakage. Avoid removing the lamp from energized fixtures because an excessive number of isolation transformers with open secondaries may damage the regulators and/or increase the current above its normal value. Secure, identify, and place any above ground temporary wiring in conduit to prevent electrocution and fire ignition sources. Maintain mandatory hold signs to operate normally in any situation where pilots or vehicle drivers could mistakenly be in that location. At towered airports certificated under Part 139, holding position signs are required to be illuminated on open taxiways crossing to closed or inactive runways. If the holding position sign is installed on the runway circuit for the closed runway, install a jumper to the taxiway circuit to provide power to the holding position sign for nighttime operations. Where it is not possible to maintain power to signs that would normally be operational, install barricades to exclude aircraft. Figure 2-1, Figure 2-2, Figure 2-3, and Figure 2-4 illustrate temporary changes to lighting and visual NAVAIDs.

2.18.3.1 **Permanently Closed Runways and Taxiways.**

For runways and taxiways that have been permanently closed, disconnect the lighting circuits.

2.18.3.2 **Temporarily Closed Runways and New Runways Not Yet Open to Air Traffic.**

If available, use a lighted X, both at night and during the day, placed at each end of the runway on or near the runway designation numbers facing the approach. (Note that the lighted X must be illuminated at all times that it is on a runway.) The use of a lighted X is required if night work requires runway lighting to be on. See AC 150/5345-55, *Specification for L-893, Lighted Visual Aid to Indicate Temporary Runway Closure.* For runways that have been temporarily closed, but for an extended period, and for those with pilot controlled lighting, disconnect the lighting circuits or secure switches to prevent inadvertent activation. For runways that will be opened periodically, coordinate procedures with the FAA air traffic manager or, at airports without an ATCT, the airport operator. Activate stop bars if available. Figure 2-6 shows a lighted X by day. Figure 2-7 shows a lighted X at night.

Figure 2-6. Lighted X in Daytime



Figure 2-7. Lighted X at Night



2.18.3.3 **Partially Closed Runways and Displaced Thresholds.**

When a runway is partially closed, a portion of the pavement is unavailable for any aircraft operation, meaning taxiing and landing or taking off in either direction. A displaced threshold, by contrast, is put in place to ensure obstacle clearance by landing aircraft. The pavement prior to the displaced threshold is available for takeoff in the direction of the displacement, and for landing and takeoff in the opposite direction. Misunderstanding this difference and issuance of a subsequently inaccurate NOTAM can result in a hazardous situation. For both partially

closed runways and displaced thresholds, approach lighting systems at the affected end must be placed out of service.

2.18.3.3.1 Partially Closed Runways.

Disconnect edge and threshold lights on that part of the runway at and behind the threshold (that is, the portion of the runway that is closed). Alternately, cover the light fixtures in such a way as to prevent light leakage. See Figure 2-1.

2.18.3.3.2 Temporary Displaced Thresholds.

Edge lighting in the area of the displacement emits red light in the direction of approach and yellow light (white for visual runways) in the opposite direction. If the displacement is 700 feet or less, blank out centerline lights in the direction of approach or place the centerline lights out of service. If the displacement is over 700 feet, place the centerline lights out of service. See AC 150/5340-30 for details on lighting displaced thresholds. See Figure 2-2.

2.18.3.3.3 Temporary runway thresholds and runway ends must be lighted if the runway is lighted and it is the intended threshold for night landings or instrument meteorological conditions.

2.18.3.3.4 A temporary threshold on an unlighted runway may be marked by retroreflective, elevated markers in addition to markings noted in paragraph 2.18.2.1.3. Markers seen by aircraft on approach are green. Markers at the rollout end of the runway are red. At certificated airports, temporary elevated threshold markers must be mounted with a frangible fitting (see 14 CFR Part 139.309). At non-certificated airports, the temporary elevated threshold markings may either be mounted with a frangible fitting or be flexible. See AC 150/5345-39, *Specification for L-853, Runway and Taxiway Retroreflective Markers.*

2.18.3.3.5 Temporary threshold lights and runway end lights and related visual NAVAIDs are installed outboard of the edges of the full-strength pavement only when they cannot be installed on the pavement. They are installed with bases at grade level or as low as possible, but not more than 3 inch (7.6 cm) above ground. (The standard above ground height for airport lighting fixtures is 14 inches (35 cm)). When any portion of a base is above grade, place properly compacted fill around the base to minimize the rate of gradient change so aircraft can, in an emergency, cross at normal landing or takeoff speeds without incurring significant damage. See AC 150/5370-10.

2.18.3.3.6 Maintain threshold and edge lighting color and spacing standards as described in AC 150/5340-30. Battery powered, solar, or portable lights that meet the criteria in AC 150/5345-50 may be used. These systems are intended primarily for visual flight rules (VFR) aircraft operations but may

be used for instrument flight rules (IFR) aircraft operations, upon individual approval from the Flight Standards Division of the applicable FAA Regional Office.

2.18.3.3.7 When runway thresholds are temporarily displaced, reconfigure yellow lenses (caution zone), as necessary, and place the centerline lights out of service.

2.18.3.3.8 Relocate the Visual Glide Slope Indicator (VGSI), such as Visual Approach Slope Indicator (VASI) and Precision Approach Path Indicator (PAPI); other airport lights, such as Runway End Identifier Lights (REIL); and approach lights to identify the temporary threshold. Another option is to disable the VGSI or any equipment that would give misleading indications to pilots as to the new threshold location. Installation of temporary visual aids may be necessary to provide adequate guidance to pilots on approach to the affected runway. If the FAA owns and operates the VGSI, coordinate its installation or disabling with the local ATO/Technical Operations Office. Relocation of such visual aids will depend on the duration of the project and the benefits gained from the relocation, as this can result in great expense. See FAA JO 6850.2, *Visual Guidance Lighting Systems,* for installation criteria for FAA owned and operated NAVAIDs.

2.18.3.3.9 Issue a NOTAM to inform pilots of temporary lighting conditions.

2.18.3.4 **Temporarily Closed Taxiways.**

If possible, deactivate the taxiway lighting circuits. When deactivation is not possible (for example other taxiways on the same circuit are to remain open), cover the light fixture in a way as to prevent light leakage.

2.18.4 Signs.

To the extent possible, signs must be in conformance with AC 150/5345-44, *Specification for Runway and Taxiway Signs*, and AC 150/5340-18, *Standard for Airport Sign Systems.*

2.18.4.1 **Existing Signs.**

Runway exit signs are to be covered for closed runway exits. Outbound destination signs are to be covered for closed runways. Any time a sign does not serve its normal function or would provide conflicting information, it must be covered or removed to prevent misdirecting pilots. Note that information signs identifying a crossing taxiway continue to perform their normal function even if the crossing taxiway is closed. For long term construction projects, consider relocating signs, especially runway distance remaining signs.

2.18.4.2 **Temporary Signs.**

Orange construction signs comprise a message in black on an orange background. Orange construction signs may help pilots be aware of changed conditions. The airport operator may choose to introduce these signs as part of a movement area construction project to increase situational awareness when needed. Locate signs outside the taxiway safety limits and ahead of construction areas so pilots can take timely action. Use temporary signs judiciously, striking a balance between the need for information and the increase in pilot workload. When there is a concern of pilot "information overload," the applicability of mandatory hold signs must take precedence over orange construction signs recommended during construction. Temporary signs must meet the standards for such signs in Engineering Brief 93, *Guidance for the Assembly and Installation of Temporary Orange Construction Signs.* Many criteria in AC 150/5345-44, *Specification for Runway and Taxiway Signs,* are referenced in the Engineering Brief. Permissible sign legends are:

1. CONSTRUCTION AHEAD,
2. CONSTRUCTION ON RAMP, and
3. RWY XX TAKEOFF RUN AVAILABLE XXX FT.

Phasing, supported by drawings and sign schedule, for the installation of orange construction signs must be included in the CSPP or SPCD.

2.18.4.2.1 Takeoff Run Available (TORA) signs.

Recommended: Where a runway has been shortened for takeoff, install orange TORA signs well before the hold lines, such as on a parallel taxiway prior to a turn to a runway hold position. See EB 93 for sign size and location.

2.18.4.2.2 Sign legends are shown in Figure F-1.

Note: See Figure E-1, Figure E-2, Figure E-3, Figure F-2, and Figure F-3 for examples of orange construction sign locations.

2.19 **Marking and Signs for Access Routes.**

The CSPP should indicate that pavement markings and signs for construction personnel will conform to AC 150/5340-18 and, to the extent practicable, with the Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) and/or State highway specifications. Signs adjacent to areas used by aircraft must comply with the frangibility requirements of AC 150/5220-23, *Frangible Connections,* which may require modification to size and height guidance in the MUTCD.

2.20 **Hazard Marking, Lighting and Signing.**

2.20.1 Hazard marking, lighting, and signing prevent pilots from entering areas closed to aircraft, and prevent construction personnel from entering areas open to aircraft. The CSPP must specify prominent, comprehensible warning indicators for any area affected by construction that is normally accessible to aircraft, personnel, or vehicles. Hazard marking and lighting must also be specified to identify open manholes, small areas under repair, stockpiled material, waste areas, and areas subject to jet blast. Also consider less obvious construction-related hazards and include markings to identify FAA, airport, and National Weather Service facilities cables and power lines; instrument landing system (ILS) critical areas; airport surfaces, such as RSA, OFA, and OFZ; and other sensitive areas to make it easier for contractor personnel to avoid these areas.

2.20.2 Equipment.

2.20.2.1 **Barricades.**

Low profile barricades, including traffic cones, (weighted or sturdily attached to the surface) are acceptable methods used to identify and define the limits of construction and hazardous areas on airports. Careful consideration must be given to selecting equipment that poses the least danger to aircraft but is sturdy enough to remain in place when subjected to typical winds, prop wash and jet blast. The spacing of barricades must be such that a breach is physically prevented barring a deliberate act. For example, if barricades are intended to exclude aircraft, gaps between barricades must be smaller than the wingspan of the smallest aircraft to be excluded; if barricades are intended to exclude vehicles, gaps between barricades must be smaller than the width of the excluded vehicles, generally 4 feet (1.2 meters). Provision must be made for ARFF access if necessary. If barricades are intended to exclude pedestrians, they must be continuously linked. Continuous linking may be accomplished through the use of ropes, securely attached to prevent FOD.

2.20.2.2 **Lights.**

Lights must be red, either steady burning or flashing, and must meet the luminance requirements of the State Highway Department. Batteries powering lights will last longer if lights flash. Lights must be mounted on barricades and spaced at no more than 10 feet (3 meters). Lights must be operated between sunset and sunrise and during periods of low visibility whenever the airport is open for operations. They may be operated by photocell, but this may require that the contractor turn them on manually during periods of low visibility during daytime hours.

2.20.2.3 **Supplement Barricades with Signs (for example) As Necessary.**

Examples are “No Entry” and “No Vehicles.” Be aware of the increased effects of wind and jet blast on barricades with attached signs.

2.20.2.4 **Air Operations Area – General.**

Barricades are not permitted in any active safety area or on the runway side of a runway hold line. Within a runway or taxiway object free area, and on aprons, use orange traffic cones, flashing or steady burning red lights as noted above, highly reflective collapsible barricades marked with diagonal, alternating orange and white stripes; and/or signs to separate all construction/maintenance areas from the movement area. Barricades may be supplemented with alternating orange and white flags at least 20 by 20 inch (50 by 50 cm) square and securely fastened to eliminate FOD. All barricades adjacent to any open runway or taxiway / taxilane safety area, or apron must be as low as possible to the ground, and no more than 18 inches high, exclusive of supplementary lights and flags. Barricades must be of low mass; easily collapsible upon contact with an aircraft or any of its components; and weighted or sturdily attached to the surface to prevent displacement from prop wash, jet blast, wing vortex, and other surface wind currents. If affixed to the surface, they must be frangible at grade level or as low as possible, but not to exceed 3 inch (7.6 cm) above the ground. Figure 2-8 and Figure 2-9 show sample barricades with proper coloring and flags.

Figure 2-8. Interlocking Barricades



Figure 2-9. Low Profile Barricades



2.20.2.5 **Air Operations Area – Runway/Taxiway Intersections.**

Use highly reflective barricades with lights to close taxiways leading to closed runways. Evaluate all operating factors when determining how to mark temporary closures that can last from 10 to 15 minutes to a much longer period of time. However, even for closures of relatively short duration, close all taxiway/runway intersections with barricades. The use of traffic cones is appropriate for short duration closures.

2.20.2.6 **Air Operations Area – Other.**

Beyond runway and taxiway object free areas and aprons, barricades intended for construction vehicles and personnel may be many different shapes and made from various materials, including railroad ties, sawhorses, jersey barriers, or barrels.

2.20.2.7 **Maintenance.**

The construction specifications must include a provision requiring the contractor to have a person on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades. The contractor must file the contact person's information with the airport operator. Lighting should be checked for proper operation at least once per day, preferably at dusk.

2.21 Work Zone Lighting for Nighttime Construction.

Lighting equipment must adequately illuminate the work area if the construction is to be performed during nighttime hours. Refer to AC 150/5370-10 for minimum illumination levels for nighttime paving projects. Additionally, it is recommended that all support equipment, except haul trucks, be equipped with artificial illumination to safely

illuminate the area immediately surrounding their work areas. The lights should be positioned to provide the most natural color illumination and contrast with a minimum of shadows. The spacing must be determined by trial. Light towers should be positioned and adjusted to aim away from ATCT cabs and active runways to prevent blinding effects. Shielding may be necessary. Light towers should be removed from the construction site when the area is reopened to aircraft operations. Construction lighting units should be identified and generally located on the construction phasing plans in relationship to the ATCT and active runways and taxiways.

2.22 **Protection of Runway and Taxiway Safety Areas.**

Runway and taxiway safety areas, OFZs, OFAs, and approach surfaces are described in AC 150/5300-13. Protection of these areas includes limitations on the location and height of equipment and stockpiled material. An FAA airspace study may be required. Coordinate with the appropriate FAA Airports Regional or District Office if there is any doubt as to requirements or dimensions (see paragraph 2.13.5) as soon as the location and height of materials or equipment are known. The CSPP should include drawings showing all safety areas, object free areas, obstacle free zones and approach departure surfaces affected by construction.

2.22.1 Runway Safety Area (RSA).

A runway safety area is the defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway (see AC 150/5300-13). Construction activities within the existing RSA are subject to the following conditions:

2.22.1.1 No construction may occur within the existing RSA while the runway is open for aircraft operations. The RSA dimensions may be temporarily adjusted if the runway is restricted to aircraft operations requiring an RSA that is equal to the RSA width and length beyond the runway ends available during construction. (See AC 150/5300-13). The temporary use of declared distances and/or partial runway closures may provide the necessary RSA under certain circumstances. Coordinate with the appropriate FAA Airports Regional or District Office to have declared distances information published, and appropriate NOTAMs issued. See AC 150/5300-13 for guidance on the use of declared distances.

2.22.1.2 The airport operator must coordinate the adjustment of RSA dimensions as permitted above with the appropriate FAA Airports Regional or District Office and the local FAA air traffic manager and issue a NOTAM.

2.22.1.3 The CSPP and SPCD must provide procedures for ensuring adequate distance for protection from blasting operations, if required by operational considerations.

2.22.1.4 **Excavations.**

2.22.1.4.1 Open trenches or excavations are not permitted within the RSA while the runway is open. Backfill trenches before the runway is opened. If backfilling excavations before the runway must be opened is impracticable, cover the excavations appropriately. Covering for open trenches must be designed to allow the safe operation of the heaviest aircraft operating on the runway across the trench without damage to the aircraft.

2.22.1.4.2 Construction contractors must prominently mark open trenches and excavations at the construction site with red or orange flags, as approved by the airport operator, and light them with red lights during hours of restricted visibility or darkness.

2.22.1.5 **Erosion Control.**

Soil erosion must be controlled to maintain RSA standards, that is, the RSA must be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations, and capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and fire fighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft.

2.22.2 Runway Object Free Area (ROFA).

Construction, including excavations, may be permitted in the ROFA. However, equipment must be removed from the ROFA when not in use, and material should not be stockpiled in the ROFA if not necessary. Stockpiling material in the OFA requires submittal of a 7460-1 form and justification provided to the appropriate FAA Airports Regional or District Office for approval.

2.22.3 Taxiway Safety Area (TSA).

2.22.3.1 A taxiway safety area is a defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway. (See AC 150/5300-13.) Since the width of the TSA is equal to the wingspan of the design aircraft, no construction may occur within the TSA while the taxiway is open for aircraft operations. The TSA dimensions may be temporarily adjusted if the taxiway is restricted to aircraft operations requiring a TSA that is equal to the TSA width available during construction. Give special consideration to TSA dimensions at taxiway turns and intersections. (see AC 150/5300-13).

2.22.3.2 The airport operator must coordinate the adjustment of the TSA width as permitted above with the appropriate FAA Airports Regional or District Office and the FAA air traffic manager and issue a NOTAM.

2.22.3.3 The CSPP and SPCD must provide procedures for ensuring adequate distance for protection from blasting operations.

2.22.3.4 **Excavations.**

1. Curves. Open trenches or excavations are not permitted within the TSA while the taxiway is open. Trenches should be backfilled before the taxiway is opened. If backfilling excavations before the taxiway must be opened is impracticable, cover the excavations appropriately. Covering for open trenches must be designed to allow the safe operation of the heaviest aircraft operating on the taxiway across the trench without damage to the aircraft.
2. Straight Sections. Open trenches or excavations are not permitted within the TSA while the taxiway is open for unrestricted aircraft operations. Trenches should be backfilled before the taxiway is opened. If backfilling excavations before the taxiway must be opened is impracticable, cover the excavations to allow the safe passage of ARFF equipment and of the heaviest aircraft operating on the taxiway across the trench without causing damage to the equipment or aircraft. In rare circumstances where the section of taxiway is indispensable for aircraft movement, open trenches or excavations may be permitted in the TSA while the taxiway is open to aircraft operations, subject to the following restrictions:
    a. Taxiing speed is limited to 10 mph.
    b. Appropriate NOTAMs are issued.
    c. Marking and lighting meeting the provisions of paragraphs 2.18 and 2.20 are implemented.
    d. Low mass, low-profile lighted barricades are installed.
    e. Appropriate temporary orange construction signs are installed.
3. Construction contractors must prominently mark open trenches and excavations at the construction site with red or orange flags, as approved by the airport operator, and light them with red lights during hours of restricted visibility or darkness.

2.22.3.5 **Erosion control.**

Soil erosion must be controlled to maintain TSA standards, that is, the TSA must be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations, and capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft.

2.22.4 Taxiway Object Free Area (TOFA).

Unlike the Runway Object Free Area, aircraft wings regularly penetrate the taxiway object free area during normal operations. Thus, the restrictions are more stringent. Except as provided below, no construction may occur within the taxiway object free area while the taxiway is open for aircraft operations.

2.22.4.1 The taxiway object free area dimensions may be temporarily adjusted if the taxiway is restricted to aircraft operations requiring a taxiway object free area that is equal to the taxiway object free area width available. Give special consideration to TOFA dimensions at taxiway turns and intersections.

2.22.4.2 Offset taxiway centerline and edge pavement markings (do not use glass beads) may be used as a temporary measure to provide the required taxiway object free area. Where offset taxiway pavement markings are provided, centerline lighting, centerline reflectors, or taxiway edge reflectors are required. Existing lighting that does not coincide with the temporary markings must be taken out of service.

2.22.4.3 Construction activity, including open excavations, may be accomplished without adjusting the width of the taxiway object free area, subject to the following restrictions:

2.22.4.3.1 Taxiing speed is limited to 10 mph.

2.22.4.3.2 NOTAMs issued advising taxiing pilots of hazard and recommending reduced taxiing speeds on the taxiway.

2.22.4.3.3 Marking and lighting meeting the provisions of paragraphs 2.18 and 2.20 are implemented.

2.22.4.3.4 If desired, appropriate orange construction signs are installed. See paragraph 2.18.4.2 and Appendix F.

2.22.4.3.5 Five-foot clearance is maintained between equipment and materials and any part of an aircraft (includes wingtip overhang). If such clearance can only be maintained if an aircraft does not have full use of the entire taxiway width (with its main landing gear at the edge of the usable pavement), then it will be necessary to move personnel and equipment for the passage of that aircraft.

2.22.4.3.6 Flaggers furnished by the contractor must be used to direct and control construction equipment and personnel to a pre-established setback distance for safe passage of aircraft, and airline and/or airport personnel. Flaggers must also be used to direct taxiing aircraft. Due to liability issues, the airport operator should require airlines to provide flaggers for directing taxiing aircraft.

2.22.5 Obstacle Free Zone (OFZ).

In general, personnel, material, and/or equipment may not penetrate the OFZ while the runway is open for aircraft operations. If a penetration to the OFZ is necessary, it may be possible to continue aircraft operations through operational restrictions. Coordinate with the FAA through the appropriate FAA Airports Regional or District Office.

2.22.6 Runway Approach/Departure Areas and Clearways.

All personnel, materials, and/or equipment must remain clear of the applicable threshold siting surfaces, as defined in AC 150/5300-13. Objects that do not penetrate these surfaces may still be obstructions to air navigation and may affect standard instrument approach procedures. Coordinate with the FAA through the appropriate FAA Airports Regional or District Office.

2.22.6.1 Construction activity in a runway approach/departure area may result in the need to partially close a runway or displace the existing runway threshold. Partial runway closure, displacement of the runway threshold, as well as closure of the complete runway and other portions of the movement area also require coordination through the airport operator with the appropriate FAA air traffic manager (FSS if non-towered) and ATO/Technical Operations (for affected NAVAIDS) and airport users.

2.22.6.2 **Caution About Partial Runway Closures.**

When filing a NOTAM for a partial runway closure, clearly state that the portion of pavement located prior to the threshold is not available for landing and departing traffic. In this case, the threshold has been moved for both landing and takeoff purposes (this is different than a displaced threshold). There may be situations where the portion of closed runway is available for taxiing only. If so, the NOTAM must reflect this condition).

2.22.6.3 **Caution About Displaced Thresholds.**

Implementation of a displaced threshold affects runway length available for aircraft landing over the displacement. Depending on the reason for the displacement (to provide obstruction clearance or RSA), such a displacement may also require an adjustment in the landing distance available and accelerate-stop distance available in the opposite direction. If project scope includes personnel, equipment, excavation, or other work within the existing RSA of any usable runway end, do not implement a displaced threshold unless arrivals and departures toward the construction activity are prohibited. Instead, implement a partial closure.

2.23 **Other Limitations on Construction.**

The CSPP must specify any other limitations on construction, including but not limited to:

2.23.1 Prohibitions.

2.23.1.1 No use of tall equipment (cranes, concrete pumps, and so on) unless a 7460-1 determination letter is issued for such equipment.

2.23.1.2 No use of open flame welding or torches unless fire safety precautions are provided and the airport operator has approved their use.

2.23.1.3 No use of electrical blasting caps on or within 1,000 feet (300 meters) of the airport property. See AC 150/5370-10.

2.23.2 Restrictions.

2.23.2.1 Construction suspension required during specific airport operations.

2.23.2.2 Areas that cannot be worked on simultaneously.

2.23.2.3 Day or night construction restrictions.

2.23.2.4 Seasonal construction restrictions.

2.23.2.5 Temporary signs not approved by the airport operator.

2.23.2.6 Grades changes that could result in unplanned effects on NAVAIDs.

CHAPTER 3. GUIDELINES FOR WRITING A CSPP

3.1 General Requirements.

The CSPP is a standalone document written to correspond with the subjects outlined in paragraph 2.4. The CSPP is organized by numbered sections corresponding to each subject listed in paragraph 2.4, and described in detail in paragraphs 2.5 - 2.23. Each section number and title in the CSPP matches the corresponding subject outlined in paragraph 2.4 (for example, 1. Coordination, 2. Phasing, 3. Areas and Operations Affected by the Construction Activity, and so on). With the exception of the project scope of work outlined in Section 2. Phasing, only subjects specific to operational safety during construction should be addressed.

3.2 Applicability of Subjects.

Each section should, to the extent practical, focus on the specific subject. Where an overlapping requirement spans several sections, the requirement should be explained in detail in the most applicable section. A reference to that section should be included in all other sections where the requirement may apply. For example, the requirement to protect existing underground FAA ILS cables during trenching operations could be considered FAA ATO coordination (Coordination, paragraph 2.5.3), an area and operation affected by the construction activity (Areas and Operations Affected by the Construction Activity, paragraph 2.7.1.4), a protection of a NAVAID (Protection of Navigational Aids (NAVAIDs), paragraph 2.8), or a notification to the FAA of construction activities (Notification of Construction Activities, paragraph 2.13.5.3.2). However, it is more specifically an underground utility requirement (Underground Utilities, paragraph 2.15). The procedure for protecting underground ILS cables during trenching operations should therefore be described in 2.4.2.11: "The contractor must coordinate with the local FAA System Support Center (SSC) to mark existing ILS cable routes along Runway 17-35. The ILS cables will be located by hand digging whenever the trenching operation moves within 10 feet of the cable markings." All other applicable sections should include a reference to 2.4.2.11: "ILS cables shall be identified and protected as described in 2.4.2.11" or "See 2.4.2.11 for ILS cable identification and protection requirements." Thus, the CSPP should be considered as a whole, with no need to duplicate responses to related issues.

3.3 Graphical Representations.

Construction safety drawings should be included in the CSPP as attachments. When other graphical representations will aid in supporting written statements, the drawings, diagrams, and/or photographs should also be attached to the CSPP. References should be made in the CSPP to each graphical attachment and may be made in multiple sections.

3.4 **Reference Documents.**

The CSPP must not incorporate a document by reference unless reproduction of the material in that document is prohibited. In that case, either copies of or a source for the referenced document must be provided to the contractor. Where this AC recommends references (e.g. as in paragraph 3.9) the intent is to include a reference to the corresponding section in the CSPP, not to this Advisory Circular.

3.5 **Restrictions.**

The CSPP should not be considered as a project design review document. The CSPP should also avoid mention of permanent ("as-built") features such as pavements, markings, signs, and lighting, except when such features are intended to aid in maintaining operational safety during the construction.

3.6 **Coordination.**

Include in this section a detailed description of conferences and meetings to be held both before and during the project. Include appropriate information from AC 150/5370-12. Discuss coordination procedures and schedules for each required FAA ATO Technical Operations shutdown and restart and all required flight inspections.

3.7 **Phasing.**

Include in this section a detailed scope of work description for the project as a whole and each phase of work covered by the CSPP. This includes all locations and durations of the work proposed. Attach drawings to graphically support the written scope of work. Detail in this section the sequenced phases of the proposed construction. Include a reference to paragraph 3.8, as appropriate.

3.8 **Areas and Operations Affected by Construction.**

Focus in this section on identifying the areas and operations affected by the construction. Describe corresponding mitigation that is not covered in detail elsewhere in the CSPP. Include references to paragraphs below as appropriate. Attach drawings as necessary to graphically describe affected areas and mechanisms proposed. See Appendix F for sample operational effects tables and figures.

3.9 **NAVAID Protection.**

List in this section all NAVAID facilities that will be affected by the construction. Identify NAVAID facilities that will be placed out of service at any time prior to or during construction activities. Identify individuals responsible for coordinating each shutdown and when each facility will be out of service. Include a reference to paragraph 3.6 for FAA ATO NAVAID shutdown, restart, and flight inspection coordination. Outline in detail procedures to protect each NAVAID facility remaining in service from interference by construction activities. Include a reference to paragraph 3.14 for the

issuance of NOTAMs as required. Include a reference to paragraph 3.16 for the protection of underground cables and piping serving NAVAIDs. If temporary visual aids are proposed to replace or supplement existing facilities, include a reference to paragraph 3.19. Attach drawings to graphically indicate the affected NAVAIDS and the corresponding critical areas.

3.10 **Contractor Access.**

This will necessarily be the most extensive section of the CSPP. Provide sufficient detail so that a contractor not experienced in working on airports will understand the unique restrictions such work will require. Due to this extent, it should be broken down into subsections as described below:

3.10.1 Location of Stockpiled Construction Materials.

Describe in this section specific locations for stockpiling material. Note any height restrictions on stockpiles. Include a reference to paragraph 3.21 for hazard marking and lighting devices used to identify stockpiles. Include a reference to paragraph 3.11 for provisions to prevent stockpile material from becoming wildlife attractants. Include a reference to paragraph 3.12 for provisions to prevent stockpile material from becoming FOD. Attach drawings to graphically indicate the stockpile locations.

3.10.2 Vehicle and Pedestrian Operations.

While there are many items to be addressed in this major subsection of the CSPP, all are concerned with one main issue: keeping people and vehicles from areas of the airport where they don't belong. This includes preventing unauthorized entry to the AOA and preventing the improper movement of pedestrians or vehicles on the airport. In this section, focus on mechanisms to prevent construction vehicles and workers traveling to and from the worksite from unauthorized entry into movement areas. Specify locations of parking for both employee vehicles and construction equipment, and routes for access and haul roads. In most cases, this will best be accomplished by attaching a drawing. Quote from AC 150/5210-5 specific requirements for contractor vehicles rather than referring to the AC as a whole, and include special requirements for identifying HAZMAT vehicles. Quote from, rather than incorporate by reference, AC 150/5210-20 as appropriate to address the airport's rules for ground vehicle operations, including its training program. Discuss the airport's recordkeeping system listing authorized vehicle operators.

3.10.3 Two-Way Radio Communications.

Include a special section to identify all individuals who are required to maintain communications with Air Traffic (AT) at airports with active towers, or monitor CTAF at airports without or with closed ATCT. Include training requirements for all individuals required to communicate with AT. Individuals required to monitor AT frequencies should also be identified. If construction employees are also required to communicate by radio with Airport Operations, this procedure should be described in detail. Usage of vehicle mounted radios and/or portable radios should be addressed. Communication procedures for the event of disabled radio communication (that is, light

signals, telephone numbers, others) must be included. All radio frequencies should by identified (Tower, Ground Control, CTAF, UNICOM, ATIS, and so on).

3.10.4 Airport Security.

Address security as it applies to vehicle and pedestrian operations. Discuss TSA requirements, security badging requirements, perimeter fence integrity, gate security, and other needs. Attach drawings to graphically indicate secured and/or Security Identification Display Areas (SIDA), perimeter fencing, and available access points.

3.11 **Wildlife Management.**

Discuss in this section wildlife management procedures. Describe the maintenance of existing wildlife mitigation devices, such as perimeter fences, and procedures to limit wildlife attractants. Include procedures to notify Airport Operations of wildlife encounters. Include a reference to paragraph 3.10 for security (wildlife) fence integrity maintenance as required.

3.12 **FOD Management.**

In this section, discuss methods to control and monitor FOD: worksite housekeeping, ground vehicle tire inspections, runway sweeps, and so on. Include a reference to paragraph 3.15 for inspection requirements as required.

3.13 **HAZMAT Management.**

Describe in this section HAZMAT management procedures: fuel deliveries, spill recovery procedures, Safety Data Sheet (SDS), Material Safety Data Sheet (MSDS) or Product Safety Data Sheet (PSDS) availability, and other considerations. Any specific airport HAZMAT restrictions should also be identified. Include a reference to paragraph 3.10 for HAZMAT vehicle identification requirements. Quote from, rather than incorporate by reference, AC 150/5320-15.

3.14 **Notification of Construction Activities.**

List in this section the names and telephone numbers of points of contact for all parties affected by the construction project. We recommend a single list that includes all telephone numbers required under this section. Include emergency notification procedures for all representatives of all parties potentially impacted by the construction. Identify individual representatives – and at least one alternate – for each party. List both on-duty and off-duty contact information for each individual, including individuals responsible for emergency maintenance of airport construction hazard lighting and barricades. Describe procedures to coordinate immediate response to events that might adversely affect the operational safety of the airport (such as interrupted NAVAID service). Explain requirements for and the procedures for the issuance of Notices to Airmen (NOTAMs), notification to FAA required by 14 CFR Part 77 and Part 157 and in the event of affected NAVAIDs. For NOTAMs, identify an individual, and at least one alternate, responsible for issuing and cancelling each specific type of Notice to

Airmen (NOTAM) required. Detail notification methods for police, fire fighting, and medical emergencies. This may include 911, but should also include direct phone numbers of local police departments and nearby hospitals. Identify the E911 address of the airport and the emergency access route via haul roads to the construction site. Require the contractor to have this information available to all workers. The local Poison Control number should be listed. Procedures regarding notification of Airport Operations and/or the ARFF Department of such emergencies should be identified, as applicable. If airport radio communications are identified as a means of emergency notification, include a reference to paragraph 3.10. Differentiate between emergency and nonemergency notification of ARFF personnel, the latter including activities that affect ARFF water supplies and access roads. Identify the primary ARFF contact person and at least one alternate. If notification is to be made through Airport Operations, then detail this procedure. Include a method of confirmation from the ARFF department.

3.15 **Inspection Requirements.**

Describe in this section inspection requirements to ensure airfield safety compliance. Include a requirement for routine inspections by the resident engineer (RE) or other airport operator's representative and the construction contractors. If the engineering consultants and/or contractors have a Safety Officer who will conduct such inspections, identify this individual. Describe procedures for special inspections, such as those required to reopen areas for aircraft operations. Part 139 requires daily airfield inspections at certificated airports, but these may need to be more frequent when construction is in progress. Discuss the role of such inspections on areas under construction. Include a requirement to immediately remedy any deficiencies, whether caused by negligence, oversight, or project scope change.

3.16 **Underground Utilities.**

Explain how existing underground utilities will be located and protected. Identify each utility owner and include contact information for each company/agency in the master list. Address emergency response procedures for damaged or disrupted utilities. Include a reference to paragraph 3.14 for notification of utility owners of accidental utility disruption as required.

3.17 **Penalties.**

Describe in this section specific penalties imposed for noncompliance with airport rules and regulations, including the CSPP: SIDA violations, VPD, and others.

3.18 **Special Conditions.**

Identify any special conditions that may trigger specific safety mitigation actions outlined in this CSPP: low visibility operations, snow removal, aircraft in distress, aircraft accident, security breach, VPD, and other activities requiring construction suspension/resumption. Include a reference to paragraph 3.10 for compliance with airport safety and security measures and for radio communications as required. Include

a reference to paragraph 3.14 for emergency notification of all involved parties, including police/security, ARFF, and medical services.

3.19 **Runway and Taxiway Visual Aids.**

Include marking, lighting, signs, and visual NAVAIDS. Detail temporary runway and taxiway marking, lighting, signs, and visual NAVAIDs required for the construction. Discuss existing marking, lighting, signs, and visual NAVAIDs that are temporarily, altered, obliterated, or shut down. Consider non-federal facilities and address requirements for reimbursable agreements necessary for alteration of FAA facilities and for necessary flight checks. Identify temporary TORA signs or runway distance remaining signs if appropriate. Identify required temporary visual NAVAIDs such as REIL or PAPI. Quote from, rather than incorporate by reference, AC 150/5340-1, *Standards for Airport Markings;* AC 150/5340-18, *Standards for Airport Sign Systems;* and AC 150/5340-30, as required. Attach drawings to graphically indicate proposed marking, lighting, signs, and visual NAVAIDs.

3.20 **Marking and Signs for Access Routes.**

Detail plans for marking and signs for vehicle access routes. To the extent possible, signs should be in conformance with the Federal Highway Administration MUTCD and/or State highway specifications, not hand lettered. Detail any modifications to the guidance in the MUTCD necessary to meet frangibility/height requirements.

3.21 **Hazard Marking and Lighting.**

Specify all marking and lighting equipment, including when and where each type of device is to be used. Specify maximum gaps between barricades and the maximum spacing of hazard lighting. Identify one individual and at least one alternate responsible for maintenance of hazard marking and lighting equipment in the master telephone list. Include a reference to paragraph 3.14. Attach drawings to graphically indicate the placement of hazard marking and lighting equipment.

3.22 **Work Zone Lighting for Nighttime Construction.**

If work is to be conducted at night, specify all lighting equipment, including when and where each type of device is to be used. Indicate the direction lights are to be aimed and any directions that aiming of lights is prohibited. Specify any shielding necessary in instances where aiming is not sufficient to prevent interference with air traffic control and aircraft operations. Attach drawings to graphically indicate the placement and aiming of lighting equipment. Where the plan only indicates directions that aiming of lights is prohibited, the placement and positioning of portable lights must be proposed by the Contractor and approved by the airport operator’s representative each time lights are relocated or repositioned.

3.23 **Protection of Runway and Taxiway Safety Areas.**

This section should focus exclusively on procedures for protecting all safety areas, including those altered by the construction: methods of demarcation, limit of access, movement within safety areas, stockpiling and trenching restrictions, and so on. Reference AC 150/5300-13, as required. Include a reference to paragraph 3.10 for procedures regarding vehicle and personnel movement within safety areas. Include a reference to paragraph 3.10 for material stockpile restrictions as required. Detail requirements for trenching, excavations, and backfill. Include a reference to paragraph 3.21 for hazard marking and lighting devices used to identify open excavations as required. If runway and taxiway closures are proposed to protect safety areas, or if temporary displaced thresholds and/or revised declared distances are used to provide the required Runway Safety Area, include a reference to paragraphs 3.14 and 3.19. Detail procedures for protecting the runway OFZ, runway OFA, taxiway OFA and runway approach surfaces including those altered by the construction: methods of demarcation, limit of cranes, storage of equipment, and so on. Quote from, rather than incorporate by reference, AC 150/5300-13, as required. Include a reference to paragraph 3.24 for height (i.e., crane) restrictions as required. One way to address the height of equipment that will move during the project is to establish a three-dimensional "box" within which equipment will be confined that can be studied as a single object. Attach drawings to graphically indicate the safety area, OFZ, and OFA boundaries.

3.24 **Other Limitations on Construction.**

This section should describe what limitations must be applied to each area of work and when each limitation will be applied: limitations due to airport operations, height (i.e., crane) restrictions, areas which cannot be worked at simultaneously, day/night work restrictions, winter construction, and other limitations. Include a reference to paragraph 3.7 for project phasing requirements based on construction limitations as required.

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APPENDIX A. RELATED READING MATERIAL

Obtain the latest version of the following free publications from the FAA on its Web site at http://www.faa.gov/airports/.

Table A-1. FAA Publications

Number	Title and Description
AC 150/5200-28	*Notices to Airmen (NOTAMs) for Airport Operators* Guidance for using the NOTAM System in airport reporting.
AC 150/5200-30	*Airport Field Condition Assessments and Winter Operations Safety* Guidance for airport owners/operators on the development of an acceptable airport snow and ice control program and on appropriate field condition reporting procedures.
AC 150/5200-33	*Hazardous Wildlife Attractants On or Near Airports* Guidance on locating certain land uses that might attract hazardous wildlife to public-use airports.
AC 150/5210-5	*Painting, Marking, and Lighting of Vehicles Used on an Airport* Guidance, specifications, and standards for painting, marking, and lighting vehicles operating in the airport air operations areas.
AC 150/5210-20	*Ground Vehicle Operations to include Taxiing or Towing an Aircraft on Airports* Guidance to airport operators on developing ground vehicle operation training programs.
AC 150/5300-13	*Airport Design* FAA standards and recommendations for airport design. Establishes approach visibility minimums as an airport design parameter, and contains the Object Free area and the obstacle free-zone criteria.
AC 150/5210-24	*Airport Foreign Object Debris (FOD) Management* Guidance for developing and managing an airport foreign object debris (FOD) program

Number	Title and Description
AC 150/5320-15	*Management of Airport Industrial Waste* Basic information on the characteristics, management, and regulations of industrial wastes generated at airports. Guidance for developing a Storm Water Pollution Prevention Plan (SWPPP) that applies best management practices to eliminate, prevent, or reduce pollutants in storm water runoff with particular airport industrial activities.
AC 150/5340-1	*Standards for Airport Markings* FAA standards for the siting and installation of signs on airport runways and taxiways.
AC 150/5340-18	*Standards for Airport Sign Systems* FAA standards for the siting and installation of signs on airport runways and taxiways.
AC 150/5345-28	*Precision Approach Path Indicator (PAPI) Systems* FAA standards for PAPI systems, which provide pilots with visual glide slope guidance during approach for landing.
AC 150/5340-30	*Design and Installation Details for Airport Visual Aids* Guidance and recommendations on the installation of airport visual aids.
AC 150/5345-39	*Specification for L-853, Runway and Taxiway Retroreflective Markers*
AC 150/5345-44	*Specification for Runway and Taxiway Signs* FAA specifications for unlighted and lighted signs for taxiways and runways.
AC 150/5345-53	*Airport Lighting Equipment Certification Program* Details on the Airport Lighting Equipment Certification Program (ALECP).
AC 150/5345-50	*Specification for Portable Runway and Taxiway Lights* FAA standards for portable runway and taxiway lights and runway end identifier lights for temporary use to permit continued aircraft operations while all or part of a runway lighting system is inoperative.
AC 150/5345-55	*Specification for L-893, Lighted Visual Aid to Indicate Temporary Runway Closure*

Number	Title and Description
AC 150/5370-10	*Standards for Specifying Construction of Airports* Standards for construction of airports, including earthwork, drainage, paving, turfing, lighting, and incidental construction.
AC 150/5370-12	*Quality Management for Federally Funded Airport Construction Projects*
EB 93	*Guidance for the Assembly and Installation of Temporary Orange Construction Signs*
FAA Order 5200.11	FAA Airports (ARP) Safety Management System (SMS) Basics for implementing SMS within ARP. Includes roles and responsibilities of ARP management and staff as well as other FAA lines of business that contribute to the ARP SMS.
FAA Certalert 98-05	*Grasses Attractive to Hazardous Wildlife* Guidance on grass management and seed selection.
FAA Form 7460-1	Notice of Proposed Construction or Alteration
FAA Form 7480-1	Notice of Landing Area Proposal
FAA Form 6000.26	National NAS Strategic Interruption Service Level Agreement, Strategic Events Coordination, Airport Sponsor Form

Obtain the latest version of the following free publications from the Electronic Code of Federal Regulations at http://www.ecfr.gov/.

Table A-2. Code of Federal Regulation

Number	Title
Title 14 CFR Part 77	Safe, Efficient Use and Preservation of the Navigable Airspace
Title 14 CFR Part 139	Certification of Airports
Title 49 CFR Part 1542	Airport Security

Obtain the latest version of the Manual on Uniform Traffic Control Devices from the Federal Highway Administration at http://mutcd.fhwa.dot.gov/.

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APPENDIX B. TERMS AND ACRONYMS

Table B-1. Terms and Acronyms

Term	Definition
Form 7460-1	Notice of Proposed Construction or Alteration. For on-airport projects, the form submitted to the FAA regional or airports division office as formal written notification of any kind of construction or alteration of objects that affect navigable airspace, as defined in 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*. (See guidance available on the FAA web site at https://oeaaa.faa.gov.) The form may be downloaded at http://www.faa.gov/airports/resources/forms/, or filed electronically at: https://oeaaa.faa.gov.
Form 7480-1	Notice of Landing Area Proposal. Form submitted to the FAA Airports Regional Division Office or Airports District Office as formal written notification whenever a project without an airport layout plan on file with the FAA involves the construction of a new airport; the construction, realigning, altering, activating, or abandoning of a runway, landing strip, or associated taxiway; or the deactivation or abandoning of an entire airport The form may be downloaded at http://www.faa.gov/airports/resources/forms/.
Form 6000-26	Airport Sponsor Strategic Event Submission Form
AC	Advisory Circular
ACSI	Airport Certification Safety Inspector
ADG	Airplane Design Group
AIP	Airport Improvement Program
ALECP	Airport Lighting Equipment Certification Program
ANG	Air National Guard
AOA	Air Operations Area, as defined in 14 CFR Part 107. Means a portion of an airport, specified in the airport security program, in which security measures are carried out. This area includes aircraft movement areas, aircraft parking areas, loading ramps, and safety areas, and any adjacent areas (such as general aviation areas) that are not separated by adequate security systems, measures, or procedures. This area does not include the secured area of the airport terminal building.
ARFF	Aircraft Rescue and Fire Fighting
ARP	FAA Office of Airports
ASDA	Accelerate-Stop Distance Available
AT	Air Traffic
ATCT	Airport Traffic Control Tower
ATIS	Automatic Terminal Information Service
ATO	Air Traffic Organization
Certificated Airport	An airport that has been issued an Airport Operating Certificate by the FAA under

Term	Definition
	the authority of 14 CFR Part 139, *Certification of Airports*.
CFR	Code of Federal Regulations
Construction	The presence of construction-related personnel, equipment, and materials in any location that could infringe upon the movement of aircraft.
CSPP	Construction Safety and Phasing Plan. The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator's consultant and approved by the airport operator. It is included in the invitation for bids and becomes part of the project specifications.
CTAF	Common Traffic Advisory Frequency
Displaced Threshold	A threshold that is located at a point on the runway other than the designated beginning of the runway. The portion of pavement behind a displaced threshold is available for takeoffs in either direction or landing from the opposite direction.
DOT	Department of Transportation
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FOD	Foreign Object Debris/Damage
FSS	Flight Service Station
GA	General Aviation
HAZMAT	Hazardous Materials
HMA	Hot Mix Asphalt
IAP	Instrument Approach Procedures
IFR	Instrument Flight Rules
ILS	Instrument Landing System
LDA	Landing Distance Available
LOC	Localizer antenna array
Movement Area	The runways, taxiways, and other areas of an airport that are used for taxiing or hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading aprons and aircraft parking areas (reference 14 CFR Part 139).
MSDS	Material Safety Data Sheet
MUTCD	Manual on Uniform Traffic Control Devices
NAVAID	Navigation Aid
NAVAID Critical Area	An area of defined shape and size associated with a NAVAID that must remain clear and graded to avoid interference with the electronic signal.
Non-Movement Area	The area inside the airport security fence exclusive of the Movement Area. It is important to note that the non-movement area includes pavement traversed by aircraft.

Term	Definition
NOTAM	Notices to Airmen
Obstruction	Any object/obstacle exceeding the obstruction standards specified by 14 CFR Part 77, subpart C.
OCC	Operations Control Center
OE / AAA	Obstruction Evaluation / Airport Airspace Analysis
OFA	Object Free Area. An area on the ground centered on the runway, taxiway, or taxi lane centerline provided to enhance safety of aircraft operations by having the area free of objects except for those objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes. (See AC 150/5300-13 for additional guidance on OFA standards and wingtip clearance criteria.)
OFZ	Obstacle Free Zone. The airspace below 150 ft (45 m) above the established airport elevation and along the runway and extended runway centerline that is required to be clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance protection for aircraft landing or taking off from the runway and for missed approaches. The OFZ is subdivided as follows: Runway OFZ, Inner Approach OFZ, Inner Transitional OFZ, and Precision OFZ. Refer to AC 150/5300-13 for guidance on OFZ.
OSHA	Occupational Safety and Health Administration
OTS	Out of Service
P&R	Planning and Requirements Group
NPI	NAS Planning & Integration
PAPI	Precision Approach Path Indicator
PFC	Passenger Facility Charge
PLASI	Pulse Light Approach Slope Indicator
Project Proposal Summary	A clear and concise description of the proposed project or change that is the object of Safety Risk Management.
RA	Reimbursable Agreement
RE	Resident Engineer
REIL	Runway End Identifier Lights
RNAV	Area Navigation
ROFA	Runway Object Free Area
RSA	Runway Safety Area. A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway, in accordance with AC 150/5300-13.
SDS	Safety Data Sheet
SIDA	Security Identification Display Area
SMS	Safety Management System

Term	Definition
SPCD	Safety Plan Compliance Document. Details developed and submitted by a contractor to the airport operator for approval providing details on how the performance of a construction project will comply with the CSPP.
SRM	Safety Risk Management
SSC	System Support Center
Taxiway Safety Area	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway, in accordance with AC 150/5300-13.
TDG	Taxiway Design Group
Temporary	Any condition that is not intended to be permanent.
Temporary Runway End	The beginning of that portion of the runway available for landing and taking off in one direction, and for landing in the other direction. Note the difference from a displaced threshold.
Threshold	The beginning of that portion of the runway available for landing. In some instances, the landing threshold may be displaced.
TODA	Takeoff Distance Available
TOFA	Taxiway Object Free Area
TORA	Takeoff Run Available. The length of the runway less any length of runway unavailable and/or unsuitable for takeoff run computations. See AC 150/5300-13 for guidance on declared distances.
TSA	Taxiway Safety Area, or Transportation Security Administration
UNICOM	A radio communications system of a type used at small airports.
VASI	Visual Approach Slope Indicator
VGSI	Visual Glide Slope Indicator. A device that provides a visual glide slope indicator to landing pilots. These systems include precision approach path indicator (PAPI), visual approach slope indicator (VASI), and pulse light approach slope indicator (PLASI).
VFR	Visual Flight Rules
VOR	Very High Frequency Omnidirectional Radio Range
VPD	Vehicle / Pedestrian Deviation

APPENDIX C. SAFETY AND PHASING PLAN CHECKLIST

This appendix is keyed to Chapter 2. In the electronic version of this AC, clicking on the paragraph designation in the Reference column will access the applicable paragraph. There may be instances where the CSPP requires provisions that are not covered by the list in this appendix.

This checklist is intended as an aid, not a required submittal.

Table C-1. CSPP Checklist

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
General Considerations					
Requirements for predesign, prebid, and preconstruction conferences to introduce the subject of airport operational safety during construction are specified.	2.5				
Operational safety is a standing agenda item for construction progress meetings.	2.5				
Scheduling of the construction phases is properly addressed.	2.6				
Any formal agreements are established.	2.5.3				
Areas and Operations Affected by Construction Activity					
Drawings showing affected areas are included.	2.7.1				
Closed or partially closed runways, taxiways, and aprons are depicted on drawings.	2.7.1.1				
Access routes used by ARFF vehicles affected by the project are addressed.	2.7.1.2				
Access routes used by airport and airline support vehicles affected by the project are addressed.	2.7.1.3				
Underground utilities, including water supplies for firefighting and drainage.	2.7.1.4				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
Approach/departure surfaces affected by heights of temporary objects are addressed.	2.7.1.5				
Construction areas, storage areas, and access routes near runways, taxiways, aprons, or helipads are properly depicted on drawings.	2.7.1				
Temporary changes to taxi operations are addressed.	2.7.2.1				
Detours for ARFF and other airport vehicles are identified.	2.7.2.2				
Maintenance of essential utilities and underground infrastructure is addressed.	2.7.2.3				
Temporary changes to air traffic control procedures are addressed.	2.7.2.4				
NAVAIDs					
Critical areas for NAVAIDs are depicted on drawings.	2.8				
Effects of construction activity on the performance of NAVAIDS, including unanticipated power outages, are addressed.	2.8				
Protection of NAVAID facilities is addressed.	2.8				
The required distance and direction from each NAVAID to any construction activity is depicted on drawings.	2.8				
Procedures for coordination with FAA ATO/Technical Operations, including identification of points of contact, are included.	2.8, 2.13.1, 2.13.5.3.1, 2.18.1				
Contractor Access					
The CSPP addresses areas to which contractor will have access and how	2.9				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
the areas will be accessed.					
The application of 49 CFR Part 1542 Airport Security, where appropriate, is addressed.	2.9				
The location of stockpiled construction materials is depicted on drawings.	2.9.1				
The requirement for stockpiles in the ROFA to be approved by FAA is included.	2.9.1				
Requirements for proper stockpiling of materials are included.	2.9.1				
Construction site parking is addressed.	2.9.2.1				
Construction equipment parking is addressed.	2.9.2.2				
Access and haul roads are addressed.	2.9.2.3				
A requirement for marking and lighting of vehicles to comply with AC 150/5210-5, *Painting, Marking and Lighting of Vehicles Used on an Airport,* is included.	2.9.2.4				
Proper vehicle operations, including requirements for escorts, are described.	2.9.2.5, 2.9.2.6				
Training requirements for vehicle drivers are addressed.	2.9.2.7				
Two-way radio communications procedures are described.	2.9.2.9				
Maintenance of the secured area of the airport is addressed.	2.9.2.10				
Wildlife Management					
The airport operator’s wildlife management procedures are addressed.	2.10				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
Foreign Object Debris Management					
The airport operator's FOD management procedures are addressed.	2.11				
Hazardous Materials Management					
The airport operator's hazardous materials management procedures are addressed.	2.12				
Notification of Construction Activities					
Procedures for the immediate notification of airport user and local FAA of any conditions adversely affecting the operational safety of the airport are detailed.	2.13				
Maintenance of a list by the airport operator of the responsible representatives/points of contact for all involved parties and procedures for contacting them 24 hours a day, seven days a week is specified.	2.13.1				
A list of local ATO/Technical Operations personnel is included.	2.13.1				
A list of ATCT managers on duty is included.	2.13.1				
A list of authorized representatives to the OCC is included.	2.13.2				
Procedures for coordinating, issuing, maintaining and cancelling by the airport operator of NOTAMS about airport conditions resulting from construction are included.	2.8, 2.13.2, 2.18.3.3.9				
Provision of information on closed or hazardous conditions on airport movement areas by the airport operator to the OCC is specified.	2.13.2				
Emergency notification procedures for medical, fire fighting, and police	2.13.3				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
response are addressed.					
Coordination with ARFF personnel for non-emergency issues is addressed.	2.13.4				
Notification to the FAA under 14 CFR parts 77 and 157 is addressed.	2.13.5				
Reimbursable agreements for flight checks and/or design and construction for FAA owned NAVAIDs are addressed.	2.13.5.3.2				
Inspection Requirements					
Daily and interim inspections by both the airport operator and contractor are specified.	2.14.1, 2.14.2				
Final inspections at certificated airports are specified when required.	2.14.3				
Underground Utilities					
Procedures for protecting existing underground facilities in excavation areas are described.	2.15				
Penalties					
Penalty provisions for noncompliance with airport rules and regulations and the safety plans are detailed.	2.16				
Special Conditions					
Any special conditions that affect the operation of the airport or require the activation of any special procedures are addressed.	2.17				
Runway and Taxiway Visual Aids - Marking, Lighting, Signs, and Visual NAVAIDs					
The proper securing of temporary airport markings, lighting, signs, and visual NAVAIDs is addressed.	2.18.1				
Frangibility of airport markings, lighting, signs, and visual NAVAIDs is specified.	2.18.1, 2.18.3, 2.18.4.2, 2.20.2.4				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
The requirement for markings to be in compliance with AC 150/5340-1, *Standards for Airport Markings*, is specified.	2.18.2				
Detailed specifications for materials and methods for temporary markings are provided.	2.18.2				
The requirement for lighting to conform to AC 150/5340-30, *Design and Installation Details for Airport Visual Aids;* AC 150/5345-50, *Specification for Portable Runway and Taxiway Lights;* and AC 150/5345-53, *Airport Lighting Certification Program*, is specified.	2.18.3				
The use of a lighted X is specified where appropriate.	2.18.2.1.2, 2.18.3.2				
The requirement for signs to conform to AC 150/5345-44, *Specification for Runway and Taxiway Signs;* AC 50/5340-18, *Standards for Airport Sign Systems;* and AC 150/5345-53, *Airport Lighting Certification Program*, is specified.	2.18.4				
Marking and Signs For Access Routes					
The CSPP specifies that pavement markings and signs intended for construction personnel should conform to AC 150/5340-18 and, to the extent practicable, with the MUTCD and/or State highway specifications.	2.18.4.2				
Hazard Marking and Lighting					
Prominent, comprehensible warning indicators for any area affected by construction that is normally accessible to aircraft, personnel, or vehicles are specified.	2.20.1				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
Hazard marking and lighting are specified to identify open manholes, small areas under repair, stockpiled material, and waste areas.	2.20.1				
The CSPP considers less obvious construction-related hazards.	2.20.1				
Equipment that poses the least danger to aircraft but is sturdy enough to remain in place when subjected to typical winds, prop wash and jet blast is specified.	2.20.2.1				
The spacing of barricades is specified such that a breach is physically prevented barring a deliberate act.	2.20.2.1				
Red lights meeting the luminance requirements of the State Highway Department are specified.	2.20.2.2				
Barricades, temporary markers, and other objects placed and left in areas adjacent to any open runway, taxiway, taxi lane, or apron are specified to be as low as possible to the ground, and no more than 18 inch high.	2.20.2.3				
Barricades are specified to indicate construction locations in which no part of an aircraft may enter.	2.20.2.3				
Highly reflective barriers with lights are specified to barricade taxiways leading to closed runways.	2.20.2.5				
Markings for temporary closures are specified.	2.20.2.5				
The provision of a contractor's representative on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades is specified.	2.20.2.7				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
Work Zone Lighting for Nighttime Construction					
If work is to be conducted at night, the CSPP identifies construction lighting units and their general locations and aiming in relationship to the ATCT and active runways and taxiways.	2.21				
Protection of Runway and Taxiway Safety Areas					
The CSPP clearly states that no construction may occur within a safety area while the associated runway or taxiway is open for aircraft operations.	2.22.1.1, 2.22.3.1				
The CSPP specifies that the airport operator coordinates the adjustment of RSA or TSA dimensions with the ATCT and the appropriate FAA Airports Regional or District Office and issues a local NOTAM.	2.22.1.2, 2.22.3.2				
Procedures for ensuring adequate distance for protection from blasting operations, if required by operational considerations, are detailed.	2.22.3.3				
The CSPP specifies that open trenches or excavations are not permitted within a safety area while the associated runway or taxiway is open, subject to approved exceptions.	2.22.1.4				
Appropriate covering of excavations in the RSA or TSA that cannot be backfilled before the associated runway or taxiway is open is detailed.	2.22.1.4				
The CSPP includes provisions for prominent marking of open trenches and excavations at the construction site.	2.22.1.4				
Grading and soil erosion control to maintain RSA/TSA standards are	2.22.3.5				

Coordination	Reference	Addressed?			Remarks
		Yes	No	NA	
addressed.					
The CSPP specifies that equipment is to be removed from the ROFA when not in use.	2.22.2				
The CSPP clearly states that no construction may occur within a taxiway safety area while the taxiway is open for aircraft operations.	2.22.3				
Appropriate details are specified for any construction work to be accomplished in a taxiway object free area.	2.22.4				
Measures to ensure that personnel, material, and/or equipment do not penetrate the OFZ or threshold siting surfaces while the runway is open for aircraft operations are included.	2.22.4.3.6				
Provisions for protection of runway approach/departure areas and clearways are included.	2.22.6				
Other Limitations on Construction					
The CSPP prohibits the use of open flame welding or torches unless adequate fire safety precautions are provided and the airport operator has approved their use.	2.23.1.2				
The CSPP prohibits the use of electrical blasting caps on or within 1,000 ft (300 m) of the airport property.	2.23.1.3				

APPENDIX D. CONSTRUCTION PROJECT DAILY SAFETY INSPECTION CHECKLIST

The situations identified below are potentially hazardous conditions that may occur during airport construction projects. Safety area encroachments, unauthorized and improper ground vehicle operations, and unmarked or uncovered holes and trenches near aircraft operating surfaces pose the most prevalent threats to airport operational safety during airport construction projects. The list below is one tool that the airport operator or contractor may use to aid in identifying and correcting potentially hazardous conditions. It should be customized as appropriate for each project including information such as the date, time and name of the person conducting the inspection.

Table D-1. Potentially Hazardous Conditions

Item	Action Required (Describe)	No Action Required (Check)
Excavation adjacent to runways, taxiways, and aprons improperly backfilled.		
Mounds of earth, construction materials, temporary structures, and other obstacles near any open runway, taxiway, or taxi lane; in the related Object Free area and aircraft approach or departure areas/zones; or obstructing any sign or marking.		
Runway resurfacing projects resulting in lips exceeding 3 inch (7.6 cm) from pavement edges and ends.		
Heavy equipment (stationary or mobile) operating or idle near AOA, in runway approaches and departures areas, or in OFZ.		
Equipment or material near NAVAIDs that may degrade or impair radiated signals and/or the monitoring of navigation and visual aids. Unauthorized or improper vehicle operations in localizer or glide slope critical areas, resulting in electronic interference and/or facility shutdown.		
Tall and especially relatively low visibility units (that is, equipment with slim profiles) — cranes, drills, and similar objects — located in critical areas, such as OFZ and		

Item	Action Required (Describe)	No Action Required (Check)
approach zones.		
Improperly positioned or malfunctioning lights or unlighted airport hazards, such as holes or excavations, on any apron, open taxiway, or open taxi lane or in a related safety, approach, or departure area.		
Obstacles, loose pavement, trash, and other debris on or near AOA. Construction debris (gravel, sand, mud, paving materials) on airport pavements may result in aircraft propeller, turbine engine, or tire damage. Also, loose materials may blow about, potentially causing personal injury or equipment damage.		
Inappropriate or poorly maintained fencing during construction intended to deter human and animal intrusions into the AOA. Fencing and other markings that are inadequate to separate construction areas from open AOA create aviation hazards.		
Improper or inadequate marking or lighting of runways (especially thresholds that have been displaced or runways that have been closed) and taxiways that could cause pilot confusion and provide a potential for a runway incursion. Inadequate or improper methods of marking, barricading, and lighting of temporarily closed portions of AOA create aviation hazards.		
Wildlife attractants — such as trash (food scraps not collected from construction personnel activity), grass seeds, tall grass, or standing water — on or near airports.		
Obliterated or faded temporary markings on active operational areas.		
Misleading or malfunctioning obstruction lights. Unlighted or unmarked obstructions in the approach to any open runway pose aviation hazards.		

Item	Action Required (Describe)	No Action Required (Check)
Failure to issue, update, or cancel NOTAMs about airport or runway closures or other construction related airport conditions.		
Failure to mark and identify utilities or power cables. Damage to utilities and power cables during construction activity can result in the loss of runway / taxiway lighting; loss of navigation, visual, or approach aids; disruption of weather reporting services; and/or loss of communications.		
Restrictions on ARFF access from fire stations to the runway / taxiway system or airport buildings.		
Lack of radio communications with construction vehicles in airport movement areas.		
Objects, regardless of whether they are marked or flagged, or activities anywhere on or near an airport that could be distracting, confusing, or alarming to pilots during aircraft operations.		
Water, snow, dirt, debris, or other contaminants that temporarily obscure or derogate the visibility of runway/taxiway marking, lighting, and pavement edges. Any condition or factor that obscures or diminishes the visibility of areas under construction.		
Spillage from vehicles (gasoline, diesel fuel, oil) on active pavement areas, such as runways, taxiways, aprons, and airport roadways.		
Failure to maintain drainage system integrity during construction (for example, no temporary drainage provided when working on a drainage system).		

Item	Action Required (Describe)	No Action Required (Check)
Failure to provide for proper electrical lockout and tagging procedures. At larger airports with multiple maintenance shifts/workers, construction contractors should make provisions for coordinating work on circuits.		
Failure to control dust. Consider limiting the amount of area from which the contractor is allowed to strip turf.		
Exposed wiring that creates an electrocution or fire ignition hazard. Identify and secure wiring, and place it in conduit or bury it.		
Site burning, which can cause possible obscuration.		
Construction work taking place outside of designated work areas and out of phase.		

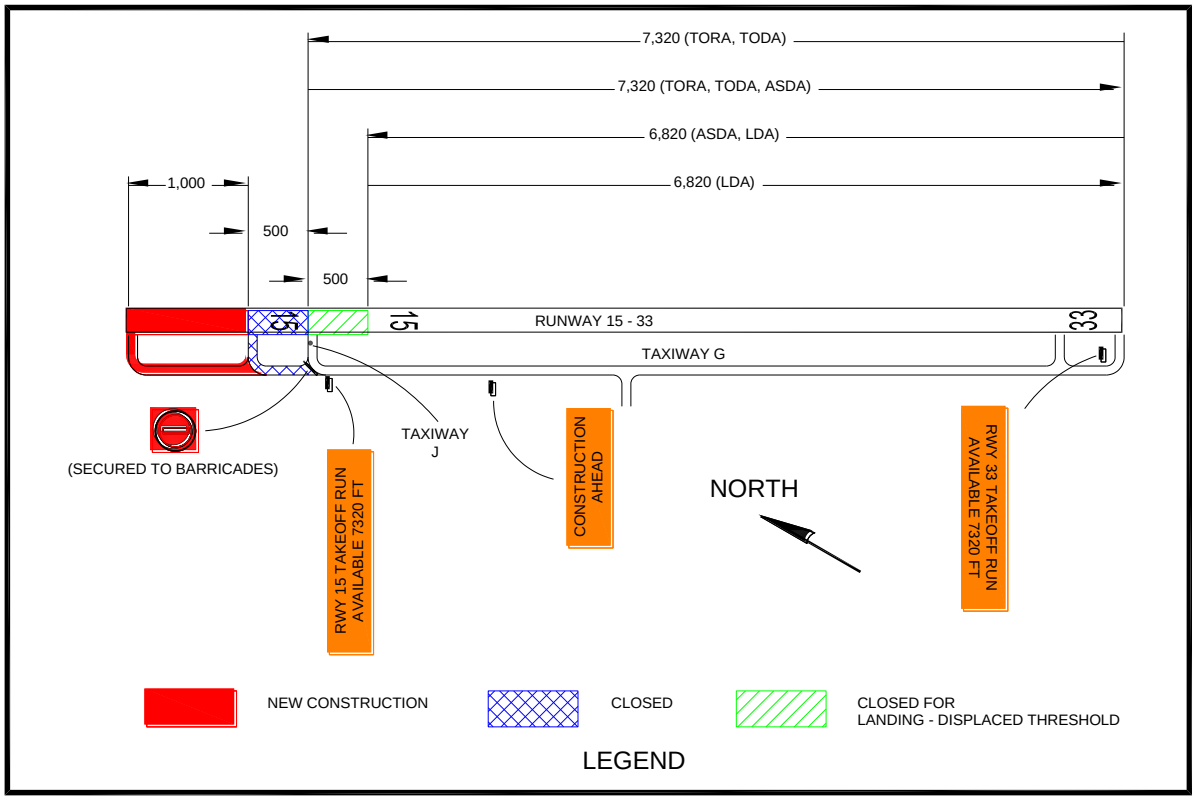
APPENDIX E. SAMPLE OPERATIONAL EFFECTS TABLE

E.1 **Project Description.**

Runway 15-33 is currently 7820 feet long, with a 500 foot stopway on the north end. This project will remove the stopway and extend the runway 1000 feet to the north and 500 feet to the south. Finally, the existing portion of the runway will be repaved. The runway 33 glide slope will be relocated. The new runway 33 localizer has already been installed by FAA Technical Operations and only needs to be switched on. Runway 15 is currently served only by a localizer, which will remain in operation as it will be beyond the future RSA. Appropriate NOTAMS will be issued throughout the project.

E.1.1 During Phase I, the runway 15 threshold will be displaced 1000 feet to keep construction equipment below the approach surface. The start of runway 15 takeoff and the departure end of runway 33 will also be moved 500 feet to protect workers from jet blast. Declared distances for runway 33 will be adjusted to provide the required RSA and applicable departure surface. Excavation near Taxiway G will require its ADG to be reduced from IV to III. See Figure E-1.

Figure E-1. Phase I Example

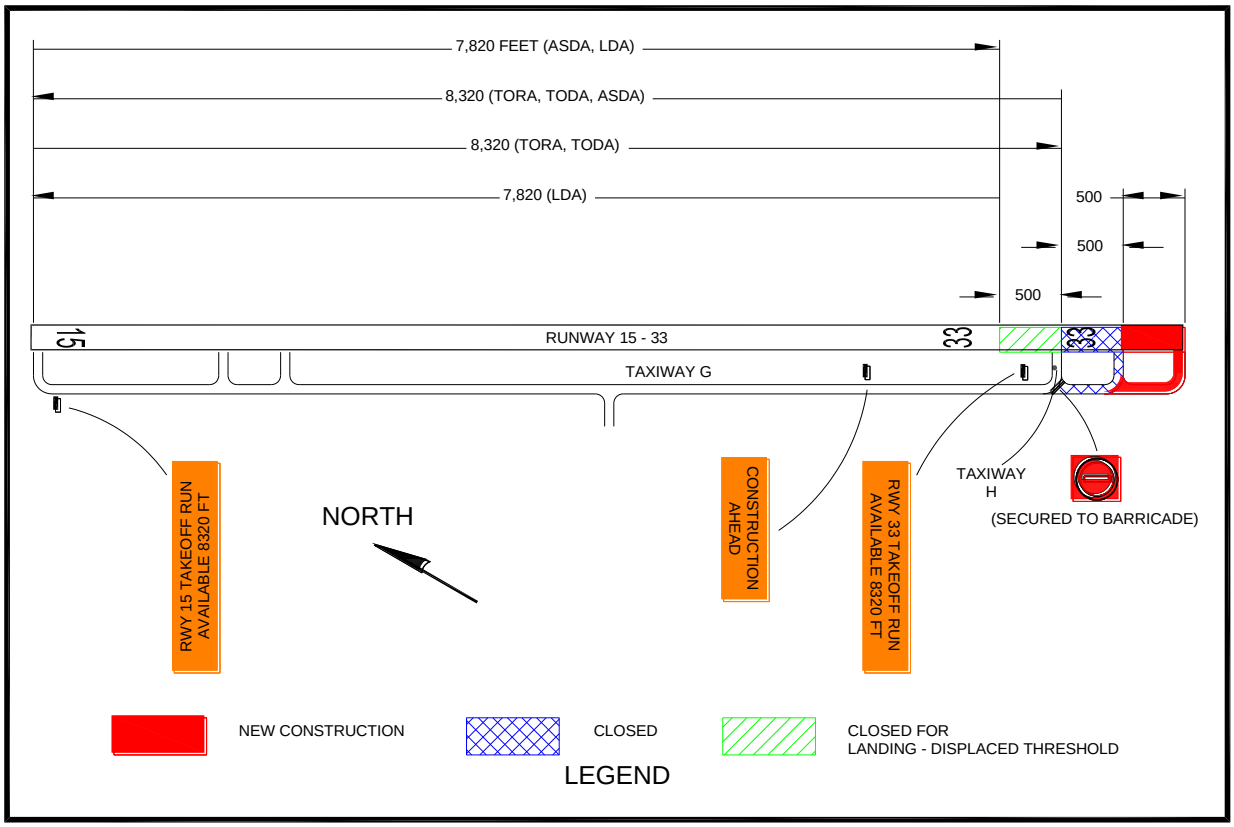


Note 1: Where hold signs are installed on both sides of a taxiway, install the TORA sign on the left side of the taxiway before the final turn to the runway intersection.

Note 2: Based on the declared distances for Runway 33 departures, the maximum equipment height in the construction area is 12.5 feet (500/40 = 12.5).

E.2 During Phase II, the runway 33 threshold will be displaced 1000 feet to keep construction equipment below the approach surface. The start of runway 33 takeoff and the departure end of runway 15 will also be moved 500 feet to protect workers from jet blast. Declared distances for runway 15 will be adjusted to provide the required RSA and applicable departure surface. See Figure E-2.

Figure E-2. Phase II Example



Note 1: Where hold signs are installed on both sides of a taxiway, install the TORA sign on the left side of the taxiway before the final turn to the runway intersection.

Note 2: Based on the declared distances for Runway 15 departures, the maximum equipment height in the construction area is 12.5 feet (500/40 = 12.5).

E.3 During Phase III, the existing portion of the runway will be repaved with Hot Mix Asphalt (HMA) and the runway 33 glide slope will be relocated. Construction will be accomplished between the hours of 8:00 pm and 5:00 am, during which the runway will be closed to operations.

Figure E-3. Phase III Example

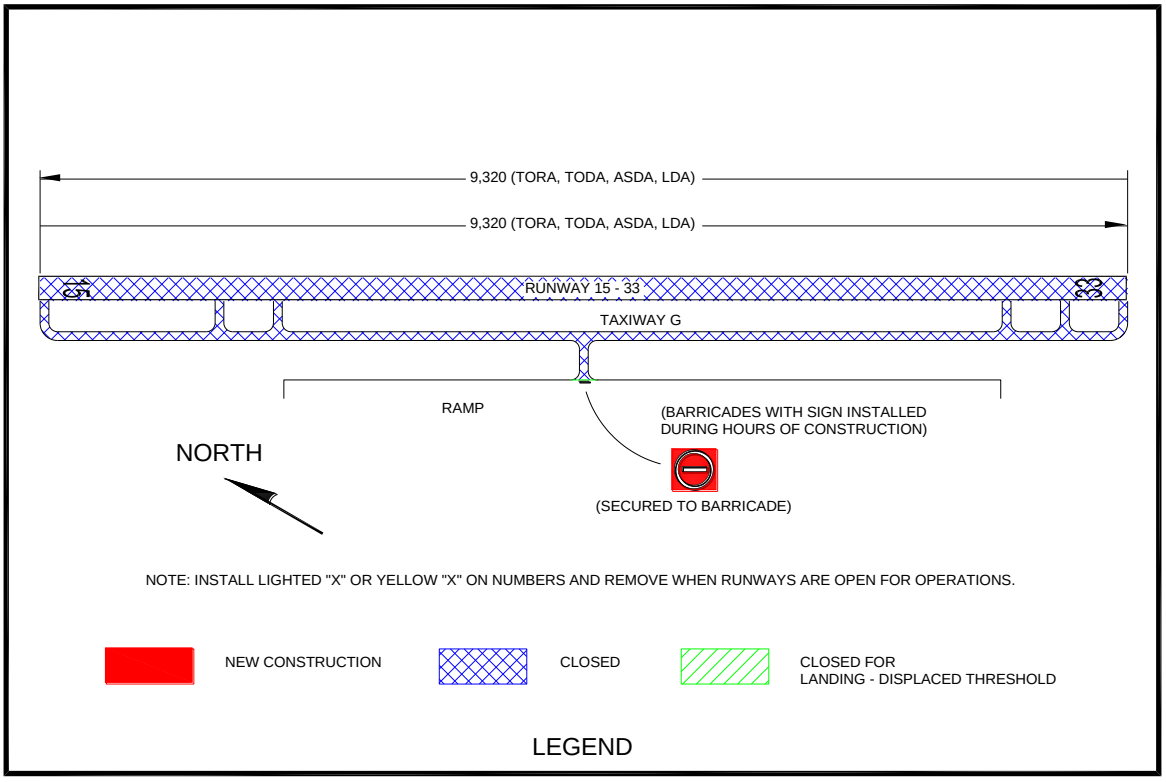


Table E-1. Operational Effects Table

Project	**Runway 15-33 Extension and Repaving**			
Phase	**Normal (Existing)**	**Phase I: Extend Runway 15 End**	**Phase II: Extend Runway 33 End**	**Phase III: Repave Runway**
Scope of Work	N/A	Extend Runway 15-33 1,000 ft on north end with Hot Mix Asphaltic Concrete (HMA).	Extend Runway 15-33 500 ft on south end with Hot Mix Asphaltic Concrete (HMA).	Repave existing runway with HMA Relocate Runway 33 Glide Slope
Effects of Construction Operations	N/A	Existing North 500 ft closed	Existing South 500 ft closed	Runway closed between 8:00 pm and 5:00 am Edge lighting out of service
Construction Phase	N/A	Phase I (Anticipated)	Phase II (Anticipated)	Phase III (Anticipated)
Runway 15 Average Aircraft Operations	Carrier: 52 /day GA: 26 /day Military: 11 /day	Carrier: 40 /day GA: 26 /day Military: 0 /day	Carrier: 45 /day GA: 26 /day Military: 5 /day	Carrier: 45 / day GA: 20 / day Military: 0 /day
Runway 33 Average Aircraft Operations	Carrier: 40 /day GA: 18 /day Military: 10 /day	Carrier: 30 /day GA: 18 /day Military: 0 /day	Carrier: 25 /day GA: 18 /day Military: 5 /day	Carrier: 20 /day GA: 5 /day Military: 0 /day
Runway 15-33 Aircraft Category	C-IV	C-IV	C-IV	C-IV
Runway 15 Approach Visibility Minimums	1 mile	1 mile	1 mile	1 mile
Runway 33 Approach Visibility Minimums	¾ mile	¾ mile	¾ mile	1 mile

Note: Proper coordination with Flight Procedures group is necessary to maintain instrument approach procedures during construction.

Project		Runway 15-33 Extension and Repaving			
Phase		**Normal (Existing)**	**Phase I: Extend Runway 15 End**	**Phase II: Extend Runway 33 End**	**Phase III: Repave Runway**
Runway 15 Declared Distances	**TORA**	7,820	7,320	8,320	9,320
	TODA	7,820	7,320	8,320	9,320
	ASDA	7,820	7,320	7,820	9,320
	LDA	7,820	6,820	7,820	9,320
Runway 33 Declared Distances	**TORA**	7,820	7,320	8,320	9,320
	TODA	7,820	7,320	8,320	9,320
	ASDA	8,320	6,820	8,320	9,320
	LDA	7,820	6,820	7,820	9,320
Runway 15 Approach Procedures		LOC only	LOC only	LOC only	LOC only
		RNAV	RNAV	RNAV	RNAV
		VOR	VOR	VOR	VOR
Runway 33 Approach Procedures		ILS	ILS	ILS	LOC only
		RNAV	RNAV	RNAV	RNAV
		VOR	VOR	VOR	VOR
Runway 15 NAVAIDs		LOC	LOC	LOC	LOC
Runway 33 NAVAIDs		ILS, MALSR	ILS, MALSR	ILS, MALSR	LOC, MALSR
Taxiway G ADG		IV	III	IV	IV
Taxiway G TDG		4	4	4	4
ATCT (hours open)		24 hours	24 hours	24 hours	0500 - 2000
ARFF Index		D	D	D	D

Project	Runway 15-33 Extension and Repaving			
Phase	**Normal (Existing)**	**Phase I: Extend Runway 15 End**	**Phase II: Extend Runway 33 End**	**Phase III: Repave Runway**
Special Conditions	Air National Guard (ANG) military operations	All military aircraft relocated to alternate ANG Base	Some large military aircraft relocated to alternate ANG Base	All military aircraft relocated to alternate ANG Base
Information for NOTAMs		Refer above for applicable declared distances. Taxiway G limited to 118 ft wingspan	Refer above for applicable declared distances.	Refer above for applicable declared distances. Airport closed 2000 – 0500. Runway 15 glide slope OTS.

Note: This table is one example. It may be advantageous to develop a separate table for each project phase and/or to address the operational status of the associated NAVAIDs per construction phase.

Complete the following chart for each phase to determine the area that must be protected along the runway and taxiway edges:

Table E-2. Runway and Taxiway Edge Protection

Runway/Taxiway	Aircraft Approach Category* A, B, C, or D	Airplane Design Group* I, II, III, or IV	Safety Area Width in Feet Divided by 2*

*See AC 150/5300-13 to complete the chart for a specific runway/taxiway.

Complete the following chart for each phase to determine the area that must be protected before the runway threshold:

Table E-3. Protection Prior to Runway Threshold

Runway End Number	Airplane Design Group* I, II, III, or IV	Aircraft Approach Category* A, B, C, or D	Minimum Safety Area Prior to the Threshold*	Minimum Distance to Threshold Based on Required Approach Slope*	
			ft	ft	: 1
			ft	ft	: 1
			ft	ft	: 1
			ft	ft	: 1

*See AC 150/5300-13 to complete the chart for a specific runway.

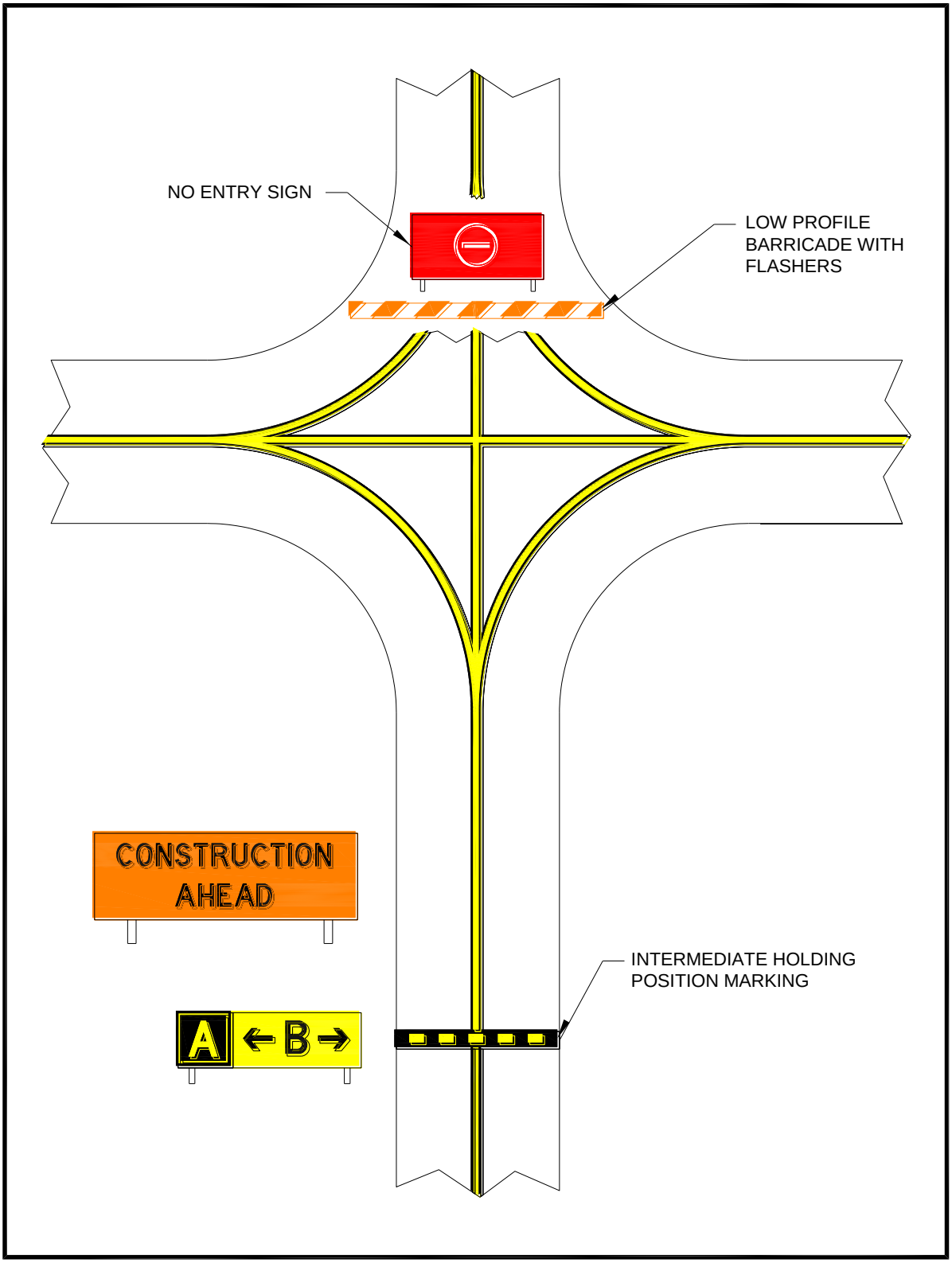
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APPENDIX F. ORANGE CONSTRUCTION SIGNS

Figure F-1. Approved Sign Legends

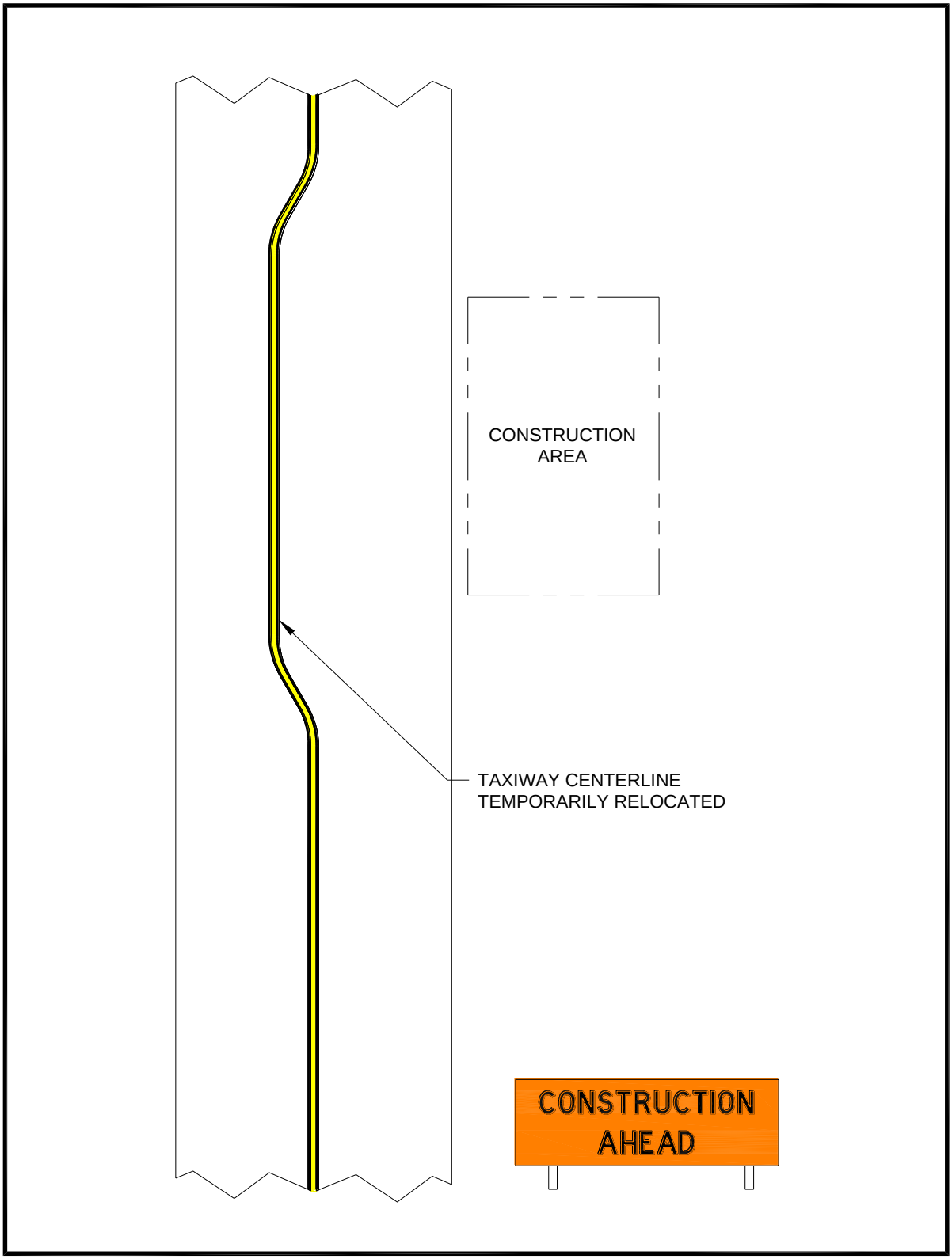


Figure F-2. Orange Construction Sign Example 1



Note: For proper placement of signs, refer to EB 93.

Figure F-3. Orange Construction Sign Example 2



Note: For proper placement of signs, refer to EB 93.

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Advisory Circular Feedback

If you find an error in this AC, have recommendations for improving it, or have suggestions for new items/subjects to be added, you may let us know by (1) mailing this form to Manager, Airport Engineering Division, Federal Aviation Administration ATTN: AAS-100, 800 Independence Avenue SW, Washington DC 20591 or (2) faxing it to the attention of the Office of Airport Safety and Standards at (202) 267-5383.

Subject: AC 150/5370-2G Date: _____

Please check all appropriate line items:

☐ An error (procedural or typographical) has been noted in paragraph _____ on page _____.

☐ Recommend paragraph _____ on page _____ be changed as follows:

_____
_____
_____

☐ In a future change to this AC, please cover the following subject:
(Briefly describe what you want added.)

_____
_____
_____

☐ Other comments:

_____
_____
_____

☐ I would like to discuss the above. Please contact me at (phone number, email address).

_____

Submitted by: _____ Date: _____

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DIVISION 1 - SPECIFICATIONS

SPECIAL PROVISIONS

Pre-Renovation Hazardous Material Report

(SP-8)

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Limited Hazardous Materials Pre-Renovation Survey

Greater Binghamton Airport Hangar 2
2534 Airport Road
Johnson City, New York 13790

Arctic Project Number: 2026.056

Prepared by:

ARCTIC ENTERPRISES, INC.
7010 Fly Road, Suite 1, East Syracuse, New York 13057

April 29, 2026

Limited Hazardous Materials Pre-Renovation Survey

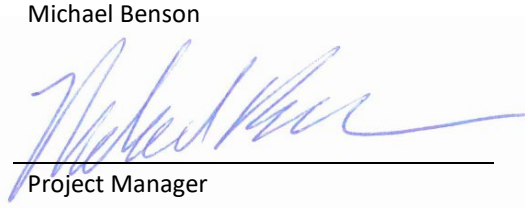
Greater Binghamton Airport Hangar 2
2534 Airport Road
Johnson City, New York 13790

Prepared for:

Mr. Hashem M. Obeidallah, PE, MBA
McFarland Johnson
49 Court Street, Suite 240
Binghamton, New York 13091

Author:

Name: Michael Benson

Signature: 

Title: Project Manager

Reviewed by:

Name: Janette Van Wie

Signature: 

Title: President/Owner

Project Number:	2026.056
Report Status:	FINAL
Date:	April 29, 2026
Prepared by:	Arctic Enterprises, Inc.
	7010 Fly Road, Suite 1
	East Syracuse, New York 13057
Telephone:	315.476.1757
Fax:	315.476.1764
	www.arcticent.com

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4.0 OSHA AND NEW YORK STATE COMPLIANCE 7
5.0 LEAD-BASED PAINT BULK SAMPLING 7
6.0 PCB BULK SAMPLING 8
7.0 SUMMARY 8

ATTACHMENTS

Attachment A: Arctic's Company License and Personnel Certifications
Attachment B: Asbestos Bulk Sample Laboratory Report
Attachment C: Lead-Based Paint Bulk Sample Laboratory Report
Attachment D: Sample Location and Positive Materials Location Drawings

1.0 INTRODUCTION

In accordance with your request, Arctic Enterprises, Inc. (Arctic) was retained to collect samples of any suspect asbestos-containing materials (ACMs), suspect polychlorinated biphenyl (PCBs) in caulks/sealants and representative lead-based paint (LBP) materials from Greater Binghamton Airport, located at 2534 Airport Road, in Johnson City, New York. Sampling was limited to Hangar 2 and conducted in preparation for the upcoming renovation project under consideration.

2.0 ASBESTOS BULK SAMPLING

The asbestos bulk samples were collected by Mr. Michael Benson, a New York State Department of Labor (NYSDOL) certified asbestos building inspector. A total of sixty-0ne (61) samples were collected. Post collection, the samples were labeled and sent to AmeriSci New York, an approved environmental laboratory for analysis.

By regulatory definition, any building material containing greater than one percent (1%) asbestos must be considered an asbestos-containing material (ACM). Several of the materials sampled were found to be asbestos-containing, as determined by laboratory analysis. The laboratory analysis report has been included in Attachment B. The table below summarizes the results:

Table 2.1 – ASBESTOS BULK SAMPLE LABORATORY RESULTS

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	ASBESTOS CONTENT
FT-00A,B	A: 1ST FLOOR MEN'S ROOM B: 1ST FLOOR WOMEN'S ROOM	12" x 12" GRAY WHITE SELF-ADHESIVE FLOOR TILE	NAD
CBM-002A,B	A: 1ST FLOOR MEN'S ROOM B: 1ST FLOOR WOMEN'S ROOM	YELLOW COVE BASE MASTIC	NAD
FTM-003A,B	**A: 1-10 B: 1-3**	**9" x 9" BLACK FLOOR TILE MASTIC**	**2.6% CHRYSOTILE**
FT-004A,B	**A: 1-10 B: 1-3**	**9" x 9" BROWN FLOOR TILE**	**3.1% CHRYSOTILE**
FL-005A,B	1ST FLOOR CORRIDOR	WHITE FLOOR LEVELER	NAD
CA-006A,B	A: 1-10 B: 1-9	CARPET ADHESIVE	NAD
FT-007A,B	A: 1-3 B: 1-2	12" x 12" WHITE WITH SPECKS	NAD
FT-008A,B	A: 1-3 B: 1-8	12" x 12" OLIVE/CREAM FLOOR TILE	NAD
FTM-009A,B	A: 1-3 B: 1-8	FLOOR TILE MASTIC TO 12" x 12" FLOOR TILE	NAD
CT-010A,B	1-8	2' x 4' FISSURED CEILING TILE	NAD

Table 2.1 – ASBESTOS BULK SAMPLE LABORATORY RESULTS

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	ASBESTOS CONTENT
CT-011A,B	1-11	2' x 4' CEILING TILE WITH 2 x 2 PATTERN	NAD
CT-012A,B	1-10	2' x 4' CEILING TILE WITH 2 x 2 OMNI PATTERN	NAD
CT-013A,B	1-20	2' x 2' ROUGH CEILING TILE	NAD
FGB-014A,B,C	A:1-21 B: 1-20 C: 1-22	WHITE BACKING ON FIBERGLASS INSULATION	NAD
CT-015A,B	2-15	2' x 2' ROUGH NO PATTERN	NAD
CT-016A,B	2-1	2' x 2' ROUGH CEILING TILE RAISED	NAD
TM-017A,B	**2-1**	**THRESHOLD MASTIC**	**2.1% CHRYSOTILE**
FT-018A,B	2-1	12" x 12" OFF WHITE WITH DARK SPECKS	NAD
DW-019A,B	A: 1-8 B: 2-1	DRYWALL	NAD
JC-020A,B,C,D,E	A: 1-8 B, C: 1-15 D: 2-1 E:2-14	JOINT COMPOUND	NAD
BB-021A,B	2ND FLOOR CEILING	BACKING ON BATT INSULATION	NAD
STM-022A,B	**STAIRCASE**	**STAIR TREAD MASTIC**	**4.2% CHRYSOTILE**
F-023A,B,C	**1-22**	**FITTING INSULATION**	**36.0% CHRYSOTILE**
CT-024A,B	2ND FLOOR TOP CEILING	2' x 4' CEILING TILES ORIGINAL HIGH CEILING	NAD
VB-025A,B	**ROOF, BOTTOM LAYER**	**BLACK VAPOR BARRIER**	**1.9% CHRYSOTILE**
RR-026A,B	ROOF MIDDLE LAYER	ROLLED ROOFING	NAD
RR-027A,B	ROOF TOP LAYER	ROLLED ROOFING	NAD
RTAR-028A,B	ROOF	BLACK ROOF TAR	NAD

Table Notes: NAD = No Asbestos Detected, *TRACE* = Less Than 1% Asbestos, [ ] = **Asbestos-Containing Materials**

Table 2.2 – Approximate Quantity of ACMs & PACMs

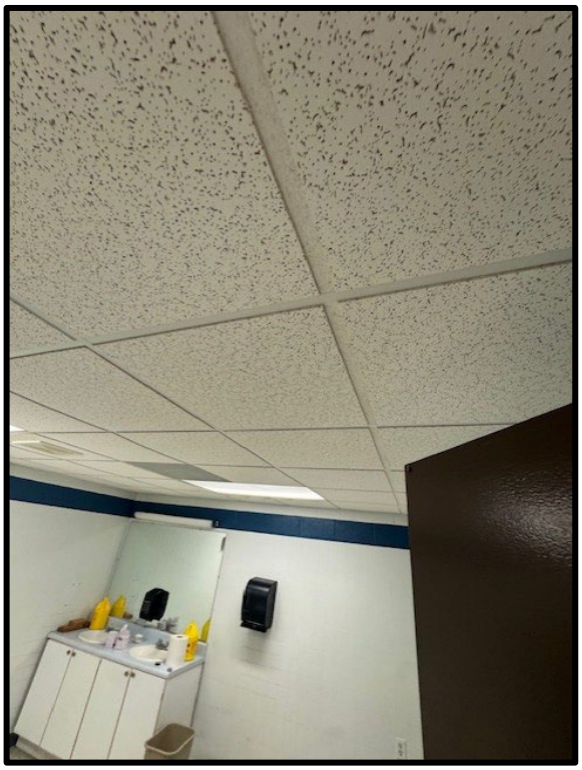
BUILDING MATERIAL	MATERIAL LOCATION	ESTIMATED QUANTITY	MATERIAL/ CONDITION
9" x 9" BLACK FLOOR TILE MASTIC	1-2 & 1-8	468 SF	NF, INTACT
	1-3	1,135 SF	
	1-4	275 SF	
	1-9	110 SF	
	1-10	650 SF	
	1-11	110 SF	
	1-12	210 SF	
	1-15	725 SF	
	1-18	120 SF	
	1-19	240 SF	
	1-20	1,560 SF	
	2-2	150 SF	
	2-3	370 SF	
	2-4	330 SF	
	2-5	250 SF	
	2-6	360 SF	
	2-7	210 SF	
	2-8	160 SF	
	2-9	700 SF	
	2-11	100 SF	
	2ND FLOOR MECHANICAL ROOM	220 SF	
9" x 9" BROWN FLOOR TILE	1-3	185 SF	NF, INTACT
	1-10	225 SF	
	2-11	100 SF	
	2ND FLOOR MECHANICAL ROOM	220 SF	
STAIR TREAD MASTIC	STAIRCASE	100 SF	NF, INTACT
FITTING INSULATION	1-22	15 LF	F, INTACT
BLACK VAPOR BARRIER	ROOF, BOTTOM LAYER	35,000 SF	NF, INTACT

Table 2.2 – Approximate Quantity of ACMs & PACMs

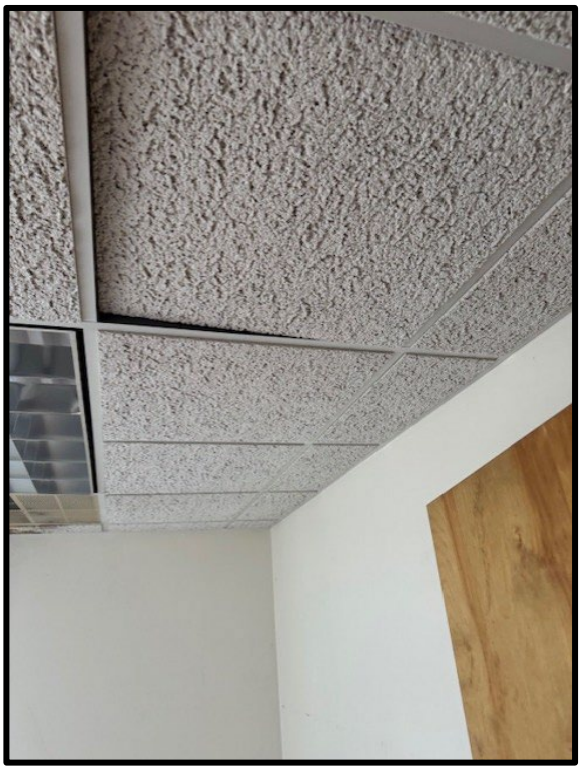
BUILDING MATERIAL	MATERIAL LOCATION	ESTIMATED QUANTITY	MATERIAL/ CONDITION
THRESHOLD MASTIC	1-2 & 1-8	3 SF	NF, INTACT
	1-3	3 SF	
	1-4	4 SF	
	1-9	2 SF	
	1-10	3 SF	
	1-11	3 SF	
	1-12	3 SF	
	1-14	3 SF	
	1-15	5 SF	
	1-18	3 SF	
	1-19	3 SF	
	1-20	5 SF	
	2-1	3 SF	
	2-2	3 SF	
	2-3	3 SF	
	2-4	3 SF	
	2-5	3 SF	
	2-8	3 SF	
	2-10	3 SF	
	2-11	3 SF	
	2-12	3 SF	
	2-13	3 SF	
	2-14	3 SF	
	2-15	3 SF	
	2-16	3 SF	
	2ND FLOOR MECHANICAL ROOM	5 SF	

Table Notes: SF = Square Feet, LF = Linear Feet, NF = Non-Friable, F = Friable, TBD = To Be Determined

3.0 PHOTOS



NON-ACM 2’ x 2’ CEILING TILE



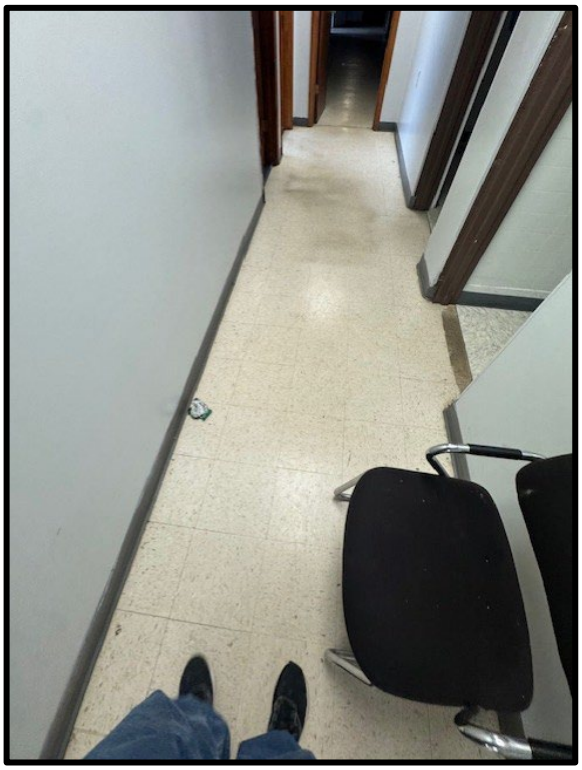
NON-ACM 2’ x 2’ RAISED CEILING TILE



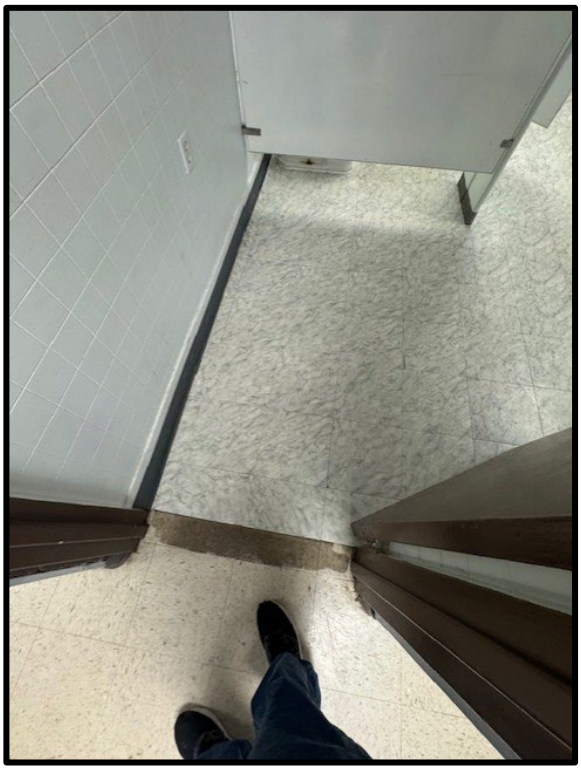
NON-ACM 2’ x 4’ OMNI CEILING TILE



ACM 9” x 9” BROWN FLOOR TILE



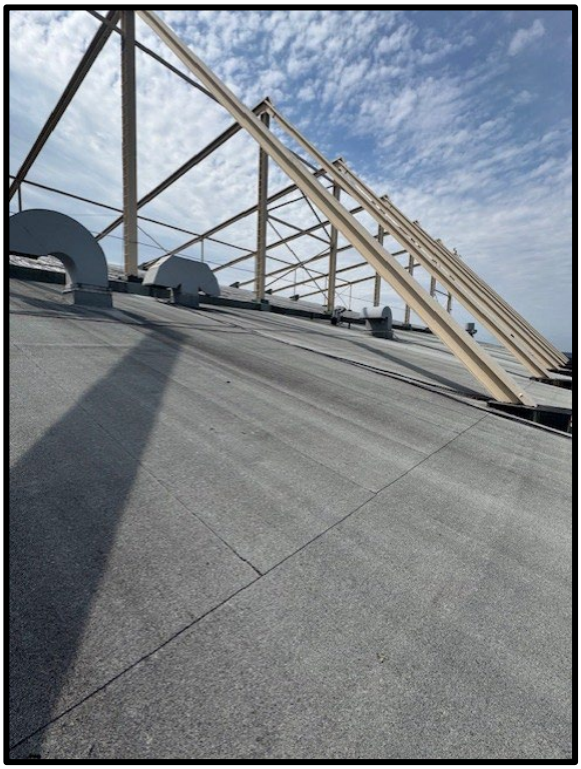
12” x 12” OFF-WHITE FLOOR TILE



12” x 12” GRAY WHITE SELF-ADHESIVE FLOOR TILE



ROLLED ROOFING BOTTOM LAYER ACM



ROLLED ROOFING BOTTOM LAYER ACM

4.0 OSHA AND NEW YORK STATE COMPLIANCE

Trace Amounts of ACM – It should be noted that the Occupational Safety & Health Administration (OSHA) Asbestos Standard (29 CFR 1926.1101) has a definition for both "asbestos" and "asbestos-containing material." Under OSHA Asbestos Standard, the definition of asbestos covers all materials containing any concentration of detected asbestos, including those with concentrations less than or equal to one percent asbestos. Although work operations conducted in areas where a material contains less than or equal to one percent asbestos is an "unclassified" operation, the employer still must follow the requirements of 29 CFR 1926.1101(g) (1) [except (g)(1)(i)],(g)(2) and (g)(3) that describe engineering and work practice controls operations to prevent unnecessary asbestos exposures to their employees (worker protection regulations).

Transmittal of Building/Structure Asbestos Survey Information – As required by New York State Industrial Code Rule 56, copies of the building/structure asbestos survey shall be immediately transmitted by the building/structure owner, as follows:

(1) One (1) copy of the completed asbestos survey shall be sent by the owner or their agent to the local entity charged with issuing a permit for such demolition, renovation, remodeling or repair work under State or local laws.

(2) One (1) copy of the completed asbestos survey for controlled demolition (as per Subpart 56-11.5) or pre-demolition asbestos projects shall also be submitted to the appropriate Asbestos Control Bureau district office.

(3) One (1) copy of the completed asbestos survey shall be kept on the construction site with the asbestos notification and variance, if required, throughout the duration of the asbestos project and any associated demolition, renovation, remodeling or repair project.

5.0 LEAD-BASED PAINT BULK SAMPLING

The lead-based paint samples were collected by Arctic's Industrial Hygiene Technician Mr. Michael Benson. A total of three (3) lead samples were collected. Post collection, the samples were labeled and sent to Schneider Laboratories, an approved environmental laboratory for analysis.

By regulatory definition, lead-based paint (LBP) is defined as any material containing a minimum of 0.5% lead by weight. None of the samples collected were identified as lead-based paint, as defined by the USEPA. It should be noted that materials containing any amount of lead are regulated by OSHA, additional handling and disposal considerations may apply. The laboratory report has been included in Attachment C. The table below summarizes the sampling results:

Table 5.1 – LEAD BULK SAMPLE LABORATORY RESULTS

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	LEAD CONTENT*
PAINT-1L	1-13	WHITE PAINT	<0.002696%

Table 5.1 – LEAD BULK SAMPLE LABORATORY RESULTS

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	LEAD CONTENT*
PAINT-2L	1-8	GRAY PAINT	<0.00258%
PAINT-3L	STAIRWELL	WHITE CEILING PAINT	0.0183%

Table Notes: * = Percentage of Lead by Weight

6.0 PCB BULK SAMPLING

No suspect PCB caulk/sealant were identified; therefore, no PCB samples were collected by Arctic's Industrial Hygiene Technician, Mr. Michael Benson.

7.0 SUMMARY

During this sampling event, asbestos-containing materials were identified. No lead-based paints were identified. No PCB-containing caulks samples were collected. It should be noted that this sampling was representative in nature and the scope was directed by the Client. Under no circumstances should this sampling be considered a complete representation of the suspect materials that may exist at this location. If you have any questions pertaining to this report, please contact our office at (315) 476-1757. We thank you for the opportunity to work with you on this project.

DIVISION 1 - SPECIFICATIONS

SPECIAL PROVISIONS

New York State Prevailing Wage Rates

(SP-9)

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Kathy Hochul, Governor

Roberta Reardon, Commissioner

Broome County

Hashem Obeidallah
McFarland Johnson
49 Court St
Binghamton NY 13902

Schedule Year	2026 through 2027
Date Requested	06/29/2026
PRC#	2026018499

Location	Greater Binghamton Airport
Project ID#	
Project Type	Rehabilitation of Hangars 2&3

PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Rate Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2026 through June 2027. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website www.labor.ny.gov. Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: _____ Date Cancelled: _____

Name & Title of Representative: _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

General Provisions of Laws Covering Workers on Article 8 Public Work Contracts

Introduction

The Labor Law requires public work contractors and subcontractors to pay laborers, workers, or mechanics employed in the performance of a public work contract not less than the prevailing rate of wage and supplements (fringe benefits) in the locality where the work is performed.

Contractor Registry

Effective December 30, 2024 all contractors and subcontractors submitting bids or performing construction work on public work projects, or private projects covered by Article 8 of the Labor Law, are required to register with the New York State Department of Labor (NYSDOL) under Labor Law Section 220-i. To register, contractors and subcontractors must submit an application through NYSDOL's Contractor Registry portal which is available through the agency's Management System for Protecting Worker Rights (MPWR) https://mpwr-public.labor.ny.gov/en/login.

For additional information, please visit online.

Responsibilities of the Department of Jurisdiction

A Department of Jurisdiction (Contracting Agency) includes a state department, agency, board or commission: a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporation; a public benefit corporation; and a public authority awarding a public work contract.

The Department of Jurisdiction (Contracting Agency) awarding a public work contract MUST obtain a Prevailing Rate Schedule listing the hourly rates of wages and supplements due the workers to be employed on a public work project. This schedule may be obtained by completing and forwarding a "Request for wage and Supplement Information" form (PW 39) to the Bureau of Public Work. The Prevailing Rate Schedule MUST be included in the specifications for the contract to be awarded and is deemed part of the public work contract.

Upon the awarding of the contract, the law requires that the Department of Jurisdiction (Contracting Agency) furnish the following information to the Bureau: the name and address of the contractor, the date the contract was let and the approximate dollar value of the contract. To facilitate compliance with this provision of the Labor Law, a copy of the Department's "Notice of Contract Award" form (PW 16) is provided with the original Prevailing Rate Schedule.

The Department of Jurisdiction (Contracting Agency) is required to notify the Bureau of the completion or cancellation of any public work project. The Department's PW 200 form is provided for that purpose.

Both the PW 16 and PW 200 forms are available for completion online.

Hours

No laborer, worker, or mechanic in the employ of a contractor or subcontractor engaged in the performance of any public work project shall be permitted to work more than eight hours in any day or more than five days in any week, except in cases of extraordinary emergency. The contractor and the Department of Jurisdiction (Contracting Agency) may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project.

Wages and Supplements

The wages and supplements to be paid and/or provided to laborers, workers, and mechanics employed on a public work project shall be not less than those listed in the current Prevailing Rate Schedule for the locality where the work is performed. If a prime contractor on a public work project has not been provided with a Prevailing Rate Schedule, the contractor must notify the Department of Jurisdiction (Contracting Agency) who in turn must request an original Prevailing Rate Schedule form the Bureau of Public Work. Requests may be submitted by: mail to NYSDOL, Bureau of Public Work, State Office Bldg. Campus, Bldg. 12, Rm. 130, Albany, NY 12226; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website www.labor.ny.gov.

Upon receiving the original schedule, the Department of Jurisdiction (Contracting Agency) is REQUIRED to provide complete copies to all prime contractors who in turn MUST, by law, provide copies of all applicable county schedules to each subcontractor and obtain from each subcontractor, an affidavit certifying such schedules were received. If the original schedule expired, the contractor may obtain a copy of the new annual determination from the NYSDOL website www.labor.ny.gov.

The Commissioner of Labor makes an annual determination of the prevailing rates. This determination is in effect from July 1st through June 30th of the following year. The annual determination is available on the NYSDOL website

www.labor.ny.gov.

Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. As per Article 6 of the Labor law, contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemperaneous, true, and accurate payroll records. At a minimum, payrolls must show the following information for each person employed on a public work project: Name, Address, Last 4 Digits of Social Security Number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid or provided, and Daily and weekly number of hours worked in each classification.

The filing of payrolls to the Department of Jurisdiction is a condition of payment.Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury. The Department of Jurisdiction (Contracting Agency) shall collect, review for facial validity, and maintain such payrolls.

In addition, the Commissioner of Labor may require contractors to furnish, with ten (10) days of a request, payroll records sworn to as their validity and accuracy for public work and private work. Payroll records include, but are not limited to time cards, work description sheets, proof that supplements were provided, cancelled payroll checks and payrolls. Failure to provide the requested information within the allotted ten (10) days will result in the withholding of up to 25% of the contract, not to exceed $100,000.00. If the contractor or subcontractor does not maintain a place of business in New York State and the amount of the contract exceeds $25,000.00, payroll records and certifications must be kept on the project worksite.

The prime contractor is responsible for any underpayments of prevailing wages or supplements by any subcontractor.

All contractors or their subcontractors shall provide to their subcontractors a copy of the Prevailing Rate Schedule specified in the public work contract as well as any subsequently issued schedules. A failure to provide these schedules by a contractor or subcontractor is a violation of Article 8, Section 220-a of the Labor Law.

All subcontractors engaged by a public work project contractor or its subcontractor, upon receipt of the original schedule and any subsequently issued schedules, shall provide to such contractor a verified statement attesting that the subcontractor has received the Prevailing Rate Schedule and will pay or provide the applicable rates of wages and supplements specified therein. (See NYS Labor Laws, Article 8 . Section 220-a).

Determination of Prevailing Wage and Supplement Rate Updates Applicable to All Counties

The wages and supplements contained in the annual determination become effective July 1st whether or not the new determination has been received by a given contractor. Care should be taken to review the rates for obvious errors. Any corrections should be brought to the Department's attention immediately. It is the responsibility of the public work contractor to use the proper rates. If there is a question on the proper classification to be used, please call the district office located nearest the project. Any errors in the annual determination will be corrected and posted to the NYSDOL website on the first business day of each month. Contractors are responsible for paying these updated rates as well, retroactive to July 1st.

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. To the extent possible, the Department posts rates in its possession that cover periods of time beyond the July 1st to June 30th time frame covered by a particular annual determination. Rates that extend beyond that instant time period are informational ONLY and may be updated in future annual determinations that actually cover the then appropriate July 1st to June 30th time period.

Withholding of Payments

When a complaint is filed with the Commissioner of Labor alleging the failure of a contractor or subcontractor to pay or provide the prevailing wages or supplements, or when the Commissioner of Labor believes that unpaid wages or supplements may be due, payments on the public work contract shall be withheld from the prime contractor in a sufficient amount to satisfy the alleged unpaid wages and supplements, including interest and civil penalty, pending a final determination.

When the Bureau of Public Work finds that a contractor or subcontractor on a public work project failed to pay or provide the requisite prevailing wages or supplements, the Bureau is authorized by Sections 220-b and 235.2 of the Labor Law to so notify the financial officer of the Department of Jurisdiction (Contracting Agency) that awarded the public work contract. Such officer MUST then withhold or cause to be withheld from any payment due the prime contractor on account of such contract the amount indicated by the Bureau as sufficient to satisfy the unpaid wages and supplements, including interest and any civil penalty that may be assessed by the Commissioner of Labor. The withholding continues until there is a final determination of the underpayment by the Commissioner of Labor or by the court in the event a legal proceeding is instituted for review of the determination of the Commissioner of Labor.

The Department of Jurisdiction (Contracting Agency) shall comply with this order of the Commissioner of Labor or of the court with respect to the release of the funds so withheld.

Summary of Notice Posting Requirements

The current Prevailing Rate Schedule must be posted in a prominent and accessible place on the site of the public work project. The prevailing wage schedule must be encased in, or constructed of, materials capable of withstanding adverse weather conditions and be titled "PREVAILING RATE OF WAGES" in letters no smaller than two (2) inches by two (2) inches.

The "Public Work Project" notice must be posted at the beginning of the performance of every public work contract, on each job site.

Every employer providing workers. compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers. Compensation Board in a conspicuous place on the jobsite.

Every employer subject to the NYS Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers, notices furnished by the State Division of Human Rights.

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the NYS Department of Labor.

Apprentices

Employees cannot be paid apprentice rates unless they are individually registered in a program registered with the NYS Commissioner of Labor. The allowable ratio of apprentices to journeyworkers in any craft classification can be no greater than the statewide building trade ratios promulgated by the Department of Labor and included with the Prevailing Rate Schedule. An employee listed on a payroll as an apprentice who is not registered as above or is performing work outside the classification of work for which the apprentice is indentured, must be paid the prevailing journeyworker's wage rate for the classification of work the employee is actually performing.

NYSDOL Labor Law, Article 8, Section 220-3, require that only apprentices individually registered with the NYS Department of Labor may be paid apprenticeship rates on a public work project. No other Federal or State Agency of office registers apprentices in New York State.

Persons wishing to verify the apprentice registration of any person must do so in writing by mail, to the NYSDOL Office of Employability Development / Apprenticeship Training, State Office Bldg. Campus, Bldg. 12, Albany, NY 12226 or by Fax to NYSDOL Apprenticeship Training (518) 457-7154. All requests for verification must include the name and social security number of the person for whom the information is requested.

The only conclusive proof of individual apprentice registration is written verification from the NYSDOL Apprenticeship Training Albany Central office. Neither Federal nor State Apprenticeship Training offices outside of Albany can provide conclusive registration information.

It should be noted that the existence of a registered apprenticeship program is not conclusive proof that any person is registered in that program. Furthermore, the existence or possession of wallet cards, identification cards, or copies of state forms is not conclusive proof of the registration of any person as an apprentice.

Interest and Penalties

In the event that an underpayment of wages and/or supplements is found:

- Interest shall be assessed at the rate then in effect as prescribed by the Superintendent of Banks pursuant to section 14-a of the Banking Law, per annum from the date of underpayment to the date restitution is made.
- A Civil Penalty may also be assessed, not to exceed 25% of the total of wages, supplements, and interest due.

Debarment

Any contractor or subcontractor and/or its successor shall be ineligible to submit a bid on or be awarded any public work contract or subcontract with any state, municipal corporation or public body for a period of five (5) years when:

- Two (2) willful determinations have been rendered against that contractor or subcontractor and/or its successor within any consecutive six (6) year period.
- There is any willful determination that involves the falsification of payroll records or the kickback of wages or supplements.

Criminal Sanctions

Willful violations of the Prevailing Wage Law (Article 8 of the Labor Law) may be a felony punishable by fine or imprisonment of up to 15 years, or both.

Discrimination

No employee or applicant for employment may be discriminated against on account of age, race, creed, color, national origin, sex, disability or marital status.

No contractor, subcontractor nor any person acting on its behalf, shall by reason of race, creed, color, disability, sex or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates (NYS Labor Law, Article 8, Section 220-e(a)).

No contractor, subcontractor, nor any person acting on its behalf, shall in any manner, discriminate against or intimidate any employee on account of race, creed, color, disability, sex, or national origin (NYS Labor Law, Article 8, Section 220-e(b)).

The Human Rights Law also prohibits discrimination in employment because of age, marital status, or religion.

There may be deducted from the amount payable to the contractor under the contract a penalty of $50.00 for each calendar day during which such person was discriminated against or intimidated in violation of the provision of the contract (NYS Labor Law, Article 8, Section 220-e(c)).

The contract may be cancelled or terminated by the State or municipality. All monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of the anti-discrimination sections of the contract (NYS Labor Law, Article 8, Section 220-e(d)).

Every employer subject to the New York State Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers notices furnished by the State Division of Human Rights.

Workers' Compensation

In accordance with Section 142 of the State Finance Law, the contractor shall maintain coverage during the life of the contract for the benefit of such employees as required by the provisions of the New York State Workers' Compensation Law.

A contractor who is awarded a public work contract must provide proof of workers' compensation coverage prior to being allowed to begin work.

The insurance policy must be issued by a company authorized to provide workers' compensation coverage in New York State. Proof of coverage must be on form C-105.2 (Certificate of Workers' Compensation Insurance) and must name this agency as a certificate holder.

If New York State coverage is added to an existing out-of-state policy, it can only be added to a policy from a company authorized to write workers' compensation coverage in this state. The coverage must be listed under item 3A of the information page.

The contractor must maintain proof that subcontractors doing work covered under this contract secured and maintained a workers' compensation policy for all employees working in New York State.

Every employer providing worker's compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

Unemployment Insurance

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the New York State Department of Labor.

Kathy Hochul, Governor

Roberta Reardon, Commissioner

Broome County

Hashem Obeidallah
McFarland Johnson
49 Court St
Binghamton NY 13902

Schedule Year 2026 through 2027
Date Requested 06/29/2026
PRC# 2026018499

Location Greater Binghamton Airport
Project ID#
Project Type Rehabilitation of Hangars 2&3

Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

Contractor Information
All information must be supplied

Federal Employer Identification Number: _____

Name: _____

Address: _____

_____

City: _____ State: _____ Zip: _____

Amount of Contract: $_____

Approximate Starting Date: ____/____/____

Approximate Completion Date: ____/____/____

Contract Type:
[ ] (01) General Construction
[ ] (02) Heating/Ventilation
[ ] (03) Electrical
[ ] (04) Plumbing
[ ] (05) Other : _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12226

Social Security Numbers on Certified Payrolls:

The Department of Labor is cognizant of the concerns of the potential for misuse or inadvertent disclosure of social security numbers. Identity theft is a growing problem and we are sympathetic to contractors' concern regarding inclusion of this information on payrolls if another identifier will suffice.

For these reasons, the substitution of the use of the last four digits of the social security number on certified payrolls submitted to contracting agencies on public work projects is now acceptable to the Department of Labor. This change does not affect the Department's ability to request and receive the entire social security number from employers during its public work/ prevailing wage investigations.

Construction Industry Fair Play Act: Required Posting for Labor Law Article 25-B § 861-d

Construction industry employers must post the "Construction Industry Fair Play Act" notice in a prominent and accessible place on the job site. Failure to post the notice can result in penalties of up to $1,500 for a first offense and up to $5,000 for a second offense. The posting is included as part of this wage schedule. Additional copies may be obtained from the NYS DOL website, https://dol.ny.gov/public-work-and-prevailing-wage
If you have any questions concerning the Fair Play Act, please call the State Labor Department toll-free at 1-866-435-1499 or email us at: dol.misclassified@labor.ny.gov .

Worker Notification: (Labor Law §220, paragraph a of subdivision 3-a)

Effective June 23, 2020

This provision is an addition to the existing wage rate law, Labor Law §220, paragraph a of subdivision 3-a. It requires contractors and subcontractors to provide written notice to all laborers, workers or mechanics of the *prevailing wage and supplement rate* for their particular job classification *on each pay stub**. It also requires contractors and subcontractors to *post a notice* at the beginning of the performance of every public work contract *on each job site* that includes the telephone number and address for the Department of Labor and a statement informing laborers, workers or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her job classification. The required notification will be provided with each wage schedule, may be downloaded from our website *www.labor.ny.gov* or be made available upon request by contacting the Bureau of Public Work at 518-457-5589. *In the event the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.

(12.20)

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

Budget Policy & Reporting Manual

B-610

Public Work Enforcement Fund

effective date December 7, 2005

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1. Purpose and Scope:

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, maintenance and repair, and announces the recently-enacted increase to the percentage of the dollar value of such contracts that must be deposited into the Fund. This item also describes the roles of the following entities with respect to the Fund:

- New York State Department of Labor (DOL),
- The Office of the State of Comptroller (OSC), and
- State agencies and public benefit corporations.

2. Background and Statutory References:

DOL uses the Fund to enforce the State's Labor Law as it relates to contracts for construction or reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law. State agencies and public benefit corporations participating in such contracts are required to make payments to the Fund.

Chapter 511 of the Laws of 1995 (as amended by Chapter 513 of the Laws of 1997, Chapter 655 of the Laws of 1999, Chapter 376 of the Laws of 2003 and Chapter 407 of the Laws of 2005) established the Fund.

3. Procedures and Agency Responsibilities:

The Fund is supported by transfers and deposits based on the value of contracts for construction and reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law, into which all State agencies and public benefit corporations enter.

Chapter 407 of the Laws of 2005 increased the amount required to be provided to this fund to .10 of one-percent of the total cost of each such contract, to be calculated at the time agencies or public benefit corporations enter into a new contract or if a contract is amended. The provisions of this bill became effective August 2, 2005.

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

OSC will report to DOL on all construction-related ("D") contracts approved during the month, including contract amendments, and then DOL will bill agencies the appropriate assessment monthly. An agency may then make a determination if any of the billed contracts are exempt and so note on the bill submitted back to DOL. For any instance where an agency is unsure if a contract is or is not exempt, they can call the Bureau of Public Work at the number noted below for a determination. Payment by check or journal voucher is due to DOL within thirty days from the date of the billing. DOL will verify the amounts and forward them to OSC for processing.

For those contracts which are not approved or administered by the Comptroller, monthly reports and payments for deposit into the Public Work Enforcement Fund must be provided to the Administrative Finance Bureau at the DOL within 30 days of the end of each month or on a payment schedule mutually agreed upon with DOL.

Reports should contain the following information:

- Name and billing address of State agency or public benefit corporation;
- State agency or public benefit corporation contact and phone number;
- Name and address of contractor receiving the award;
- Contract number and effective dates;
- Contract amount and PWEF assessment charge (if contract amount has been amended, reflect increase or decrease to original contract and the adjustment in the PWEF charge); and
- Brief description of the work to be performed under each contract.

Checks and Journal Vouchers, payable to the "New York State Department of Labor" should be sent to:

Department of Labor
Administrative Finance Bureau-PWEF Unit
Building 12, Room 464
State Office Campus
Albany, NY 12226

Any questions regarding billing should be directed to NYSDOL's Administrative Finance Bureau-PWEF Unit at (518) 457-3624 and any questions regarding Public Work Contracts should be directed to the Bureau of Public Work at (518) 457-5589.

NEW YORK STATE OF OPPORTUNITY. Department of Labor

Required Notice under Article 25-B of the Labor Law

Attention All Employees, Contractors and Subcontractors: You are Covered by the Construction Industry Fair Play Act

The law says that you are an employee unless:

- You are free from direction and control in performing your job, **and**
- You perform work that is not part of the usual work done by the business that hired you, **and**
- You have an independently established business.

Your employer cannot consider you to be an independent contractor unless all three of these facts apply to your work.

It is against the law for an employer to misclassify employees as independent contractors or pay employees off the books.

Employee Rights: If you are an employee, you are entitled to state and federal worker protections. These include:

- Unemployment Insurance benefits, if you are unemployed through no fault of your own, able to work, and otherwise qualified,
- Workers' compensation benefits for on-the-job injuries,
- Payment for wages earned, minimum wage, and overtime (under certain conditions),
- Prevailing wages on public work projects,
- The provisions of the National Labor Relations Act, and
- A safe work environment.

It is a violation of this law for employers to retaliate against anyone who asserts their rights under the law. Retaliation subjects an employer to civil penalties, a private lawsuit or both.

Independent Contractors: If you are an independent contractor**, you must pay all taxes and Unemployment Insurance contributions required by New York State and Federal Law.**

Penalties for paying workers off the books or improperly treating employees as independent contractors:

• **Civil Penalty**	First offense: Up to $2,500 per employee Subsequent offense(s): Up to $5,000 per employee
• **Criminal Penalty**	First offense: Misdemeanor - up to 30 days in jail, up to a $25,000 fine and debarment from performing public work for up to one year. Subsequent offense(s): Misdemeanor - up to 60 days in jail or up to a $50,000 fine and debarment from performing public work for up to 5 years.

If you have questions about your employment status or believe that your employer may have violated your rights and you want to file a complaint, call the Department of Labor at (866) 435-1499 or send an email to dol.misclassified@labor.ny.gov. All complaints of fraud and violations are taken seriously. You can remain anonymous.

Employer Name:

WE ARE YOUR DOL

NEW YORK STATE Department of Labor

New York State Department of Labor
Bureau of Public Work

Attention Employees

THIS IS A:

PUBLIC WORK PROJECT

If you are employed on this project as a **worker, laborer, or mechanic** you are entitled to receive the **prevailing wage and supplements rate** for the classification at which you are working.

Your pay stub and wage notice received upon hire must clearly state your wage rate and supplement rate.

Chapter 629 of the Labor Laws of 2007:

These wages are set by law and must be posted at the work site. They can also be found at: https://dol.ny.gov/bureau-public-work

If you feel that you have not received proper wages or benefits, please call our nearest office.*

Albany	(518) 457-2744	Patchogue	(631) 687-4882
Binghamton	(607) 721-8005	Rochester	(585) 258-4505
Buffalo	(716) 847-7159	Syracuse	(315) 428-4056
Garden City	(516) 228-3915	Utica	(315) 793-2314
New York City	(212) 932-2419	White Plains	(914) 997-9507
Newburgh	(845) 568-5287		

* For New York City government agency construction projects, please contact the Office of the NYC Comptroller at (212) 669-4443, or www.comptroller.nyc.gov – click on Bureau of Labor Law.

Contractor Name: _____

Project Location: _____

Requirements for OSHA 10 Compliance

Article 8 §220-h requires that when the advertised specifications, for every contract for public work, is $250,000.00 or more the contract must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training “prior to the performing any work on the project.”

The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (*Note: Completion cards do not have an expiration date.)*
- Training roster, attendance record of other documentation from the certified trainer pending the issuance of the card.
- Other valid proof

**A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-457-5589.

WICKS

Public work projects are subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work, when the total project's threshold is $3 million in Bronx, Kings, New York, Queens and, Richmond counties; $1.5 million in Nassau, Suffolk and Westchester counties; and $500,000 in all other counties.

For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or the use of a Project Labor Agreement (PLA), and must be open to public inspection.

Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.

The Commissioner of Labor shall have the power to enforce separate specification requirement s on projects, and may issue stop-bid orders against public owners for non-compliance.

Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.

Contractors must pay subcontractors within a 7 days period.

(07.19)

Introduction to the Prevailing Rate Schedule

Information About Prevailing Rate Schedule

This information is provided to assist you in the interpretation of particular requirements for each classification of worker contained in the attached Schedule of Prevailing Rates.

Classification

It is the duty of the Commissioner of Labor to make the proper classification of workers taking into account whether the work is heavy and highway, building, sewer and water, tunnel work, or residential, and to make a determination of wages and supplements to be paid or provided. It is the responsibility of the public work contractor to use the proper rate. If there is a question on the proper classification to be used, please call the district office located nearest the project. District office locations and phone numbers are listed below.
Prevailing Wage Schedules are issued separately for "General Construction Projects" and "Residential Construction Projects" on a county-by-county basis.

General Construction Rates apply to projects such as: Buildings, Heavy & Highway, and Tunnel and Water & Sewer rates.
Residential Construction Rates generally apply to construction, reconstruction, repair, alteration, or demolition of one family, two family, row housing, or rental type units intended for residential use.
Some rates listed in the Residential Construction Rate Schedule have a very limited applicability listed along with the rate. Rates for occupations or locations not shown on the residential schedule must be obtained from the General Construction Rate Schedule. Please contact the local Bureau of Public Work office before using Residential Rate Schedules, to ensure that the project meets the required criteria.

*Contractor Registry (LL 220-I):
Labor Law Section 220-i requires that contractors obtain a Contractor Registry certificate of registration prior to bidding on or commencing work on a public or private project subject to prevailing wage requirements. Subcontractors also are prohibited from commencing work on covered employment unless they have received a Contractor Registry certificate. Contractors are required to submit their Certificate of Registration with their bid materials. A public database is available online to confirm registration at data.ny.gov to confirm registration validity. For additional information on how to register and the requirements, visit https://dol.ny.gov/public-work-contractor-and-subcontractorregistry-
landing.

Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. Payrolls must be maintained for at least three (3) years from the projects date of completion. Additionally, as per Article 6 of the Labor Law, contractors and subcontractors are required to establish, maintain, and preserve for not less that six (6) years, contemporaneous, true, and accurate payroll records.

At a minimum, payrolls must show the following information for each person employed on a public work project: Name; Address, Last 4 Digits of Social Security number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid or provided, and Daily and weekly number of hours worked in each classification.

Payroll records and transcripts are required to be kept on site during all the time that work under that contract is being performed.

NOTE: *For more detailed information regarding Article 9 prevailing wage contracts, please refer to "General Provisions of Laws Covering Workers on Article 9 Public Work Building Service Contracts".*

If you have any questions concerning the attached schedule or would like additional information, please write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12240

OR

Contact the nearest BUREAU of PUBLIC WORK District Office

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518

Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

Overtime

At a minimum, all work performed on a public work project in excess of eight hours in any one day or more than five days in any workweek is overtime. The specific overtime requirements for each trade or occupation on a public work project may differ. Specific overtime requirements for each trade or occupation are contained in the prevailing rate schedules.

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays.

The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. Although in most cases the payment or provision of supplements is straight time for all hours worked, some classifications require the payment or provision of supplements, or a portion of the supplements, to be paid or provided at a premium rate for premium hours worked. Supplements may also be required to be paid or provided on paid holidays, regardless of whether the day is worked. The Overtime Codes and Notes listed on the particular wage classification will indicate these conditions as required.

Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year. Please Note: Updates to the Wage Schedule shall be made on a quarterly basis.

All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website (www.labor.ny.gov) for current wage rate information.

Shift Work

If the timeline of the contract requires shift work be performed to meet deadlines, the BPWE will enforce the shift work rate as the required rate on the project whether or not shift work is specifically addressed in the contract.

Paid Prenatal Leave

Every employer shall be required to provide to its employees twenty hours of paid prenatal personal leave during any fifty-two week calendar period. Paid prenatal personal leave shall mean leave taken for the health care services received by an employee during their pregnancy or related to such pregnancy, including physical examinations, medical procedures, monitoring and testing, and discussions with a healthcare provider related to the pregnancy. Paid prenatal personal leave may be taken in hourly increments. Benefits for paid prenatal personal leave shall be paid in hourly installments. Employees shall receive compensation at the employee's regular rate of pay, or the applicable minimum wage established by the labor law, whichever is greater, for the use of Paid Prenatal leave.

Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1,1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before a second Apprentice is allowed. The last ratio repeats indefinitely. Therefore, three more Journeyworkers must be present before a third Apprentice can be hired, and so on.

Please call Apprentice Training Central Office at (518) 457-6820 if you have any questions.

Title (Trade)	Ratio
Boilermaker (Construction)	1:1,1:4

Boilermaker (Shop)	1:1,1:3
Carpenter (Bldg.,H&H, Pile Driver/Dockbuilder)	1:1,1:4
Carpenter (Residential)	1:1,1:3
Electrical (Outside) Lineman	1:1,1:2
Electrician (Inside)	1:1,1:3
Elevator/Escalator Construction & Modernizer	1:1,1:2
Glazier	1:1,1:3
Insulation & Asbestos Worker	1:1,1:3
Iron Worker	1:1,1:4
Laborer	1:1,1:3
Mason	1:1,1:4
Millwright	1:1,1:4
Op Engineer	1:1,1:5
Painter	1:1,1:3
Plumber & Steamfitter	1:1,1:3
Roofer	1:1,1:2
Sheet Metal Worker	1:1,1:3
Sprinkler Fitter	1:1,1:2

If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12226

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518
Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Broome County General Construction

Boilermaker — 08/01/2026

JOB DESCRIPTION Boilermaker **DISTRICT** 1

ENTIRE COUNTIES
Albany, Broome, Chenango, Columbia, Delaware, Essex, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Tioga, Warren, Washington

WAGES
Per hour

	07/01/2026	01/01/2027 Additional
Boilermaker	$ 45.84	$ 2.50*

*To be allocated at a later date

SUPPLEMENTAL BENEFITS
Per hour

Journeyworker	$ 26.51 + $1.49*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 25) on HOLIDAY PAGE
Note: When a holiday falls on Sunday, the day observed by the State or Nation shall be observed, and when Christmas Day and New Year's fall on Saturday, Friday will be observed as the holiday.

REGISTERED APPRENTICES
(1/2) year terms at the following percentage of Journeyworker's wage per hour:

1st	2nd	3rd	4th	5th	6th	7th	8th
65%	65%	70%	75%	80%	85%	90%	95%

Supplemental Benefits per hour:

1st	2nd	3rd	4th	5th	6th	7th	8th
$ 19.71 +1.49*	$ 19.71 +1.49*	$ 20.69 +1.49*	$ 21.64 +1.49*	$ 22.62 +1.49*	$ 23.60 +1.49*	$ 24.57 +1.49*	$ 25.53 +1.49*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

1-197

Broadband — 08/01/2026

JOB DESCRIPTION Broadband **DISTRICT** 4

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

PARTIAL COUNTIES
Orange: Only in the Village of Greenwood Lake, Village of Highland Falls, Town of Tuxedo, and Town of Patterson

WAGES
NOTE: Applies to all public work and covered private projects, including those receiving ConnectAll funding subject to New York State Labor Law §224-E, solicited on or after July 1,2025. For all other projects solicited prior to July 1,2025 please see LINEMAN ELECTRICIAN(1)-TELEDATA

Per Hour:	07/01/2026	08/04/2026
Field Tech Install/Repair*	$ 52.85	$ 54.44

For outside work (excluding installation on building construction/alteration/renovation projects), stopping at first point of attachment (demarcation), installing/maintaining/repairing broadband internet service.

"Broadband", "Broadband Service", or "Broadband Internet" means mass-market retail service by wire or radio that provides the capability to transmit data to and receive data from all or substantially all internet endpoints, including any capabilities that are incidental to and enable the operation of the communications service, but excluding dial-up internet access service.

*NOTE: EXCLUDES work within ten(10) feet of High Voltage (600 Volts and over) transmission lines. Please see LINEMAN rates.
*NOTE: Does not include the operation of equipment. Please see applicable OPERATING ENGINEER rates.
*NOTE: Does not include Groundmen/Flagger/Flagmen. Please see LABORER/LABORER-HEAVY/HIGHWAY rates.

SUPPLEMENTAL BENEFITS
Per Hour:

$ 23.24

OVERTIME PAY
See (B, K, *R) on OVERTIME PAGE
* Two and one half times the hourly rate after the 8th hour

HOLIDAY
Paid: See (5, 6, 7, 11, 12) on HOLIDAY PAGE
Overtime: See (5, 6, 7, 11, 12) on HOLIDAY PAGE

4-CWA-Dist2

Carpenter - Building — 08/01/2026

JOB DESCRIPTION Carpenter - Building **DISTRICT** 2

ENTIRE COUNTIES
Broome, Tioga

WAGES

Per hour:	07/01/2026	07/01/2027 Additional	07/01/2028 Additional
Carpenter	$ 35.19	$ 4.00*	$ 3.00*
Floor Coverer	35.19	4.00*	3.00*
Carpet Layer	35.19	4.00*	3.00*
Dry-Wall	35.19	4.00*	3.00*
Diver-Wet Day	60.19	4.00*	3.00*
Diver -Dry Day	36.19	4.00*	3.00*
Diver Tender	36.19	4.00*	3.00*

*To be allocated at a later date

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED BELOW (per hour worked):
- Pile Drivers/Dock Builders shall receive $0.25 per hour over the journeyworker's rate of pay when performing piledriving/dock building work.
- Certified welders shall receive $3.00 per hour over the journeyworker's rate of pay when the employee is required to be certified and performs DOT, AWS, or ABS specified welding work.
- When an employee performs work within a contaminated area on a State and/or Federally designated hazardous waste site, and where relevant State and/or Federal regulations require employees to be furnished and use or wear required forms of personal protection, then the employee shall receive their regular hourly rate plus $1.50 per hour.
- Depth pay for Divers based upon deepest depth on the day of the dive (per diem payment):
  0' to 80' no additional fee
  81'to 100' additional $.50 per foot
  101'to 150' additional $0.75 per foot
  151'and deeper additional $1.25 per foot
- Penetration pay for Divers based upon deepest penetration on the day of the dive (per diem payment):
  0' to 50' no additional fee
  51' to 100' additional $.75 per foot
  101' and deeper additional $1.00 per foot
- Diver rates applies to all hours worked on dive day.

SHIFT WORK
On Agency/Owner mandated shift work, the following rates will be applicable:
1st Shift - Regular Rate
2nd Shift - Premium of 10% of base wage per hour
3rd Shift - Premium of 15% of base wage per hour
Shift work shall be defined as implementing at least two (2) shifts in a twenty-four (24) consecutive hour period. Shift work must be for a minimum of three (3) consecutive days.

SUPPLEMENTAL BENEFITS
Per hour:

	07/01/2026
Journeyworker	$ 22.57

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: Any holiday which occurs on Sunday shall be observed the following Monday. If Christmas falls on a Saturday, it shall be observed on the prior Friday.

REGISTERED APPRENTICES
Wages per hour (1300 hour terms at the following percentage of Journeyworker's base wage):

1st	2nd	3rd	4th
65%	70%	75%	80%

Supplemental Benefits per hour:

$ 13.05	$ 13.05	$ 15.65	$ 15.65

NOTE ADDITIONAL AMOUNTS PAID TO APPRENTICES FOR THE FOLLOWING WORK LISTED BELOW (per hour worked):
- Pile Driving/Dock Builder apprentices shall receive an additional $0.25 per hour worked when performing piledriving/dock building work.
- Certified Welders shall receive $3.00 per hour over the apprentices rate of pay when the apprentice is required to be certified and performs DOT, AWS or ABS specified welding work.
- When an apprentice performs work within a contaminated area on a State and/or Federally designated hazardous waste site, and where relevant State and/or Federal regulations require the apprentice to be furnished and use or wear required forms of personal protection, then the apprentice shall receive their regular hourly rate plus $1.50 per hour.

2-277B-Bro

Carpenter - Building / Heavy&Highway 08/01/2026

JOB DESCRIPTION Carpenter - Building / Heavy&Highway **DISTRICT** 2

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

PARTIAL COUNTIES
Orange: The area lying on Northern side of Orange County demarcated by a line drawn from the Bear Mountain Bridge continuing west to the Bear Mountain Circle, continue North on 9W to the town of Cornwall where County Road 107 (also known as Quaker Rd) crosses under 9W, then east on County Road 107 to Route 32, then north on Route 32 to Orrs Mills Rd, then west on Orrs Mills Rd to Route 94, continue west and south on Route 94 to the Town of Chester, to the intersection of Kings Highway, continue south on Kings Highway to Bellvale Rd, west on Bellvale Rd to Bellvale Lakes Rd, then south on Bellvale Lakes Rd to Kain Rd, southeast on Kain Rd to Route 17A, then north and southeast along Route 17A to Route 210, then follow Route 210 to NJ Border.

WAGES

Wages per hour:	07/01/2026	07/01/2027 Additional
Carpenter - ONLY for Artificial Turf/Synthetic Sport Surface	$ 39.69	$ 2.25*

*To be allocated at a later date.

Note - Does not include the operation of equipment. Please see Operating Engineers rates.

SUPPLEMENTAL BENEFITS
Per hour worked:

Journeyworker	$ 27.84

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE
Notes:
When a holiday falls upon a Saturday, it shall be observed on the preceding Friday. Whan a holiday falls upon a Sunday, it shall be observed on the following Monday.
An employee taking an unexcused day off the regularly scheduled day before or after a paid Holiday shall not receive Holiday pay.

REGISTERED APPRENTICES
Wages per hour (1300 hour terms at the following percentage of Journeyworker's wage):

1st	2nd	3rd	4th

65%	70%	75%	80%

Supplemental Benefits per hour worked:

$ 19.08	$ 19.69	$ 21.86	$ 22.47

2-42AtSS

Carpenter - Heavy&Highway 08/01/2026

JOB DESCRIPTION Carpenter - Heavy&Highway **DISTRICT** 2

ENTIRE COUNTIES
Broome, Cayuga, Chemung, Cortland, Delaware, Jefferson, Lewis, Onondaga, Oswego, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Yates

WAGES

Per hour	07/01/2026	07/01/2027 Additional
Carpenter	$ 41.02	$ 4.42*
Piledriver	41.02	4.42*
Dockbuilder	41.02	4.42*
Diver-Wet Day	66.02	4.42*
Diver-Dry Day	42.02	4.42*
Diver-Tender	42.02	4.42*

*To be allocated at a later date.

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED BELOW (per hour worked):
- State or Federal designated hazardous site, requiring protective gear shall be an additional $2.50 per hour.
- Certified welders when required to perform welding work will receive an additional $5.00 per hour.

ADDITIONAL NOTES PERTAINING TO DIVERS/TENDERS:
- Divers and Tenders shall receive one and one half (1 1/2) times their regular diver and tender rate of pay for Effluent and Slurry diving.
- Divers and tenders being paid at the specified rate for Effluent and Slurry diving shall have all overtime rates based on the specified rate plus the appropriate overtime rates (one and one half or two times the specified rate for Slurry and Effluent divers and tenders).
- The pilot of an ADS or submersible will receive one and one-half (1 1/2) times the Diver-Wet Day Rate for time submerged.
- All crew members aboard a submersible shall receive the Diver-Wet Day rate.
- Depth pay for Divers based upon deepest depth on the day of the dive (per diem payment):
  - 0' to 50' no additional fee
  - 51' to 100' additional $0.50 per foot
  - 101' to 150' additional $0.75 per foot
  - 151' to 200' additional $1.25 per foot
  - 201' and deeper additional $1.50 per foot
- Penetration pay for Divers based upon deepest penetration on the day of the dive (per diem payment):
  - 0' to 50' no additional fee
  - 51' to 100' additional $0.75 per foot
  - 101' to 200' additional $1.00 per foot
  - Over 201' additional $1.25 per foot
- Diver rates applies to all hours worked on dive day.

SHIFT WORK
When project owner mandates a single irregular work shift, the Journeyworkers and Apprentices will receive an additional $4.00 per hour. A single irregular work shift can start any time from 5:00 p.m. to 1:00 a.m.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 27.81

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
- In the event a Holiday falls on a Saturday, the Friday before will be observed as a Holiday. If a Holiday falls on a Sunday, then Monday will be observed as a Holiday.
- The employee must work their scheduled workday before and their scheduled workday after the holiday to receive holiday pay.

REGISTERED APPRENTICES
CARPENTER/PILEDRIVER/DOCKBUILDER APPRENTICES
Wages per hour (1300 hour terms at the following percentage of journeyworker's base wage):

1st	2nd	3rd	4th
65%	70%	75%	80%

Supplemental Benefits per hour:

$ 19.05	$ 19.66	$ 21.78	$ 22.39

NOTE ADDITIONAL AMOUNTS PAID PER HOUR WORKED TO APPRENTICES FOR SPECIFIC TYPES OF WORK PERFORMED:
- State or Federal designated hazardous site, requiring protective gear shall be an additional $2.50 per hour.
- Certified welders when required to perform welding work will receive an additional $5.00 per hour.

2-277HH-Bro

Electrician 08/01/2026

JOB DESCRIPTION Electrician **DISTRICT** 2

ENTIRE COUNTIES
Broome

PARTIAL COUNTIES
Chenango: Entire County except the Townships of Columbus, New Berlin and Sherburne.
Delaware: Only the Townships of Davenport, Delhi, Deposit, Franklin, Hamden, Masonville, Meredith, Sidney, Tompkins and Walton Townships,and that portion of Colchester and Hancock Townships north of the east branch of the Delaware River.
Otsego: Only the Townships of Butternuts, Hartwick, Laurens, Maryland, Milford, Morris, Oneonta, Otego, Unadilla and Westford.
Tioga: Only the Townships of Berkshire, Newark Valley, Owego, Richford and Tioga.

WAGES

Per hour:	07/01/2026	06/01/2027 Additional	06/01/2028 Additional
Electrician (base wage)	$ 44.36	$3.31*	$3.86*
Cable Splicer	50.43	3.81*	4.36*

*To be allocated at a later date.

ADDITIONAL AMOUNTS FOR SPECIFIC TYPES OF JOBSITE CONDITIONS (amount subject to any overtime premiums):
Additional $ 0.50 per hour when required to work underground, such as in tunnels for roads, railroads, or water.
Additional $ 0.50 per hour when required to work at a height of 40 feet above the ground or roof level.

SHIFT WORK
When shift work is mandated in the job specifications or by the contracting agency, the following journeyworker hourly rates apply. The starting hours of a shift may be adjusted up to two (2) hours in order to meet the needs of the contracting agency.

Between the hours of 8:00AM and 4:30PM	$ 44.36
Between the hours of 4:30PM and 1:00AM	52.03
Between the hours of 12:30AM and 9:00AM	58.29

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 33.38 plus 3% of wage

OVERTIME PAY
See (B, *E, Q) on OVERTIME PAGE
*Double time after 8 hours on Saturday.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, *8, 16) on HOLIDAY PAGE
When a dated holiday falls on a Saturday it shall be celebrated on Friday. When a dated holiday falls on a Sunday, it shall be celebrated on Monday.
*Good Friday may be celebrated the following Monday by mutual agreement of Employer and Employees.

REGISTERED APPRENTICES
WAGES: Terms at the following percentages of Journeyworker's wage.

1st	2nd	3rd	4th	5th
0-2000 Hrs	2000-3500 Hrs	3500-5000 Hrs	5000-6500 Hrs	6500-8000 Hrs
46%	51%	59%	69%	79%

ADDITIONAL AMOUNTS FOR SPECIFIC TYPES OF JOBSITE CONDITIONS (amount subject to any overtime premiums):
Additional $ 0.50 per hour when required to work underground, such as in tunnels for roads, railroads, or water.
Additional $ 0.50 per hour when required to work at a height of 40 feet above the ground or roof level.

SUPPLEMENTAL BENEFITS per hour:
1st term $ 10.75 plus 3% of the hourly wage

2nd term	$ 28.72 plus 3% of the hourly wage
All other terms	$ 29.43 plus 3% of the hourly wage

2-325

Elevator Constructor — 08/01/2026

JOB DESCRIPTION Elevator Constructor **DISTRICT** 6

ENTIRE COUNTIES
Broome, Cayuga, Chenango, Cortland, Franklin, Jefferson, Lewis, Onondaga, Oswego, St. Lawrence, Tioga, Tompkins

PARTIAL COUNTIES
Delaware: Only the towns of: Tompkins, Walton, Masonville, Sidney, Franklin and Deposit.
Madison: Only the towns of: Cazenovia, DeRuyter, Eaton, Fenner, Georgetown, Lebanon, Lenox, Nelson and Sullivan.
Oneida: Only the towns of: Camden, Florence and Vienna.

WAGES

Per hour:	07/01/2026	01/01/2027
Mechanic	$ 60.99	$ 63.706
Mechanic Helper	42.69	44.594

SUPPLEMENTAL BENEFITS

Per hour:		
Journeyworker	$ 38.985*	39.535*

*NOTE: Add 6% of regular hourly rate for all hours worked. Add 8% of regular hourly rate if more than 5 years of service.

OVERTIME PAY
See (D, O) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 15, 16) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE
NOTE: When a holiday falls on a Saturday, it shall be observed on Friday. When a holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES
WAGES per hour: 1 year terms at the following percentage of the Elevator Constructor Mechanic wage.

0-6 months	6-12 months	2nd year	3rd year	4th year
50%	55%	65%	70%	80%

SUPPLEMENTAL BENEFITS per hour:

0-6 months: 6% of the regular hourly apprentice rate paid, no additional supplemental benefits.

All other terms: Same as Journeyworker

6-62.1

Glazier — 08/01/2026

JOB DESCRIPTION Glazier **DISTRICT** 5

ENTIRE COUNTIES
Broome, Chemung, Chenango, Delaware, Otsego, Schuyler, Steuben, Tioga, Tompkins

WAGES

Per hour:	07/01/2026
Glazier	$ 33.00

SUPPLEMENTAL BENEFITS

Per hour:	
Journeyworker	$ 34.15

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
1000 hour terms

Appr. 1st term	$ 21.00
Appr. 2nd term	22.00
Appr. 3rd term	23.00
Appr. 4th term	24.00
Appr. 5th term	25.00
Appr. 6th term	26.00
Appr. 7th term	27.00
Appr. 8th term	28.00

Supplemental Benefits per hour:

Appr. 1st term	$ 13.27
Appr. 2nd term	13.27
Appr. 3rd term	19.27
Appr. 4th term	19.27
Appr. 5th term	20.27
Appr. 6th term	20.27
Appr. 7th term	21.27
Appr. 8th term	21.27

5-677z3

Insulator - Heat & Frost — 08/01/2026

JOB DESCRIPTION Insulator - Heat & Frost **DISTRICT** 7

ENTIRE COUNTIES
Broome, Cayuga, Chemung, Chenango, Cortland, Herkimer, Jefferson, Lewis, Madison, Oneida, Onondaga, Oswego, Otsego, Schuyler, Seneca, St. Lawrence, Tioga, Tompkins

WAGES

Per hour:	07/01/2026	05/01/2027 Additional	05/01/2028 Additional	05/01/2029 Additional
ON MECHANICAL SYSTEMS ONLY:				
Asbestos Worker	$ 45.75	$ 4.50*	$ 4.75*	$ 6.25*
Insulation Installer	45.75	4.50*	4.75*	6.25*
Firestopping Worker	45.75	4.50*	4.75*	6.25*

* To be allocated at a later date.

SHIFT WORK
The following rates will apply on all contracting agency-mandated shifts worked:

1st Shift	$ 45.75
2nd Shift	52.61
3rd Shift	54.90

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 28.59

OVERTIME PAY
See (*B1, **K, P) on OVERTIME PAGE
*NOTE: First 10 hours on Saturday.
**NOTE: Holidays that fall on Sunday are subject to double time.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (2*,4,6,28) on HOLIDAY PAGE
	*Triple time for Labor Day if worked.

REGISTERED APPRENTICES
WAGES per hour: One (1) year terms at the following percentage of Journeyworker's wage.

1st	2nd	3rd	4th
60%	70%	80%	90%

SUPPLEMENTAL BENEFITS per hour:

$ 24.24	$ 24.24	$ 28.59	$ 28.59

7-30-Syracuse

Ironworker 08/01/2026

JOB DESCRIPTION Ironworker **DISTRICT** 6

ENTIRE COUNTIES
Broome, Cayuga, Cortland, Onondaga, Oswego, Seneca, Tioga, Tompkins

PARTIAL COUNTIES
Chenango: Only the townships of Afton, Bainbridge, Coventry, German, Greene, Guilford, Lincklaen, McDonough, Norwich, Otselic, Oxford, Pharsalia, Pitcher, Preston and Smithville.
Jefferson: Only the townships of Adams, Alexandria, Brownville, Cape Vincent, Clayton, Ellisburg, Henderson, Hounsfield, LeRay, Lorraine, Lyme, Orleans, Pamelia, Rodman, Rutland, Theresa, Watertown and Worth.
Madison: Only the townships of Cazenovia, DeRuyter, Fenner, Georgetown, Lenox, Lincoln, Nelson, Smithfield and Sullivan.
Schuyler: Only the townships of Cayuta, Catharine, Hector and Montour.
Wayne: Only the townships of Butler, Galen, Huron, Rose, Savannah and Wolcott.

WAGES
Structural, Reinforcing, Re-bar, Machinery Mover & Rigger, Ornamental & Curtain Wall, Window Wall, Pre-Glazed Metal Framed Windows Attached to Steel or Masonry Including Caulking, Fence Erector (Chain Link/Security), Sheeter/Bridge Rail, Pre-Cast Erector, Stone Derrickman, Pre-Engineered Building Erector, Welder

Per hour:	07/01/2026
Ironworker	$ 38.50

SHIFT WORK
Multiple shifts mandated by the project owner. All shifts will be eight (8) hours.

1st Shift	Regular wage rate	
2nd Shift	Regular wage rate plus 10%	- Starting times between 2 PM and 7 PM
3rd Shift	Regular wage rate plus 15%	- Starting times between 7 PM and 12 AM

NOTE: When a single irregular shift is worked, with start times based on second or third shifts, add 10% to the 1st shift wage rate posted above.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 33.30

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
NOTE: Any holiday which occurs on Saturday shall be observed on the preceding Friday. Any holiday which occurs on Sunday shall be observed the following Monday.

REGISTERED APPRENTICES
WAGES per hour: One year terms at the following rates.

1st	2nd	3rd	4th
$ 21.50	$ 23.50	$ 25.50	$ 27.50

SUPPLEMENTAL BENEFITS per hour:

1st year	$ 13.28
2nd year	21.82
3rd year	23.04
4th year	24.26

6-60

Laborer - Building 08/01/2026

JOB DESCRIPTION Laborer - Building **DISTRICT** 2

ENTIRE COUNTIES
Broome, Chemung, Cortland, Schuyler, Steuben, Tioga, Tompkins

PARTIAL COUNTIES
Chenango: Entire County except the Townships of Sherburne, Columbus and New Berlin.
Delaware: Only the Townships of Sidney, Masonville, Walton, Tompkins, Deposit, Hancock, and Colchester.

WAGES
Per hour:

GROUP #1: Basic Laborer - excavation, concrete vibrator, power-driven buggie, demolition (including acetylene torch work) that is customarily done by a laborer

GROUP #2: Air Tool Operators, Mason Tenders

GROUP #3: Blaster, Rock Drill (compressor driven)

GROUP #4: Asbestos, Hazardous, Toxic Waste, Lead and Mold Remediation

	07/01/2026
GROUP #1	$ 31.25
GROUP #2	32.25
GROUP #3	33.25
GROUP #4	33.25

IMPORTANT NOTES:
- Laborer tasks on Renewable Energy and Green Energy construction work shall be paid at the appropriate Heavy & Highway rates.
- Wage and supplement rates for the operation of forklift and skid steer may be found under the classification "Operating Engineer".

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 20.20

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
When a holiday falls on Sunday, it shall be observed on the following Monday.

REGISTERED APPRENTICES
WAGES: 1000 hour terms at the following percentage of Journeyworker's wage.

1st	2nd	3rd	4th
70%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

1st term	$ 15.85
2nd term	17.10
3rd term	17.98
4th term	18.85

2-785b

Laborer - Heavy&Highway **08/01/2026**

JOB DESCRIPTION Laborer - Heavy&Highway **DISTRICT** 2

ENTIRE COUNTIES
Broome, Chemung, Cortland, Schuyler, Steuben, Tioga, Tompkins

PARTIAL COUNTIES
Chenango: Entire County except the Townships of Sherburne, Columbus, and New Berlin.
Delaware: Only the Townships of Sidney, Masonville, Walton, Tompkins, Deposit, Hancock and Colchester.

WAGES
Per hour:

GROUP A: Drill Helper, Flagman, Outboard and Hand Boats.

GROUP B: Basic Rate, Bull Float (where used for strike off only), Chain Saw, Concrete Aggregate Bin, Concrete Bootmen, Gin Buggy, Hand or Machine Vibrator, Jack Hammer, Mason Tender, Mortar Mixer, Pavement Breaker, Handlers of Steel Mesh, Small Generators for Laborers Tools, Installation of Bridge Drainage Pipe, Pipe Layers, Vibrator Type Rollers, Tamper, Drill Doctor, Water Pump Operators (1-1/2" & Single Diaphragm), Nozzle (Asphalt, Gunite, Seeding, and Sand Blasting), Laborers on Chain Link Fence Erection, Rock Splitter and Power Unit, Pusher Type Concrete Saw and all other Gas, Electric, and Air Tool Operators, Wrecking Laborer.

GROUP C: Drilling equipment - only where a separate air compressor unit supplies power, Acetylene Torch Operators, Asphalt Raker, Powder Man, Tail or Screw Operator on Asphalt Paver.

GROUP D: Blasters, Form Setters (slab steel forms on highways, roads, streets & airport runways), Stone or Granite Curb Setters.

GROUP E: Hazardous Waste defined as when an employee performs hazardous waste removal, lead abatement and removal, asbestos abatement and removal work on State and/or Federally designated waste site and were relevant State and/or Federal regulations require employees to use or wear required forms of personal protection.

	07/01/2026	07/01/2027 Additional
GROUP A	$ 39.80	$ 4.20*
GROUP B	40.00	4.20*
GROUP C	40.20	4.20*
GROUP D	40.40	4.20*
GROUP E	45.00	4.20*

*To be allocated at a later date.

IMPORTANT NOTES:
- Laborer tasks on Renewable Energy and Green Energy construction work shall be paid at the appropriate Heavy & Highway rates.
- Wage and supplement rates for the operation of forklift and skid steer may be found under the classification "Operating Engineer".
- When an employee is required by the employer and/or by the material data safety sheets of a product, during its application, to wear a half or full-face replaceable cartridge respirator for more than (2) hours, then in such case said employee(s) will be paid the Group E rate for the shift.

SHIFT WORK
A single irregular work shift starting any time between 5:00 PM and 1:00 AM on governmental mandated night work shall be paid an additional $5.00 per hour.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker $ 28.01

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
- If Holiday falls on Sunday, it will be celebrated on Monday. If the Holiday falls on Saturday, it will be celebrated on Saturday.
- An Employee must work the scheduled working day before and the scheduled working day after a holiday to receive holiday pay.

REGISTERED APPRENTICES
WAGES: 1000 hour terms at the following percentage of Journeyworker's GROUP B wage:

1st	2nd	3rd	4th
70%	80%	90%	95%

SUPPLEMENTAL BENEFITS per hour:
All terms $ 28.01

2-785h

Laborer - Tunnel 08/01/2026

JOB DESCRIPTION Laborer - Tunnel **DISTRICT** 2

ENTIRE COUNTIES
Broome, Chemung, Cortland, Schuyler, Steuben, Tioga, Tompkins

PARTIAL COUNTIES
Chenango: Entire County except the Townships of Sherburne, Columbus, and New Berlin.
Delaware: Only the Townships of Sidney, Masonville, Walton, Tompkins, Deposit, Hancock and Colchester.

WAGES
Per hour:

GROUP A: Change House Man

GROUP B: Miners and all Machine Men, Safety Miner, All Shaft work, Caisson work, Drilling, Blow Pipe, all Air Tools, Tugger, Scaling, Nipper, Guniting pot to nozzle, Bit Grinder, Signal Man (top and bottom), Concrete Man, Shield Driven Tunnels, mixed face and soft ground, liner plate tunnels in free air.

GROUP C: Blaster

GROUP D: Hazardous waste removal work on a State and/or Federally designated waste site where relevant State and/or Federal regulations require employees to use or wear required forms of personal protection.

	07/01/2026	07/01/2027 Additional
Group A	$ 42.98	$ 4.20*
Group B	43.18	4.20*
Group C	47.98	4.20*
Group D	47.98	4.20*

*To be allocated at a later date

IMPORTANT NOTES:
- When an employee is required by the employer and/or by the material data safety sheets of a product, during its application, to wear a half or full face replaceable cartridge respirator for more then (2) hours, then in such case said employee(s) will be paid the Group D rate for the shift.

SHIFT WORK
A single irregular work shift starting any time between 5:00 PM and 1:00 AM on governmental mandated night work shall be paid an additional $5.00 per hour.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker $ 28.01

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE
- If Holiday falls on Sunday, it will be celebrated on Monday. If the Holiday falls on Saturday, it will be celebrated on Friday.

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
If the holiday falls on Saturday, it will be celebrated on Friday. If the holiday falls on Sunday, it will be celebrated on Monday

REGISTERED APPRENTICES
WAGES: 1000 hour terms at the following percentage of Group B wage

1st	2nd	3rd	4th
70%	80%	90%	95%

SUPPLEMENTAL BENEFITS per hour:

All Terms $ 28.01

2-785T

Lineman Electrician — 08/01/2026

JOB DESCRIPTION Lineman Electrician **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES
A Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors, assembly of all electrical materials, conduit, pipe, or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

Crane Operators: Operation of any type of crane on line projects.
Crawler Backhoe: Operation of tracked excavator/crawler backhoe with 1/2 yard bucket or larger on line projects.
Digging Machine Operator: All other digging equipment and augering on line projects.

A Groundman/Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator/equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/truck driver may assist in installing conduit, pipe, cables and equipment.

NOTE: Includes Teledata Work within ten (10) feet of High Voltage Transmission Lines. Also includes digging of holes for poles, anchors, footer, and foundations for electrical equipment.

-----Below rates applicable on all overhead and underground distribution and maintenance work, and all overhead and underground transmission line work and the installation of fiber optic cable where no other construction trades are or have been involved. Includes access matting for line work.

Per hour:	07/01/2026	05/03/2027	05/01/2028
Group A:			
Lineman, Technician	$ 64.37	$ 66.84	$ 69.47
Crane, Crawler Backhoe	64.37	66.84	69.47
Welder, Cable Splicer	64.37	66.84	69.47
Group B:			
Digging Mach. Operator	$ 57.93	$ 60.16	$ 62.52
Group C:			
Tractor Trailer Driver	$ 54.71	$ 56.81	$ 59.05
Groundman, Truck Driver	51.50	53.47	55.58
Equipment Mechanic	51.50	53.47	55.58
Group D:			
Flagger	$ 35.40	$ 36.76	$ 38.21

Additional 3% per hour above regular rate for entire crew when a helicopter is used. This will increase to 5% on May 03, 2027.

-----Below rates applicable on all electrical sub-stations, switching structures, fiber optic cable and all other work not defined as "Utility outside electrical work." Includes access matting for line work.

Group A:			
Lineman, Technician	$ 64.37	$ 66.84	$ 69.47
Crane, Crawler Backhoe	64.37	66.84	69.47
Cable Splicer	70.81	73.52	76.42
Certified Welder, Pipe Type Cable	$ 67.59	$ 70.18	$ 72.94
Group B:			
Digging Mach. Operator	$ 57.93	$ 60.16	$ 62.52
Group C:			
Tractor Trailer Driver	$ 54.71	$ 56.81	$ 59.05
Groundman, Truck Driver	51.50	53.47	55.58
Equipment Mechanic	51.50	53.47	55.58
Group D:			
Flagger	$ 35.40	$ 36.76	$ 38.12

Additional 3% per hour above regular rate for entire crew when a helicopter is used. This will increase to 5% on May 03, 2027.

-----Below rates applicable on all railroad catenary installation and maintenance, third rail installation, bonding of rails and pipe type cable and installation of fiber optic cable. Includes access matting for line work.

Group A:			
Lineman, Tech, Welder	$ 65.81	$ 68.34	$ 71.03
Crane, Crawler Backhoe	65.81	68.34	71.03
Cable Splicer	72.39	75.17	78.13
Certified Welder, Pipe Type Cable	69.10	71.76	74.58

Group B:			
Digging Mach. Operator	$ 59.23	$ 61.51	$ 63.93
Group C:			
Tractor Trailer Driver	$ 55.94	$ 58.09	$ 60.38
Groundman, Truck Driver	52.65	54.67	56.82
Equipment Mechanic	52.65	54.67	56.82
Group D:			
Flagger	$ 36.20	$ 37.59	$ 39.07

Additional 3% per hour above regular rate for entire crew when a helicopter is used. This will increase to 5% on May 03, 2027.

-----Below rates applicable on all overhead and underground transmission line work & fiber optic cable where other construction trades are or have been involved. This applies to transmission line work only, not other construction. Includes access matting for line work.

Group A:			
Lineman, Tech, Welder	$ 67.10	$ 69.68	$ 72.43
Crane, Crawler Backhoe	67.10	69.68	72.43
Group B:			
Digging Mach. Operator	$ 60.39	$ 62.71	$ 65.19
Group C:			
Tractor Trailer Driver	$ 57.04	$ 59.23	$ 61.57
Groundman, Truck Driver	53.68	55.74	57.94
Equipment Mechanic	53.68	55.74	57.94
Group D:			
Flagger	$ 36.91	$ 38.32	$ 39.84

Additional 3% per hour above regular rate for entire crew when a helicopter is used. This will increase to 5% on May 03, 2027.

SHIFT WORK

The following rates will apply on all contracting agency mandated multiple shifts of at least five (5) days duration worked between the hours listed below:

1ST SHIFT	8:00 AM to 4:30 PM REGULAR RATE
2ND SHIFT	4:30 PM to 1:00 AM REGULAR RATE PLUS 17.3 %
3RD SHIFT	12:30 AM to 9:00 AM REGULAR RATE PLUS 31.4 %

SUPPLEMENTAL BENEFITS

Per hour:

	07/01/2026	05/03/2027	05/01/2028
Group A	$ 32.91*	$ 34.41*	$ 35.91*
Group B	$ 28.91*	$ 30.41*	$ 31.91*
Group C	$ 28.51*	$ 29.71*	$ 30.91*
Group D	$ 28.41*	$ 29.54*	$ 30.67*

*NOTE: Plus 7% of the hourly wage paid. The 7% is based on the straight time rate or the premium time rate.

OVERTIME PAY

See (B, E, Q, X) on OVERTIME PAGE. NOTE: Double time for all emergency work designated by the Contracting Agency.
WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid	See (5, 6, 8, 15, 25) on HOLIDAY PAGE
Overtime	See (5, 6, 8, 15, 25) on HOLIDAY PAGE

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES

WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyworker's Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

	07/01/2026	05/03/2027	05/01/2028
All terms:	$ 28.41*	$ 29.54*	$ 30.67*

*NOTE: Plus 7% of the hourly wage paid. The 7% is based on the straight time rate or the premium time rate.

6-1249a

Lineman Electrician - Teledata — 08/01/2026

JOB DESCRIPTION Lineman Electrician - Teledata **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES
NOTE: Applies to all public work and covered private projects, including those receiving ConnectAll funding subject to LL 224-E,solicited prior to July 1, 2025. For all projects, excluding dial-up internet access service, solicited on or after July 1, 2025, please see BROADBAND

Per hour:	07/01/2026	01/04/2027	01/03/2028	01/01/2029
Cable Splicer	$ 42.03	$ 43.30	$ 44.59	$ 45.93
Installer, Repairman	39.89	41.09	42.32	43.59
Teledata Lineman	39.89	41.09	42.32	43.59
Tech., Equip. Operator	39.89	41.09	42.32	43.59
Groundman/Flagger	21.14	21.78	22.43	23.10

For outside work, stopping at first point of attachment (demarcation).

NOTE: EXCLUDES Teledata work within ten (10) feet of High Voltage (600 volts and over) transmission lines. For this work, please see LINEMAN.

SHIFT WORK
The following rates apply when the contracting agency mandates multiple shifts of at least five (5) days duration are worked. When two (2) or three (3) shifts are worked the following rates apply:

1ST SHIFT	REGULAR RATE
2ND SHIFT	REGULAR RATE PLUS 10%
3RD SHIFT	REGULAR RATE PLUS 15%

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 6.18 plus 4%*	$ 6.43 plus 5%*	$ 6.43 plus 6%*	$ 6.68 plus 7%*

*NOTE: The percentage (%) listed above is based on the hourly wage paid, straight time rate or premium time rate.

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE
WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE

6-1249LT - Teledata

Lineman Electrician - Traffic Signal, Lighting — 08/01/2026

JOB DESCRIPTION Lineman Electrician - Traffic Signal, Lighting **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Warren, Washington, Wayne, Wyoming, Yates

WAGES

Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors which includes, but is not limited to road loop wires; conduit and plastic or other type pipes that carry conductors, flex cables and connectors, and to oversee the encasement or burial of such conduits or pipes.

Crane Operators: Operation of any type of crane on Traffic Signal/Lighting projects.
Crawler Backhoe: Operation of tracked excavator/crawler backhoe with 1/2 yard bucket or larger on Traffic Signal/Lighting projects.
Digging Machine Operator: All other digging equipment and augering on Traffic Signal/Lighting projects.

A Groundman/Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator/equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/truck driver may assist in installing conduit, pipe, cables and equipment.

A flagger's duties shall consist of traffic control only.

Per hour:	07/01/2026	05/03/2027	05/01/2028
Group A:			
Lineman, Technician	$ 55.31	$ 57.40	$ 59.64
Crane, Crawler Backhoe	55.31	57.40	59.64
Certified Welder	58.08	60.27	62.62
Group B:			
Digging Machine	$ 49.78	$ 51.66	$ 53.68
Group C:			
Tractor Trailer Driver	$ 47.01	$ 48.79	$ 50.69
Groundman, Truck Driver	44.25	45.92	47.71
Equipment Mechanic	44.25	45.92	47.71
Group D:			
Flagger	$ 33.19	$ 34.44	$ 35.78

Above rates are applicable for installation, testing, operation, maintenance and repair on all Traffic Control (Signal) and Illumination (Lighting) projects, Traffic Monitoring Systems, and Road Weather Information Systems. Includes digging of holes for poles, anchors, footer foundations for electrical equipment; assembly of all electrical materials or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

SHIFT WORK

The following rates will apply on all contracting agency mandated multiple shifts of at least five (5) days duration worked between the hours listed below:

1ST SHIFT	8:00 AM TO 4:30 PM	REGULAR RATE
2ND SHIFT	4:30 PM TO 1:00 AM	REGULAR RATE PLUS 17.3%
3RD SHIFT	12:30 AM TO 9:00 AM	REGULAR RATE PLUS 31.4%

SUPPLEMENTAL BENEFITS

Per hour:

	07/01/2026	05/03/2027	05/01/2028
Group A	$ 32.91*	$ 34.41*	$ 35.91*
Group B	$ 28.91*	$ 30.41*	$ 31.91*
Group C	$ 28.51*	$ 29.71*	$ 30.91*
Group D	$ 28.41*	$ 29.54*	$ 30.67*

*NOTE: Plus 7% of the hourly wage paid. The 7% is based on the straight time rate or the premium time rate.

OVERTIME PAY

See (B, E, Q, X) on OVERTIME PAGE.
NOTE: Double time for all emergency work designated by the Contracting Agency.
WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid: See (5, 6, 8, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 25) on HOLIDAY PAGE

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES
WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyworker's Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

	07/01/2026	05/03/2027	05/01/2028
All terms:	$ 28.41*	$ 29.54*	$ 30.67*

*NOTE: Plus 7% of the hourly wage paid. The 7% is based on the straight time rate or the premium time rate.

6-1249a-LT

Lineman Electrician - Tree Trimmer — 08/01/2026

JOB DESCRIPTION Lineman Electrician - Tree Trimmer **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES
Applies to line clearance, tree work and right-of-way preparation on all new or existing energized overhead or underground electrical, telephone and CATV lines. This also includes stump removal near underground energized electrical lines including telephone and CATV lines.

Per hour:	07/01/2026	01/01/2027	01/03/2027
Tree Trimmer	$ 34.67	$ 34.67	$ 36.23
Equipment Operator	30.67	30.67	32.05
Equipment Mechanic	30.67	30.67	32.05
Truck Driver	24.93	24.93	26.05
Groundman	20.53	20.53	21.45
Flagger	16.20	16.20*	16.93

* This rate may be subject to a minimum wage increase 01/01/2027.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 11.23*	$ 11.48*	$ 11.48*

*NOTE: Plus 4.5% of the hourly wage paid. The 4.5% is based on the straight time rate or the premium time rate.

OVERTIME PAY
See (B, E, Q, X) on OVERTIME PAGE
WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY
Paid: See (5, 6, 8, 15, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 16, 25) on HOLIDAY PAGE
NOTE: All paid holidays falling on a Saturday shall be observed on the preceding Friday. All paid holidays falling on a Sunday shall be observed on the following Monday.

6-1249TT

Mason - Building — 08/01/2026

JOB DESCRIPTION Mason - Building **DISTRICT** 5

ENTIRE COUNTIES
Broome, Chenango, Delaware, Otsego, Tioga

WAGES
Per hour: 07/01/2026

Building:

Bricklayer, Cement	$ 36.34
Mason, Plasterer, Stone	
Mason, Tuck Pointer	

SUPPLEMENTAL BENEFITS
Per hour:

Journeyman	$ 31.26

OVERTIME PAY
See (B,E,E2*,Q) on OVERTIME PAGE
*Note - Or other conditions beyond the employer's control such as fire or natural disaster.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

One year terms at the following rates:

1st	2nd	3rd	4th
$ 22.99	$ 28.44	$ 29.82	$ 32.71

Supplemental benefits per hour:

1st	2nd	3rd	4th
$ 24.52	$ 25.75	$ 28.84	$ 30.42

5-3B - Bing - Z2

Mason - Heavy&Highway 08/01/2026

JOB DESCRIPTION Mason - Heavy&Highway **DISTRICT** 5

ENTIRE COUNTIES
Allegany, Broome, Chautauqua, Chemung, Chenango, Cortland, Delaware, Genesee, Livingston, Monroe, Ontario, Orleans, Otsego, Schuyler, Seneca, Steuben, Tioga, Tompkins, Wayne, Wyoming, Yates

PARTIAL COUNTIES
Cattaraugus: Enitre county except in the Township of Perrysburg and the Village of Gowanda only the Bricklayer classification applies.
Erie: Only the Bricklayer classification applies.
Niagara: Only the Bricklayer classification applies.

WAGES

Per hour:	07/01/2026
Heavy & Highway:	
Cement Mason	$ 41.38
Bricklayer	41.38

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 27.03

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

1500 hour terms at the following percentage of Journeyworker's wage:

1st	2nd	3rd	4th
50%	60%	70%	80%

Supplemental benefits per hour:

1st term	$ 15.78
2nd term	$ 25.07

3rd term	$ 25.56
4th term	$ 26.05

5-3h

Mason - Tile Finisher — 08/01/2026

JOB DESCRIPTION Mason - Tile Finisher **DISTRICT** 5

ENTIRE COUNTIES
Broome, Chemung, Chenango, Cortland, Delaware, Otsego, Schuyler, Steuben, Tioga, Tompkins

PARTIAL COUNTIES
Allegany: Towns of Alfred, Almond, Andover and Burns in Allegany County

WAGES

Wages	
Per hour:	07/01/2026
Building:	
Marble, Slate, Terrazzo and Tile Finisher	$ 35.00

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 24.47

OVERTIME PAY
See (B,E,E2*,Q) on OVERTIME PAGE
*Note - Or other conditions beyond the employer's control such as fire or natural disaster.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

One year terms at the following wage:

1st	2nd	3rd
$ 21.00	$ 24.50	$ 28.00

Supplemental benefits per hour:

1st	2nd	3rd
$ 15.69	$ 16.39	$ 21.13

5-3TF - Z4

Mason - Tile Setter — 08/01/2026

JOB DESCRIPTION Mason - Tile Setter **DISTRICT** 5

ENTIRE COUNTIES
Broome, Chemung, Chenango, Cortland, Delaware, Otsego, Schuyler, Steuben, Tioga, Tompkins

PARTIAL COUNTIES
Allegany: Towns of Alfred, Almond, Andover and Burns.

WAGES

Wages	
Per Hour:	07/01/2026
Building:	
Marble, Slate, Terrazzo and Tile Setter	$ 36.69

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 28.56

OVERTIME PAY
See (B,E,E2*,Q) on OVERTIME PAGE
*Note - Or other conditions beyond the employer's control such as fire or natural disaster.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

One year terms at the following wage:

1st	2nd	3rd	4th
$ 22.01	$ 25.68	$ 29.35	$ 33.02

Supplemental benefits per hour:

1st	2nd	3rd	4th
$ 16.49	$ 17.31	$ 26.90	$ 27.73

5-3TS - Z4

Millwright 08/01/2026

JOB DESCRIPTION Millwright **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES
THE FOLLOWING RATE APPLIES TO ANY GAS/STEAM TURBINE AND OR RELATED COMPONENT WORK, INCLUDING NEW INSTALLATIONS OR MAINTENANCE AND ANY/ALL WORK PERFORMED WITHIN THE PROPERTY LIMITS OF A NUCLEAR FACILITY.

Per hour:	07/01/2026	07/01/2027 Additional	07/01/2028 Additional
Millwright - Power Generation	$ 50.00	$ 3.00*	$ 3.00*

* To be allocated at a later date.

NOTE: ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount subject to any overtime premiums):
- Certified Welders shall receive an additional $ 1.75 per hour provided they are directed to weld.
- If a work site has been declared a hazardous site by the Owner and the use of protective gear (including, as a minimum, air purifying canister-type chemical respirators) is required, then that employee shall receive an additional $ 1.50 per hour.
- An employee performing the work of a machinist shall receive an additional $ 2.00 per hour. For the purposes of this premium to apply, a "machinist" is a person who uses a lathe, Bridgeport, milling machine or similar type of tool to make or modify parts.
- When performing work underground at 500 feet and below, the employee shall receive an additional $ 1.00 per hour.

SUPPLEMENTAL BENEFITS
Per hour paid:

Journeyworker	$ 28.45*

*NOTE: Subject to OT premium

OVERTIME PAY
See (B, E, E2, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
NOTE: Any holiday that falls on Sunday shall be observed the following Monday. Any holiday that falls on Saturday shall be observed the preceding Friday.

REGISTERED APPRENTICES
WAGES per hour: One year terms at the following percentage of Journeyworker's wage:

Appr. 1st year	65%*
Appr. 2nd year	75%*
Appr. 3rd year	80%*
Appr. 4th year	90%*

*NOTE: Additional premium for the following work listed below:

Certified Welder	$ 1.75
Hazardous Waste Work	1.50
Machinist	2.00
Underground (500' and below)	1.00

SUPPLEMENTAL BENEFITS per hour:

Appr. 1st year	$ 11.96
Appr. 2nd year	23.50
Appr. 3rd year	25.15
Appr. 4th year	26.80

6-1163Power

Millwright 08/01/2026

JOB DESCRIPTION Millwright **DISTRICT** 6

ENTIRE COUNTIES
Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Herkimer, Madison, Seneca, Tioga, Yates

WAGES

Per hour:	07/01/2026	07/01/2027 Additional	07/01/2028 Additional
Building	$ 40.50	$ 3.50*	$ 3.50*
Heavy & Highway	44.00		

* To be allocated at a later date.

NOTE: ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount subject to any overtime premiums):
- Certified Welders shall receive an additional $ 1.75 per hour provided they are directed to weld.
- On Building projects, If a work site has been declared a hazardous site by the Owner and the use of protective gear (including, as a minimum, air purifying canister-type chemical respirators) are required, then that employee shall receive an additional $ 1.50 per hour.
- H/H work performed on hazardous waste sites where employees are required to wear protective gear shall receive an additional $ 2.00 per hour over the Millwright H/H rate for all hours worked on the day protective gear was worn.
- An employee performing the work of a machinist shall receive an additional $ 2.00 per hour. For the purposes of this premium to apply, a "machinist" is a person who uses a lathe, Bridgeport, milling machine or similar type of tool to make or modify parts.
- When performing work underground at 500 feet and below, the employee shall receive an additional $ 1.00 per hour.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 27.54

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
NOTE: Any holiday that falls on Sunday shall be observed the following Monday. Any holiday that falls on a Saturday shall be observed the preceding Friday.

REGISTERED APPRENTICES
WAGES per hour: One year terms at the following percentage of Journeyworker's wage:

Appr. 1st year	65%*
Appr. 2nd year	75%*
Appr. 3rd year	80%*
Appr. 4th year	90%*

*NOTE: Additional premium for the following work listed below:

Certified Welder	$ 1.75
Hazardous Waste (Bldg)	1.50
Hazardous Waste (H/H)	2.00
Machinist	2.00
Underground (500' and below)	1.00

SUPPLEMENTAL BENEFITS per hour:

Appr. 1st year	$ 11.96
Appr. 2nd year	22.86
Appr. 3rd year	24.42
Appr. 4th year	25.98

6-1163 Zone 2

Operating Engineer - Building 08/01/2026

JOB DESCRIPTION Operating Engineer - Building **DISTRICT** 1

ENTIRE COUNTIES
Broome, Chenango, Tioga

WAGES
NOTE:
-- In the event that equipment listed below is operated by robotic control, the classification covering the operation will be the same as if manually operated.
-- If a second employee is required by the employer for operation of any covered machine, they shall be an Engineer Class C

CLASS A1**: All cranes that require A NYS crane license, tower cranes***(including self erecting), hydraulic cranes, locomotive crane, piledriver, cableway, derricks, whirlies, dragline, boom trucks over 5 tons, cherry pickers, overhead cranes (gantry or saddle type), truck cranes

CLASS A:
Shovel, Excavators 18,001 lbs. and above(including rubber tire full swing), Gradalls, power road grader, all CMI equipment, front-end rubber tire loader, tractor-mounted drill (quarry master), mucking machine, concrete central mix plant, concrete pump, belcrete system, automated asphalt concrete plant, and tractor road paver, boom trucks 5 tons and under, maintenance engineer, self-contained crawler drill-hydraulic rock drill, Profiler/Milling machine.

CLASS B:
Excavators 18,000 lbs. and under, Backhoes (rubber tired backhoe/loader combination), bulldozer, pushcat, tractor, traxcavator, scraper, LeTourneau grader, form fine grader, self-propelled soil compactor (fill roller), asphalt roller, blacktop spreader, power brooms, sweepers, trenching machine, Barber Green loader, side booms, hydro hammer, concrete spreader, concrete finishing machine, one drum hoist, power hoisting (single drum), hoist two drum or more, three drum engine, power hoisting (two drum and over), two drum and swinging engine, three drum swinging engine, hod hoist, A-L frame winches, core and well drillers (one drum), post hole digger, model CHB Vibro-Tamp or similar machine, batch bin and plant operator, dinky locomotive, skid steer loader, track excavator 5/8 cubic yard or smaller, front end rubber tired loader under four cubic yards, vacum machine (mounted or towed).

CLASS C:
Fork lift, high lift, all terrain fork lift: or similar, oiler, fireman and heavy-duty greaser, boilers and steam generators, pump, vibrator, motor mixer, air compressor, dust collector, welding machine, well point, mechanical heater, generators, temporary light plants, electric submersible pumps 4" and over, murphy type diesel generator, conveyor, elevators, concrete mixer, beltcrete power pack (belcrete system), seeding, and mulching machines, pumps, rotating telehandler (that does not require NYS crane license).

WAGES per hour

	07/01/2026	07/01/2027	07/01/2028	07/01/2029
Building		Additional	Additional	Additional
Class A1**	$ 57.45	$ 5.03*	$ 5.62*	$ 5.61*
Class A	$ 53.01	5.00*	5.60*	6.10*
Class B	$ 52.42	4.87*	5.45*	5.95*
Class C	$ 49.96	4.72*	5.32*	5.79*

(*) To be allocated at a later date

Additional $2.50 per hr over B rate for Nuclear Leader work.
Additional $2.50 per hour if work requires Personal Protective Equipment for hazardous waste site activities with a level C or over rating.

(**)TONNAGE RATING PREMIUMS:
Note: Additional value subject to same premiums as shown for OT
All cranes 1000 tons and over, A1 rate plus $7.00
All cranes 800-999 tons, A1 rate plus $6.00
All cranes 600-799 tons, A1 rate plus $5.00
All cranes 400-599 tons, A1 rate plus $4.00
All cranes 200-399 tons, A1 rate plus $3.00
All cranes 111-199 tons, A1 rate plus $2.25
All cranes 110 tons and under, A1 rate only

(***)Tower Cranes - A1 rate plus $ 0.50 (no tonnage premiums apply)

- Cranes in Luffer Configuration - A1 rate plus $ 5.00
- Cranes with external ballast (Tray or Wagon) - A1 rate plus $ 5.00
- NOTE: These premiums are in addition to the tonnage premiums if over 400 tons.

SUPPLEMENTAL BENEFITS
Per hour

Journeyworker	$ 34.30

OVERTIME PAY
See (B, E, *Q) on OVERTIME PAGE
*If a designated holiday is worked, employee shall receive 8 hours of straight time pay in addition to the double time rate for all hours worked.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
NOTE: If a holiday falls on Sunday, it will be celebrated on Monday. If the holiday falls on Saturday, it will be celebrated on Friday.

REGISTERED APPRENTICES
Wages per hour

1000 hours terms at the following percentage of Journeyworker's wage Class B:

1st	2nd	3rd	4th
60%	70%	80%	90%

Supplemental Benefits per hour worked

All terms	$ 29.70

1-158 BCT

Operating Engineer - Heavy&Highway — 08/01/2026

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 1

ENTIRE COUNTIES
Albany, Broome, Chenango, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Tioga, Warren, Washington

PARTIAL COUNTIES
Dutchess: Defined as north of the northern boundary line of City of Poughkeepsie then due east to Route 115 to Bedell Road then east along Bedell Road to VanWagner Road then north along VanWagner Road to Bower Road then east along Bower Road to Rte. 44 east to Route 343 then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to Connecticut.

WAGES
NOTE:
---In the event that equipment listed below is operated by robotic control, the classification covering the operation will be the same as if manually operated.
---If a second employee is required by the employer for operation of any covered machine, they shall be an Engineer Class C.

CLASS A1**: All Cranes that require a NYS Crane License (Boom Truck, Cableway, Cherry Picker, Derrick, Dragline, Overhead Crane (Gantry or Straddle Type), Pile Driver, Tower Cranes (including self-erecting)***, Truck Crane).

CLASS A: Asphalt Curb Machine (self-propelled, slipform); Asphalt Paver; Automated Concrete Spreader (CMI type); Automatic Fine Grader; Backhoe (except tractor mounted, rubber tired); Backhoe Excavator, Full Swing (CAT 212 or similar type); Back Filling Machine; Belt Placer (CMI type); Blacktop Plant (automated); Blacktop Roller; Bull Dozer being operated with active GPS; Caisson Auger; Central Mix Concrete Plant (automated); Concrete Curb Machine (self-propelled, slipform); Concrete Pump; Cranes - listed in A1 that do not require a NYS Crane License; Directional Boring/Drilling Machine; Dredge; Dual Drum Paver; Excavator (all purpose-hydraulic, Gradall or similar); Front End Loader (4 cu. yd. & over); Head Tower (Sauerman or equal); Hoist (two or three drum); Holland Loader; Jetting Plow; Maintenance Engineer; Mine Hoist; Mucking Machine or Mole; Pavement Breaker (SP Wirtgen; PB-4 and similar type); Profiler/Milling Machine (over 105 h.p.); Power Grader; Quad 9; Quarry Master (or equivalent); Rotating Telehandler; Scraper (including challenger type); Shovel; Side Boom; Slip Form Paver; Tractor Drawn Belt-Type Loader; Truck or Trailer Mounted Log Chipper (self-feeder); Tug Operator (manned rented equipment excluded); Tunnel Shovel.

CLASS B: Backhoe (tractor mounted, rubber tired); Bituminous Recycler Machine; Bituminous Spreader and Mixer; Blacktop Plant (non-automated); Blast or Rotary Drill (truck or tractor mounted); Boring Machine; Bridge Deck Finishing Machine; Brokk; Cage Hoist; Central Mix Plant (non-automated) and All Concrete Batching Plants; Concrete Paver (over 16'); Crawler Drill (self-contained); Crusher; Diesel Power Unit; Drill Rigs (truck or tractor mounted); Front End Loader (under 4 cu. yd.); Greaseman - Lubrication Engineer; HiPressure Boiler (15 lbs & over); Hoist (one drum); Hydro-Axe; Kolman Plant Loader & similar type loaders (if employer requires another man to clean the screen or to maintain the equipment, they shall be an Oiler); Locomotive; Material Handling Knuckle Boom; Mini Excavators (under 18,000 lbs.); Mixer (for stabilized base, self-propelled); Monorail Machine; Profiler/Milling Machine (105 h.p. and under); Plant Engineer; Prentice Loader; Pug Mill; Pump Crete; Ready Mix Concrete Plant; Refrigeration Equipment (for soil stabilization); Road Widener; Roller (all above subgrade, See Class A for Blacktop Roller); Sea Mule; Self-contained ride-on Rock Drill (excluding Air-Track type drill); Skidder; Tractor with Dozer and/or Pusher; Trencher; Tugger Hoist; Vacuum Machine (mounted or towed); Vermeer Saws (ride-on, any size or type); Welder; Winch and Winch Cat; Work Boat Operator including L.C.M.'s.
NOTE: Effective 07/01/27 Prentice Loader will move to CLASS A.

CLASS C: "A" Frame Winch Hoist (On Truck); Aggregate Plant; Articulated Heavy Hauler; Asphalt or Concrete Grooving Machine (ride-on); Ballast Regulator (ride-on); Bituminous Heater (self-propelled); Boat (powered); Boiler (used in conjunction with production); Cement & Bin Operator; Compressors****; Concrete Pavement Spreader and Finisher; Concrete Paver or Mixer (16' & under); Concrete Saw (self-propelled); Conveyor; Deck Hand; Directional Boring/Drilling Machine Locator; Drill (Core); Drill (Well); Dust Collectors****; Electric Pump When Used in Conjunction with Well Point System; Farm Tractor with accessories; Fine Grade Machine; Fireman; Forklift; Form Tamper; Generators****; Grout Pump; Gunite Machine; Hammers (hydraulic self-propelled); Heaters****; Hydra-Spiker (ride-on); Hydraulic Pump (jacking system); Hydro-Blaster (water); Light Plants****; Mulching Machine; Oiler; Parapet Concrete or Pavement Grinder; Post Hole Digger (excluding hand-held); Post Driver; Power Broom (towed); Power Heaterman; Power Sweeper; Pumps****; Revinius Widener; Roller (subgrade & fill); Scarifier (ride-on); Shell Winder; Skid Steer Loader (Bobcat or similar) including all attachments; Span Saw (ride-on); Steam Cleaner; Tamper (ride-on); Tie Extractor (ride-on); Tie Handlers (ride-on); Tie Inserters (ride-on); Tie Spacers (ride-on); Tire Repair; Track Liner (ride-on); Tractor; Tractor (with towed accessories); Vacuum Machine (self-propelled); Vibratory Compactor; Vibro Tamp; Welding Machines****; Well Point.

****CLASS C NOTE: Considered Hands-Off (unmanned). Includes only operation and maintenance of the equipment.

Per hour:	07/01/2026	07/01/2027 Additional	07/01/2028 Additional	07/01/2029 Additional
CLASS A1**	$ 63.56	$ 4.29*	$ 4.42*	$ 4.56*
CLASS A	59.81	3.54*	3.67*	3.81*
CLASS B	58.90	3.54*	3.67*	3.81*
CLASS C	56.33	3.54*	3.67*	3.81*

* To be allocated at a later date.

(**) TONNAGE PREMIUMS:
All cranes up to 64 ton capacity - A1 rate
All cranes 65 ton to 110 ton capacity - A1 rate plus $ 1.50
All cranes 111 ton to 199 ton capacity- A1 rate plus $ 2.00
All cranes 200 ton to 399 ton capacity - A1 rate plus $ 3.00
All cranes 400 ton to 599 ton capacity - A1 rate plus $ 4.00
All cranes 600 ton to 799 ton capacity - A1 rate plus $ 5.00
All cranes 800 ton to 999 ton capacity - A1 rate plus $ 6.00
All cranes 1000 ton capacity and over - A1 rate plus $ 7.00

(***) Tower Cranes - A1 rate plus $ 3.00 (no tonnage premiums apply)

- Cranes in Luffer Configuration - A1 rate plus $ 5.00
- Cranes with external ballast (Tray or Wagon) - A1 rate plus $ 5.00

Additional $ 2.50 per hour for hazardous waste removal work on a State and/or Federally designated waste site which requires employees to wear Level C or above forms of personal protection.

SHIFT WORK
SINGLE IRREGULAR WORK SHIFT: Additional $ 2.50 per hour for all employees who work a single irregular work shift starting from 5:00 PM to 1:00 AM that is mandated by the Contracting Agency.

SUPPLEMENTAL BENEFITS
Per hour

Journeyworker $ 34.60

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

NOTE: If a holiday falls on Sunday, it will be celebrated on Monday. If an employee works on this Monday, they shall be compensated at double time plus the holiday pay (triple time).

REGISTERED APPRENTICES
WAGES per hour: Hourly terms at the following percentage of Journeyworker's CLASS B wage.

0-1000 hrs	60%
1001-2000 hrs	70%
2001-3000 hrs	80%
3001-4100 hrs	90%

An additional $ 2.50 per hour is required when an apprentice performs hazardous waste removal work on a State and/or Federally designated waste site which requires employees to wear Level C or above forms of personal protection.

SUPPLEMENTAL BENEFITS per hour:

All Terms	$29.20

1-158H/H Alb

Operating Engineer - Survey Crew — 08/01/2026

JOB DESCRIPTION Operating Engineer - Survey Crew **DISTRICT** 12

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Wyoming, Yates

PARTIAL COUNTIES
Dutchess: The northern portion of the county from the northern boundary line of the City of Poughkeepsie, north.

WAGES
These rates apply to Building, Tunnel, and Heavy Highway.

Per hour:
SURVEY CLASSIFICATIONS:
Party Chief - One who directs a survey party and/or works independently.
Surveyor - One who operates the surveying instruments for measurements.
Survey Assistant - One who assists the Party Chief or Surveyor.

	07/01/2026	07/01/2027 Additional	07/01/2028 Additional
Party Chief	$ 56.64	$ 5.50*	$ 5.50*
Surveyor	52.74	$ 4.50*	$ 4.50*
Surveyor Assistant	36.00	$ 3.50*	$ 3.50*

Additional $3.00/hr. for Tunnel Work.
Additional $2.50/hr. for EPA or DEC certified toxic or hazardous waste work.

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS
Per hour worked:

Party Chief	$ 32.45
Surveyor	$ 32.45
Survey Assistant	$ 20.60

OVERTIME PAY
See (B, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
WAGES: 1000 hour terms based on percentage of Surveyor wage:

07/01/2026

0-1000	1001-2000	2001-3000
60%	70%	80%

SUPPLEMENTAL BENEFIT per hour worked:

All Terms: $ 22.65

12-158-545 D.H.H.

Operating Engineer - Survey Crew - Consulting Engineer — 08/01/2026

JOB DESCRIPTION Operating Engineer - Survey Crew - Consulting Engineer **DISTRICT** 12

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Wyoming, Yates

PARTIAL COUNTIES
Dutchess: The northern portion of the county from the northern boundary line of the City of Poughkeepsie, north.

WAGES
These rates apply to feasibility and preliminary design surveying, line and grade surveying for inspection or supervision of construction when performed under a Consulting Engineer Agreement.

Per hour:
SURVEY CLASSIFICATIONS:
Party Chief - One who directs a survey party and/or works independently
Surveyor - One who operates the surveying instruments for measurements
Survey Assistant - One who assists the Party Chief or Surveyor.

	07/01/2026	07/01/2027 Additional	07/01/2028 Additional
Party Chief	$ 56.64	$ 5.50*	$ 5.50*
Surveyor	52.74	$ 4.50*	$ 4.50*
Survey Assistant	36.00	$ 3.50*	$ 3.50*

Additional $3.00/hr. for Tunnel Work.
Additional $2.50/hr. for EPA or DEC certified toxic or hazardous waste work.

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS
Per hour worked:

Party Chief	$ 32.45
Surveyor	$ 32.45
Survey Assistant	$ 20.60

OVERTIME PAY
See (B, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
WAGES: 1000 hour terms based on percentage of Surveyor wage:

07/01/2026

0-1000	1001-2000	2001-3000
60%	70%	80%

SUPPLEMENTAL BENEFIT per hour worked:
All Terms: $22.65

12-158-545 DCE

Operating Engineer - Tunnel — 08/01/2026

JOB DESCRIPTION Operating Engineer - Tunnel **DISTRICT** 7

ENTIRE COUNTIES
Albany, Allegany, Broome, Cayuga, Chemung, Chenango, Clinton, Columbia, Cortland, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Oneida, Onondaga, Ontario, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Yates

PARTIAL COUNTIES
Dutchess: Northern part of Dutchess, to the northern boundary line of the City of Poughkeepsie, then due east to Route 115 to Bedell Road, then east along Bedell Road to VanWagner Road, then north along VanWagner Road to Bower Road, then east along Bower Road to Rte. 44 east to Rte. 343, then along Rte. 343 east to the northern boundary of the Town of Dover Plains and east along the northern boundary of the Town of Dover Plains, to the borderline of the State of Connecticut.

Genesee: Only that portion of the county that lies east of a line drawn down the center of Route 98 and the entirety of the City of Batavia.

WAGES

CLASS A: Automatic Concrete Spreader (CMI Type); Automatic Fine Grader; Backhoe (except tractor mounted, rubber tired); Belt Placer (CMI Type); Blacktop Plant (automated); Cableway; Caisson Auger; Central Mix Concrete Plant (automated); Concrete Curb Machine (self-propelled slipform); Concrete Pump (8" or over); Dredge; Dual Drum Paver; Excavator; Front End Loader (4 cu. yd & over); Gradall; Head Tower (Sauerman or Equal); Hoist (shaft); Hoist (two or three Drum); Log Chipper/Loader (self-feeder); Maintenance Engineer (shaft and tunnel); any Mechanical Shaft Drill; Mine Hoist; Mining Machine(Mole and similar types); Mucking Machine or Mole; Overhead Crane (Gantry or Straddle Type); Pile Driver; Power Grader; Remote Controlled Mole or Tunnel Machine; Scraper; Shovel; Side Boom; Slip Form Paver (If a second man is needed, they shall be an Oiler); Tripper/Maintenance Engineer (shaft & tunnel); Tractor Drawn Belt-Type Loader; Tug Operator (manned rented equipment excluded); Tunnel Shovel.

CLASS B: Automated Central Mix Concrete Plant; Backhoe (track mounted, rubber tired); Backhoe (topside); Bituminous Spreader and Mixer, Blacktop Plant (non-automated); Blast or Rotary Drill (truck or tractor mounted); Boring Machine; Cage Hoist; Central Mix Plant(non-automated); all Concrete Batching Plants; Compressors (4 or less exceeding 2,000 c.f.m. combined capacity); Concrete Pump; Crusher; Diesel Power Unit; Drill Rigs (tractor mounted); Front End Loader (under 4 cu. yd.); Grayco Epoxy Machine; Hoist (One Drum); Hoist (2 or 3 drum topside); Knuckle Boom material handler; Kolman Plant Loader & similar type Loaders (if employer requires another person to clean the screen or to maintain the equipment, they shall be an Oiler); L.C.M. Work Boat Operator; Locomotive; Maintenance Engineer (topside); Maintenance Grease Man; Mixer (for stabilized base-self-propelled); Monorail Machine; Plant Engineer; Personnel Hoist; Pump Crete; Ready Mix Concrete Plant; Refrigeration Equipment (for soil stabilization); Road Widener; Roller (all above sub-grade); Sea Mule; Shotcrete Machine; Shovel (topside); Tractor with Dozer and/or Pusher; Trencher; Tugger Hoist; Tunnel Locomotive; Vacuum Machine (mounted or towed); Welder; Winch; Winch Cat.

CLASS C: A Frame Truck; All Terrain Telescoping Material Handler; Ballast Regulator (ride-on); Compressors (4 not to exceed 2,000 c.f.m. combined capacity; or 3 or less with more than 1200 c.f.m. but not to exceed 2,000 c.f.m.); Compressors (any size, but subject to other provisions for compressors); Dust Collectors; Generators; Pumps; Welding Machines; Light Plants (4 or any type combination); Concrete Pavement Spreaders and Finishers; Conveyor; Drill (core); Drill (well); Electric Pump used in conjunction with Well Point System; Farm Tractor with Accessories; Fine Grade Machine; Fork Lift; Grout Pump (over 5 cu. ft.); Gunite Machine; Hammers (hydraulic-self-propelled); Hydra-Spiker (ride-on); Hydra-Blaster (water); Hydro-Blaster; Motorized Form Carrier; Post Hole Digger and Post Driver; Power Sweeper; Roller grade & fill); Scarifier (ride-on); Span-Saw (ride-on); Submersible Electric Pump (when used in lieu of well points); Tamper (ride-on); Tie-Extractor (ride-on), Tie Handler (ride-on), Tie Inserter (ride-on), Tie Spacer (ride-on); Track Liner (ride-on); Tractor with towed accessories; Vibratory Compactor; Vibro Tamp, Well Point.

CLASS D: Aggregate Plant; Cement & Bin Operator; Compressors (3 or less not to exceed 1,200 c.f.m. combined capacity); Compressors (any size, but subject to other provisions for compressors); Dust Collectors; Generators; Pumps; Welding Machines; Light Plants (3 or less or any type or combination); Concrete Saw (self-propelled); Form Tamper; Greaseman; Hydraulic Pump (jacking system); Junior Engineer; Light Plants; Mulching Machine; Oiler; Parapet Concrete or Pavement Grinder; Power Broom (towed); Power Heaterman (when used for production); Revinius Widener; Shell Winder; Steam Cleaner; Tractor.

Per hour:	07/01/2026	07/01/2027 Additional	07/01/2028 Additional	07/01/2029 Additional
CLASS A	$ 60.95	$ 3.54*	$ 3.67*	$ 3.81*
CLASS B	59.73	3.54*	3.67*	3.81*
CLASS C	56.94	3.54*	3.67*	3.81*
CLASS D	53.93	3.54*	3.67*	3.81*

* To be allocated at a later date.

Additional $5.00 per hour for Hazardous Waste Work on a state or federally designated hazardous waste site where the Operating Engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin and eye protection.

CRANES:
Crane 1: All Tower cranes, including self-erecting.
Crane 2: All Lattice Boom Cranes and all other cranes with a manufacturer's rating of fifty (50) ton and over.
Crane 3: All hydraulic cranes and derricks with a manufacturer's rating of forty nine (49) ton and below, including boom trucks.

Crane 1	$ 64.95
Crane 2	63.95
Crane 3	62.95

SUPPLEMENTAL BENEFITS

Per hour:

$ 26.05
+ 10.85*

* This portion of the benefits subject to SAME PREMIUM as shown for overtime wages.

OVERTIME PAY

See (B, B2, E, Q, X) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
NOTE: If a holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES
WAGES per hour: Hourly terms at the following percentage of Journeyworker's CLASS B wage.

1st term: (0-1000 hrs) 60%
2nd term: (1001-2000 hrs) 65%
3rd term: (2001-3000 hrs) 70%
4th term: (3001-4100 hrs) 75%

Additional $5.00 per hour for Hazardous Waste Work on a state or federally designated hazardous waste site where the Operating Engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin and eye protection.

SUPPLEMENTAL BENEFITS per hour: Same as Journeyworker.

7-158-832TL.

Painter 08/01/2026

JOB DESCRIPTION Painter **DISTRICT** 2

ENTIRE COUNTIES
Broome, Chenango, Tioga

WAGES
Per hour:

	07/01/2026
Painter	$ 29.12
Taper, Paperhangers, and Vinyl hangers	30.58

ADDITIONAL AMOUNTS FOR SPECIFIC TYPES OF JOBSITE CONDITIONS (amount subject to any overtime premiums):
- Additional $ 1.10 per hour for Brush and Roll Epoxy (Solvent Base Only)
- Additional $ 0.60 per hour for Swing Scaffold, Boatswain chair, Spray helper, Steam cleaning acid and high pressure water, Power grinders with respirator
- Additional $ 0.60 per hour for Structural steel (buildings) defined as new or old construction where ceilings, walls or the steel itself is to be painted from open trusses which require climbing or crawling without the support of solid scaffolding or scaffolding starting at the floor or ground level.
- Additional $ 1.00 per hour for Spray Painting
- Additional $ 1.00 per hour for Steeple Jack (Over 100 feet)
- Additional $ 1.50 per hour for Spray Epoxy (Solvent Based)
- Additional $ 0.90 per hour for Sandblasting

NOTE - SEE BRIDGE PAINTER RATES FOR BRIDGES & TANKS

SUPPLEMENTAL BENEFITS
Per hour:
Journeyworker $ 25.91

OVERTIME PAY
See (B, E2, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
A Holiday that falls on a Sunday will be celebrated on Monday, a holiday that falls on a Saturday will be celebrated on Friday.

REGISTERED APPRENTICES
WAGES:

Painter: 750 hour terms at the Painter Apprentice wage rate:

1st	2nd	3rd	4th	5th	6th	7th	8th
$ 18.00	$ 19.00	$ 20.00	$ 21.00	$ 22.00	$ 23.00	$ 24.00	$ 25.00

Taper: 750 hour terms at the following Journeyworker Taper Apprentice wage rate:

1st	2nd	3rd	4th	5th	6th
$ 20.00	$ 21.00	$ 22.00	$ 23.00	$ 24.00	$ 25.00

ADDITIONAL AMOUNTS FOR SPECIFIC TYPES OF JOBSITE CONDITIONS (amount subject to any overtime premiums):
- Additional $ 1.10 per hour for Brush and Roll Epoxy (Solvent Base Only)
- Additional $ 0.60 per hour for Swing Scaffold, Boatswain chair, Spray helper, Steam cleaning acid and high pressure water, Power grinders with respirator
- Additional $ 0.60 per hour for Structural steel (buildings) defined as new or old construction where ceilings, walls or the steel itself is to be painted from open trusses which require climbing or crawling without the support of solid scaffolding or scaffolding starting at the floor or ground level.
- Additional $ 1.00 per hour for Spray Painting
- Additional $ 1.00 per hour for Steeple Jack (Over 100 feet)
- Additional $ 1.50 per hour for Spray Epoxy (Solvent Based)
- Additional $ 0.90 per hour for Sandblasting

SUPPLEMENTAL BENEFITS per hour:
Painter/Decorator:

1st	2nd	3rd	4th	5th	6th	7th	8th
$ 6.00	$ 7.00	$ 8.00	$ 9.10	$ 11.00	$ 11.00	$ 13.00	$ 14.00

Taper/Drywall Finisher:

1st	2nd	3rd	4th	5th	6th
$ 6.00	$ 7.00	$ 8.00	$ 10.00	$ 13.00	$ 14.00

2-178 B

Painter 08/01/2026

JOB DESCRIPTION Painter **DISTRICT** 3

ENTIRE COUNTIES
Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Cortland, Delaware, Erie, Genesee, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Wayne, Wyoming, Yates

WAGES
Per hour: 07/01/2026

Bridge	$ 47.39
Tunnel	47.39
Tank*	45.39

For Bridge Painting Contracts, ALL WORKERS on and off the bridge (including Flagmen) are to be paid Painter's Rate; the contract must be ONLY for Bridge Painting.

*Tank rate applies to indoor and outdoor tanks, tank towers, standpipes, digesters, waste water treatment tanks, chlorinator tanks, etc. Covers all types of tanks including but not limited to steel tanks, concrete tanks, fiberglass tanks, etc.

SHIFT WORK
Note an additional $1.50 per hour is required when the contracting agency or project specification requires any shift to start prior to 6:00am or after 12:00 noon.

SUPPLEMENTAL BENEFITS
Per hour:
$ 32.81

OVERTIME PAY
Exterior work only See (B, E2, E4, F, R) on OVERTIME PAGE.
All other work See (B, F, R) on OVERTIME PAGE.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

750 hour terms at the following wage:

1st	2nd	3rd	4th	5th	6th
$ 24.00	$ 26.00	$ 28.00	$ 30.00	$ 34.00	$ 38.00

Supplemental benefits per hour:

1st	2nd	3rd	4th	5th	6th
$ 6.60	$ 6.95	$ 7.30	$ 7.65	$ 8.00	$ 8.35

3-4-Bridge, Tunnel, Tank

Painter - Metal Polisher — 08/01/2026

JOB DESCRIPTION Painter - Metal Polisher **DISTRICT** 8

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

	07/01/2026
Metal Polisher	$ 41.33
Metal Polisher*	42.43
Metal Polisher**	45.33

*Note: Applies on New Construction & complete renovation
** Note: Applies when working on scaffolds over 34 feet.

SUPPLEMENTAL BENEFITS
Per Hour:

Journeyworker:
All classifications $ 13.99

OVERTIME PAY
See (B, E, P, T) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:
One (1) year term at the following wage rates:

	07/01/2026
1st year	$ 20.67
2nd year	22.73
3rd year	24.80
1st year*	$ 21.06
2nd year*	23.17
3rd year*	25.34
1st year**	$ 23.17
2nd year**	25.23
3rd year**	27.30

*Note: Applies on New Construction & complete renovation
** Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:
Per hour:

1st year	$ 9.19
2nd year	9.19
3rd year	9.19

8-8A/28A-MP

Plumber — 08/01/2026

JOB DESCRIPTION Plumber **DISTRICT** 2

ENTIRE COUNTIES
Broome, Chenango

PARTIAL COUNTIES
Cortland: Only the Township of Marathon.
Delaware: Only the Townships of Andes, Bovina, Colchester, Davenport, Delhi, Deposit, Franklin, Hamden, Hancock, Harpersfield, Kortright, Masonville, Meredith, Sidney, Stamford, Tompkins and Walton.
Madison: Only the Township of Georgetown.

Otsego: Only the Townships of Burlington, Butternuts, Decatur, Edmeston, Hartwick, Laurens, Maryland, Milford, Morris, New Lisbon, Oneonta, Otego, Pittsfield, Unadilla, Westford and Worchester.
Tioga: Only the Townships of Newark Valley and Owego.

WAGES

Per hour:	07/01/2026
Plumber	$ 46.91
Steamfitter	46.91

SHIFT WORK

Agency-mandated shift operations:

1. Shift work shall start no earlier than 6AM Monday and will conclude no later than 9AM Saturday (overtime premiums applicable after 8 hours in a shift).

2. Single irregular shiftwork, less than 3 consecutive days will be paid at the rate of time and one-half of the regular hourly rate.

3. 3 consecutive work days or more:
First Shift - No Premium (Starting 6AM-9AM)
Second Shift - Regular hourly rate plus 12%
Third Shift - Regular hourly rate plus 18%

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker	$ 16.00
	+18.81*

*This portion of the benefit is subject to the SAME PREMIUM as shown for overtime on projects over $100 million in total construction costs (including engineering & architecture).

OVERTIME PAY

See (B, E, Q, *V) on OVERTIME PAGE
*portion of supplemental benefits subject to V code when project cost is over $100 million (including engineering & architecture).

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
When a Holiday falls on Sunday, it will be celebrated the following day. If the holiday falls on a Saturday, it will be observed that day unless so determined by the Federal Government to be celebrated on a different day.

REGISTERED APPRENTICES

WAGES: One year terms at the following percentage of Journeyworker's wage.

1st.	2nd.	3rd.	4th.	5th.
50%	55%	60%	70%	85%

SUPPLEMENTAL BENEFITS per hour:

1st term	$ 16.00
	+9.42*
All other terms	$ 16.00
	+14.81*

*This portion of the benefit is subject to the SAME PREMIUM as shown for overtime on projects over $100 million in total construction costs (including engineering & architecture).

2-112s-SF

Roofer — 08/01/2026

JOB DESCRIPTION Roofer **DISTRICT** 2

ENTIRE COUNTIES

Broome, Chemung, Chenango, Delaware, Otsego, Schoharie, Schuyler, Steuben, Tioga, Tompkins

WAGES

Per hour:	07/01/2026	06/01/2027 Additional	06/01/2028 Additional
Roofer, Waterproofer	$ 31.79	$ 3.50**	$ 4.00**
	+ 1.06*		

*This amount is paid for all hours worked, whether regular or premium hours.
**To be allocated at a later date.

NOTE ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount not subject to overtime premiums):
- On days where more than one shift is worked on the job, the hours worked after 4:30 PM and before 6:00 AM will be paid an additional $1.90 per hour premium. This premium is not for use in emergency repair situations.
- Premium of $1.25 per hour will be paid for the application, rip-off, torching, or handling of pitch products. The premium will be paid for pitch that is showing, covered or buried on the roof.
- Premium of $1.25 per hour will be paid for asbestos abatement requiring a half face respirator.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 24.99

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages:
Indentured prior to 06/01/2026:

Hours per term	
0-667 Hrs.	$ 22.25 + 0.74*
668-1334 Hrs.	23.84 + 0.79*
1335-2001 Hrs.	25.43 + 0.85*
2002-2668 Hrs.	27.02 + 0.90*
2669-3335 Hrs.	28.61 + 0.95*
3336-4000 Hrs.	30.20 + 1.01*

Indentured on or after 06/01/2026:

Hours per term	
0-600 Hrs.	$ 25.43 + 0.85*
601-1200 Hrs.	26.23 + 0.87*
1201-1800 Hrs.	27.02 + 0.90*
1801-2400 Hrs.	27.82 + 0.93*
2401-3000 Hrs.	28.61 + 0.95*
3001-3600 Hrs.	29.41 + 0.98*
3601-4200 Hrs.	30.20 + 1.01*
4201-4800 Hrs.	31.00 + 1.03*

*This amount is paid for all hours worked, whether regular or premium hours.

NOTE ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount not subject to overtime premiums):
- On days where more than one shift is worked on the job, the hours worked after 4:30 PM and before 6:30 AM will be paid an additional $1.90 per hour premium. This premium is not for use in emergency repair situations.
- Premium of $1.25 per hour will be paid for the application, rip-off, torching, or handling of pitch products. The premium will be paid for pitch that is showing, covered or buried on the roof.
- Premium of $1.25 per hour will be paid for asbestos abatement requiring a half face respirator.

Supplemental Benefits:
Indentured prior to 06/01/2026:

Hours per term	
0-667 Hrs.	$ 20.93
668-1334 Hrs.	21.60
1335-2001 Hrs.	22.29
2002-2668 Hrs.	22.96
2669-3335 Hrs.	23.63
3336-4000 Hrs.	24.32

Indentured on or after 06/01/2026:

Hours per term	
0-600 Hrs.	$ 11.45
601-1200 Hrs.	11.45
1201-1800 Hrs.	19.50
1801-2400 Hrs.	23.30
2401-3000 Hrs.	23.63

3001-3600 Hrs.	23.97
3601-4200 Hrs.	24.32
4201-4800 Hrs.	24.65

2-203elmi

Sheetmetal Worker — 08/01/2026

JOB DESCRIPTION Sheetmetal Worker **DISTRICT** 2

ENTIRE COUNTIES
Allegany, Broome, Chemung, Delaware, Otsego, Schuyler, Steuben, Tioga, Tompkins

WAGES
Per hour:

	07/01/2026	05/01/2027 Additional
Sheetmetal Worker	$ 40.82 + 1.02*	$ 4.00**

NOTE: Ten cents ($0.10) per hour additional premium to be paid when working polyresin fiberglass.
*Amount is paid for every hour worked (amount not subject to overtime premium)
**To be allocated at a later date

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker: $ 25.33

OVERTIME PAY
See (*B1, Q) on OVERTIME PAGE
*On Saturday, time and one half of the hourly rate for the first ten (10) hours, then two (2) times the hourly wage rate for all hours after ten (10) hours worked.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: Holidays are observed on the Holiday, not on the day that it is locally observed.

REGISTERED APPRENTICES
WAGES per hour:
Indentured after 05/01/2025 (1-year Terms):

	1st	2nd	3rd	4th	5th
07/01/2026	$ 24.49 +0.61*	$ 26.53 +0.66*	$ 28.57 +0.71*	$ 32.66 +0.82*	$ 34.70 +0.87*

Indentured prior to 05/01/2025 (Half Year Terms):

	1st	2nd	3rd	4th	5th	6th	7th	8th
07/01/2026	$ 24.49 +0.61*	$ 24.49 +0.61*	$ 26.53 +0.66*	$ 28.57 +0.71*	$ 30.62 +0.77*	$ 32.66 +0.82*	$ 34.70 +0.87*	$ 36.74 +0.92*

*Amount is paid for every hour worked (amount not subject to overtime premium)

SUPPLEMENTAL BENEFITS per hour:
Indentured after 05/01/2025:

	1st	2nd	3rd	4th	5th
07/01/2026	$ 2.28	$ 21.05	$ 21.13	$ 21.30	$ 25.08

Indentured prior to 05/01/2025:

	1st	2nd	3rd	4th	5th	6th	7th	8th
07/01/2026	$ 2.28	$ 2.28	$ 21.05	$ 21.13	$ 21.22	$ 21.30	$ 21.38	$ 21.46

2-112

Sprinkler Fitter — 08/01/2026

JOB DESCRIPTION Sprinkler Fitter **DISTRICT** 1

ENTIRE COUNTIES
Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Washington, Wayne, Wyoming, Yates

WAGES

Per hour

	07/01/2026	01/01/2027	04/01/2027	01/01/2028
Sprinkler Fitter	$ 47.91	$ 47.91	$ 50.76	$ 50.76

SUPPLEMENTAL BENEFITS
Per hour

Journeyworker	$ 30.71	$ 31.71	$ 31.71	$ 32.71

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: When a holiday falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double time rate. When a holiday falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double time rate.

REGISTERED APPRENTICES
One Half Year terms at the following wage per hour:

	07/01/2026	01/01/2027	04/01/2027	01/01/2028
1st Term	$ 24.50	$ 24.50	$ 25.73	$ 25.73
2nd Term	27.35	27.35	28.72	28.72
3rd Term	29.63	29.63	31.11	31.11
4th Term	31.91	31.91	33.50	33.50
5th Term	33.62	33.62	35.30	35.30
6th Term	36.47	36.47	38.29	38.29
7th Term	38.75	38.75	40.68	40.68
8th Term	41.03	41.03	43.08	43.08
9th Term	43.30	43.30	45.47	45.47
10th Term	45.58	45.58	47.86	47.86
Supplemental Benefits per hour:				
1st & 2nd Term	$ 10.23	$ 11.23	$ 11.23	$ 12.23
3rd & 4th Term	22.79	23.79	23.79	24.79
All Other Terms	23.04	24.04	24.04	25.04

1-669

Teamster - Building — 08/01/2026

JOB DESCRIPTION Teamster - Building **DISTRICT** 6

ENTIRE COUNTIES
Broome, Cayuga, Cortland, Delaware, Onondaga, Seneca, Tompkins, Yates

PARTIAL COUNTIES
Allegany: Only the Townships of Alfred, Almond, Burns.
Chenango: Only the Townships of Afton, Bainbridge, Coventry, Greene, Guilford, Oxford and Smithville.
Madison: Only the Townships of Cazenovia, DeRuyter, Fenner, Georgetown, Lenox, Nelson and Sullivan.
Oswego: All Townships except Boylston, Redfield and Sandy Creek.
Otsego: Only the Townships of Butternuts, Laurens, Maryland, Millford, Morris, Oneonta, Otego, Unadilla, and Worchester.
Steuben: Only the Townships of Canisteo, Cohoctan, Dansville, Fremont, Greenwood, Hornell, Hartsville, Jasper, Prattsburg, Troupsburg, and West Union.
Tioga: Only the Townships of Berkshire, Candor, Newark Valley, Nichols, Owego, Richford, and Tioga. All territory east of Nichols/Smithboro to Broome County, within the State of New York.

WAGES
GROUP A: Straight Trucks.
GROUP B: Tractor Trailer, Farm Tractor, Fuel Truck.
GROUP C: Euclid.
GROUP D: On site Mechanic.

Per hour:	07/01/2026	07/01/2027	07/01/2028
Building: (under $ 5 million*)			
GROUP A, B, C, D	$ 38.65	$ 42.31	$ 47.91
Building: (over $ 5 million*)			
GROUP A, B	$ 39.70	$ 43.36	$ 48.96
GROUP C	40.05	43.71	49.31
GROUP D	39.85	43.51	49.11

* Total project cost including General Construction, Plumbing, HVAC and Electrical

NOTE: All work performed at nuclear power plants, and fuel trucks that require a hazardous materials license, shall receive a $ 5.00 per hour premium above the applicable wage rate.

SUPPLEMENTAL BENEFITS
Per hour:

(under $ 5 million*)	$ 33.16	$ 35.51	$35.92
(over $ 5 million*)	33.96	36.31	36.73

* Total project cost including General Construction, Plumbing, HVAC and Electrical

OVERTIME PAY
(D, O) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

6-317

Teamster - Heavy&Highway 08/01/2026

JOB DESCRIPTION Teamster - Heavy&Highway **DISTRICT** 2

ENTIRE COUNTIES
Broome, Delaware

PARTIAL COUNTIES
Chenango: Only the Townships of Smithville, Greene, Coventry, Oxford, Afton, Bainbridge and Guilford.
Otsego: Only the Townships of Butternuts, Laurens, Maryland, Milford, Morris, Oneonta, Otego, Unadilla and Worchester.
Tioga: Only the Townships of Nichols, Tioga, Candor, Richford, Berkshire, Newark Valley and Owego.

WAGES
Per hour:

GROUP #1: Warehousemen, Yardmen, Truck Helpers, Pickups, Panel Trucks, Flatboy Material Trucks (straight jobs), Single Axle Dump Trucks, Dumpsters, Material Checkers and Receivers, Greasers, Truck Tiremen, Mechanic Helpers and Parts Chasers, Tandems and Batch Trucks, Mechanics, Dispatcher. Semi-Trailers, Low-boy Trucks, Asphalt Distributor Trucks, Agitator, Mixer Trucks and Dumpcrete type vehicles, Truck Mechanic.

GROUP #2: Specialized Earth Moving Equipment-Euclid type or similar off-highway where not self-loading. Straddle (Ross) Carrier, and self-contained concrete mobile truck. Off-highway Tandem Back-Dump, Twin Engine Equipment and Double-Hitched Equipment where not self-loading.

GROUP #3: Fuel Truck that requires a HazMat license endorsement.

	07/01/2026	07/01/2027
Group #1	$ 39.98	$ 43.64
Group #2	40.07	43.73
Group #3	44.98	48.64

NOTES
- An additional $1.50 per hour shall be paid to an employee who performs hazardous waste removal work on a City, County, State and/or Federally designated waste site where employee is required to use or wear personal protective equipment.

SHIFT WORK
- A single irregular work shift can start any time between 5:00pm and 1:00am. All employees who work a single irregular shift on governmental mandated night work shall be paid an additional $5.00 per hour (applicable on projects bid on or after 07/01/2020).

SUPPLEMENTAL BENEFITS
Per hour paid:

$ 28.85	$ 29.69

OVERTIME PAY
See (B, E, Q, X) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
If a holiday falls on Sunday, it will be celebrated Monday.
Any employee laid off within the week in which a holiday falls shall receive holiday pay.

2-317(Bing)

Welder 08/01/2026

JOB DESCRIPTION Welder **DISTRICT** 1

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

Per hour	07/01/2026
Welder:	To be paid the same rate of the mechanic performing the work.*

*EXCEPTION: If a specific welder certification is required, then the 'Certified Welder' rate in that trade tag will be paid.

OVERTIME PAY

HOLIDAY

1-As Per Trade

Overtime Codes

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule. Additional requirements may also be listed in the HOLIDAY section.

NOTE: Supplemental Benefits are 'Per hour worked' (for each hour worked) unless otherwise noted

(AA)	Time and one half of the hourly rate after 7 and one half hours per day
(A)	Time and one half of the hourly rate after 7 hours per day
(B)	Time and one half of the hourly rate after 8 hours per day
(B1)	Time and one half of the hourly rate for the 9th & 10th hours week days and the 1st 8 hours on Saturday. Double the hourly rate for all additional hours
(B2)	Time and one half of the hourly rate after 40 hours per week
(B3)	Time and one half of the hourly rate after 40 straight hours per week
(C)	Double the hourly rate after 7 hours per day
(C1)	Double the hourly rate after 7 and one half hours per day
(D)	Double the hourly rate after 8 hours per day
(D1)	Double the hourly rate after 9 hours per day
(E)	Time and one half of the hourly rate on Saturday
(E1)	Time and one half 1st 4 hours on Saturday; Double the hourly rate all additional Saturday hours
(E2)	Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(E3)	Between November 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week
(E4)	Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(E5)	Double time after 8 hours on Saturdays
(F)	Time and one half of the hourly rate on Saturday and Sunday
(G)	Time and one half of the hourly rate on Saturday and Holidays
(H)	Time and one half of the hourly rate on Saturday, Sunday, and Holidays
(I)	Time and one half of the hourly rate on Sunday
(J)	Time and one half of the hourly rate on Sunday and Holidays
(K)	Time and one half of the hourly rate on Holidays
(L)	Double the hourly rate on Saturday
(M)	Double the hourly rate on Saturday and Sunday
(N)	Double the hourly rate on Saturday and Holidays
(O)	Double the hourly rate on Saturday, Sunday, and Holidays
(P)	Double the hourly rate on Sunday
(Q)	Double the hourly rate on Sunday and Holidays
(R)	Double the hourly rate on Holidays

(S)	Two and one half times the hourly rate for Holidays
(S1)	Two and one half times the hourly rate the first 8 hours on Sunday or Holidays One and one half times the hourly rate all additional hours.
(T)	Triple the hourly rate for Holidays
(U)	Four times the hourly rate for Holidays
(V)	Including benefits at SAME PREMIUM as shown for overtime
(W)	Time and one half for benefits on all overtime hours.
(X)	Benefits payable on Paid Holiday at straight time. If worked, additional benefit amount will be required for worked hours. (Refer to other codes listed.)

Holiday Codes

PAID Holidays:

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

OVERTIME Holiday Pay:

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays. The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule. The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

(1)	None
(2)	Labor Day
(3)	Memorial Day and Labor Day
(4)	Memorial Day and July 4th
(5)	Memorial Day, July 4th, and Labor Day
(6)	New Year's, Thanksgiving, and Christmas
(7)	Lincoln's Birthday, Washington's Birthday, and Veterans Day
(8)	Good Friday
(9)	Lincoln's Birthday
(10)	Washington's Birthday
(11)	Columbus Day
(12)	Election Day
(13)	Presidential Election Day
(14)	1/2 Day on Presidential Election Day
(15)	Veterans Day
(16)	Day after Thanksgiving
(17)	July 4th
(18)	1/2 Day before Christmas
(19)	1/2 Day before New Years
(20)	Thanksgiving
(21)	New Year's Day
(22)	Christmas
(23)	Day before Christmas
(24)	Day before New Year's
(25)	Presidents' Day
(26)	Martin Luther King, Jr. Day
(27)	Memorial Day
(28)	Easter Sunday

(29) Juneteenth

New York State Department of Labor - Bureau of Public Work
State Office Building Campus
Building 12 - Room 130
Albany, New York 12226

REQUEST FOR WAGE AND SUPPLEMENT INFORMATION

As Required by Articles 8 and 9 of the NYS Labor Law

Fax (518) 485-1870 or mail this form for new schedules or for determination for additional occupations.

This Form Must Be Typed

Submitted By: (Check Only One) ☐ Contracting Agency ☐ Architect or Engineering Firm ☐ Public Work District Office Date:

A. Public Work Contract to be let by: (Enter Data Pertaining to Contracting/Public Agency)

1. Name and complete address ☐ (Check if new or change)

Telephone Fax

E-Mail:

2. NY State Units (see Item 5).

- ☐ 01 DOT
- ☐ 02 OGS
- ☐ 03 Dormitory Authority
- ☐ 04 State University Construction Fund
- ☐ 05 Mental Hygiene Facilities Corp.
- ☐ 06 OTHER N.Y. STATE UNIT
- ☐ 07 City
- ☐ 08 Local School District
- ☐ 09 Special Local District, i.e., Fire, Sewer, Water District
- ☐ 1O Village
- ☐ 11 Town
- ☐ 12 County
- ☐ 13 Other Non-N.Y. State (Describe)

3. SEND REPLY TO ☐ (check if new or change)
Name and complete address:

Telephone Fax

E-Mail:

4. SERVICE REQUIRED. Check appropriate box and provide project information.

☐ New Schedule of Wages and Supplements.

APPROXIMATE BID DATE :

☐ Additional Occupation and/or Redetermination

PRC NUMBER ISSUED PREVIOUSLY FOR THIS PROJECT :

OFFICE USE ONLY

B. PROJECT PARTICULARS

5. Project Title

Description of Work

Contract Identification Number

Note: For NYS units, the OSC Contract No.

6. Location of Project:
Location on Site

Route No/Street Address

Village or City

Town

County

7. Nature of Project - Check One:

- ☐ 1. New Building
- ☐ 2. Addition to Existing Structure
- ☐ 3. Heavy and Highway Construction (New and Repair)
- ☐ 4. New Sewer or Waterline
- ☐ 5. Other New Construction (Explain)
- ☐ 6. Other Reconstruction, Maintenance, Repair or Alteration
- ☐ 7. Demolition
- ☐ 8. Building Service Contract

8. OCCUPATION FOR PROJECT :

- ☐ Construction (Building, Heavy Highway/Sewer/Water)
- ☐ Tunnel
- ☐ Residential
- ☐ Landscape Maintenance
- ☐ Elevator maintenance
- ☐ Exterminators, Fumigators
- ☐ Fire Safety Director, NYC Only
- ☐ Fuel Delivery
- ☐ Guards, Watchmen
- ☐ Janitors, Porters, Cleaners, Elevator Operators
- ☐ Moving furniture and equipment
- ☐ Trash and refuse removal
- ☐ Window cleaners
- ☐ Other (Describe)

9. Does this project comply with the Wicks Law involving separate bidding? YES ☐ NO ☐

10. Name and Title of Requester

Signature

SEE PAGE TWO FOR LAWS RELATING TO PUBLIC WORK CONTRACTS

NEW YORK STATE DEPARTMENT OF LABOR
Bureau of Public Work - Debarment List

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Under Article 8 and Article 9 of the NYS Labor Law, a contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work or public building service contract/sub-contract with the state, any municipal corporation or public body for a period of five (5) years from the date of debarment when:

- Two (2) final determinations have been rendered within any consecutive six-year (6) period determining that such contractor, sub-contractor and/or its successor has WILLFULLY failed to pay the prevailing wage and/or supplements;
- One (1) final determination involves falsification of payroll records or the kickback of wages and/or supplements.

The agency issuing the determination and providing the information, is denoted under the heading 'Fiscal Officer'. DOL = New York State Department of Labor; NYC = New York City Comptroller's Office; AG = New York State Attorney General's Office; DA = County District Attorney's Office.

Debarment Database: To search for contractors, sub-contractors and/or their successors debarred from bidding or being awarded any public work contract or subcontract under NYS Labor Law Articles 8 and 9, or under NYS Workers' Compensation Law Section 141-b, access the database at this link: https://apps.labor.ny.gov/EDList/searchPage.do

For inquiries please call 518-457-5589.

NYSDOL Bureau of Public Work Debarment List 08/14/2026

Article 8

AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	DOL	*****5784	A.J.M. TRUCKING, INC.		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	DOL		AKHLAQ OULAKH		4307 28TH AVE ASTORIA NY 11103	10/11/2024	10/11/2029
DOL	DOL		ALEXANDER DELISA		411 THEODORE FREMND SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	NYC		ALL COUNTY SEWER & DRAIN, INC.		7 GREENFIELD DR WARWICK NY 10990	03/25/2022	03/25/2027
DOL	DOL	*****8387	AMERICAN PAVING & MASONRY, CORP.		8 FOREST AVE GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	DOL	*****8654	AMERICAN PAVING, INC.		8 FORREST AVE. GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	NYC	*****8017	AMIN ELECTRICAL CORP.		97-23 218TH STREET QUEENS VILLAGE NY 11429	12/04/2025	12/04/2030
DOL	DOL		ANGELO STANCO		8 FOREST AVE. GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	DOL		ANGELO TONDO		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL	*****4231	ANKER'S ELECTRIC SERVICE, INC.		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
DOL	DOL		ANTHONY CASALE		20 HEATHER RIDGE ROAD TROY NY 12180	05/20/2025	05/20/2030
DOL	DOL		ANTHONY MONGELLI		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	DOL	*****8421	B & B DRYWALL, INC		206 WARREN AVE APT 1WHITE PLAINS NY 10603	12/14/2021	12/14/2026
DOL	DOL	*****3932	B ROC CONSTRUCTION INC		7307 WOODSIDE ROAD VICTOR NY 14564	05/06/2025	05/06/2030
DOL	DA	*****2404	BJA RENOVATION, CORP		33 DOLLARD DR NORTH BABYLON NY 11703	03/19/2025	03/19/2030
DOL	DOL	*****5078	BLACK RIVER TREE REMOVAL, LLC		29807 ANDREWS ROAD BLACK RIVER NY 13032	10/17/2023	10/17/2028
DOL	DOL		C.M.C CONTRACTORS, INC.		500 WEST PUTNAM AVE SUITE 400GREENWICH CT 06830	09/03/2025	09/03/2030
DOL	DOL		CARLOS F. ESCOBAR		411 THEODORE FREMD AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL		CARLOS FIGUEROA		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL	*****4155	CASA BUILDERS, INC.	FRIEDLANDER CONSTRUCTION	64 N PUTT CONNERS ROAD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	DOL		CESAREO TULA		120 SEARS AVE ELMSFORD NY 10523	09/26/2025	09/26/2030
DOL	DOL	*****2292	CHAMPION MAINTENANCE CONTRACTORS, INC.		211 SOUTH RIDGE STREET RYE BROOK NY 10573	09/03/2025	09/03/2030
DOL	NYC	*****2117	CHARAN ELECTRICAL ENTERPRISES		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	DOL		CHARLES CASALE		55 MAIN AVENUE WYNANTSKILL NY 12198	05/20/2025	05/20/2030
DOL	DOL		CHARLES CASALE		55 MAIN AVENUE WYNANTSKILL NY 12198	05/20/2025	05/20/2030
DOL	DOL		CHRISTOPHER PEROSI		5507 NESCONSET HIGHWAY MT. SINAI NY 11766	07/17/2025	07/17/2030
DOL	DOL	*****2281	CORRAO TRUCKING, INC.		PO BOX 393 NANUET NY 10954	09/17/2024	09/17/2029
DOL	DOL		CRAIG JOHANSEN		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
DOL	DOL	*****7619	DANCO CONSTRUCTION UNLIMITED INC.		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
DOL	DOL		DANIEL DELISA		211 SOUTH RIDGE STREET RYE BROOK NY 10573	09/03/2025	09/03/2030
DOL	DOL		DANIEL LOHAN		6836 N. LEXINGTON LANE NILES IL 60714	05/28/2026	05/28/2031
DOL	DOL		DANIEL ROBERT MCNALLY		7 GREENFIELD DRIVE WARWICK NY 10990	03/25/2022	03/25/2027
DOL	DOL		DARWIN PEGUESE		6400 BALTIMORE NATIONAL SUITE 602CANTONSVILLE NY 21228	10/24/2024	10/24/2029
DOL	DOL		DAVID FRIEDLANDER		64 NORTH PUTT CORNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	DOL		DENISE NAGLE		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030

DOL	DOL		DINA TAYLOR		64 N PUTT CONNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	DOL	*****2337	EGL DRAINAGE SOLUTION & REPAIRS LLC		5507 NESCONSET HIGHWAY MT. SINAI NY 11766	07/17/2025	07/17/2030
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTR		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/3002
DOL	DOL		EMIL KISZKO		84 DIAMOND ST BROOKLYN NY 11222	07/18/2024	07/18/2029
DOL	DOL	*****3298	EMJACK CONSTRUCTION CORP.		84 DIAMOND ST BROOKLYN NY 11222	07/18/2024	07/18/2029
DOL	DOL	*****3298	EMJACK CONSTRUCTION LLC		4192 SIR ANDREW CIRCLE DOYLESTOWN PA 18902	07/18/2024	07/18/2029
DOL	NYC		ENRICO MANETTA		101 MALBA DR. WHITESTONE NY 11357	04/01/2026	04/01/2031
DOL	DOL		EUGENIUSZ "GINO" KUCHAR		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	DOL	*****2998	G.E.M. AMERICAN CONSTRUCTION CORP.		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
DOL	NYC		GHANSHYAM AMIN		97-23 218TH STREET QUEENS VILLAGE NY 11429	12/04/2025	12/04/2030
DOL	DA		GIOVANNA TRAVALJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DA		GIOVANNI NAPOLITANO		2501 BAYVIEW AVENUE WANTAGH NY 11793	02/21/2024	02/21/2029
DOL	DA	*****0213	GORILLA CONTRACTING GROUP, LLC		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DA	*****4760	GTX CONSTRUCTION ASSOCIATES, CORP		2501 BAYVIEW AVE WANTAGH NY 11793	02/21/2024	02/21/2029
DOL	DOL		HENRY WICKE A/K/A HENRY WICKE, JR.		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL	*****6961	HUNTER ELEVATOR COMPANY, INC.		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030
DOL	DOL	*****2397	ISLAND BREEZE MARINE, INC.		6400 BALTIMORE NATIONAL CANTONSVILLE MD 21228	10/24/2024	10/24/2029
DOL	DOL	*****5010	J. LINDSLEY ENTERPRISE, LLC		1002 STATE ROUTE 176 FULTON NY 13069	07/30/2025	07/30/2030
DOL	DOL	*****0241	J. LINDSLEY ROOFING, LLC		211 NORTH 2ND STREET FULTON NY 13069	07/30/2025	07/30/2030
DOL	DOL		J.M.J CONSTRUCTION		151 OSTRANDER AVENUE SYRACUSE NY 13205	11/21/2022	11/21/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	12/12/2022	12/12/2027
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JAMES J. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL		JAMES LINDSLEY		211 NORTH 2ND STREET FULTON NY 13069	07/30/2025	07/30/2030

DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL	*****7993	JBS DIRT, INC.		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL	*****2435	JEFFEL D. JOHNSON	JMJ7 AND SON	5553 CAIRNSTRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JEFFEL JOHNSON ELITE CARPENTER REMODEL AND CONSTRUCTION		C2 EVERGREEN CIRCLE LIVERPOOL NY 13090	11/21/2022	11/21/2027
DOL	DOL	*****2435	JEFFREY M. JOHNSON	JMJ7 AND SON	5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JENNIFER LINDSLEY		211 NORTH 2ND STREET FULTON NY 13069	07/30/2025	07/30/2030
DOL	DOL		JERRY DASTON		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030
DOL	DOL		JMJ7 & SON CONSTRUCTION, LLC		5553 CAIRNS TRAIL LIVERPOOL NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 AND SONS CONTRACTORS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS		7014 13TH AVENUE BROOKLYN NY 11228	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS AND SONS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS, LLC		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JOHN NAGLE A/K/A JOHN NAGLE, JR.		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030
DOL	DOL		JONATHAN DELISA		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL		JORGE FIGUEROA		411 THEODORE FRMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DA		JOSEPH DEMASCO		33 DOLLARD DRIVE NORTH BABYLON NY 11703	01/30/2026	01/30/2031
DOL	DA		JOSEPH DEMASCO		33 DOLLARD DRIVE NORTH BABYLON NY 11703	03/19/2025	03/19/2030
DOL	DOL		JOSEPH HALL		937 US ROUTE 11 CENTRAL SQUARE NY 13036	10/21/2024	10/21/2029
DOL	DOL	*****2271	JOSEPH HALL COMPANIES LLC		937 US ROUTE 11 CENTRAL SQUARE NY 13036	10/21/2024	10/21/2029
DOL	DOL		JOSEPH K. SALERNO		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL		JOSEPH K. SALERNO II		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		JRN CONSTRUCTION CO, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002

DOL	DOL		KEAN INDUSTRIES, LLC		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		KEVIN FUNEZ URBINA A/K/A KEVIN FUNEZ		1009 LYNDALE AVE TRENTON NJ 08629	12/16/2024	12/16/2029
DOL	DOL		KIMBERLY F. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL	*****8760	KJ&J CONSTRUCTION, LLC		1009 LYNDALE AVE TRENTON NJ 08629	12/16/2024	12/16/2029
DOL	DOL		KMA GROUP II, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL	*****1833	KMA GROUP INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KMA INSULATION, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KRIN HEINEMANN		2345 ROUTE 52, SUITE 2N HOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	NYC		KULWANT S. DEOL		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL	*****3716	LIGHTNIN ELECTRIC INC.		3418 NORTHERN BLVD SUITE 5-27LONG ISLAND CITY NY 11101	12/13/2024	12/13/2029
DOL	AG	*****3291	LINTECH ELECTRIC, INC.		3006 TILDEN AVE BROOKLYN NY 11226	02/16/2022	02/16/2027
DOL	DOL		LIZETTE PONCE		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	NYC	*****7516	MANCO ENTERPRISES OF NY, INC.		44-17 54TH DR. MASPETH NY 11378	04/01/2026	04/01/2031
DOL	NYC	*****1783	MANETTA ENTERPISES, INC. D/B/A MANETTA INDUSTRIES		44-17 54TH DR. MASPETH NY 11378	04/01/2026	04/01/2031
DOL	DA		MANUEL P TOBIO		150 KINGS STREET BROOKLYN NY 14444	08/19/1998	08/19/2998
DOL	DA		MANUEL TOBIO		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	DOL		MOHAMMAD MIAN		8269 21ST ST BELLEROSE NY 11426	12/22/2022	12/22/2027
DOL	NYC		NASEER CHAUDHRY		2349 BRAGG STREET BROOKLYN NY 11229	04/22/2025	04/22/2030
DOL	DOL	*****7790	NATIONAL BUILDING & RESTORATION CORP		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	*****1797	NATIONAL CONSTRUCTION SERVICES, INC		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	NYC		NAVIT SINGH		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		NELCO CONTRACTING, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DA		NICHOLAS BARNETT		33 DOLLARD DR BABYLON NY 11703	03/04/2025	03/04/2030
DOL	DOL		NICHOLAS RAO		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DA		NICHOLAS T. ANALITIS		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027

DOL	DOL		NIKOLA NTONI		3418 NORTHERN BLVD SUITE 5-27LONG ISLAND CITY NY 11101	12/13/2024	12/13/2029
DOL	NYC	*****6971	NN CONSTRUCTION, INC.		2349 BRAGG STREET BROOKLYN NY 11229	04/22/2025	04/22/2030
DOL	NYC	*****5643	NYC LINE CONTRACTORS, INC.		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL	*****4168	PHANTOM CONSTRUCTION CORP.		95-27 116TH STREET QUEENS NY 11419	07/12/2024	07/12/2029
DOL	DOL	*****4168	PHANTOM CONSTRUCTION CORP.		95-27 116TH STREET QUEENS NY 11419	05/28/2024	05/28/2029
DOL	DOL	*****2041	QUALITY STEEL ERECTORS INC.		6836 N. LEXINGTON LANE NILES IL 60714	05/28/2026	05/28/2031
DOL	DOL	*****4772	R.W. LOBDELL CONSTRUCTION LLC		635 WEST DRYDEN ROAD FREEVILLE NY 13068	01/31/2025	01/31/2030
DOL	DOL	*****2633	RAW POWER ELECTRIC CORP.		3 PARK CIRCLE MIDDLETOWN NY 10940	07/11/2022	07/11/2027
DOL	DOL		ROBBYE BISSESAR		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	01/11/2003	01/11/3003
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	07/11/2022	07/11/2027
DOL	DOL		ROSA GARCIA		411 THEODORE FRMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL	*****7172	RZ & AL INC.		198 RIDGE AVENUE VALLEY STREAM NY 11581	06/06/2022	06/06/2027
DOL	DA	*****0476	SAMCO ELECTRIC CORP.		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DA		SILVANO TRAVALJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	NYC	*****3661	SPANIER BUILDING MAINTENANCE CORP		200 OAK DRIVE SYOSSET NY 11791	03/14/2022	03/14/2027
DOL	DOL		STANADOS KALOGELAS		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
DOL	DOL	*****3496	STAR INTERNATIONAL INC		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	08/11/2003	08/11/3003
DOL	DOL		STEVEN DELISA		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL	*****9150	SURGE INC.		8269 21ST STREET BELLEROSE NY 11426	12/22/2022	12/22/2027
DOL	DOL		SYED MUHAMMAD S. JAFRI A/K/A SHARRUKH JAFRI		4307 28TH AVE ASTORIA NY 11103	10/11/2024	10/11/2029
DOL	DOL		SYED RAZA		198 RIDGE AVENUE NY 11581	06/06/2022	06/06/2027
DOL	DOL		TARLOK SINGH		95-27 116TH STREET QUEENS NY 11419	05/28/2024	05/28/2029
DOL	DOL		TARLOK SINGH		95-27 116TH STREET QUEENS NY 11419	07/12/2024	07/12/2029
DOL	DOL	*****4855	TECH INDUSTRIES LLC		20 HEATHER RIDGE ROAD TROY NY 12180	05/20/2025	05/20/2030
DOL	DOL	*****2426	THE MATRUKH GROUP, INC.		4307 28TH AVE PO BOX 9082ASTORIA NY 11103	10/11/2024	10/11/2029
DOL	DOL		THOMAS LOBDELL		635 WEST DRYDEN ROAD FREEVILLE NY 13068	01/31/2025	01/31/2030
DOL	DOL		TIMOTHY PERCY		29807 ANDREWS ROAD BLACK RIVER NY 13612	10/17/2023	10/17/2028
DOL	DA	*****1050	TRI STATE CONSTRUCTION OF NY CORP.		50-39 175TH PLACE FRESH MEADOWS NY 11365	03/28/2022	03/28/2027
DOL	DOL	*****8485	TULA PLUMBING AND HEATING LLC		120 SEARS AVE ELMSFORD NY 10523	09/26/2025	09/26/2030
DOL	DOL	*****8210	UPSTATE CONCRETE & MASONRY CONTRACTING CO INC		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL		VINCENT CORRAO		PO BOX 393 NANUET NY 10954	09/17/2024	09/17/2029
DOL	DOL		WILLIAM A BELL		7307 WOODSIDE ROAD VICTOR NY 14564	05/06/2025	05/06/2030
DOL	DOL	*****8266	WILLIAM CHRIS MCCLENDON	MCCLENDON ASPHALT PAVING	1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028

NYSDOL Bureau of Public Work Debarment List 08/14/2026

Article 8

DOL	DOL		WILLIAM CHRIS MCCLENDON		1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028
DOL	DOL		WILLIAM SCRIVENS		4192 SIR ANDREW CIRCLE DOYELSTOWN PA 18902	07/18/2024	07/18/2029
DOL	DOL	*****9494	WND CONSTRUCTION LLC		411 THEODORE FREMD AVENUE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL		XENOFON EFTHIMIADIS		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028

DIVISION 1 - SPECIFICATIONS

SPECIAL PROVISIONS

Standard Clause for New York Contract

(SP-10)

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APPENDIX A

STANDARD CLAUSES FOR NEW YORK STATE CONTRACTS

PLEASE RETAIN THIS DOCUMENT
FOR FUTURE REFERENCE.

June 2023

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STANDARD CLAUSES FOR NYS CONTRACTS

The parties to the attached contract, license, lease, amendment or other agreement of any kind (hereinafter, "the contract" or "this contract") agree to be bound by the following clauses which are hereby made a part of the contract (the word "Contractor" herein refers to any party other than the State, whether a contractor, licenser, licensee, lessor, lessee or any other party):

1. EXECUTORY CLAUSE. In accordance with Section 41 of the State Finance Law, the State shall have no liability under this contract to the Contractor or to anyone else beyond funds appropriated and available for this contract.

2. NON-ASSIGNMENT CLAUSE. In accordance with Section 138 of the State Finance Law, this contract may not be assigned by the Contractor or its right, title or interest therein assigned, transferred, conveyed, sublet or otherwise disposed of without the State's previous written consent, and attempts to do so are null and void. Notwithstanding the foregoing, such prior written consent of an assignment of a contract let pursuant to Article XI of the State Finance Law may be waived at the discretion of the contracting agency and with the concurrence of the State Comptroller where the original contract was subject to the State Comptroller's approval, where the assignment is due to a reorganization, merger or consolidation of the Contractor's business entity or enterprise. The State retains its right to approve an assignment and to require that any Contractor demonstrate its responsibility to do business with the State. The Contractor may, however, assign its right to receive payments without the State's prior written consent unless this contract concerns Certificates of Participation pursuant to Article 5-A of the State Finance Law.

3. COMPTROLLER'S APPROVAL. In accordance with Section 112 of the State Finance Law, if this contract exceeds $50,000 (or $75,000 for State University of New York or City University of New York contracts for goods, services, construction and printing, and $150,000 for State University Health Care Facilities) or if this is an amendment for any amount to a contract which, as so amended, exceeds said statutory amount, or if, by this contract, the State agrees to give something other than money when the value or reasonably estimated value of such consideration exceeds $25,000, it shall not be valid, effective or binding upon the State until it has been approved by the State Comptroller and filed in his office. Comptroller's approval of contracts let by the Office of General Services, either for itself or its customer agencies by the Office of General Services Business Services Center, is required when such contracts exceed $85,000. Comptroller's approval of contracts established as centralized contracts through the Office of General Services is required when such contracts exceed $125,000, and when a purchase order or other procurement transaction issued under such centralized contract exceeds $200,000.

4. WORKERS' COMPENSATION BENEFITS. In accordance with Section 142 of the State Finance Law, this contract shall be void and of no force and effect unless the Contractor shall provide and maintain coverage during the life of this contract for the benefit of such employees as are required to be covered by the provisions of the Workers' Compensation Law.

5. NON-DISCRIMINATION REQUIREMENTS. To the extent required by Article 15 of the Executive Law (also known as the Human Rights Law) and all other State and Federal statutory and constitutional non-discrimination provisions, the Contractor will not discriminate against any employee or applicant for employment, nor subject any individual to harassment, because of age, race, creed, color, national origin, citizenship or immigration status, sexual orientation, gender identity or expression, military status, sex, disability, predisposing genetic characteristics, familial status, marital status, or domestic violence victim status or because the individual has opposed any practices forbidden under the Human Rights Law or has filed a complaint, testified, or assisted in any proceeding under the Human Rights Law. Furthermore, in accordance with Section 220-e of the Labor Law, if this is a contract for the construction, alteration or repair of any public building or public work or for the manufacture, sale or distribution of materials, equipment or supplies, and to the extent that this contract shall be performed within the State of New York, Contractor agrees that neither it nor its subcontractors shall, by reason of race, creed, color, disability, sex, or national origin: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. If this is a building service contract as defined in Section 230 of the Labor Law, then, in accordance with Section 239 thereof, Contractor agrees that neither it nor its subcontractors shall by reason of race, creed, color, national origin, age, sex or disability: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. Contractor is subject to fines of $50.00 per person per day for any violation of Section 220-e or Section 239 as well as possible termination of this contract and forfeiture of all moneys due hereunder for a second or subsequent violation.

6. WAGE AND HOURS PROVISIONS. If this is a public work contract covered by Article 8 of the Labor Law or a building service contract covered by Article 9 thereof, neither Contractor's employees nor the employees of its subcontractors may be required or permitted to work more than the number of hours or days stated in said statutes, except as otherwise provided in the Labor Law and as set forth in prevailing wage and supplement schedules issued by the State Labor Department. Furthermore, Contractor and its subcontractors must pay at least the prevailing wage rate and pay or provide the prevailing supplements, including the premium rates for overtime pay, as determined by the State Labor Department in

accordance with the Labor Law. Additionally, effective April 28, 2008, if this is a public work contract covered by Article 8 of the Labor Law, the Contractor understands and agrees that the filing of payrolls in a manner consistent with Subdivision 3-a of Section 220 of the Labor Law shall be a condition precedent to payment by the State of any State approved sums due and owing for work done upon the project.

7. NON-COLLUSIVE BIDDING CERTIFICATION. In accordance with Section 139-d of the State Finance Law, if this contract was awarded based upon the submission of bids, Contractor affirms, under penalty of perjury, that its bid was arrived at independently and without collusion aimed at restricting competition. Contractor further affirms that, at the time Contractor submitted its bid, an authorized and responsible person executed and delivered to the State a non-collusive bidding certification on Contractor's behalf.

8. INTERNATIONAL BOYCOTT PROHIBITION. In accordance with Section 220-f of the Labor Law and Section 139-h of the State Finance Law, if this contract exceeds $5,000, the Contractor agrees, as a material condition of the contract, that neither the Contractor nor any substantially owned or affiliated person, firm, partnership or corporation has participated, is participating, or shall participate in an international boycott in violation of the federal Export Administration Act of 1979 (50 USC App. Sections 2401 et seq.) or regulations thereunder. If such Contractor, or any of the aforesaid affiliates of Contractor, is convicted or is otherwise found to have violated said laws or regulations upon the final determination of the United States Commerce Department or any other appropriate agency of the United States subsequent to the contract's execution, such contract, amendment or modification thereto shall be rendered forfeit and void. The Contractor shall so notify the State Comptroller within five (5) business days of such conviction, determination or disposition of appeal (2 NYCRR § 105.4).

9. SET-OFF RIGHTS. The State shall have all of its common law, equitable and statutory rights of set-off. These rights shall include, but not be limited to, the State's option to withhold for the purposes of set-off any moneys due to the Contractor under this contract up to any amounts due and owing to the State with regard to this contract, any other contract with any State department or agency, including any contract for a term commencing prior to the term of this contract, plus any amounts due and owing to the State for any other reason including, without limitation, tax delinquencies, fee delinquencies or monetary penalties relative thereto. The State shall exercise its set-off rights in accordance with normal State practices including, in cases of set-off pursuant to an audit, the finalization of such audit by the State agency, its representatives, or the State Comptroller.

10. RECORDS. The Contractor shall establish and maintain complete and accurate books, records, documents, accounts and other evidence directly pertinent to performance under this contract (hereinafter, collectively, the "Records"). The Records must be kept for the balance of the calendar year in which they were made and for six (6) additional years thereafter. The State Comptroller, the Attorney General and any other person or entity authorized to conduct an examination, as well as the agency or agencies involved in this contract, shall have access to the Records during normal business hours at an office of the Contractor within the State of New York or, if no such office is available, at a mutually agreeable and reasonable venue within the State, for the term specified above for the purposes of inspection, auditing and copying. The State shall take reasonable steps to protect from public disclosure any of the Records which are exempt from disclosure under Section 87 of the Public Officers Law (the "Statute") provided that: (i) the Contractor shall timely inform an appropriate State official, in writing, that said records should not be disclosed; and (ii) said records shall be sufficiently identified; and (iii) designation of said records as exempt under the Statute is reasonable. Nothing contained herein shall diminish, or in any way adversely affect, the State's right to discovery in any pending or future litigation.

11. IDENTIFYING INFORMATION AND PRIVACY NOTIFICATION. (a) Identification Number(s). Every invoice or New York State Claim for Payment submitted to a New York State agency by a payee, for payment for the sale of goods or services or for transactions (e.g., leases, easements, licenses, etc.) related to real or personal property must include the payee's identification number. The number is any or all of the following: (i) the payee's Federal employer identification number, (ii) the payee's Federal social security number, and/or (iii) the payee's Vendor Identification Number assigned by the Statewide Financial System. Failure to include such number or numbers may delay payment. Where the payee does not have such number or numbers, the payee, on its invoice or Claim for Payment, must give the reason or reasons why the payee does not have such number or numbers.

(b) Privacy Notification. (1) The authority to request the above personal information from a seller of goods or services or a lessor of real or personal property, and the authority to maintain such information, is found in Section 5 of the State Tax Law. Disclosure of this information by the seller or lessor to the State is mandatory. The principal purpose for which the information is collected is to enable the State to identify individuals, businesses and others who have been delinquent in filing tax returns or may have understated their tax liabilities and to generally identify persons affected by the taxes administered by the Commissioner of Taxation and Finance. The information will be used for tax administration purposes and for any other purpose authorized by law. (2) The personal information is requested by the purchasing unit of the agency contracting to purchase the goods or services or lease the real or personal property covered by this contract or lease. The information is maintained in the Statewide Financial System by the Vendor Management Unit within the Bureau of State Expenditures, Office of the State Comptroller, 110 State Street, Albany, New York 12236.

12. EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITIES AND WOMEN. In accordance with Section 312 of the Executive Law and 5 NYCRR Part 143, if this contract is: (i) a written agreement or purchase order instrument, providing for a total expenditure in excess of $25,000.00, whereby a contracting agency is committed to expend or does expend funds in return for labor, services, supplies, equipment, materials or any combination of the foregoing, to be performed for, or rendered or furnished to the contracting agency; or (ii) a written agreement in excess of $100,000.00 whereby a contracting agency is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon; or (iii) a written agreement in excess of $100,000.00 whereby the owner of a State assisted housing project is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon for such project, then the following shall apply and by signing this agreement the Contractor certifies and affirms that it is Contractor's equal employment opportunity policy that:

(a) The Contractor will not discriminate against employees or applicants for employment because of race, creed, color, national origin, sex, age, disability or marital status, shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on State contracts and will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination. Affirmative action shall mean recruitment, employment, job assignment, promotion, upgradings, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation;

(b) at the request of the contracting agency, the Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of the Contractor's obligations herein; and

(c) the Contractor shall state, in all solicitations or advertisements for employees, that, in the performance of the State contract, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.

Contractor will include the provisions of "(a), (b) and (c)" above, in every subcontract over $25,000.00 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon (the "Work") except where the Work is for the beneficial use of the Contractor. Section 312 does not apply to: (i) work, goods or services unrelated to this contract; or (ii) employment outside New York State. The State shall consider compliance by a contractor or subcontractor with the requirements of any federal law concerning equal employment opportunity which effectuates the purpose of this clause. The contracting agency shall determine whether the imposition of the requirements of the provisions hereof duplicate or conflict with any such federal law and if such duplication or conflict exists, the contracting agency shall waive the applicability of Section 312 to the extent of such duplication or conflict. Contractor will comply with all duly promulgated and lawful rules and regulations of the Department of Economic Development's Division of Minority and Women's Business Development pertaining hereto.

13. CONFLICTING TERMS. In the event of a conflict between the terms of the contract (including any and all attachments thereto and amendments thereof) and the terms of this Appendix A, the terms of this Appendix A shall control.

14. GOVERNING LAW. This contract shall be governed by the laws of the State of New York except where the Federal supremacy clause requires otherwise.

15. LATE PAYMENT. Timeliness of payment and any interest to be paid to Contractor for late payment shall be governed by Article 11-A of the State Finance Law to the extent required by law.

16. NO ARBITRATION. Disputes involving this contract, including the breach or alleged breach thereof, may not be submitted to binding arbitration (except where statutorily authorized), but must, instead, be heard in a court of competent jurisdiction of the State of New York.

17. SERVICE OF PROCESS. In addition to the methods of service allowed by the State Civil Practice Law & Rules ("CPLR"), Contractor hereby consents to service of process upon it by registered or certified mail, return receipt requested. Service hereunder shall be complete upon Contractor's actual receipt of process or upon the State's receipt of the return thereof by the United States Postal Service as refused or undeliverable. Contractor must promptly notify the State, in writing, of each and every change of address to which service of process can be made. Service by the State to the last known address shall be sufficient. Contractor will have thirty (30) calendar days after service hereunder is complete in which to respond.

18. PROHIBITION ON PURCHASE OF TROPICAL HARDWOODS. The Contractor certifies and warrants that all wood products to be used under this contract award will be in accordance with, but not limited to, the specifications and provisions of Section 165 of the State Finance Law, (Use of Tropical Hardwoods) which prohibits purchase and use of tropical hardwoods, unless specifically exempted, by the State or any governmental agency or political subdivision or public benefit corporation. Qualification for an exemption under this

law will be the responsibility of the contractor to establish to meet with the approval of the State.

In addition, when any portion of this contract involving the use of woods, whether supply or installation, is to be performed by any subcontractor, the prime Contractor will indicate and certify in the submitted bid proposal that the subcontractor has been informed and is in compliance with specifications and provisions regarding use of tropical hardwoods as detailed in § 165 State Finance Law. Any such use must meet with the approval of the State; otherwise, the bid may not be considered responsive. Under bidder certifications, proof of qualification for exemption will be the responsibility of the Contractor to meet with the approval of the State.

19. MACBRIDE FAIR EMPLOYMENT PRINCIPLES. In accordance with the MacBride Fair Employment Principles (Chapter 807 of the Laws of 1992), the Contractor hereby stipulates that the Contractor either (a) has no business operations in Northern Ireland, or (b) shall take lawful steps in good faith to conduct any business operations in Northern Ireland in accordance with the MacBride Fair Employment Principles (as described in Section 165 of the New York State Finance Law), and shall permit independent monitoring of compliance with such principles.

20. OMNIBUS PROCUREMENT ACT OF 1992. It is the policy of New York State to maximize opportunities for the participation of New York State business enterprises, including minority- and women-owned business enterprises as bidders, subcontractors and suppliers on its procurement contracts.

Information on the availability of New York State subcontractors and suppliers is available from:

NYS Department of Economic Development
Division for Small Business and Technology Development
625 Broadway
Albany, New York 12245
Telephone: 518-292-5100

A directory of certified minority- and women-owned business enterprises is available from:

NYS Department of Economic Development
Division of Minority and Women's Business Development
633 Third Avenue 33rd Floor
New York, NY 10017
646-846-7364
email: mwbebusinessdev@esd.ny.gov
https://ny.newnycontracts.com/FrontEnd/searchcertifieddirectory.asp

The Omnibus Procurement Act of 1992 (Chapter 844 of the Laws of 1992, codified in State Finance Law § 139-i and Public Authorities Law § 2879(3)(n)–(p)) requires that by signing this bid proposal or contract, as applicable, Contractors certify that whenever the total bid amount is greater than $1 million:

(a) The Contractor has made reasonable efforts to encourage the participation of New York State Business Enterprises as suppliers and subcontractors, including certified minority- and women-owned business enterprises, on this project, and has retained the documentation of these efforts to be provided upon request to the State;

(b) The Contractor has complied with the Federal Equal Opportunity Act of 1972 (P.L. 92-261), as amended;

(c) The Contractor agrees to make reasonable efforts to provide notification to New York State residents of employment opportunities on this project through listing any such positions with the Job Service Division of the New York State Department of Labor, or providing such notification in such manner as is consistent with existing collective bargaining contracts or agreements. The Contractor agrees to document these efforts and to provide said documentation to the State upon request; and

(d) The Contractor acknowledges notice that the State may seek to obtain offset credits from foreign countries as a result of this contract and agrees to cooperate with the State in these efforts.

21. RECIPROCITY AND SANCTIONS PROVISIONS. Bidders are hereby notified that if their principal place of business is located in a country, nation, province, state or political subdivision that penalizes New York State vendors, and if the goods or services they offer will be substantially produced or performed outside New York State, the Omnibus Procurement Act 1994 and 2000 amendments (Chapter 684 and Chapter 383, respectively, codified in State Finance Law § 165(6) and Public Authorities Law § 2879(5)) require that they be denied contracts which they would otherwise obtain. NOTE: As of May 2023, the list of discriminatory jurisdictions subject to this provision includes the states of South Carolina, Alaska, West Virginia, Wyoming, Louisiana and Hawaii.

22. COMPLIANCE WITH BREACH NOTIFICATION AND DATA SECURITY LAWS. Contractor shall comply with the provisions of the New York State Information Security Breach and Notification Act (General Business Law §§ 899-aa and 899-bb and State Technology Law § 208).

23. COMPLIANCE WITH CONSULTANT DISCLOSURE LAW. If this is a contract for consulting services, defined for purposes of this requirement to include analysis, evaluation, research, training, data processing, computer programming, engineering, environmental, health, and mental health services, accounting, auditing, paralegal, legal or similar services, then, in accordance with Section 163 (4)(g) of the State Finance Law (as amended by Chapter 10 of the Laws of 2006), the Contractor shall timely, accurately and properly comply with the requirement to submit an annual employment report for the contract to the agency that awarded the contract, the Department of Civil Service and the State Comptroller.

24. PROCUREMENT LOBBYING. To the extent this agreement is a "procurement contract" as defined by State Finance Law §§ 139-j and 139-k, by signing this agreement the contractor certifies and affirms that all disclosures made in accordance with State Finance Law §§ 139-j and 139-k are complete, true and accurate. In the event such certification is found to be intentionally false or intentionally incomplete, the State may terminate the agreement by providing written notification to the Contractor in accordance with the terms of the agreement.

25. CERTIFICATION OF REGISTRATION TO COLLECT SALES AND COMPENSATING USE TAX BY CERTAIN STATE CONTRACTORS, AFFILIATES AND SUBCONTRACTORS.
To the extent this agreement is a contract as defined by Tax Law § 5-a, if the contractor fails to make the certification required by Tax Law § 5-a or if during the term of the contract, the Department of Taxation and Finance or the covered agency, as defined by Tax Law § 5-a, discovers that the certification, made under penalty of perjury, is false, then such failure to file or false certification shall be a material breach of this contract and this contract may be terminated, by providing written notification to the Contractor in accordance with the terms of the agreement, if the covered agency determines that such action is in the best interest of the State.

26. IRAN DIVESTMENT ACT. By entering into this Agreement, Contractor certifies in accordance with State Finance Law § 165-a that it is not on the "Entities Determined to be Non-Responsive Bidders/Offerers pursuant to the New York State Iran Divestment Act of 2012" ("Prohibited Entities List") posted at: https://ogs.ny.gov/iran-divestment-act-2012

Contractor further certifies that it will not utilize on this Contract any subcontractor that is identified on the Prohibited Entities List. Contractor agrees that should it seek to renew or extend this Contract, it must provide the same certification at the time the Contract is renewed or extended. Contractor also agrees that any proposed Assignee of this Contract will be required to certify that it is not on the Prohibited Entities List before the contract assignment will be approved by the State.

During the term of the Contract, should the state agency receive information that a person (as defined in State Finance Law § 165-a) is in violation of the above-referenced certifications, the state agency will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the Act within 90 days after the determination of such violation, then the state agency shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, imposing sanctions, seeking compliance, recovering damages, or declaring the Contractor in default.

The state agency reserves the right to reject any bid, request for assignment, renewal or extension for an entity that appears on the Prohibited Entities List prior to the award, assignment, renewal or extension of a contract, and to pursue a responsibility review with respect to any entity that is awarded a contract and appears on the Prohibited Entities list after contract award.

27. ADMISSIBILITY OF REPRODUCTION OF CONTRACT. Notwithstanding the best evidence rule or any other legal principle or rule of evidence to the contrary, the Contractor acknowledges and agrees that it waives any and all objections to the admissibility into evidence at any court proceeding or to the use at any examination before trial of an electronic reproduction of this contract, in the form approved by the State Comptroller, if such approval was required, regardless of whether the original of said contract is in existence.

DIVISION 2 – TECHNICAL SPECIFICATIONS

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TECHNICAL SPECIFICATIONS

For The

Greater Binghamton Airport

REHABILITATION OF HANGARS 2 & 3
PHASE 2

MJ Project No. 19090.06

PREPARED FOR:

Greater Binghamton Airport

Final Design

September 2026

TECHNICAL SPECIFICATION

SUMMARY OF WORK

PART 1 CONTRACT DOCUMENTS

1.01 This section of these Specifications is a part of the Contract Documents as defined in the General Provisions. All applicable parts of the balance of the Contract Documents are equally as binding for this section as for all other sections.

PART 2 DESCRIPTION

2.01 PROJECT

Project Name: Rehabilitation of Hangars 2&3 – Phase 2
Owner's Name: Broome County.
The Project consists of the Rehabilitation of Hangars 2&3 at the Greater Binghamton Airport

The work includes addressing aging infrastructure, safety concerns, and code deficiencies by upgrading outdated HVAC, electrical, plumbing, and fire alarm systems; and improving overall energy efficiency and safety. Additionally, the work includes restoring damaged interiors, rehabilitating hangar bay doors, installing modern heating and ventilation solutions, and implementing ADA and current building code compliance measures such as accessible restrooms, fire-rated assemblies, CO detection, and installation of a wheelchair lift.

2.02 CONTRACT DESCRIPTION

Contract Type: Multiple prime contracts each based on a Stipulated Price as described in the Proposal Documents.
The work of each separate prime contract is identified in this section.

2.03 DESIGN/MANAGEMENT IDENTIFICATION

OWNER or SPONSOR
Broome County
Department of Aviation, Greater Binghamton Airport
2534 Airport Road
Johnson City, New York 13790

ENGINEER
McFarland Johnson
49 Court Street
Binghamton, NY 13901

ARCHITECT
Aubertine & Currier Architects, Engineers & Land Surveyors, PLLC
522 Bradley Street
Watertown, NY 13601

MEP ENGINEER
Ram-Tech Engineers
6100 Fairway Drive
Syracuse, NY 13211

2.04 SECTIONS APPLICABLE TO ALL CONTRACTS

Unless otherwise noted, all provisions of the sections listed below apply to all contracts. Specific items of work listed under individual contract descriptions constitute exceptions.

Division 01 – General Requirements

The following drawings are made part of each prime contract unless otherwise noted:

IN-01 Index and Work Description
IN-02 Major Scope Items
GN-01 Location Plan and Notes

2.05 CONTRACT NO. 1 – GENERAL CONSTRUCTION

Provide all Work except Work specifically assigned to other contractors in this Section.

Work under this Contract may generally be described to include, but not be limited to the following:

Alteration of existing office spaces to meet 2025 NYS Building Code, such as modifying layout of restrooms, retrofit of existing handrails, providing ADA-access to the second floor, and ensuring that demising wall between offices and hangars meets the qualification of a 2-hr separation. Additionally, cosmetic repairs shall also be a part of the project. These repairs include, but are not limited to, installation of new carpet tiles, replacing the entire ceiling grid and acoustical ceiling tiles, and providing new LED light fixtures.

Drawings: The Contract generally consists of all work shown on “A”, Series drawings.

Specifications: The Contract shall include all work in the following specifications unless otherwise noted:

Division 02 – Existing Conditions
Division 05 – Metals
Division 06 – Wood, Plastics, and Composites
Division 08 – Openings
Division 09 – Finishes
Division 10 – Specialties
Division 14 – Conveying Equipment
Division 31 – Earthwork
Asbestos Abetment Specs

2.06 CONTRACT NO. 2 – PLUMBING CONSTRUCTION

This contractor shall cover the following work: Plumbing trades. Specification sections listed above as applicable to all contracts.

Work under this Contract may generally be described to include, but not be limited to the following:

- Removal of existing plumbing equipment as indicated on Drawings.
- Sanitary, waste and vent piping, and domestic water piping and connections to
- existing systems where indicated on Drawings.
- Plumbing fixtures and accessories and water coolers where indicated on
- Drawings.
- Gas piping, and equipment connections.
- Insulation of all renovated Work as specified.
- Identification of systems.
- All necessary cutting, patching and firestopping.
- Cleaning and testing as specified.

Drawings: The Contract generally consists of all work shown on "PD", “PL”, and “P” Series drawings.

Specifications: This contract shall include all work in the following specification unless otherwise noted:

Divisions 22 - Plumbing

2.07 CONTRACT NO. 3 – MECHANICAL CONSTRUCTION

This contractor shall cover the following work: Mechanical trades. Specification sections listed above as applicable to all contracts.

Work under this Contract may generally be described to include, but not be limited to the following:

- Removal of existing furnaces and infrared heaters and associated controls.
- Heating & ventilation systems including air turnover units, fans, ductwork, ductwork accessories, registers, grilles, etc.
- Replacement of existing air inlet and outlets and associated ductwork and accessories.
- Control wiring to motor controllers, temperature sensors, line and low voltage thermostats, interlock wiring, control wiring to HVAC equipment, control transformers, etc.
- Temperature control system.
- Testing, adjusting and balancing.
- All necessary cutting, patching and firestopping.
- Miscellaneous items shown and/or specified.

Drawings: The Contract generally consists of all work shown on “MD” and “MH” Series drawings.

Specifications: This contract shall include all work in the following specifications unless otherwise noted:

Divisions 23 – Heating, Ventilation & Air-Conditioning (HVAC)

2.08 CONTRACT NO. 4 – ELECTRICAL CONSTRUCTION

This contractor shall cover the following work: electrical trades. Specification sections listed above as applicable to all contracts.

Work under this Contract may generally be described to include, but not be limited to the following:

- Removal of existing electrical equipment as indicated on Drawings.
- New power distribution system, including the provision of an electrical distribution system study.
- Lighting and power systems for the alterations and areas shown.
- Wiring devices and branch circuitry in areas shown.
- Power wiring systems for mechanical and miscellaneous electrical equipment etc.
- Fire Alarm System.
- All necessary cutting, patching and firestopping.
- Miscellaneous items shown and/or specified.

Drawings: The Contract generally consists of all work shown on “ED”, “EL”, “EP”, "E" Series drawings.

Specifications: This contract shall include all work in the following specification unless otherwise noted:

Division 26 – Electrical
Division 28 – Electronic Safety and Security

2.09 ALLOWANCES

A. CONTRACT NO. 1 - GENERAL CONSTRUCTION

1. Field Change Allowance: The General Contractor shall include $50,000 in the total of their lump sum bid for Field Changes as needed. Any work paid through the Field Change Allowance must receive approval by the Resident Engineer and Owner prior to be undertaken with an agreed upon scope and price. If, at the end of the project, there is additional monies left in the Field Change Allowance, it will be deducted from the total General Contract Amount.

B. CONTRACT NO. 2 – PLUMBING

1. Field Change Allowance: The Plumbing Contractor shall include $10,000 in the total of their lump sum bid for Field Changes as needed. Any work paid through the Field Change Allowance must receive approval by the Resident Engineer and Owner prior to be undertaken with an agreed upon scope and price. If, at the end of the project, there is additional monies left in the Field Change Allowance, it will be deducted from the total Plumbing Contract Amount.

C. CONTRACT NO. 3 – MECHNICAL

1. Field Change Allowance: The Mechanical Contractor shall include $10,000 in the total of their lump sum bid for Field Changes as needed. Any work paid through the Field Change Allowance must receive approval by the Resident Engineer and Owner prior to be undertaken with an agreed upon scope and price. If, at the end of the project, there is additional monies left in the Field Change Allowance, it will be deducted from the total Mechanical Contract Amount.

D. CONTRACT NO. 4 – ELECTRICAL

1. Field Change Allowance: The Electrical Contractor shall include $10,000 in the total of their lump sum bid for Field Changes as needed. Any work paid through the Field Change Allowance must receive approval by the Resident Engineer and Owner prior to be undertaken with an agreed upon scope and price. If, at the end of the project, there is additional monies left in the Field Change Allowance, it will be deducted from the total Electrical Contract Amount.

2. Utility Allowance: The General Contractor shall include $10,000 in the total of their lump sum bid for fees paid to the Utility Companies for the installation of new electrical services to the building. The amount of the allowance paid to the General Contractor will be the amount of the invoice from the Utility Company plus 5%. If, at the end of the project, there is additional monies left in the Utility Allowance, it will be deducted from the total General Contract Amount.

END OF SECTION

SECTION 01 2500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

A. Section 00 4325 - Substitution Request Form - During Procurement: Required form for substitution requests made prior to award of contract (During procurement).

B. Section 00 6325 - Substitution Request Form - During Construction: Required form for substitution requests made after award of contract (During construction).

C. Section 01 2200 - Unit Prices, for additional unit price requirements.

D. Section 01 2300 - Alternates, for product alternatives affecting this section.

E. Section 01 3000 - Administrative Requirements: Submittal procedures, coordination.

F. Section 01 6000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.

1.03 DEFINITIONS

1.04 REFERENCE STANDARDS

A. CSI/CSC Form 1.5C - Substitution Request (During the Bidding/Negotiating Stage); Current Edition.

B. CSI/CSC Form 13.1A - Substitution Request (After the Bidding/Negotiating Phase); Current Edition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.
   5. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
   1. Note explicitly any non-compliant characteristics.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. No specific form is required. Contractor's Substitution Request documentation must be submitted in writting and include the following:
      a. Project Information:
         1) Owner's, Architect's, and Contractor's names.
      b. Substitution Request Information:
         1) Discrete and consecutive Substitution Request number, and descriptive subject/title.

2) Indication of whether the substitution is for cause or convenience.
3) Issue date.
4) Reference to particular Contract Document(s) specification section number, title, and article/paragraph(s).
5) Description of Substitution.
6) Reason why the specified item cannot be provided.
7) Differences between proposed substitution and specified item.
8) Description of how proposed substitution affects other parts of work.

c. Attached Comparative Data: Provide point-by-point, side-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:
1) Physical characteristics.
2) In-service performance.
3) Expected durability.
4) Visual effect.
5) Warranties.
6) Other salient features and requirements.
7) Include, as appropriate or requested, the following types of documentation:
(a) Product Data:
(b) Samples.

d. Impact of Substitution:
1) Savings to Owner for accepting substitution.
2) Change to Contract Time due to accepting substitution.

D. Limit each request to a single proposed substitution item.
1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Submittal Time Restrictions:
1. Instructions to Bidders specifies time restrictions and the documents required for submitting substitution requests during the bidding period.
2. Owner will consider requests for substitutions only if submitted at least 10 days prior to the date for receipt of bids.

B. Submittal Form (before award of contract):
1. Submit substitution requests in writting.
2. Submit substitution requests by completing CSI/CSC Form 1.5C - Substitution Request. See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Submittal Form (after award of contract):
1. Submit substitution requests in writting.

B. Architect will consider requests for substitutions only within 30 days after date of Agreement.

C. Submit request for Substitution for Cause immediately upon discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

D. Submit request for Substitution for Convenience immediately upon discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.

2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
3. Bear the costs engendered by proposed substitution of:
    a. Owner's compensation to the Architect for any required redesign, time spent processing and evaluating the request.
    b. Other construction by Owner.
    c. Other unanticipated project considerations.

E. Substitutions will not be considered under one or more of the following circumstances:
1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
2. Without a separate written request.
3. When acceptance will require revisions to Contract Documents.

3.04 RESOLUTION

A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

B. Architect will notify Contractor in writing of decision to accept or reject request.
1. Architect's decision following review of proposed substitution will be noted on the submitted form.

3.05 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.06 CLOSEOUT ACTIVITIES

A. See Section 01 7800 - Closeout Submittals, for closeout submittals.

END OF SECTION

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SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.

B. Electronic document submittal service.

C. Preconstruction meeting.

D. Progress meetings.

E. Construction progress schedule.

F. Submittals for review, information, and project closeout.

G. Number of copies of submittals.

H. Requests for Interpretation (RFI) procedures.

I. Submittal procedures.

1.02 RELATED REQUIREMENTS

A. Section 01 6000 - Product Requirements: General product requirements.

B. Section 01 7800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 REFERENCE STANDARDS

A. AIA G716 - Request for Information; 2004.

B. AIA G810 - Transmittal Letter; 2001.

C. CSI/CSC Form 12.1A - Submittal Transmittal; Current Edition.

D. CSI/CSC Form 13.2A - Request for Information; Current Edition.

1.04 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 01 7000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

B. Make the following types of submittals to Architect:
   1. Requests for Interpretation (RFI).
   2. Requests for substitution.
   3. Shop drawings, product data, and samples.
   4. Test and inspection reports.
   5. Design data.
   6. Manufacturer's instructions and field reports.
   7. Applications for payment and change order requests.
   8. Progress schedules.
   9. Coordination drawings.
   10. Correction Punch List and Final Correction Punch List for Substantial Completion.
   11. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF) format, as appropriate to the document, and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.

1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Interpretation (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project record.
2. Contractor and Architect are required to use this service.
3. It is Contractor's responsibility to submit documents in allowable format.
4. Subcontractors, suppliers, and Architect's consultants will be permitted to use the service at no extra charge.
5. Users of the service need an email address, internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.
6. Paper document transmittals will not be reviewed; emailed electronic documents will not be reviewed.
7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

B. Submittal Service: The selected service is:

3.02 PRECONSTRUCTION MEETING

A. Architect will schedule a meeting after Notice of Award.

B. Attendance Required:
1. Owner.
2. Architect.
3. Contractor.

C. Agenda:
1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
5. Designation of personnel representing the parties to Contract, _____ and Architect.
6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
7. Scheduling.

D. Record minutes and distribute copies digitally within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.03 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the work at maximum bi-monthly intervals.

B. Attendance Required:
1. Contractor.
2. Owner.
3. Architect.
4. Contractor's superintendent.
5. Major subcontractors.

C. Agenda:
1. Review minutes of previous meetings.
2. Review of work progress.
3. Field observations, problems, and decisions.

4. Identification of problems that impede, or will impede, planned progress.
5. Review of submittals schedule and status of submittals.
6. Maintenance of progress schedule.
7. Corrective measures to regain projected schedules.
8. Planned progress during succeeding work period.
9. Maintenance of quality and work standards.
10. Effect of proposed changes on progress schedule and coordination.
11. Other business relating to work.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 CONSTRUCTION PROGRESS SCHEDULE

A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.

B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
   1. Include written certification that major contractors have reviewed and accepted proposed schedule.

D. Within 10 days after joint review, submit complete schedule.

E. Submit updated schedule with each Application for Payment.

3.05 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:
   1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
   2. A resolution to an issue which has arisen due to field conditions and affects design intent.

B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.

C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
   1. Prepare a separate RFI for each specific item.
      a. Do not forward requests which solely require internal coordination between subcontractors.
   2. Prepare in a format and with content acceptable to Owner.
      a. Use CSI/CSC Form 13.2A - Request for Interpretation.
   3. Prepare using software provided by the Electronic Document Submittal Service.

D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
   1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
   2. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
      a. Approval of submittals (use procedures specified elsewhere in this section).
      b. Approval of substitutions (see Section - 01 6000 - Product Requirements)
      c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
      d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).

3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.

E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
1. Official Project name and number, and any additional required identifiers established in Contract Documents.
2. Owner's, Architect's, and Contractor's names.
3. Discrete and consecutive RFI number, and descriptive subject/title.
4. Issue date, and requested reply date.
5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.

F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
1. Indicate current status of every RFI. Update log promptly and on a regular basis.
2. Note dates of when each request is made, and when a response is received.
3. Highlight items requiring priority or expedited response.
4. Highlight items for which a timely response has not been received to date.
5. Identify and include improper or frivolous RFIs.

H. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 3:00 PM will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
2. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
3. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.06 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
1. Product data.

2. Shop drawings.
3. Samples for selection.
4. Samples for verification.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.07 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 7800 - Closeout Submittals:
1. Project record documents.
2. Operation and maintenance data.
3. Warranties.
4. Bonds.
5. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

3.08 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
1. After review, produce duplicates.
2. Retained samples will not be returned to Contractor unless specifically so stated.

3.09 SUBMITTAL PROCEDURES

A. General Requirements:
1. Use a separate transmittal for each item.
2. Transmit using approved form.
   a. Use Form AIA G810.
   b. Use Form CSI/CSC Form 12.1A.
   c. Use form generated by Electronic Document Submittal Service software.
3. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
4. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
5. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
6. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
   a. Deliver submittals to Architect at electronically.
7. Schedule submittals to expedite the Project, and coordinate submission of related items.
8. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.

B. Shop Drawing Procedures:

1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
2. Do not reproduce Contract Documents to create shop drawings.
3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

C. Samples Procedures:
1. Transmit related items together as single package.
2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.
3. Include with transmittal high-resolution image files of samples to facilitate electronic review and approval. Provide separate submittal page for each item image.

END OF SECTION

SECTION 01 6000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Section 01 2500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.

B. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOC-restricted product categories.

C. Section 01 7419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

1.02 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
   1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.

B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

2.02 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by Contract Documents.

B. Use of products having any of the following characteristics is not permitted:
   1. Containing lead, cadmium, or asbestos.

C. Where other criteria are met, Contractor shall give preference to products that:
   1. If used on interior, have lower emissions, as defined in Section 01 6116.
   2. If wet-applied, have lower VOC content, as defined in Section 01 6116.
   3. Have longer documented life span under normal use.
   4. Result in less construction waste. See Section 01 7419
   5. Are made of recycled materials.

2.03 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

D. Products Specified as Basis-of-Design: Submit substitution requests for unnamed products to Architect for evaluation.

2.04 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. See Section 01 2500 - Substitution Procedures.

3.02 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.

H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01 7419.

B. Store and protect products in accordance with manufacturers' instructions.

C. Store with seals and labels intact and legible.

D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

E. For exterior storage of fabricated products, place on sloped supports above ground.

F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.

G. Comply with manufacturer's warranty conditions, if any.

H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

I. Prevent contact with material that may cause corrosion, discoloration, or staining.

J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Requirements for alterations work, including selective demolition.

C. Cutting and patching.

D. Surveying for laying out the work.

E. Cleaning and protection.

F. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

G. General requirements for maintenance service.

1.02 RELATED REQUIREMENTS

A. Section 01 3000 - Administrative Requirements: Submittals procedures, Electronic document submittal service.

B. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.

C. Section 02 4100 - Demolition: Demolition of whole structures and parts thereof; site utility demolition.

D. Section 07 8400 - Firestopping.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
   1. On request, submit documentation verifying accuracy of survey work.
   2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
   3. Submit surveys and survey logs for the project record.

C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   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 Owner or separate Contractor.
   6. Include in request:
      a. Identification of Project.
      b. Location and description of affected work.
      c. Necessity for cutting or alteration.
      d. Description of proposed work and products to be used.
      e. Effect on work of Owner or separate Contractor.
      f. Written permission of affected separate Contractor.
      g. Date and time work will be executed.

1.04 QUALIFICATIONS

A. For demolition work, employ a firm specializing in the type of work required.

B. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of surveyor's Errors and Omissions

insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,

C. For design of temporary shoring and bracing, employ a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

1.05 PROJECT CONDITIONS

A. Use of explosives is not permitted.

B. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

C. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
   1. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.

D. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
   1. Pest Control Service: Weekly treatments.

E. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Architect of any discrepancies discovered.

C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.

F. Utilize recognized engineering survey practices.

G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
   1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations; and _____.
   2. Grid or axis for structures.
   3. Building foundation, column locations, ground floor elevations, and _____.

H. Periodically verify layouts by same means.

I. Maintain a complete and accurate log of control and survey work as it progresses.

3.04 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.05 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 indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.
   2. Relocate items indicated on drawings.
   3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
   4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.

C. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.

1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
3. 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.
    a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
    b. Provide temporary connections as required to maintain existing systems in service.
4. Verify that abandoned services serve only abandoned facilities.
5. 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; patch holes left by removal using materials specified for new construction.

D. 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.

E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
3. Where a change of plane of 1/4 inch (6 mm) or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
4. Where a change of plane of 1/4 inch (6 mm) or more occurs in existing work, notify architect..
5. Trim existing wood doors as necessary to clear new floor finish. Refinish trim as required.

F. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

G. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.

H. Clean existing systems and equipment.

I. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

J. Do not begin new construction in alterations areas before demolition is complete.

K. Comply with all other applicable requirements of this section.

3.06 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. See Alterations article above for additional requirements.

C. Perform whatever cutting and patching is necessary to:
   1. Complete the work.
   2. Fit products together to integrate with other work.
   3. Provide openings for penetration of mechanical, electrical, and other services.
   4. Match work that has been cut to adjacent work.
   5. Repair areas adjacent to cuts to required condition.
   6. Repair new work damaged by subsequent work.
   7. Remove samples of installed work for testing when requested.
   8. Remove and replace defective and non-complying work.

D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

G. Restore work with new products in accordance with requirements of Contract Documents.

H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.

J. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.07 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.08 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.09 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.10 FINAL CLEANING

A. Use cleaning materials that are nonhazardous.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

E. Clean filters of operating equipment.

F. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, drainage systems, and _____.

G. Clean site; sweep paved areas, rake clean landscaped surfaces.

H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.11 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.

B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.

C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.

D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.

E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.

H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

3.12 MAINTENANCE

A. Provide service and maintenance of components indicated in specification sections.

B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.

C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.

D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.

E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

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SECTION 01 7419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

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. Contractor Reporting Responsibilities: Submit periodic Waste Disposal Reports; report landfill disposal, incineration, recycling, salvage, and reuse regardless of to whom the cost or savings accrues; use the same units of measure on required reports.

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.

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.

1.02 RELATED REQUIREMENTS

A. Section 01 3000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. Section 01 5000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.

C. Section 01 6000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.

D. Section 01 7000 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

1.03 DEFINITIONS

A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.

B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.

C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.

D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.

E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

I. Return: To give back reusable items or unused products to vendors for credit.

J. Reuse: To reuse a construction waste material in some manner on the project site.

K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

N. Toxic: Poisonous to humans either immediately or after a long period of exposure.

O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
   1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
   2. Submit Report on a form acceptable to Owner.
   3. Landfill Disposal: Include the following information:
      a. Identification of material.
      b. Amount, in tons or cubic yards (cubic meters), of trash/waste material from the project disposed of in landfills.
      c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
      d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
   4. Incinerator Disposal: Include the following information:
      a. Identification of material.
      b. Amount, in tons or cubic yards (cubic meters), of trash/waste material from the project delivered to incinerators.
      c. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.
      d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
   5. Recycled and Salvaged Materials: Include the following information for each:
      a. Identification of material, including those retrieved by installer for use on other projects.
      b. Amount, in tons or cubic yards (cubic meters), date removed from the project site, and receiving party.
      c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
      d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
      e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
   6. Material Reused on Project: Include the following information for each:
      a. Identification of material and how it was used in the project.
      b. Amount, in tons or cubic yards (cubic meters).
      c. Include weight tickets as evidence of quantity.

7. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 3 EXECUTION

2.01 WASTE MANAGEMENT PROCEDURES

A. See Section 01 3000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. See Section 01 5000 for additional requirements related to trash/waste collection and removal facilities and services.

C. See Section 01 6000 for waste prevention requirements related to delivery, storage, and handling.

D. See Section 01 7000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

2.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.

B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.

C. 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.

D. Meetings: Discuss trash/waste management goals and issues at project meetings.
   1. Prebid meeting.
   2. Preconstruction meeting.
   3. Regular job-site meetings.

E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
   1. Provide containers as required.
   2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
   3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.

F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

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SECTION 01 7610
TEMPORARY PROTECTIVE COVERINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary protective coverings for installed floors, walls, and other surfaces.

1.02 RELATED REQUIREMENTS

A. Section 01 7000 - Execution and Closeout Requirements: Coordination of requirements for materials specified in this section.

PART 2 PRODUCTS

2.01 GENERAL

A. Provide materials that are easily removed without damage to the surfaces covered and with the following characteristics:
   1. Water resistant.
   2. Vapor permeable.
   3. Impact resistant.
   4. Slip resistant.
   5. Flame retardant.

2.02 MATERIALS

A. Sheet Materials:
   1. Corrugated polypropylene sheet.
   2. Recycled paperboard/plastic composite sheet.
   3. Recycled paperboard sheet.
   4. Plywood, 1/2 inch (13 mm) thick nominal.

B. Rolled Materials:
   1. Self-adhering polyethylene film.
   2. Recycled cellulose fiberboard paper.

C. Corner and Door Jamb Protection Materials:
   1. Cardboard, shaped specifically for application.

PART 3 EXECUTION

3.01 PREPARATION

A. Remove dirt and debris from surfaces to be protected.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Trim or overlap sheet materials to fit area to be covered.

C. Roll out and cut rolled materials to fit area to be covered.

D. Stretch self-adhering film materials to completely cover surface.

E. Install door jamb protection to full height of opening.

3.03 REMOVAL

A. Remove protective coverings prior to Date of Substantial Completion. Reuse or recycle materials if possible.

END OF SECTION

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SECTION 01 7800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Operation and maintenance data.

B. Warranties and bonds.

1.02 RELATED REQUIREMENTS

A. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

B. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.

C. Individual Product Sections: Specific requirements for operation and maintenance data.

D. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Operation and Maintenance Data:
   1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
   3. Submit two sets of revised final documents in final form within 10 days after final inspection.

B. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 OPERATION AND MAINTENANCE DATA

A. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

B. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

C. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.02 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:
   1. Product data, with catalog number, size, composition, and color and texture designations.
   2. Information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

C. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.03 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

END OF SECTION

SECTION 01 7900
DEMONSTRATION AND TRAINING

PART 1 GENERAL

1.01 SUMMARY

A. Demonstration of products and systems to be commissioned and where indicated in specific specification sections.

B. Training of Owner personnel in operation and maintenance is required for:
   1. Wheelchair Lifts.
   2. Items specified in individual product Sections.

1.02 RELATED REQUIREMENTS

A. Section 01 7800 - Closeout Submittals: Operation and maintenance manuals.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures; except:
   1. Make all submittals specified in this section, and elsewhere where indicated for commissioning purposes, directly to the Commissioning Provider.
   2. Submit one copy to the Commissioning Provider, not to be returned.
   3. Make commissioning submittals on time schedule specified by Commissioning Provider.
   4. Submittals indicated as "Draft" are intended for the use of the Commissioning Provider in preparation of overall Training Plan; submit in editable .rtf or .docx electronic format unless otherwise approved.

B. Draft Training Plans: Owner will designate personnel to be trained; tailor training to needs and skill-level of attendees.
   1. Submit to Commissioning Provider for review and inclusion in overall training plan.
   2. Submit not less than four weeks prior to start of training.
   3. Revise and resubmit until acceptable.
   4. Provide an overall schedule showing all training sessions.
   5. Include at least the following for each training session:
      a. Identification, date, time, and duration.
      b. Description of products and/or systems to be covered.
      c. Name of firm and person conducting training; include qualifications.
      d. Intended audience, such as job description.
      e. Objectives of training and suggested methods of ensuring adequate training.
      f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
      g. Media to be used, such a slides, hand-outs, etc.
      h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor.

C. Training Manuals: Provide training manual for each attendee; allow for minimum of two attendees per training session.
   1. Include applicable portion of O&M manuals.
   2. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in O&M manuals.
   3. Provide one extra copy of each training manual to be included with operation and maintenance data.

1.04 QUALITY ASSURANCE

A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
   1. Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.

2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 DEMONSTRATION - GENERAL

A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Owner.

B. Demonstrations conducted during Functional Testing need not be repeated unless Owner personnel training is specified.

C. Demonstration may be combined with Owner personnel training if applicable.

D. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.
   2. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

E. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.

3.02 TRAINING - GENERAL

A. Commissioning Provider will prepare the Training Plan based on draft plans submitted.

B. Conduct training on-site unless otherwise indicated.

C. Owner will provide classroom and seating at no cost to Contractor.

D. Do not start training until Functional Testing is complete, unless otherwise specified or approved by the Commissioning Provider.

E. Provide training in minimum two hour segments.

F. The Commissioning Provider is responsible for determining that the training was satisfactorily completed and will provide approval forms.

G. Training schedule will be subject to availability of Owner's personnel to be trained; re-schedule training sessions as required by Owner; once schedule has been approved by Owner failure to conduct sessions according to schedule will be cause for Owner to charge Contractor for personnel "show-up" time.

H. Review of Facility Policy on Operation and Maintenance Data: During training discuss:
   1. The location of the O&M manuals and procedures for use and preservation; backup copies.
   2. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
   3. Typical uses of the O&M manuals.

I. Product- and System-Specific Training:
   1. Review the applicable O&M manuals.
   2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
   3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
   4. Provide hands-on training on all operational modes possible and preventive maintenance.
   5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.

6. Discuss common troubleshooting problems and solutions.
7. Discuss any peculiarities of equipment installation or operation.
8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
9. Review recommended tools and spare parts inventory suggestions of manufacturers.
10. Review spare parts and tools required to be furnished by Contractor.
11. Review spare parts suppliers and sources and procurement procedures.

J. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

END OF SECTION

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SECTION 02 4100
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

1.02 RELATED REQUIREMENTS

A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.

B. Section 01 1000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.

C. Section 01 5000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.

D. Section 01 6000 - Product Requirements: Handling and storage of items removed for salvage and relocation.

E. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

1.03 DEFINITIONS

A. Demolish: Dismantle, raze, destroy, or wreck any building or structure or any part thereof.

B. Remove: Detach or dismantle items from existing construction and dispose of them off site, unless items are indicated to be salvaged or reinstalled.

C. Existing to Remain: Designation for existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

PART 3 EXECUTION

2.01 DEMOLITION

A. Remove areas indicated in drawings..

B. Remove other items indicated, for salvage, relocation, recycling, and _____.

2.02 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 required permits.
   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. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   5. 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.

B. Protect existing structures and other elements to remain in place and not 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.

C. Hazardous Materials:
   1. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.

2.03 EXISTING UTILITIES

A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

2.04 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.
   1. Verify construction and utility arrangements are as indicated.
   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. Remove existing work as indicated and required to accomplish new work.
   1. Remove items indicated on drawings.

C. Services including, but not limited to, HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications: Remove existing systems and equipment as indicated.
   1. Maintain existing active systems to remain in operation, and 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.

D. Protect existing work to remain.
   1. Prevent movement of structure. Provide shoring and bracing as required.
   2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch to match new work.

2.05 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

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SECTION 05 4000
COLD-FORMED METAL FRAMING

PART 2 PRODUCTS

1.01 PERFORMANCE REQUIREMENTS

A. Design Requirements: Design cold-formed framing systems, components and connectors to withstand specified design loads in compliance with ICC (IBC), ASCE 7, AISI S100, and AISI S240.

B. Design Criteria: In accordance with applicable codes.
   1. Live load deflection meeting the following, unless otherwise indicated:
   2. Able to tolerate movement of components without damage, failure of joint seals, undue stress on fasteners, or other detrimental effects when subject to seasonal or cyclic day/night temperature ranges.
   3. Able to accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.

1.02 MATERIALS

A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S240.

1.03 STRUCTURAL FRAMING COMPONENTS

A. Wall Studs and Track Sections: AISI S240; c-shaped studs and u-shaped track sections in stud-matching nominal width and compatible height.

1.04 CONNECTIONS

END OF SECTION

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SECTION 06 4100
ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wood casework with opaque finish.

B. Wood casework with laminate cladding.

C. Cabinet and drawer hardware.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate schedule of climate-controlled rooms with schedule of storage of wood and wood-based materials requiring climate-controlled environments.
   2. Coordinate work of this section with installation of wood blocking, wood backing, metal strapping, and other anchorage that provides casework backing and structural support.
   3. Coordinate work of this section with rough-in electrical integrally-related with casework.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data for Wood Casework for Transparent Finish: Submit manufacturer's published, product descriptive data.
   1. HPDL Laminates: For each type, indicate description, thickness, and color.
   2. Laminate Edgebanding: For each type, indicate thickness.
   3. Veneer Tape Edgebanding: For each type, indicate material and thickness.
   4. Transparent Finish Systems: For each system, include manufacturer's name.
   5. Opaque Finish Systems: For each system, include manufacturer's name.
   6. Hardware: For each type of cabinet and drawer hardware.
   7. Locks: For each type of cabinet and drawer lock.
   8. Accessory Components: For each type of glass and grommet.

C. Shop Drawings:
   1. General: Each sheet sequentially numbered and dated.
   2. AWI QCP Program Shop Drawing Requirements:
      a. Reference Plans: Casework locations in relative context of building floor plans.
         1) Drawing Scale: 1/4 inch = 1 foot (1:50), minimum.
      b. Plans and Elevations: Plan and elevation views of each assembly type.
         1) Include rough opening dimensions and casework assembly dimensions.
         2) Drawing Scale: 3/4 inch = 1 foot (1:20), minimum.
      c. Detailed Sections: Dimensioned section views of each casework configuration.
         1) Include appropriate locations for casework wall anchorage.
         2) Drawing Scale: 1-1/2 inch = 1 foot (1:10), minimum.
      d. Details: Dimensioned casework assembly details with material thicknesses.
         1) Include wood veneer panels, laminate-clad panels, and panel cores.
         2) Drawing Scale: 3 inches = 1 foot (1:4), minimum.
      e. Details of Wood Veneer Leaves: Include dimensions and grain direction for each leaf.
         1) Drawing Scale: 3 inches = 1 foot (1:4), minimum.

D. Samples:
   1. AWI QCP Program Requirements for Samples: Comply with AWI 100.
   2. Samples, Solid Wood Drawer Fronts with Transparent Finish: For each species and cut, submit two samples, finished on exposed surfaces, representing expected range of color and grain; size: 6 by 12 inches (150 by 300 mm); thickness: 3/4 inches (90 mm).

3. Samples, Wood Veneer Panels: For each wood veneer species and cut, submit twofinished samples, indicating specified species, cut, and finish; size: 8 by 8 inches (200 by 200 mm), minimum; thickness: 3/4 inch (19 mm).
4. Samples, Wood Veneer Edgebanding: For each species and cut of wood veneer, submit two samples, representing range of color and grain to be provided; length: 6 inches (150 mm), minimum.
5. Samples, Wood Veneer Tape Edgebanding: For each species and cut of wood veneer, submit two samples; length: 6 inches (150 mm), minimum.
6. Samples, Solid Wood Drawer Fronts with Opaque Finish: Submit two finished samples; size: 6 by 12 inches (150 by 300 mm); 3/4 inch (90 mm) thick.
7. Samples, Panels to Receive Opaque Finish: Submit two finished samples; size: 8 by 8 inches (200 by 200 mm), minimum; thickness: 3/4 inch (19 mm).
8. Samples, Laminate-Clad Panels: For each laminate-clad type, submit two, laminate-clad sample panels; size: 8 by 8 inches (200 by 200 mm); thickness: 3/4 inch (19 mm).
9. Samples, Edgebanding:
10. Samples, Laminates: For each laminate type, submit two samples for each specified color.

1.04 QUALITY ASSURANCE

A. Fabricator/Installer Qualifications: Firm specializing in fabricating and installing products specified in this section with minimum five years of documented experience; with qualifications indicating ability to comply with requirements of this section.

1.05 FIELD CONDITIONS

A. Ambient Conditions for Acclimation, Installation, and Post-Installation of Wood-Based Products:
   1. Acclimation Period Prior to Installation: 72 hours minimum, inside installation environment.
   2. Temperature Conditions During Installation and Post-Installation: Maintain temperature between 60 degrees F (16 degrees C) and 90 degrees F (32 degrees C).
   3. Maximum Sustained Time outside Specified Relative Humidity Range: 24 hours.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Formica Corporation: www.formica.com/#sle.

B. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ARCHITECTURAL WOOD CASEWORK

A. Provide casework and casework components in sizes and profiles as indicated on drawings.

2.03 CONCEALED CABINET BASE COMPONENTS

A. Cabinet Base Toe-Kick Subfronts:

B. Cabinet Base Blocking and Stretchers:

C. Cabinet Base Sleepers:

2.04 WOOD AND WOOD-BASED MATERIALS

END OF SECTION

SECTION 07 8400
FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Firestopping systems.

B. Firestopping of joints and penetrations in fire-resistance-rated and smoke-resistant assemblies, whether indicated on drawings or not.

1.02 RELATED REQUIREMENTS

A. Section 01 7000 - Execution and Closeout Requirements: Cutting and patching.

B. Section 09 2116 - Gypsum Board Assemblies: Gypsum wallboard fireproofing.

1.03 REFERENCE STANDARDS

A. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).

B. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2026.

C. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2026.

D. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems; 2024.

E. ASTM E2174 - Standard Practice for On-Site Inspection of Installed Firestop Systems; 2024.

F. ASTM E2307 - Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-Story Test Apparatus; 2025b.

G. ASTM E2393 - Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers; 2024.

H. ASTM E2837 - Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed between Rated Wall Assemblies and Nonrated Horizontal Assemblies; 2023a, with Editorial Revision (2024).

I. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015, with Editorial Revision (2021).

J. FM (AG) - FM Approval Guide; Current Edition.

K. FM 4991 - Examination Standard for Firestop Contractors; 2026.

L. ITS (DIR) - Directory of Listed Products; Current Edition.

M. UL (DIR) - Online Certifications Directory; Current Edition.

N. UL (FRD) - Fire Resistance Directory; Current Edition.

O. UL 1479 - Standard for Fire Tests of Penetration Firestops; Current Edition, Including All Revisions.

P. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.

C. Product Data: Provide data on product characteristics, performance ratings, and limitations.

D. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Manufacturer's qualification statement.

G. Installer's qualification statement.

1.05 QUALITY ASSURANCE

A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
   1. Listing in UL (FRD), FM (AG), or ITS (DIR) 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. Submission of actual test reports is required for assemblies for which none of the above substantiation exists.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

C. Installer Qualifications: Company specializing in performing the work of this section and:
   1. Recognized as a Qualified Contractor in compliance with requirements of UL (DIR) Solutions Qualified Firestop Contractor Program.
   2. Verification of at least five satisfactorily completed projects of comparable size and type.
   3. Licensed by local authorities having jurisdiction (AHJ).

1.06 FIELD CONDITIONS

A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.

B. Provide ventilation in areas where solvent-cured materials are being installed.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Firestopping Manufacturers:
   1. A/D Fire Protection Systems Inc; _____: www.adfire.com/#sle.
   2. CEMCO; HOTROD Type-X Compressible Firestopping: www.cemcosteel.com/#sle.
   3. Fire Shield, LLC; Barri-Ring: www.fireshieldlv.com/#sle.
   4. Hilti, Inc; _____: www.hilti.com/#sle.
   5. Nelson FireStop Products; _____: www.nelsonfirestop.com/#sle.
   6. Tremco Commercial Sealants & Waterproofing; TREMstop Acrylic: www.tremcosealants.com/#sle.
   7. Substitutions: See Section 01 6000 - Product Requirements.

2.02 MATERIALS

A. Firestopping Materials: Any materials meeting requirements.

B. Mold and Mildew Resistance: In restrooms or other wet areas, provide firestopping materials with mold and mildew resistance rating of zero(0) in accordance with ASTM G21.

C. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.

D. Fire Ratings: Refer to drawings for required systems and ratings.

2.03 FIRESTOPPING ASSEMBLY REQUIREMENTS

A. Perimeter Fire Containment Firestopping: Use system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of floor assembly.

B. Head-of-Wall (HW) Joint System Firestopping at Joints Between Fire-Rated Wall Assemblies and Non-Rated Horizontal Assemblies: Use system that has been tested according to ASTM E2837 to have fire resistance F Rating equal to required fire rating of wall assembly.

C. Floor-to-Floor (FF), Floor-to-Wall (FW), Head-of-Wall (HW), and Wall-to-Wall (WW) Joints, Except Perimeter, Where Both Are Fire-Rated: Use system that has been tested according to

ASTM E1966 or UL 2079 to have fire resistance F Rating equal to required fire rating of the assembly in which the joint occurs.

D. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.

E. Acoustically Rated Firestopping: Provide system tested in accordance with ASTM E90 with STC rating of 50, minimum.

2.04 FIRESTOPPING FOR PERIMETER CONTAINMENT

A. Perimeter Joint Systems That Have Not Been Tested For Movement Capabilities (Static-S):
   1. 2 Hour Construction: UL System CW-S-0002; Specified Technologies Inc. AS200 Elastomeric Spray.
   2. 2 Hour Construction: UL System CW-S-0003; Specified Technologies Inc. Fast Tack Firestop Spray.
   3. 2 Hour Construction: UL System CW-S-0007; Specified Technologies Inc. SpeedFlex TTG Track Top Gasket.
   4. 2 Hour Construction: UL System CW-S-2015; RectorSeal MetaCaulk 1200 Spray.

2.05 FIRESTOPPING FOR FLOOR-TO-FLOOR, FLOOR-TO-WALL, HEAD-OF-WALL, AND WALL-TO-WALL JOINTS

A. Concrete and Concrete Masonry Walls and Floors:
   1. Head-of-Wall Joints at Concrete/Concrete Masonry Wall to Concrete Over Metal Deck Floor:
      a. 2 Hour Construction: UL System HW-D-0058; RectorSeal MetaCaulk 1200 Spray.
      b. 2 Hour Construction: UL System HW-D-0149; RectorSeal MetaCaulk 150+.
      c. 2 Hour Construction: UL System HW-D-0181; Hilti CFS-SP WB Firestop Joint Spray and CP 672.
      d. 2 Hour Construction: UL System HW-D-1037; Hilti CFS-SP WB Firestop Joint Spray and CP 672.
   2. Head-of-Wall Joints at Concrete/Concrete Masonry Wall to Concrete Floor:
      a. 2 Hour Construction: UL System HW-D-0268; Hilti CP 606 Flexible Firestop Sealant.
      b. 2 Hour Construction: UL System HW-D-0312; Specified Technologies Inc. SIL Silicone Sealant.
   3. Concrete/Concrete Masonry Wall-to-Wall Joint Systems That Have Movement Capabilities (Dynamic-D):
      a. 2 Hour Construction: UL System WW-D-0025; RectorSeal MetaCaulk 1200 Spray.
      b. 2 Hour Construction: UL System WW-D-0027; RectorSeal MetaCaulk 150+.
      c. 2 Hour Construction: UL System WW-D-0110; RectorSeal MetaCaulk 150+.
      d. 2 Hour Construction: UL System WW-D-1077; Tremco, TREMstop Acrylic Firestop Sealant.
      e. 2 Hour Construction: UL System WW-D-0017; Hilti CFS-SP WB Firestop Joint Spray and CP 672.
      f. 2 Hour Construction: UL System WW-D-0032; Hilti CP 606 Flexible Firestop Sealant.

B. Gypsum Board Walls:
   1. Wall-to-Wall Joints That Have Not Been Tested For Movement Capabilities (Static-S):
      a. 2 Hour Construction: UL System WW-S-0063; Specified Technologies Inc. SpeedFlex TTG Track Top Gasket.
      b. 2 Hour Construction: UL System WW-S-0089; RectorSeal MetaCaulk 150+.
      c. 1 Hour Construction: UL System WW-S-0063; Specified Technologies Inc. SpeedFlex TTG Track Top Gasket.
   2. Wall-to-Wall Joints That Have Movement Capabilities (Dynamic-D):
      a. 2 Hour Construction: UL System WW-D-0180; Specified Technologies Inc. SpeedFlex TTG Track Top Gasket.
      b. 2 Hour Construction: UL System WW-D-0067; Hilti CP 606 Flexible Firestop Sealant.

c. 1 Hour Construction: UL System WW-D-0067; Hilti CP 606 Flexible Firestop Sealant.

3. Head-of-Wall Joints at Underside of Flat Concrete:
   a. 2 Hour Construction: UL System HW-D-0044; Specified Technologies Inc. AS200 Elastomeric Spray.
   b. 2 Hour Construction: UL System HW-D-0079; Specified Technologies Inc. ES Elastomeric Firestop Sealant.
   c. 2 Hour Construction: UL System HW-D-0371; Specified Technologies Inc. SpeedFlex Joint Profile System.
   d. 2 Hour Construction: UL System HW-D-0689; Specified Technologies Inc. SpeedFlex TTG Track Top Gasket.
   e. 2 Hour Construction: UL System HW-D-0798; RectorSeal Blaze Foam.
   f. 2 Hour Construction: UL System HW-D-1068; Hilti CFS-SP WB Firestop Joint Spray and CP 672.
   g. 2 Hour Construction: UL System HW-D-0757; Hilti CFS-TTS Top Track Seal.
   h. 2 Hour Construction: UL System HW-D-0016; Tremco, TREMstop Acrylic Firestop Sealant.
4. Head-of-Wall Joints at Concrete Over Metal Deck:
   a. 2 Hour Construction: UL System HW-D-0043; Specified Technologies Inc. AS200 Elastomeric Spray.
   b. 2 Hour Construction: UL System HW-D-0099; Specified Technologies Inc. SpeedFlex Joint Profile System.
   c. 2 Hour Construction: UL System HW-D-0144; RectorSeal MetaCaulk 150+.
   d. 2 Hour Construction: UL System HW-D-0365; Specified Technologies Inc. SpeedFlex Joint Profile System.
   e. 2 Hour Construction: UL System HW-D-0749; Specified Technologies Inc. SpeedFlex TTG Track Top Gasket.
5. Head-of-Wall Joints at Concrete Over Metal Deck, Wall Parallel to Ribs:
   a. 2 Hour Construction: UL System HW-D-0049; Hilti CFS-SP WB Firestop Joint Spray and CP 672.
   b. 2 Hour Construction: UL System HW-D-0184; Hilti CP 606 Flexible Firestop Sealant.
6. Head-of-Wall Joints at Concrete Over Metal Deck, Wall Perpendicular to Ribs, Cut to Fit Ribs:
   a. 2 Hour Construction: UL System HW-D-0045; Hilti CP 606 Flexible Firestop Sealant.
   b. 2 Hour Construction: UL System HW-D-0103; Specified Technologies Inc. ES Elastomeric Firestop Sealant.
7. Head-of-Wall Joints at Concrete Over Metal Deck, Wall Perpendicular to Ribs, Not Cut to Fit:
   a. 2 Hour Construction: UL System HW-D-0042; Hilti CFS-SP WB Firestop Joint Spray and CP 672.

2.06 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. 2 Hour Construction: UL System C-AJ-0015; Specified Technologies Inc. SSM Mortar.
      c. 2 Hour Construction: UL System C-AJ-0116; Specified Technologies Inc. Composite Sheet.
      d. 2 Hour Construction: UL System C-AJ-0136; Specified Technologies Inc. SSM Mortar.

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.
b. 2 Hour Construction: UL System C-AJ-8035; Specified Technologies Inc. SSM Mortar.
c. 2 Hour Construction: UL System C-AJ-8042; RectorSeal MetaCaulk 1000.
d. 2 Hour Construction: UL System C-AJ-8055; Specified Technologies Inc. SSP Firestop Putty.
e. 2 Hour Construction: UL System C-AJ-8093; Specified Technologies Inc. SSB Intumescent Firestop Pillows.
f. 2 Hour Construction: UL System C-AJ-8129; RectorSeal MetaCaulk 1200 Spray.
g. 2 Hour Construction: UL System C-AJ-8181; Specified Technologies Inc. Composite Sheet.
h. 2 Hour Construction: UL System C-AJ-8309; Roxtec GH FL100 Frame Kit.
i. 2 Hour Construction: UL System C-AJ-8309; Roxtec RS Seal.

2. Uninsulated Metallic Pipe, Conduit, and Tubing:
   a. 2 and 3 Hour Construction: UL System C-AJ-1696; HoldRite HydroFlame 200 Intumescent Firestop Sealant.
   b. 2 Hour Construction: UL System C-AJ-1036; RectorSeal MetaCaulk 950.
   c. 2 Hour Construction: UL System C-AJ-1090; Specified Technologies Inc. SSP Firestop Putty.
   d. 2 Hour Construction: UL System C-AJ-1198; Specified Technologies Inc. SIL Silicone Sealant.
   e. 2 Hour Construction: UL System C-AJ-1226; Hilti FS-ONE MAX Intumescent Firestop Sealant.
3. Uninsulated Non-Metallic Pipe, Conduit, and Tubing:
   a. 2 and 3 Hour Construction: UL System C-AJ-2843; HoldRite HydroFlame Pipe Collar.
   b. 2 Hour Construction: UL System C-AJ-2047; RectorSeal MetaCaulk 1000.
   c. 2 Hour Construction: UL System C-AJ-2167; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   d. 2 Hour Construction: UL System C-AJ-2109; Hilti CP 643N/644 Firestop Collar.
   e. 2 Hour Construction: UL System C-AJ-2106; Specified Technologies Inc. SSW Wrap Strips.
   f. 2 Hour Construction: UL System C-AJ-2297; Specified Technologies Inc. SSC Collars.
   g. 2 Hour Construction: UL System C-AJ-2297; Specified Technologies Inc. SSW Wrap Strips.
4. Electrical Cables Not In Conduit:
   a. 2 Hour Construction: UL System C-AJ-3213; Specified Technologies Inc. LCC Intumescent Firestop Collars.
   b. 2 Hour Construction: UL System C-AJ-3213; Specified Technologies Inc. SSC Collars.
   c. 2 Hour Construction: UL System W-J-3046; Specified Technologies Inc. SSP Firestop Putty.
5. Cable Trays with Electrical Cables:
6. Insulated Pipes:
   a. 2 Hour Construction: UL System C-AJ-5048; Hilti FS-ONE MAX Intumescent Firestop Sealant, CP 606 Flexible Firestop Sealant, CP 601S Elastomeric Firestop Sealant, CP 604 Self-Leveling Firestop Sealant or CFS-S SIL GG Firestop Silicone Sealant Gun-Grade.
   b. 2 Hour Construction: UL System C-AJ-5091; Hilti FS-ONE IMAX Intumescent Firestop Sealant.

C. Penetrations Through Floors By:

1. Uninsulated Metallic Pipe, Conduit, and Tubing:
    a. 2 Hour Construction: UL System F-A-1110; Specified Technologies Inc. CID Cast-In Device.
    b. 2 Hour Construction: UL System F-A-1129; Specified Technologies Inc. Closet Flange Firestop Gasket.
2. Uninsulated Non-Metallic Pipe, Conduit, and Tubing:
    a. 2 and 3 Hour Construction: UL System F-A-2412; Hilti CFS-CID U Firestop Cast-In Device.
    b. 2 Hour Construction: UL System F-A-2246; Specified Technologies Inc. CID Cast-In Device.
3. Electrical Cables Not In Conduit:
    a. 2 and 3 Hour Construction: UL System F-A-3091; Hilti CFS-CID U Firestop Cast-In Device.
    b. 2 Hour Construction: UL System F-A-3032; Specified Technologies Inc. Ready Split Sleeve.
    c. 2 Hour Construction: UL System F-A-3058; Specified Technologies Inc. EZ-Path Series 44 Fire-Rated Pathway.
4. Insulated Pipes:
    a. 2 and 3 Hour Construction: UL System F-A-5083; Hilti CFS-CID U Firestop Cast-In Device.

D. Penetrations Through Walls By:
1. Uninsulated Metallic Pipe, Conduit, and Tubing:
    a. 2 Hour Construction: UL System W-J-1067; Hilti FS-ONE MAX Intumescent Firestop Sealant.
    b. 2 Hour Construction: UL System W-J-1300; Roxtec RS Seal.
2. Electrical Cables Not In Conduit:
    a. 2 Hour Construction: UL System C-AJ-3095; Hilti FS-ONE MAX Intumescent Firestop Sealant.
    b. 2 Hour Construction: UL System C-AJ-3216; Hilti CFS-PL Firestop Plug.
3. Insulated Pipes:
    a. 2 Hour Construction: UL System C-AJ-5090; Hilti FS-ONE MAX Intumescent Firestop Sealant.
4. HVAC Ducts, Uninsulated:
    a. 2 Hour Construction: UL System W-J-7092; Specified Technologies Inc. FyreFlange HVAC Firestop Angle.
    b. 2 Hour Construction: UL System W-J-7109; Hilti FS-ONE MAX Intumescent Firestop Sealant, or CP 606 Flexible Firestop Sealant.
5. HVAC Ducts, Insulated:
    a. 2 Hour Construction: UL System W-J-7112; Hilti FS-ONE MAX Intumescent Firestop Sealant.

2.07 FIRESTOPPING PENETRATIONS THROUGH GYPSUM BOARD WALLS

A. Blank Openings:
1. 2 Hour Construction: UL System W-L-0038; Specified Technologies Inc. FP Intumescent Firestop Plug.
2. 2 Hour Construction: UL System W-L-3334; Hilti CP 653 Speed Sleeve.

B. Penetrations By:
1. Multiple Penetrations in Large Openings:
    a. 2 Hour Construction: UL System W-L-8079; Hilti FS-ONE MAX Intumescent Firestop Sealant.
2. Uninsulated Metallic Pipe, Conduit, and Tubing:
    a. 2 Hour Construction: UL System W-L-1033; Specified Technologies Inc. SIL Silicone Sealant.

b. 2 Hour Construction: UL System W-L-1042; Specified Technologies Inc. WF300 Intumescent Firestop Caulk (For Wood Frame Construction).
c. 2 Hour Construction: UL System W-L-1054; Hilti FS-ONE MAX Intumescent Firestop Sealant.
d. 2 Hour Construction: UL System W-L-1477; Specified Technologies Inc. EZ Firestop Grommet.

3. Uninsulated Non-Metallic Pipe, Conduit, and Tubing:
   a. 2 Hour Construction: UL System W-L-2078; Hilti CP 643N/644 Firestop Collar.
   b. 2 Hour Construction: UL System W-L-2128; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   c. 2 Hour Construction: UL System W-L-2241; Specified Technologies Inc. WF300 Intumescent Firestop Caulk (For Wood Frame Construction).
   d. 2 Hour Construction: UL System W-L-2243; Specified Technologies Inc. SSW Wrap Strips.
4. Electrical Cables Not In Conduit:
   a. 2 Hour Construction: UL System W-L-3065; Hilti FS-ONE MAX Intumescent Firestop Sealant, CP 606 Flexible Firestop Sealant, CD 601S Elastomeric Firestop Sealant, or CP 618 Firestop Putty Stick.
   b. 2 Hour Construction: UL System W-L-3135; Specified Technologies Inc. SSP Firestop Putty.
   c. 2 Hour Construction: UL System W-L-3218; Specified Technologies Inc. EZ-Path Series 33 Fire-Rated Pathway.
   d. 2 Hour Construction: UL System W-L-3303; Specified Technologies Inc. Ready Split Sleeve.
   e. 2 Hour Construction: UL System W-L-3370; Specified Technologies Inc. EZ Firestop Grommet.
   f. 2 Hour Construction: UL System W-L-3374; Specified Technologies Inc. FP Intumescent Firestop Plug.
5. Cable Trays with Electrical Cables:
   a. 2 Hour Construction: UL System W-L-4008; Specified Technologies Inc. SSB Intumescent Firestop Pillows.
   b. 2 Hour Construction: UL System W-L-4011; Hilti CFS-BL Firestop Block.
   c. 2 Hour Construction: UL System W-L-4060; Hilti FS-ONE MAX Intumescent Firestop Sealant.
6. Insulated Pipes:
   a. 2 Hour Construction: UL System W-L-5028; Hilti FS-ONE MAX Intumescent Firestop Sealant.
7. HVAC Ducts, Insulated:
   a. 2 Hour Construction: UL System W-L-7156; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   b. 2 Hour Construction: UL System W-L-7238; Specified Technologies Inc. FyreFlange HVAC Firestop Angle.

2.08 FIRESTOPPING SYSTEMS

A. Firestopping: Any material meeting requirements.
   1. Fire Ratings: Use system that is listed by FM (AG), ITS (DIR), or UL (FRD) and tested in accordance with ASTM E814, ASTM E119, or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other specified requirements.

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 materials that could adversely affect bond of firestopping material.

B. Remove incompatible materials that could adversely affect bond.

C. Install backing materials to prevent liquid material from 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. Do not cover installed firestopping until inspected by Owner's Independent Testing Agency.

C. Do not cover installed firestopping until inspected by authorities having jurisdiction.

D. Install labeling required by code.

3.04 FIELD QUALITY CONTROL

A. Independent Testing Agency: Inspection agency employed and paid by Owner, will examine penetration firestopping in accordance with ASTM E2174 and ASTM E2393.

B. Repair or replace penetration firestopping and joints at locations where inspection results indicate firestopping or joints do not meet specified requirements.

3.05 CLEANING

A. Clean adjacent surfaces of firestopping materials.

3.06 PROTECTION

A. Protect adjacent surfaces from damage by material installation.

END OF SECTION

SECTION 08 1113
HOLLOW METAL DOORS AND FRAMES

PART 2 PRODUCTS

1.01 PERFORMANCE REQUIREMENTS

A. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

1.02 HOLLOW METAL DOORS

1.03 HOLLOW METAL FRAMES

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.

END OF SECTION

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SECTION 08 1416
FLUSH WOOD DOORS

PART 2 PRODUCTS

1.01 DOORS AND PANELS

A. Doors: See drawings for locations and additional requirements.

1.02 DOOR AND PANEL CORES

1.03 DOOR FACINGS

1.04 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

C. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.

D. Provide edge clearances in accordance with the quality standard specified.

1.05 FINISHES - WOOD VENEER DOORS

END OF SECTION

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SECTION 08 7100
DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hardware for wood and hollow metal doors.

B. Hardware for fire-rated doors.

C. Thresholds.

D. Weatherstripping and gasketing.

1.02 RELATED REQUIREMENTS

A. Section 08 1113 - Hollow Metal Doors and Frames.

B. Section 08 1416 - Flush Wood Doors.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. BHMA (CPD) - Certified Products Directory; Current Edition.

C. BHMA A156.1 - Standard for Butts and Hinges; 2025.

D. BHMA A156.2 - Bored and Preassembled Locks and Latches; 2022.

E. BHMA A156.3 - Exit Devices; 2025.

F. BHMA A156.4 - Door Closers and Pivots; 2024.

G. BHMA A156.5 - Cylinders and Input Devices for Locks; 2020.

H. BHMA A156.6 - Standard for Architectural Door Trim; 2021.

I. BHMA A156.7 - Template Hinge Dimensions; 2022.

J. BHMA A156.8 - Door Controls - Overhead Stops and Holders; 2021.

K. BHMA A156.13 - Mortise Locks and Latches; 2022.

L. BHMA A156.15 - Release Devices - Closer Holder, Electromagnetic and Electromechanical; 2021.

M. BHMA A156.16 - Standard for Auxiliary Hardware; 2023.

N. BHMA A156.17 - Self Closing Hinges & Pivots; 2025.

O. BHMA A156.18 - Standard for Materials and Finishes; 2020.

P. BHMA A156.21 - Thresholds; 2025.

Q. BHMA A156.22 - Standard for Gasketing; 2021.

R. BHMA A156.28 - Standard for Recommended Practices for Mechanical Keying Systems; 2023.

S. BHMA A156.29 - American National Standard for Exit Locks, Exit Alarms, Alarms for Exit Devices; 2022 .

T. DHI (KSN) - Keying Systems and Nomenclature; 2019.

U. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

V. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025, with Amendment (2024).

W. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

X. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2022.

Y. UL (DIR) - Online Certifications Directory; Current Edition.

Z. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.

B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

C. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.

D. Keying Requirements Meeting:
   1. Owner, Owner's Representative or Project Manager will schedule meeting at project site prior to Contractor occupancy.
   2. Attendance Required:
      a. Contractor.
      b. Owner.
      c. Project Manager
   3. Agenda:
      a. Establish keying requirements.
      b. Verify locksets and locking hardware are functionally correct for project requirements.
      c. Verify that keying and programming complies with project requirements.
      d. Establish keying submittal schedule and update requirements.
   4. Incorporate "Keying Requirements Meeting" decisions into keying submittal upon review of door hardware keying system including, but not limited to, the following:
      a. Access control requirements.
      b. Key control system requirements.
      c. Schematic diagram of preliminary key system.
      d. Flow of traffic and extent of security required.
   5. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, Project Manager, participants, and those affected by decisions made.
   6. Deliver established keying requirements to manufacturers.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.

C. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
   1. Prepared by or under supervision of Architectural Hardware Consultant (AHC).
   2. Provide complete description for each door listed.

D. Samples for Verification:
   1. Submit minimum size of 2 by 4 inch (51 by 102 mm) for sheet samples, and minimum length of 4 inch (102 mm) for other products.
   2. Submit one (1) sample of hinge, latchset, lockset, closer, and _____ illustrating style, color, and finish.
   3. Return full-size samples to Contractor.
   4. Submit product description with samples.

E. Manufacturer's qualification statement.

F. Installer's qualification statement.

G. Supplier's qualification statement.

H. Specimen warranty.

I. Project Record Documents: Record actual locations of concealed equipment, services, and conduit.

J. Maintenance Materials and Tools: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Lock Cylinders: Ten for each master keyed group.
   3. Tools: One set of each special wrench or tool applicable for each different or special hardware component, whether supplied by hardware component manufacturer or not.

1.06 QUALITY ASSURANCE

A. Standards for Fire-Rated Doors: Maintain one copy of each referenced standard on site, for use by Architect and Contractor.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.

C. Installer Qualifications: Company specializing in performing work of the type specified for commercial door hardware with at least three years of documented experience.

D. Supplier Qualifications: Company with certified Architectural Hardware Consultant (AHC) and Electrified Hardware Consultant (EHC) to assist in work of this section.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

1.08 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer's Warranty: Provide warranty against defects in material and workmanship for period indicated. Complete forms in Owner's name and register with manufacturer.
   1. Closers: Five years, minimum.
   2. Exit Devices: Three years, minimum.
   3. Locksets and Cylinders: Three years, minimum.
   4. Other Hardware: Two years, minimum.

PART 2 PRODUCTS

2.01 DESIGN AND PERFORMANCE CRITERIA

A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.

B. Provide individual items of single type, of same model, and by same manufacturer.

C. Provide door hardware products that comply with the following requirements:
   1. Applicable provisions of federal, state, and local codes.
   2. Accessibility: ADA Standards and ICC A117.1.
   3. Applicable provisions of NFPA 101.
   4. Fire-Rated Doors: NFPA 80, listed and labeled by qualified testing agency for fire protection ratings indicated, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.
   5. Hardware on Fire-Rated Doors: Listed and classified by UL (DIR), ITS (DIR), or _____ as suitable for application indicated.

D. Lock Function: Provide lock and latch function numbers and descriptions of manufacturer's series. See shop drawing submittal of Door Hardware Schedule.

E. Fasteners:

1. Provide fasteners of proper type, size, quantity, and finish that comply with commercially recognized standards for proposed applications.
    a. Aluminum fasteners are not permitted.
    b. Provide phillips flat-head screws with heads finished to match door surface hardware unless otherwise indicated.
2. Provide machine screws for attachment to reinforced hollow metal and aluminum frames.
    a. Self-drilling (Tek) type screws are not permitted.
3. Provide stainless steel machine screws and lead expansion shields for concrete and masonry substrates.
4. Provide wall grip inserts for hollow wall construction.
5. Provide spacers or sex bolts with sleeves for through bolting of hollow metal doors and frames.
6. Fire-Rated Applications: Comply with NFPA 80.
    a. Provide wood or machine screws for hinges mortised to doors or frames, strike plates to frames, and closers to doors and frames.
    b. Provide steel through bolts for attachment of surface mounted closers, hinges, or exit devices to door panels unless proper door blocking is provided.

2.02 HINGES

A. Manufacturers:
1. McKinney; an Assa Abloy Group company: www.assaabloydss.com/#sle.
2. Hager Companies: www.hagerco.com/#sle.
3. Studco Building Systems: www.studcosystems.com/#sle.
4. Waterson Corp: www.watersonusa.com/#sle.

B. Hinges: Comply with BHMA A156.1, Grade 1.
1. Self Closing Hinges: Comply with BHMA A156.17.
2. Butt Hinges: Comply with BHMA A156.1 and BHMA A156.7 for templated hinges.
    a. Provide hinge width required to clear surrounding trim.
3. Provide hinges on every swinging door.
4. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
5. Provide ball-bearing hinges at each door with closer.
6. Provide non-removable pins on exterior outswinging doors.
7. Provide following quantity of butt hinges for each door:
    a. Doors up to 60 inches (1.5 m) High: Two hinges.
    b. Doors From 60 inches (1.5 m) High up to 90 inches (2.3 m) High: Three hinges.

C. Concealed Hinges: Hinges completely mortised in door and jamb such that hinge is concealed when door is closed.
1. Hinge Size: As recommended by manufacturer for door weight and size.
2. Quantity: Same as those of butt hinges for similarly sized doors.
3. Materials: Manufacturer's standard.
    a. Body: Zinc alloy.
    b. Base Frame: Zinc alloy.
    c. Arms: Aluminum alloy.
    d. Pins: Type 304 stainless steel.
4. Products:
    a. PIVOTA, a brand of Architectural Concepts, LLC; PIVOTA DX Concealed Hinges: www.archconceptsllc.com/#sle.
    b. Substitutions: See Section 01 6000 - Product Requirements.

2.03 PIVOTS

A. Manufacturers:
1. McKinney or Rixson; an Assa Abloy Group company: www.assaabloydss.com/#sle.
2. Substitutions: See Section 01 6000 - Product Requirements.

B. Center-Hung and Offset Pivots: Comply with BHMA A156.4.

C. Self-Closing Pivots: Comply with BHMA A156.17.

D. Door Weight: Medium; standard openings with up to 650 lbs door weight.

2.04 FLUSH BOLTS

A. Manufacturers:
   1. Adams Rite, an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Hager Companies: www.hagerco.com/#sle.
   3. Trimco: www.trimcohardware.com/#sle.
   4. Substitutions: See Section 01 6000 - Product Requirements.

B. Flush Bolts: Comply with BHMA A156.16, Grade 1.
   1. Flush Bolt Throw: 3/4 inch (19 mm), minimum.

2.05 EXIT DEVICES

A. Manufacturers:
   1. Corbin Russwin, Sargent, or Yale; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Pamex, Inc; Exit Devices: www.pamexinc.com/#sle.
   3. Substitutions: See Section 01 6000 - Product Requirements.

B. Exit Devices: Comply with BHMA A156.3, Grade 1.
   1. Lever design to match lockset trim.
   2. Provide cylinder with cylinder dogging or locking trim.
   3. Provide exit devices properly sized for door width and height.
   4. Provide strike as recommended by manufacturer for application indicated.
   5. Provide UL (DIR) listed exit device assemblies for fire-rated doors and panic device assemblies for non-fire-rated doors.

2.06 DOOR PULLS AND PUSH PLATES

A. Manufacturers:
   1. Pamex, Inc; Door Pulls and Push Plates: www.pamexinc.com/#sle.
   2. Trimco: www.trimcohardware.com/#sle.
   3. Substitutions: See Section 01 6000 - Product Requirements.

B. Door Pulls and Push Plates: Comply with BHMA A156.6.
   1. Pull Type: Straight, unless otherwise indicated.
   2. Push Plate Type: Flat, with square corners, unless otherwise indicated.
      a. Edges: Beveled, unless otherwise indicated.
   3. Material: Aluminum, unless otherwise indicated.

2.07 DOOR PULLS AND PUSH BARS

A. Manufacturers:
   1. Rockwood; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Hager Companies: www.hagerco.com/#sle.
   3. Substitutions: See Section 01 6000 - Product Requirements.

B. Door Pulls and Push Bars: Comply with BHMA A156.6.
   1. Bar Type: Bar set, unless otherwise indicated.
   2. Material: Aluminum, unless otherwise indicated.

2.08 CARRY BAR

A. Manufacturers:
   1. Rockwood; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Trimco: www.trimcohardware.com/#sle.
   3. Substitutions: See Section 01 6000 - Product Requirements.

B. Carry Bar: Provides a push on active door when inactive door is opened first to allow coordinator to be engaged for proper door leaf closing sequence.
   1. Material: Brass with nylon rollers, unless otherwise indicated.

2.09 CLOSERS

A. Manufacturers; Concealed - Overhead:
   1. dormakaba; Architectural Hardware ITS96 Series and ; Architectural Hardware RTS88 Series: www.dormakaba.com/#sle.
   2. Substitutions: See Section 01 6000 - Product Requirements.

B. Closers: Comply with BHMA A156.4, Grade 1.
   1. Type: Surface mounted to door.
   2. Provide door closer on each exterior door.

2.10 OVERHEAD STOPS AND HOLDERS

A. Overhead Stops and Holders (Door Checks): Comply with BHMA A156.8, Grade 1.
   1. Provide stop for every swinging door, unless otherwise indicated.

2.11 PROTECTION PLATES

A. Manufacturers:
   1. Rockwood; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Hager Companies; _____: www.hagerco.com/#sle.
   3. Pamex, Inc; Protection Plates: www.pamexinc.com/#sle.
   4. Trimco: www.trimcohardware.com/#sle.
   5. _____.
   6. Substitutions: See Section 01 6000 - Product Requirements.

B. Protection Plates: Comply with BHMA A156.6.

C. Metal Properties: Stainless steel material.
   1. Metal, Heavy Duty: Thickness 0.062 inch (1.57 mm), minimum.
   2. Metal, Extra Heavy Duty - Flat Plate: Thickness 1/8 inch (3.175 mm), minimum, with smooth plate surface.

D. Edges: Beveled, on four sides unless otherwise indicated.

E. Fasteners: Countersunk screw fasteners.

2.12 ARMOR PLATES

A. Manufacturers:
   1. Ives, an Allegion brand: www.allegion.com/us/#sle.
   2. Trimco: www.trimcohardware.com/#sle.
   3. Substitutions: See Section 01 6000 - Product Requirements.

B. Armor Plates: Provide on bottom half of push side of doors that require protection from objects moving through openings that may damage door surface.
   1. Size: 16 inch (406 mm) high by 1-1/2 inch (38 mm) less door width (LDW) on pull side and 2 inch (51 mm) LDW on push side of door.

2.13 KICK PLATES

A. Kick Plates: Provide along bottom edge of push side of every door with closer, except aluminum storefront and glass entry doors, unless otherwise indicated.
   1. Size: 8 inch (203 mm) high by 2 inch (51 mm) less door width (LDW) on push side of door.

2.14 FLOOR STOPS

A. Manufacturers:
   1. Rockwood; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Trimco: www.trimcohardware.com/#sle.

B. Floor Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
   1. Provide floor stops when wall surface is not available; be cautious not to create a tripping hazard.
   2. Type: Manual hold-open, with pencil floor stop.
   3. Material: Aluminum housing with rubber insert.

2.15 WALL STOPS

A. Manufacturers:
   1. Rockwood; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Pamex, Inc; Wall Stops: www.pamexinc.com/#sle.
   3. Trimco: www.trimcohardware.com/#sle.
   4. Substitutions: See Section 01 6000 - Product Requirements.

B. Wall Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
   1. Type: Bumper, concave, wall stop.
   2. Material: Aluminum housing with rubber insert.

2.16 ASTRAGALS

A. Manufacturers:
   1. Pemko; an Assa Abloy Group company: www.assaabloydss.com/#sle.

B. Astragals: Comply with BHMA A156.22.
   1. Type: Split, two parts, and with sealing gasket.
   2. Material: Aluminum, with neoprene weatherstripping.
   3. Provide non-corroding fasteners at exterior locations.

2.17 THRESHOLDS

A. Manufacturers:
   1. Pemko; an Assa Abloy Group company: www.assaabloydss.com/#sle.

B. Thresholds: Comply with BHMA A156.21.
   1. Provide threshold at each exterior door, unless otherwise indicated.
   2. Type: Flat surface.
   3. Material: Aluminum.
   4. Threshold Surface: Fluted horizontal grooves across full width.
   5. Field cut threshold to profile of frame and width of door sill for tight fit.
   6. Provide non-corroding fasteners at exterior locations.

2.18 WEATHERSTRIPPING AND GASKETING

A. Manufacturers:
   1. Pemko; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Hager Companies: www.hagerco.com/#sle.

B. Weatherstripping and Gasketing: Comply with BHMA A156.22.
   1. Head and Jamb Type: Adjustable.
   2. Door Sweep Type: Encased in retainer.
   3. Material: Aluminum, with brush weatherstripping.

2.19 BUMPER GUARD

A. Manufacturers:
   1. Rockwood; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Substitutions: See Section 01 6000 - Product Requirements.

B. Bumper Guard: Provide to protect door surface and operating hardware from being damaged by heavy objects that move through opening.
   1. Type: Exit device, surface mounted.

2. Material: Stainless steel.

2.20 MAGNETIC CATCH

A. Manufacturers:
   1. Rockwood; an Assa Abloy Group company: www.assaabloydss.com/#sle.

B. Magnetic Catch: Provide on doors that are not frequently used and need to latch, and on doors that must stay in closed position within the frame.
   1. Location: Mount magnetic catch at top of door jamb with strike plate fastened to door.
   2. Material: Stainless steel.

2.21 SIGNAGE

A. Manufacturers:
   1. Substitutions: See Section 01 6000 - Product Requirements.

B. Signage (Room Name Plates and Numbers): Provide on doors for individuals to easily identify room names and/or numbers.
   1. Text Required: "MEN" with symbols and braille text.
   2. Material: In plastic or metal with paint used to create necessary text, adhered to door.

2.22 SILENCERS

A. Manufacturers:
   1. Rockwood; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Substitutions: See Section 01 6000 - Product Requirements.

B. Silencers: Provide at equal locations on door frame to mute sound of door's impact upon closing.
   1. Single Door: Provide three on strike jamb of frame.
   2. Pair of Doors: Provide two on head of frame, one for each door at latch side.
   3. Material: Rubber, gray color.

2.23 KEY CONTROL SYSTEMS

A. Key Control Systems: Comply with guidelines of BHMA A156.28.
   1. Provide keying information in compliance with DHI (KSN) standards.
   2. Keying: Grand master keyed.
   3. Supply keys in following quantities:
      a. 1 each Grand Master keys.

2.24 FINISHES

A. Finishes: Provide door hardware of same finish, unless otherwise indicated.
   1. Primary Finish: 630; satin stainless steel, with stainless steel 300 series base material (former US equivalent US32D); BHMA A156.18.
   2. Secondary Finish: 625; bright chromium plated over nickel, with brass or bronze base material (former US equivalent US26); BHMA A156.18.
      a. Use secondary finish in kitchens, bathrooms, and other spaces containing chrome or stainless steel finished appliances, fittings, and equipment; provide primary finish on one side of door and secondary finish on other side if necessary.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.

B. Install hardware on fire-rated doors and frames in accordance with applicable codes and NFPA 80.

C. Use templates provided by hardware item manufacturer.

D. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list; unless noted otherwise in Door Hardware Schedule or on drawings.
   1. Mounting heights in compliance with ADA Standards:
      a. Locksets: 40-5/16 inch (1024 mm).
      b. Push Plates/Pull Bars: 42 inch (1067 mm).
      c. Deadlocks (Deadbolts): 48 inch (1219 mm).
      d. Exit Devices: 40-5/16 inch (1024 mm).

E. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

3.03 FIELD QUALITY CONTROL

A. Provide an Architectural Hardware Consultant (AHC) to inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified.

3.04 ADJUSTING

A. Adjust work under provisions of Section 01 7000 - Execution and Closeout Requirements.

B. Adjust hardware for smooth operation.

C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

3.05 CLEANING

A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.

B. Clean adjacent surfaces soiled by hardware installation.

C. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

D. See Section 01 7419 - Construction Waste Management and Disposal for additional requirements.

3.06 PROTECTION

A. Protect finished Work under provisions of Section 01 7000 - Execution and Closeout Requirements.

B. Do not permit adjacent work to damage hardware or finish.

END OF SECTION

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SECTION 09 2116
GYPSUM BOARD ASSEMBLIES - USG

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Performance criteria for gypsum board assemblies.

B. Metal stud wall framing.

C. Gypsum wallboard.

D. Cementitious backing board.

E. Joint treatment and accessories.

F. Insulation.

1.02 RELATED REQUIREMENTS

A. Section 05 4000 - Cold-Formed Metal Framing: Structural steel stud framing.

B. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.

C. Section 07 8400 - Firestopping: Top-of-wall assemblies at fire-resistance-rated walls.

D. Section 09 3000 - Tiling: Tile backing board.

1.03 REFERENCE STANDARDS

A. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2023.

B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2023.

C. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017 (Reapproved 2022).

D. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2024.

E. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2024.

F. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2020.

G. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2025.

H. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units; 2025.

I. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2024.

J. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.

K. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2026a.

L. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.

M. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2024a.

N. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2026.

O. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C; 2026.

P. ASTM E413 - Classification for Rating Sound Insulation; 2022.

Q. GA-216 - Application and Finishing of Gypsum Panel Products; 2024.

R. UL (FRD) - Fire Resistance Directory; Current Edition.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate special details associated with fireproofing and acoustic seals.

C. Product Data: Include data on metal framing, gypsum board, glass mat faced gypsum board, sheathing, accessories, and joint finishing system.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum 5 years of experience.

PART 2 PRODUCTS

2.01 WALL ASSEMBLY TYPES

A. See drawings for graphic representations of assemblies.

2.02 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.

B. Fire-Resistance-Rated Assemblies: Provide completed assemblies with the following characteristics:
   1. Fire-Resistance-Rated Partitions: UL listed assembly No. U419; 1 hour rating
   2. Fire-Resistance-Rated Partitions: UL listed assembly No. U419; 2 hour rating.
   3. Fire-Resistance-Rated Ceilings and Soffits: One (1) hour fire rating.
   4. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL (FRD).

2.03 METAL FRAMING MATERIALS

A. Manufacturers - Metal Framing, Connectors, and Accessories:
   1. CEMCO; ____: www.cemcosteel.com/#sle.
   2. ClarkDietrich; ____: www.clarkdietrich.com/#sle.
   3. Marino; ____: www.marinoware.com/#sle.
   4. Substitutions: See Section 01 6000 - Product Requirements.

B. Non-structural Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf (L/120 at 240 Pa).
   1. Studs: "C" shaped with knurled or embossed faces.
      a. Products:
         1) ClarkDietrich; ____: www.clarkdietrich.com/#sle.
         2) Substitutions: See Section 01 6000 - Product Requirements.
   2. Runners: U shaped, sized to match studs.
   3. Ceiling Channels: C-shaped.
   4. Furring Members: Hat-shaped sections, minimum depth of 7/8 inch (22 mm).

2.04 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:
   1. USG Corporation: www.usg.com/#sle.
   2. Substitutions: Not permitted.

B. Gypsum Board: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
   2. Thickness:
      a. Vertical Surfaces: As indicated on drawings.

3. Paper-Faced Fire-Resistant Board Products:
    a. USG Corporation; USG Sheetrock Brand Firecode SCX Panels 5/8 inch: www.usg.com/#sle.
    b. Substitutions: Not permitted.

C. Backing Board For Wet Areas: One of the following products:
1. Application: Surfaces behind tile in wet areas including restrooms.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
3. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with or , suitable for decoration using natural stone or tile on walls, floors, or decks in wet and dry areas.
    a. Unfaced Products:
        1) USG Corporation; USG Durock Brand Cement Board with EdgeGuard 1/4 inch: www.usg.com/#sle.
        2) USG Corporation; USG Durock Brand Cement Board with EdgeGuard 1/2 inch: www.usg.com/#sle.
        3) USG Corporation; USG Durock Brand Cement Board with EdgeGuard 5/8 inch: www.usg.com/#sle.
        4) Substitutions: Not permitted.

2.05 GYPSUM WALLBOARD ACCESSORIES

A. Glass Fiber Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
1. Type II, Class C, Kraft faced; 1.0 perms or less when tested in accordance with ASTM E96/E96M.
2. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
3. Smoke Developed Index: 50 or less, when tested in accordance with ASTM E84.
4. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
5. Sustainability Certifications: Greenguard Gold Certified; Declare Red List Free.
6. Products:
    a. Knauf Insulation Inc; Knauf EcoBatt Insulation: www.knaufnorthamerica.com/#sle.
    b. Substitutions: See Section 01 6000 - Product Requirements.

B. Acoustical Shielding: Recycled ethylene vinyl acetate (EVA) sheet membrane; applied between studs and gypsum board.
1. Sound Transmission Class (STC): Minimum of 25, calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
2. Fire Resistance: Where fire-resistance rating is specified for the wall in which the acoustical shielding membrane is mounted, provide assemblies that have been tested in accordance with ASTM E119 for the same rating as the wall.

C. Sound Isolation Tape: Elastomeric foam tape for sound decoupling.
1. Surface Burning Characteristics: Provide assemblies with flame spread index of 75 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
2. Tape Thickness: 1/4 inch (6 mm).

D. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.

PART 3 EXECUTION

3.01 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.

B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
1. Level ceiling system to a tolerance of 1/1200.

C. Studs: Space studs at 16 inches on center (at 406 mm on center).
   1. Extend partition framing to structure where indicated and to ceiling in other locations.
   2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.

D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.

E. Blocking: Install wood blocking for support of:
   1. Framed openings.
   2. Wall-mounted cabinets.
   3. Plumbing fixtures.
   4. Toilet partitions.
   5. Toilet accessories.
   6. Wall-mounted door hardware.

3.02 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B. Sound Isolation Tape: Apply to vertical studs and top and bottom tracks/runners in accordance with manufacturer's instructions.

C. Acoustic Sealant: Install in accordance with manufacturer's instructions.

3.03 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Fire-Resistance-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.

C. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with and manufacturer's instructions.

3.04 JOINT TREATMENT

A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas specifically indicated.
   2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   3. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
   4. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.

B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch (0.8 mm).

C. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

END OF SECTION

SECTION 09 3000
TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for wall applications.

B. Cementitious backer board as tile substrate.

1.02 RELATED REQUIREMENTS

A. Section 09 2116 - Gypsum Board Assemblies: Tile backer board.

1.03 REFERENCE STANDARDS

A. ANSI A108/A118/A136 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2024.

B. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation; 2019.

C. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2022.

D. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products; 2018 (Reapproved 2023).

E. TCNA (HB-GP) - Handbook for Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs Installation; 2025-2026.

F. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2026.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.

D. Certificate: Certify products of this section meet or exceed specified requirements.

E. Master Grade Certificate: Submit for each type of tile, signed by the tile manufacturer and tile installer.

F. Installer's qualification statement.
   1. Submit documentation of National Tile Contractors Association (NTCA) or Tile Contractors' Association of America (TCAA) accreditation; www.tile-assn.com/#sle

G. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Extra Tile: 5 percent of each size, color, and surface finish combination.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.

B. Installer Qualifications:
   1. Company specializing in performing tile installation, with minimum of five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. See Section 01 7419 - Construction Waste Management and Disposal for packaging waste requirements.

B. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Tile:
   1. Dal-Tile Corporation: www.daltile.com/#sle.
   2. Substitutions: See Section 01 6000 - Product Requirements.
   3. Source Limitations: Furnish products produced by single manufacturer and obtained from single supplier.

B. Setting Materials:
   1. LATICRETE International, Inc: www.laticrete.com/#sle.
   2. Substitutions: See Section 01 6000 - Product Requirements.
   3. Source Limitations: Furnish products produced by single manufacturer and obtained from single supplier.

2.02 TILE

A. Glazed Wall Tile: ANSI A137.1 standard grade.
   1. Moisture Absorption: 7.0 to 20.0 percent as tested in accordance with ASTM C373.
   2. Size: 3 by 6 inch (76 by 152 mm), nominal.
   3. Edges: Cushioned.
   4. Surface Finish: High gloss.
   5. Color: As selected by Architect from manufacturer's standard range.
   6. Products:
      a. Dal-Tile Corporation: www.daltile.com/#sle.
      b. Substitutions: See Section 01 6000 - Product Requirements.

2.03 SETTING MATERIALS

A. Provide setting and grout materials from same manufacturer.

2.04 GROUTS

A. Provide setting and grout materials from same manufacturer.

B. High Performance Polymer Modified Grout: ANSI A118.7 polymer modified cement grout.
   1. Applications: Use where indicated on drawings and where no other type of grout is indicated.
   2. Use sanded grout for joints 1/8 inch (3.2 mm) wide and larger; use unsanded grout for joints less than 1/8 inch (3.2 mm) wide.

2.05 MAINTENANCE MATERIALS

A. Tile Sealant: Gunnable, silicone, siliconized acrylic, modified silane polymer, or urethane sealant; moisture- and mildew-resistant type.
   1. Applications: Between tile and plumbing fixtures.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify wall surfaces are smooth and flat within tolerances specified for that type of work, are dust-free, and are ready to receive tile.

3.02 PREPARATION

A. Vacuum clean surfaces and damp clean.

B. Seal substrate surface cracks with filler.

3.03 INSTALLATION - GENERAL

A. Install tile, thresholds, and stair treads and grout in accordance with applicable requirements of ANSI A108/A118/A136, manufacturer's instructions, and TCNA (HB) or TCNA (HB-GP) recommendations, as applicable.

B. Lay tile to pattern indicated on drawings. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square and external angles bullnosed.

F. Sound tile after setting. Replace hollow sounding units.

G. Keep control and expansion joints free of mortar, grout, and adhesive.

H. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

I. Grout tile joints unless otherwise indicated on drawings. Use standard grout unless otherwise indicated on drawings.

J. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 CLEANING

A. Clean tile and grout surfaces.

3.05 PROTECTION

A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION

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SECTION 09 5100
ACOUSTICAL CEILINGS - ARMSTRONG

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Acoustical units.

B. Suspension systems.

1.02 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate grid layout and related dimensioning.

C. Product Data: Provide data on suspension system components and acoustical units.

1.03 QUALITY ASSURANCE

A. Designer Qualifications: Perform seismic design under direct supervision of professional structural engineer experienced in design of this work and licensed in the State in which the Project is located.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Armstrong World Industries, Inc: www.armstrongceilings.com/#sle.

B. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ACOUSTICAL UNITS

A. Acoustical Units - General: ASTM E1264.

B. Acoustical Panels: With the following characteristics:
   1. Classification: ASTM E1264, Type A.
   2. Size: 24 by 24 inches (610 by 610 mm).
   3. Thickness: 3/4 inch (19 mm).
   4. Panel Edge: Square.
   5. Color: White.
   6. Suspension System, Type _____: Exposed grid.
   7. Products:
      a. Armstrong World Industries, Inc; Cirrus.

2.03 SUSPENSION SYSTEMS

A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold-down clips, stabilizer bars, clips, and splices as required.
   1. Materials:
      a. Aluminum Sheet: ASTM B209/B209M.

2.04 ACCESSORIES

A. Support Channels and Hangers: Primed steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

B. Hanger Wire: 12 gauge, 0.08 inch (2 mm) galvanized steel wire.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers does not interfere with other work.

3.02 PREPARATION

A. Install after major above-ceiling work is complete.

B. Coordinate location of hangers with other work.

3.03 INSTALLATION - SUSPENSION SYSTEMS

A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions, as supplemented in this section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

C. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes, and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

D. Where ducts or other equipment prevent regular spacing of hangers, reinforce nearest affected hangers and related carrying channels to span extra distance.

E. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

F. Support fixture loads using supplementary hangers located within 6 inches (152 mm) of each corner, or support components independently.

G. Do not eccentrically load system or induce rotation of runners.

3.04 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

E. Cutting Acoustical Units:
   1. Make field cut edges of same profile as factory edges.

3.05 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet (3 mm in 3 m).

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

3.06 REPAIR

A. Replace damaged or abraded components.

3.07 CLEANING

A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.

B. Clean surfaces.

END OF SECTION

SECTION 09 6500
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient tile flooring.

B. Resilient base.

C. Resilient stair accessories.

D. Installation accessories.

1.02 REFERENCE STANDARDS

A. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile; 2025.

B. ASTM F1861 - Standard Specification for Resilient Wall Base; 2021 (Reapproved 2025).

C. ASTM F2169 - Standard Specification for Resilient Stair Treads; 2015 (Reapproved 2025).

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C. Shop Drawings: Indicate seaming plans and floor patterns.

D. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.

E. Verification Samples: Submit two samples, ___ by ___ inch (___ by ___ mm) in size illustrating color and pattern for each resilient flooring product specified.

F. Installer's Qualification Statement.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum three years documented experience.

B. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.

B. Store all materials off of the floor in an acclimatized, weather-tight space.

C. Maintain temperature in storage area between 55 degrees F (13 degrees C) and 90 degrees F (72 degrees C).

D. Do not double stack pallets.

1.06 FIELD CONDITIONS

A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F (21 degrees C) to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F (13 degrees C).

PART 2 PRODUCTS

2.01 TILE FLOORING

A. Vinyl Composition Tile: Homogeneous, with color extending throughout thickness.
   1. Manufacturers:
      a. Armstrong Flooring; Excelon SDT: www.armstrongflooring.com/#sle.

2. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
3. Size: 12 by 12 inch (305 by 305 mm).
4. Thickness: 0.125 inch (3.2 mm).
5. Color: To be selected by Architect from manufacturer's standard range.

2.02 STAIR COVERING

A. Stair Treads: Rubber; full width and depth of stair tread in one piece; tapered thickness.
1. Minimum Requirements: Comply with ASTM F2169, Type TS, rubber, vulcanized thermoset.
2. Nosing: Square.

B. Stair Treads with Integral Risers: Rubber; full height of riser, full width and depth of tread in one piece; tapered thickness.
1. Minimum Requirements: Comply with ASTM F2169, Type TS, rubber, vulcanized thermoset.
2. Nosing: Square.

2.03 RESILIENT BASE

A. Resilient Base: ASTM F1861, Type TP, rubber, thermoplastic; style as scheduled.
1. Height: 4 inches (100 mm).
2. Thickness: 0.125 inch (3.2 mm).
3. Finish: Satin.

2.04 ACCESSORIES

A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.

B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.

C. Adhesive for Vinyl Flooring:

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
1. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

3.02 PREPARATION

A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

B. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.

C. Prohibit traffic until filler is fully cured.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install in accordance with manufacturer's written instructions.

3.04 INSTALLATION - TILE FLOORING

A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.

B. Lay flooring with joints and seams parallel to building lines to produce symmetrical pattern.

C. Install square tile to ashlar pattern. Allow minimum 1/2 full size tile width at room or area perimeter.

3.05 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches (45 mm) between joints.

B. Install base on solid backing. Bond tightly to wall and floor surfaces.

3.06 INSTALLATION - STAIR COVERINGS

A. Adhere over entire surface. Fit accurately and securely.

3.07 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean in accordance with manufacturer's written instructions.

3.08 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

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SECTION 09 6813
TILE CARPETING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Carpet tile, fully adhered.

B. Removal of existing carpet tile.

1.02 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.

C. Shop Drawings: Indicate layout of joints.

D. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.

E. Manufacturer's Qualification Statement.

F. Installer's Qualification Statement.

G. Operation and Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet tile with minimum three years documented experience.

B. Installer Qualifications: Company specializing in installing carpet tile with minimum three years documented experience and approved by carpet tile manufacturer.

1.04 FIELD CONDITIONS

A. Store materials in area of installation for minimum period of 24 hours prior to installation.

PART 2 PRODUCTS

2.01 MATERIALS

A. Tile Carpeting: _____, manufactured in one color dye lot.
   1. Tile Size: 18 by 18 inch (450 by 450 mm), nominal.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive carpet tile.

C. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.

D. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).
   1. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.

E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Remove existing carpet tile.

B. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

C. Remove subfloor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler.

D. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

E. Vacuum clean substrate.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install carpet tile in accordance with manufacturer's instructions.

C. Blend carpet from different cartons to ensure minimal variation in color match.

D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.

E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.

F. Trim carpet tile neatly at walls and around interruptions.

G. Complete installation of edge strips, concealing exposed edges.

3.04 CLEANING

A. Remove excess adhesive without damage, from floor, base, and wall surfaces.

B. Clean and vacuum carpet surfaces.

END OF SECTION

SECTION 09 9000
PAINTING AND COATING - COMMERCIAL FACILITY GUIDE SPECIFICATION - SHERWIN-WILLIAMS

PART 2 PRODUCTS

1.01 MANUFACTURERS

A. Basis of Design Products: Subject to compliance with requirements, provide Sherwin-Williams Company (The) products indicated; www.sherwin-williams.com/#sle.

1.02 PAINTINGS AND COATINGS

A. General:
   1. Provide factory-mixed coatings unless otherwise indicated.
   2. Do not reduce, thin, or dilute coatings or add materials to coatings unless specifically indicated in manufacturer's instructions.

B. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

END OF SECTION

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SECTION 10 2113.17
PHENOLIC TOILET COMPARTMENTS - ASI

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Phenolic toilet compartments.

B. Phenolic urinal screens.

1.02 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2026a.

C. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

D. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate work with placement of support framing and anchors in walls and ceilings.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on panel construction, hardware, accessories, and finishes.

C. Shop Drawings:
   1. Indicate plans, elevations, and dimensions. Include door swings, toilet fixture centerlines, and floor drains on plans.
   2. Indicate details of wall, floor, and ceiling supports and attachments.
   3. Indicate reflected ceiling plan view of ceiling grid and ceiling-mounted items at overhead support locations.
   4. Indicate cutouts for through-partition toilet accessories.

D. Samples:
   1. For Initial Selection: Submit color charts and samples for each type of toilet compartment material.
   2. For Verification: Submit two samples of partition materials, 3 by 3 inches (76 by 76 mm) in size, indicating color.

E. Manufacturer's qualification statement.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. See Section 01 7419 - Construction Waste Management and Disposal for packaging waste requirements.

B. Deliver, store, handle materials and products in accordance with manufacturer's instructions, recommendations, and industry standards.

C. Do not deliver materials or begin installation until building enclosed, with complete protection from outside weather, and maintain building temperature at minimum of 60 degrees F (15.6 degrees C).

D. Store products indoors in manufacturer's or fabricator's original containers and packaging, with labels clearly identifying product name and manufacturer. Protect from damage.

E. Lay cartons flat, with adequate support to ensure flatness and prevent damage to prefinished surfaces.

F. Do not store where ambient temperature exceeds 120 degrees F (49 degrees C).

1.07 FIELD CONDITIONS

A. Ambient Conditions: Maintain environmental conditions such as temperature, humidity, and ventilation within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.08 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Black Core or Color-Thru Phenolic Finish Warranty: Provide 25-year manufacturer warranty against delamination, breakage or corrosion of black core or color-thru phenolic material properly maintained in accordance with manufacturer's recommendations.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. ASI Global Partitions: www.asi-globalpartitions.com/#sle.

2.02 PHENOLIC TOILET COMPARTMENTS

A. Toilet Compartments: Black core phenolic.
   1. Ultimate Privacy-72; floor-anchored, overhead-braced mounting.

B. Urinal Screens: Black core phenolic, wall hung.

C. Design Criteria:
   1. Accessibility: Design compartments indicated on drawings to comply with ICC A117.1 and ADA Standards.
   2. Black Core Phenolic Surface Burning Characteristics: Provide assemblies with flame spread index of 75 or less and smoke developed index of 450 or less, Class B, when tested in accordance with ASTM E84.

D. Fabrication:
   1. Fabricate toilet compartment components to sizes indicated.
   2. Coordinate requirements and provide cutouts for through-partition toilet accessories and solid blocking within panel where required for attachment of toilet accessories.
   3. Provide shoes and caps at pilasters and posts to conceal anchorage, supports, and leveling mechanisms.
   4. Provide manufacturer's standard corrosion-resistant supports, leveling mechanisms, anchors, and anchoring assemblies for pilasters and posts.
   5. Floor-Anchored, Overhead-Braced Units: Provide supports, leveling mechanisms, Easy-Stall shoes, and anchors at pilasters to suit floor conditions.

2.03 COMPONENTS

A. Doors, Panels, and Pilasters: Phenolic-resin impregnated, wood-based product core with melamine-impregnated decorative surface papers and transparent, protective topcoat; NEMA LD 3 Compact Laminate.
   1. Finish: Matte.
   2. Black Core Phenolic Color: As selected from manufacturer's color card.

B. Standard Door and Panel Dimensions:
   1. Door Thickness: 3/4 inch (19 mm).

2.04 MATERIALS

A. Phenolic Panels: Monolithic core of phenolic resin, reinforced with cellulose fibers, manufactured under high pressure and at high temperatures, with melamine-impregnated decorative surface papers; NEMA LD 3, Compact Laminate.

2.05 HARDWARE AND ACCESSORIES

A. Brackets:

B. Attachments, Screws, and Bolts: Stainless steel, tamper-resistant type.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that field measurements are as indicated.

C. Verify correct spacing of and between plumbing fixtures.

D. Verify correct location of built-in framing, anchorage, and bracing.

3.02 INSTALLATION

A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's written instructions.

B. Attach panel brackets securely to walls using anchor devices.

C. Attach panels and pilasters to brackets. Locate head rail joints at pilaster centerlines.

D. Field touch-up of scratches or damaged finish not permitted. Replace damaged or scratched materials with new materials.

3.03 TOLERANCES

A. Maximum Variation from True Position: 1/4 inch (6 mm).

B. Maximum Variation from Plumb: 1/8 inch (3 mm).

3.04 ADJUSTING

A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch (5 mm).

B. Adjust adjacent components for consistency of line or plane.

3.05 CLEANING

A. Clean partition and screen surfaces with materials and cleansers in accordance with manufacturer's recommendations.

END OF SECTION

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SECTION 14 4200
WHEELCHAIR LIFTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Vertical platform wheelchair lifts.

B. Maintenance contract.

1.02 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

C. ASME A17.1 - Safety Code for Elevators and Escalators Includes Requirements for Elevators, Escalators, Dumbwaiters, Moving Walks, Material Lifts, and Dumbwaiters with Automatic Transfer Devices; 2025.

D. ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts; 2023.

E. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

F. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2023.

G. ASTM A572/A572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel; 2025.

H. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.

I. ASTM A786/A786M - Standard Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates; 2015 (Reapproved 2025).

J. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength; 2020.

K. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2025, with Amendment (2026).

L. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel; 2025, with Errata (2026).

M. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

N. ITS (DIR) - Directory of Listed Products; Current Edition.

O. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

P. UL (DIR) - Online Certifications Directory; Current Edition.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate installation of wheelchair lift system with adjacent construction using necessary attachments; provide anchoring devices in accordance with manufacturer's installation instructions; coordinate installation of cast-in-place concrete components.

1. Electrical System: Coordinate utility and electrical system connections to ensure they are made in an orderly and expeditious manner.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Include data on material descriptions, construction details, component dimensions and profiles, and finishes; include data on rated capacities, electrical and operating characteristics, and necessary accessories.

C. Shop Drawings: Include plans, elevations, sections, and attachment details; include equipment assembly details with dimensions, weights, loads, required clearances, components, size and

location of anchors and required field connections, and methods for field assembly; provide diagrams indicating signal, power, and control wiring.

D. Designer's qualification statement.

E. Manufacturer's qualification statement.

F. Installer's qualification statement.

G. Maintenance contracts.

H. Executed warranty.

I. Project Record Documents: Accurately record actual locations of concealed items, conduits, and components.

J. Maintenance Materials: Provide the following for Owner's use in maintenance of wheelchair lifts and equipment.
   1. See Section 01 6000 - Product Requirements for additional provisions.
   2. Provide technical information for servicing operating equipment.
   3. Spare Parts: Provide parts catalog with complete list of equipment replacement parts; identify each entry with equipment description and identifying code.
   4. Provide legible schematic wiring diagrams of installed electrical equipment and changes made to this part of work; list symbols corresponding to identity or markings on wheelchair lifts structural and electrical components.

1.05 QUALITY ASSURANCE

A. Designer Qualifications: Provide wheelchair lift design under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in the State of New York.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than ten years of documented experience.

C. Installer Qualifications: Company specializing in performing work of type specified and with at least five years of documented experience.

D. Documents at Project Site: Maintain at project site one copy of manufacturer's installation instructions, erection drawings, shop drawings, and reference standard documents.

1.06 FIELD CONDITIONS

A. Use of wheelchair lifts during construction for hoisting materials or personnel is not permitted.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with ASME A18.1, ASME A17.1, applicable local codes, and authorities having jurisdiction (AHJ).

B. Accessibility Requirements: Comply with ADA Standards and ICC A117.1.

C. Structural Performance: Comply with ASCE 7 for loading of wheelchair lift components and assemblies.

D. Perform welding of steel in accordance with AWS D1.1/D1.1M.

E. Perform electrical work in accordance with NFPA 70.

2.02 VERTICAL PLATFORM WHEELCHAIR LIFTS

A. Manufacturers:
   1. AmeriGlide; Hercules 750 Vertical Platform Lift : www.ameriglide.com.
   2. Substitutions: See Section 01 6000 - Product Requirements.

B. Vertical Platform Wheelchair Lifts: Provide manufacturer's standard type that complies with indicated requirements. Use manufacturer's standard components for vertical platform wheelchair lifts as required for complete system unless otherwise indicated.
   1. Type of Vertical Platform Wheelchair Lift:
      a. Vertical platform wheelchair lift installed within field-fabricated shaftway provided by others; platform includes sidewalls in addition to optional shaftway access doors and frames as indicated on drawings.
   2. Configuration:
      a. Straight through entry/exit, with front and rear openings.
      b. Number of Stops: Two.
      c. Landing Openings, Self-Closing:
         1) Lower landing with shaftway-mounted door.
         2) Upper landing with gate and platform mounted gate.
   3. Location:
      a. Interior of building, as indicated on drawings.
   4. Lift Load Capacity: 750 lb (340 kg), maximum.
   5. Lifting Height from Bottom to Upper Floor Level: As indicated on drawings.
   6. Platform Width Clearance: As indicated on drawings.
   7. Platform Length Clearance: As indicated on drawings.
   8. Platform Gate: Self-closing and flush-mounted, nominal height of 42 inches with width corresponding to width of platform.
   9. Platform Side Wall Panels: Nominal height of 42 inches, with galvanized steel sheet panels, and enclosed within rectangular extruded aluminum framework.
   10. Platform Floor: Steel sheet with checkered texture, having overall thickness not greater than 1-1/2 inches (38 mm).
   11. Access Ramp at Bottom Landing (Hangar Side): retractable automatic ramp to transition from floor level to lift platform, with ramp finish to match lift platform.
      a. Size: Provide end ramps at least 36 inches wide and side ramps at least 42 inches wide; length as required for slope with 1:12 maximum slope.
   12. Access Ramp at Bottom Landing (Office Side): Fixed ramp to transition from floor level to lift platform, with ramp finish to match lift platform.
      a. Size: Provide end ramps at least 36 inches wide and side ramps at least 42 inches wide; length as required for slope with 1:12 maximum slope.
   13. Drive System:
      a. Self-lubricating acme screw drive.
         1) Rated Speed: 10 fpm (3 m/min), nominal.
   14. Drive System Enclosure: Provide rectangular galvanized steel tube frame with flush steel sheet panels on sides and top to enclose drive system components; securely attach enclosure to adjacent substrate.

C. Wall Enclosure Components: Prehung, non-fire-rated doors and gates suspended in structural framework with infill panels as indicated.
   1. Gates: Self-closing type, with flush mount.
   2. Upper Gate: Extruded aluminum frame with 16 gauge, 0.0598 inch (1.52 mm) galvanized steel sheet lower panel kick plate, and galvanized steel sheet upper panel.
   3. Gate Height: 42 inches (1067 mm), at upper landing.
   4. Gate Width: 36 inches (915 mm), at upper landing.

2.03 ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. Electrical Characteristics:
   1. 1.5 hp (___ kW).

B. Attendant: Provide call device at each landing to contact attendant, if necessary.

C. Electrical Components, Boxes, Conduit, Wiring, and Devices: Comply with NFPA 70 and UL (DIR) or ITS (DIR) listed and labeled, and marked as applicable for proposed locations.

2.04 MATERIALS

A. Rolled Steel Sections, Shapes, and Rods: Comply with ASTM A36/A36M.

B. Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, Designation SS (structural steel), Grade 33 (230), with G90/Z275 coating.

C. Rolled Steel Floor Plates: Comply with ASTM A786/A786M, 1/8 inch (3.2 mm) thick, with manufacturer's standard surface pattern; rolled from steel plate complying with ASTM A572/A572M, Grade 55 (380).

D. Steel Tubing: Comply with ASTM A500/A500M, cold formed.

E. Anchor Bolts and Rods: Comply with ASTM F1554, Grade 55.

F. Welding: Comply with applicable requirements of AWS D1.1/D1.1M and AWS D1.3/D1.3M.

2.05 EQUIPMENT

A. Lubrication of Equipment: Provide grease fittings for lubricating bearings requiring periodic lubrication, automatic feed type grease cups, and visible and easily accessible lubrication points.

B. Guide Rails, Ropes, Counterweights, Sheaves, Attachment Brackets, and Anchors: Sized in accordance with local building code, including safety factors.

C. Maintenance Devices: Provide as necessary within wheelchair lift system, supported on structural members within accessible locations.

D. Emergency Alarm: Provide audible and visual alarm system that indicates emergency stop button on platform has been activated.

2.06 FINISHES

A. Baked-On Factory Finish for Structural Metal Surfaces: Clean surfaces of rust, oil, or grease and wipe clean with solvent; apply manufacturer's standard two-coat, baked-on finish consisting of primer and thermosetting top coat.

1. Color: Manufacturer's standard color.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that areas and conditions comply with installation tolerances and other conditions affecting this work.

B. Verify that locations for electrical rough-in connections to system equipment are in acceptable locations before installing equipment.

C. Verify that electrical power is available and of correct characteristics.

D. Do not proceed with installation until unacceptable conditions have been corrected.

3.02 PREPARATION

A. Prepare surfaces of substrates using methods in accordance with lift manufacturer's installation instructions.

B. Clean surfaces thoroughly before starting installation of lifts.

3.03 INSTALLATION

A. Install wheelchair lift system and components in accordance with manufacturer's written installation instructions.

B. Install wheelchair lift system securely to supporting structure, and flush with adjacent surfaces.

C. Install structural components using methods that comply with requirements indicated relative to layout and structural position.

3.04 ADJUSTING

A. Adjust wheelchair lift equipment to operate smoothly and safely.

B. Verify vertical travel of wheelchair lift system; adjust as necessary to maintain operating range indicated.

C. After installation, inspect exposed factory-finished wheelchair lift equipment and repair damaged finishes.

3.05 CLEANING

A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.

B. Remove protective coverings from finished surfaces.

C. Clean surfaces and components.

3.06 CLOSEOUT ACTIVITIES

A. See Section 01 7800 - Closeout Submittals for closeout submittals.

B. See Section 01 7900 - Demonstration and Training for additional requirements.

C. Demonstrate proper operation of wheelchair lifts to Owner's designated representative.

D. Demonstration: Demonstrate operation of wheelchair lift system to Owner's personnel.
   1. Use operation and maintenance data as a reference during the demonstration.
   2. Conduct a walking tour of project.
   3. Briefly describe function, operation, and maintenance of each component.

3.07 MAINTENANCE

A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.

B. Provide a separate maintenance contract for specified maintenance service.

C. Provide a separate maintenance contract for service and maintenance of wheelchair lifts system and components for one year after Date of Substantial Completion.

D. Perform maintenance work using competent personnel under supervision and in direct employment of wheelchair lift installer.

E. Examine monthly; clean, adjust, and lubricate equipment.

F. Repair, or replace parts when required with parts produced by original equipment manufacturer.

END OF SECTION

SECTION 220000
GENERAL REQUIREMENTS FOR DIVISION 22

PART 1 GENERAL

1.01 BID AND CONTRACT DOCUMENTS

A. All Work in this Division is subject to the provisions of the General Conditions, Supplementary General Conditions and Requirements of Division 1 General Requirements.

B. By submitting the bid, the Contractor acknowledges that he has not received any verbal directives from the Owner, Architects and Engineers (and their employees and sub-consultants) at any time before, during or after the bid. He further acknowledges that he has verified with all his sub-contractors, suppliers, vendors, and their representatives that they have not received any verbal directives from the Owner, Architects and Engineers (and their employees and sub-consultants) at any time before, during or after the bid. The Contractor further acknowledges that all changes to the Bid Documents have been only in the form of formal addendum.

C. By starting Work on this project, the Contractor acknowledges that all directives, field orders and change order will be only from the Owner or his Designated Representative and only in writing. All other directives verbal or otherwise will be at the Contractor's own risk.

1.02 SCOPE OF WORK

A. The scope of this Work includes plumbing systems for the project as indicated on the Contract Documents, including, but not limited to the following:

1. Removal of existing plumbing equipment as indicated on Drawings.
2. Sanitary, waste and vent piping, and domestic water piping and connections to existing systems where indicated on Drawings.
3. Plumbing fixtures and accessories and water coolers where indicated on Drawings.
4. Gas piping, and equipment connections.
5. Insulation of all renovated Work as specified.
6. Identification of systems.
7. All necessary cutting, patching and firestopping.
8. Cleaning and testing as specified.

1.03 PERMITS AND INSPECTIONS

A. Permits: Division 22 shall acquire all required permits required for execution of the Work of this Division and shall pay all fees and charges for same.

1.04 CODES AND STANDARDS

A. Building Code of New York State: Provide all Work in compliance with and meet the requirements of the latest issue.

B. Standards: All equipment shall meet all the requirements of ANSI, NEMA, AWWA, ASME, and ASPE Standards.

C. Listing: All equipment and devices for which Underwriters Laboratories has a listing service, shall be UL listed and bear the UL listing label.

E. All materials and installation shall comply with:
   1. Building Code of New York State.
   2. Existing Building Code of New York State.
   3. Energy Conservation Construction Code of New York State.
   4. Fire Code of New York State.
   5. Mechanical Code of New York State.
   6. Fuel Gas Code of New York State.
   7. National Fire Protection Association (NFPA).
   8. New York State Department of Labor Rules and Regulations.
   9. Americans with Disabilities Act.
   10. Local Utilities.
   11. Authorities Having Jurisdiction.
   12. Federal and State Occupational Safety and Health Administration.
   13. Local Municipality Codes and Ordinances.

F. In case of conflict between the Contract Documents and the requirements of any Code or Authorities Having Jurisdiction, the most stringent requirements of the aforementioned shall govern.

G. Should this Division perform any Work that does not comply with the requirements of the applicable Building Codes, State Laws, Local Ordinances, Industry Standards and/or Power Company regulations, he shall bear all costs arising in correcting the deficiencies, as approved by the Architect/Owner.

1.05 LOCAL AUTHORITY HAVING JURISDICTION (AHJ)

A. This Document does not supercede any Code, local or otherwise. All Contractors must be aware of any local requirements and Codes that may affect this project. The AHJ will make all final decisions concerning all code interpretations. Any discrepancies must be reported to the Architect or Engineer within 24 hours. Any code violations are the responsibility of the Contractor and the Contractor shall promptly make all required corrections.

1.06 DEFINITIONS

A. "Engineer" shall mean RAM-TECH Engineers, P.C.

B. "Accepted" means written permission to use a material or system.

C. "Provide" shall mean to deliver to installation site, install, and connect complete and make operational.

D. "Furnish" means to supply and deliver to site, unload, and set in location determined by Architect.

E. "Install" means to mount and connect complete and make operational the equipment or device.

1.07 SUBMITTALS

A. Submit Shop Drawings on all items of equipment and materials to be furnished and installed as required, arranged by specification section number. Include review stamp and table of contents/bill of materials. Do not combine materials from different specification Sections.

B. If submitting electronically, in addition to the requirements above, provide one (1) single-sided color hard copy of every submittal required directly to the Engineer. This includes submittal drawings that are larger than 11" x 17". Reduced scale photocopies will not be acceptable. Failure to abide by these requirements will result in an immediate ACTION C – REVISE AND RESUBMIT without review. All individual items and options within the submittal shall be clearly highlighted or otherwise identified.

C. Operation and maintenance manuals and record drawings shall not be submitted electronically. Provide hard copies only; one (1) copy shall be sufficient.

D. Listed manufacturers and their series and/or model numbers do not imply unconditional specification approval. The series and/or model numbers listed may not be current or correct, but are included as an acceptable series of products that must still comply with the written description and specification. Provision of products, based solely on model numbers listed in the specifications does not constitute automatic acceptance. Approved submittals of all product data are still required.

1.08 QUALITY ASSURANCE

A. Install all Work true to line and grade, parallel and close to walls and parallel to lines of building and maintaining maximum headroom. Do not install piping, equipment, etc. across doors, windows or other openings.

B. All equipment shall be accessible for operation, service, etc.

C. All equipment and material shall be new, unused and without any defects.

1.09 PROTECTION OF PERSONS AND PROPERTY

A. Make provisions to prevent moisture and foreign matter from entering piping, equipment, etc.

B. Contractor shall be responsible for all damages until Work is fully accepted. Replace all damaged equipment and material.

C. Assume responsibility for construction safety at all times. Include, as part of contract, all trench or building shoring, scaffolding, shielding, dust protection, mechanical/electrical protection, safety railings, barriers and other safety features required to provide safe conditions for all workmen and site visitors.

1.10 EXAMINATION OF SITE

A. Examine all Drawings including other Divisions.

B. Examine all existing conditions and ascertain access to site, available storage and delivery facilities.

C. Verify all governing dimensions at site and building.

1.11 OBSTACLES, INTERFERENCE AND COOPERATION

A. Drawings show general design and arrangement. Verify exact location and elevations at the job location. Do not scale plans and diagrams.

B. Drawings do not show all offsets, fittings, interferences and elevation changes. Adjust installation of pipe, equipment locations, etc. to accommodate Work with the obstacles and interferences. Where rearrangement is necessary, report same to Architect for review. Obtain written acceptance for all changes.

C. Cooperate with all Contractors and Owner and determine the exact route of all piping and location of all equipment.

1.12 CONCEALMENT

A. Unless otherwise specifically indicated, all Work shall be concealed above or in ceiling space, in wall space and elsewhere throughout the building.

B. In areas with no ceilings, install only after Architect reviews and comments on proposed arrangement and appearance.

1.13 COORDINATION

A. Review all construction Drawings and coordinate all Shop Drawings with Work specified under all divisions of the specifications. Division 22 is responsible to coordinate and cooperate with other Divisions' Work so that Work can be installed and maintained substantially as called for.

A. Under no circumstances shall this Division route any piping or other equipment foreign to the electrical installation in the dedicated equipment space located directly above both new and existing electrical panelboards and electrical equipment, which is a violation of the National Electrical Code (NEC) Article 110.26(E)(1). Failure to adhere to this requirement will necessitate removal and relocation or rerouting of said piping by this Division at no additional cost to the Owner or other trades.

1.14 OPENINGS, SLEEVES AND CHASES

A. Certain chases, openings and shafts will be provided as shown as part of General Construction Plans and Specifications.

B. Provide all other openings and sleeves for pipe, etc. through floors, walls, partitions, ceilings, roofs, etc. for Division 22 Work.

C. Assume responsibility for correct and final location and size of such openings: furnish templates if required. Correct improperly located and sized or omitted chases and openings as required. Plug all abandoned sleeves left as part of this Division.

1.15 FLASHING, SEALING AND FIRESTOPPING

A. Seal where pipes pass through or are affixed to general construction.

B. Provide flashing, sealing and waterproofing for wall, floor and roof openings without affecting roof guarantee or bond.

C. Piping entering through waterproof walls, floors and partitions: Provide Thunderline Corporation "Link-Seal" or accepted substitute for sealing the annular space between the pipe and sleeves.

D. Provide firestopping for openings through fire and smoke barriers, maintaining minimum required rating of floor, ceiling or wall assembly.

1.16 CUTTING AND PATCHING

A. Contractor shall do all cutting and patching of existing surface required for installation of Work installed under this Contract.

B. Repaired surfaces shall match existing surface.

C. Method of cutting shall be approved by the Architect.

1.17 PAINTING

A. Prepare surfaces of Work installed under this Division by cleaning, removing rust, etc.

B. Paint all exposed Work in existing areas to match existing conditions.

1.18 ACCESS PANELS

A. Provide for all valves and equipment located in concealed spaces.

B. Access panels shall be UL rated for walls and/or ceilings they are installed in.

C. Provided complete by General Construction Division at locations required for repair or maintenance and as required by Code. Quantity, location and size shall be the responsibility of this Division.

1.19 STORAGE AND PROTECTION OF MATERIALS

A. Store materials on base, minimum 6" above ground or floor. Equip with waterproof or windproof cover for items subject to moisture damage.

B. Store in orderly manner so as not to interfere with other Work or obstruct access to buildings or facilities.

C. Replace items stolen or damaged at no cost to the Owner.

1.20 EQUIPMENT CONNECTIONS

A. Provide complete piping connections to all equipment as called for on Drawings and as specified.

B. Obtain approved roughing diagrams and exact location of equipment for items furnished under other Divisions of the specifications. Do not rough in without approved Drawing.

1.21 CONTINUITY OF SERVICE

A. Building will be used by Owner during the construction period.

B. Keep all systems operative; make temporary connections as required.

C. Do not shut off any service without written permission from the Owner or Owner’s Representative. Schedule systems shutdown with Owner, providing a minimum of 72 hour notice.

1.22 TESTS

A. Perform operations required for the complete testing of all systems, equipment and related Work as called for.

B. Perform all tests required by local municipalities, utilities, or other governing bodies, boards or agencies having jurisdiction. Provide date and time of testing.

1.23 OWNER INSTRUCTIONS

A. Instruct designated Owner's personnel on the proper operation and care of systems and equipment, before final acceptance of the Work. Obtain written acknowledgement from person instructed prior to final payment. Submit to Architect with final acceptance request.

1.24 CONTRACTOR'S CERTIFICATION

A. All submittals shall bear the Contractor's stamp, certifying the review and approval of submittal, verification of field measurements and compliance with Contract Documents. It shall specifically be as follows:

Contractor acknowledges that all items submitted herein are provided for the base Contract Cost; and that he has reviewed the submittal information contained herein; and that he has determined and verified the materials, field measurements and field construction criteria related thereto, and that he has checked and coordinated the information contained in the submittal with the requirements of all Work in the Contract Documents and other Contracts in the Project.

_____ _____
Contractor's Signature Date

B. All submittals without the above certification will be returned, rejected.

END OF SECTION

SECTION 220523
VALVES

PART 1 GENERAL

1.01 SUMMARY
A. Valves for the various plumbing systems required to complete Work.

1.02 SUBMITTALS
A. Product Data: Provide product data on valves and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

B. Submit schedule indicating size and type of valve to be utilized for each system.

1.03 QUALITY ASSURANCE
A. All valves shall comply with Building Code of New York State.

B. Manufacturer's name and pressure rating marked on valve body.

C. Welding materials and procedures shall comply to ASME Code and applicable State Regulations. A burn permit shall be obtained by the Contractor from the Onondaga County Fire Coordinator’s office prior to welding or cutting operations.

D. Due to dezincification concerns the bronze material used in valve construction shall conform to ASTM B61 or B62.

E. All valves intended to supply drinking water shall meet the requirements of NSF/ANSI 61.

F. Fuel-gas shutoff valves shall conform with ASME B16.44.

1.04 QUALIFICATIONS
A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum three years documented experience.

B. Installer: Company specializing in performing the Work of this Section.

1.05 DELIVERY, STORAGE AND HANDLING
A. Deliver, store, protect and handle products at site.

B. Provide temporary protective coating where required.

PART 2 PRODUCTS

2.01 MANUFACTURERS
A. Valves from one or more manufacturers may be used but all valves supplied for each specific service shall be the product of one manufacturer.

B. Ball, Drain Valves: Crane, Apollo, Jenkins, Nibco or accepted equal.

C. Plug Valves: Crane, Jenkins, Mueller, Rockwell or accepted equal.

D. Balance Valve: Bell and Gossett, Taco, Armstrong or accepted equal.

2.02 VALVES

A. Ball Valves:
   1. Sizes 2" and Under: 175 PSIG, WOG, 2-piece bronze body, full port, stainless steel ball, Teflon seats, and stuffing-box ring, lever handle, solder or threaded ends.
   2. Sizes 2½" and Over: 175 PSIG, WOG, cast steel body, full port, chrome plated steel ball, Teflon seats and stuffing box ring, lever handle with balancing stop, flanged ends.

B. Plug Valves:
   1. Sizes 2" and Under: 125 PSIG bronze body, bronze spring washer, brass plug, square head, lubricated, threaded ends.
   2. Sizes 2½" and Over: 125 PSIG iron body, bronze spring washer, brass plug, square head, lubricated, flanged ends.
   3. Provide valve wrench for each type and size.
   4. Compliance: ASME B16.44.

C. Drain Valves:
   1. Bronze two piece body, 175 PSI WOG, chrome plated brass ball, Teflon seats and stuffing box ring, lever handle, ¾" brass hose connection with cap and chain.

D. Balancing Valves:
   1. Up to and including 3 inches: Bronze body, 175 PSI WOG, brass ball with glass and carbon filled TFE set rings, pressure read-out ports with internal EPT inserts and check valves, ¼ inch tapped drain, memory stop, calibrated nameplate, NPT connections, designated for positive shut-off.

PART 3 EXECUTION

3.01 PREPARATION

A. Prepare piping systems installation in accordance with manufacturer's recommendation for particularly type of system installed.

B. Remove dirt, scale, or any foreign matter from inside and outside of pipe prior to assembly.

3.02 INSTALLATION

A. Install in accordance with manufacturers instructions.

B. Install valves with stems upright.

C. Install valves at locations noted on drawings or specified.

3.03 APPLICATION

A. Install unions downstream of valves and at equipment or apparatus connections.

B. Install gate or ball valve for shut off on vertical risers and to isolate equipment, fixtures.

C. Install globe or ball valve for throttling, by-pass, or manual flow control services.

D. Install flow balancing valve in water recirculating systems where indicated.

E. Install drain valve at all low points of water systems and where indicated.

F. Provide valve stem extensions on all valves installed in insulated piping.

END OF SECTION

SECTION 220529
SUPPORTS AND ANCHORS

PART 1 GENERAL

1.01 SUMMARY

A. Pipe and equipment hangers, supports, inserts and associated anchors.

B. Sleeves and seals.

1.02 REFERENCES

A. International Building Code.

B. International Plumbing Code.

C. UL Listed and FM approved.

D. Federal Specification WWH-171.

E. MSS SP-69.

F. ASTM 123.

1.03 SUBMITTALS

A. Product Data: Catalog sheets, specifications and installation instructions for each item specified except fasteners.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Hangers and Supports: PHD, Anvil, Michigan, Carpenter & Patterson or accepted equal.

B. Epoxy Coatings: PPG, Sherwin Williams, Benjamin Moore or accepted equal.

2.02 PIPE HANGERS AND SUPPORTS

A. Hangers for Pipe Sizes ½ to 1½ Inches:
   1. Cadmium plated or galvanized steel, adjustable swivel, split ring type.
   2. Cadmium plated or galvanized steel, adjustable swivel ring type with secured insulation shield.
   3. Provide high bond chemical resistant, epoxy coated hangers in all corrosive areas, minimum 8.0 mil thickness.

B. Hangers for Pipe Sizes 2 to 8 Inches:
   1. Cadmium plated or galvanized steel, adjustable standard clevis type.
   2. Cadmium plated or galvanized steel, adjustable standard clevis type with secured insulation shield.
   3. Provide high bond chemical resistant, epoxy coated hangers in all corrosive areas, minimum 8.0 mil thickness.

C. Multiple or Trapeze Hangers:
   1. 12 gage galvanized steel channel, 1-5/8” x 1” with 9/16” diameter holes on 1-7/8” centers.
   2. Galvanized steel pipe/tube clamp with securing bolt and nut, sized for piping being supported.

3. Galvanized steel pipe/tube clamp with EPDM cushion, securing bolt and nut, sized for piping being supported.
4. Galvanized steel strut nut with spring, thread sized to match supporting rod.

D. Wall and Vertical Supports for Pipe:
1. Cadmium plated or galvanized iron extension split clamp.
2. Cadmium plated or galvanized steel-offset pipe clamp.
3. Cadmium plated or galvanized steel standard pipe clamp.
4. Cadmium plated or galvanized steel riser pipe clamp.
5. Cadmium plated or galvanized steel wall bracket with wall bracket clip.
6. Provide high bond chemical resistant, epoxy coated hangers in all corrosive areas, minimum 8.0 mil thickness.

E. Floor Support for Pipe: Cadmium plated or galvanized steel, adjustable pipe saddle with U-bolt, locknut nipple, threaded base stand.

F. Shield for Insulated Piping 2 Inches and Smaller: 18 gage galvanized steel shield over insulation in 180-degree segments, minimum 12 inches long at pipe support.

G. Shield for Insulated Piping 2½ Inches and Larger (Except Cold Water Piping): Pipe covering protective saddles.

H. Shields for Insulated Cold Water Piping 2½ Inches and Larger: Hard block non-conducting saddles in 90-degree segments, 12 inch minimum length, block thickness same as insulation thickness.

I. Refer to Section 22 07 00 for insulation schedule.

2.03 HANGER RODS

A. Steel Hanger Rods: Cadmium plated threaded both ends, threaded one end, or continuous threaded.

2.04 INSERTS

A. Malleable iron case of galvanized steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.
1. For use in solid concrete or solid block of thickness required for application.
2. Make: Rawl steel drop-in anchor or accepted equal.

B. Carbon steel or stainless-steel expansion anchor pre-assembled sleeve style anchor sized for application. The anchors shall have a nylon compression ring and triple tinned expansion sleeve. Carbon steel components shall be plated.
1. For use in concrete block, pre-cast concrete plank, solid concrete or solid concrete block of thickness required for application.
2. Make: Rawl "Lok/Bolt" type anchor or accepted equal.

2.05 SLEEVES

A. Sleeves for Pipes Through Non-fire Rated Floors: Form with 18 gage galvanized steel.

B. Sleeves for Pipes Through Non-fire Rated Beams, Walls, Footings, and Potentially Wet Floors: Schedule 40 steel pipe.

C. Sleeves for Pipes Through Fire Rated and Fire Resistive Floors and Walls, and Fireproofing: Prefabricated fire rated sleeves including seals, UL Listed.

2.06 MECHANICAL MODULAR SEAL

A. Manufacturers: Thunderline Corporation, Cooper Industries, RSI or accepted equal.

B. Interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and wall opening.
   1. Assembled with stainless steel bolts and nuts with pressure plates under each bolt and nut.
   2. ASTM D2000 M3 BA510 EPDMF for standard and corrosive service.
   3. ASTM D2000 M1 BF510 nitrile for oil resistance service.
   4. ASTM D2000 M1 GE505 silicone for high or low temperature service.
   5. Provide size and type of seal to suit application as recommended by the manufacturer's written instructions.

2.07 BEAM CLAMPS

A. Cadmium plated or galvanized steel C-clamp with hardened steel cup point set screw with locknut. Size for load, beam flange width and rod size required.

B. Cadmium plated or galvanized iron beam clamp with hardened steel clip point set screw with locknut, sized for load, beam flange width and rod size required.

2.08 FABRICATION

A. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.

B. Design hangers large enough to accept insulation shield and be removed without disengagement of supported pipe.

2.09 FINISH

A. Corrosive Areas: Provide white epoxy coating insulated piping and white materials. Provide gray epoxy coating for other systems.

B. Provide copper plated hangers and supports where used to support copper piping.

C. Provide chrome plated hangers and supports where used to support chrome piping.

2.10 FASTENERS

A. Bolts, Nuts, Washers, Lags and Screws: Cadmium plated or galvanized, size and type to suit application.

PART 3 EXECUTION

3.01 INSERTS

A. Provide inserts for placement in concrete formwork.

B. Provide inserts for suspending hangers from reinforced concrete construction.

C. Where inserts are omitted, drill through concrete slab from below and provide thru-bolt with recessed square steel plate or fender washer (size to suit application) and nut flush with top and recessed into and grouted flush with slab.

D. Provide beam clamps for suspending hangers from structural steel framing and supports.

3.02 PIPE HANGERS AND SUPPORTS

A. Support horizontal piping as follows:

PIPE SIZE	MAX. HANGER SPACING	HANGER ROD DIAMETER
½" to 1¼" copper	5'- 0"	3/8"
1½" to 2" copper	8'- 0"	3/8"
2½" to 3" copper	10'- 0"	½"
4" to 5" copper	10'- 0"	5/8"
PVC pipe (all sizes)	4'-0"	Provide for pipe size as indicated above
CPVC pipe (1" and under)	3'- 0"	3/8"
CPVC pipe (1¼" and larger)	4'- 0"	Provide for pipe size as indicated above
Cast Iron (Bell and Spigot (or No-Hub)	5'- 0" and at all offsets	Provide for pipe size as indicated above
Polyethylene pipe (all sizes)	2'- 8"	Provide for pipe size as indicated above
Polypropylene		
3"	5'- 0"	½"
4"	6'- 0"	5/8"

B. Install hangers to provide minimum ½ inch space between finished covering and adjacent work.

C. Place a hanger within 12 inches of each offset, branch line and at all floor drain P-traps and at the base of risers.

D. Use hangers with 1½ inch minimum vertical adjustment.

E. Support horizontal cast iron pipe adjacent to each hub, with 5 feet maximum spacing between hangers and at all offsets and at the base of all risers.

F. Support vertical piping at every floor. Support vertical cast iron pipe at each floor and at intervals of eight feet where elevation is greater between floors.

G. Where several pipes other than drainage piping can be installed in parallel and at same elevation, provide multiple or trapeze hangers. Spacing of hangers shall be based upon smallest pipe being supported. Provide pipe/tube clamps with cushion when supporting copper pipe or tubing.

H. Support riser piping independently of connected horizontal piping. Do not hang or support one pipe from another pipe or adjacent ductwork or equipment. Do not bend threaded rod.

I. Provide anchors in existing slab to support all new piping. Type and size as per manufacturer's recommendations for intended purpose.

J. Provide oversized hangers to accept insulation shields, wood block or dowel filter and saddles. Refer to specification Section 22 07 00 for piping insulation schedule.

K. Provide insulation shield at each hanger supporting insulated piping.

L. Install beam clamps only at panel points of open web steel joist construction.

M. Provide intermediate structural steel members where required by pipe support spacing when attaching to steel frame construction.

3.03 ANCHORS, RESTRAINTS, RIGID SUPOPRTS, STAYS AND SWAY BRACES

A. Install pipe anchors, restraints and sway braces as located noted on the Drawings. Design anchors so as to permit piping to expand and contract freely in opposite directions, sway from anchor pints. Install anchors independent of all hangers and supports, and in a manner that will not affect the structural integrity of the building.

B. In grooved end piping systems, install restraints, anchors and rigid supports as recommended by the manufacturer of the grooved end fittings to ensure proper support and alignment of the piping under operating and testing pressures (maximum hanger or support spacing shall be as previously specified).
   1. Horizontal piping shall maintain a constant pitch without sags, humps or lateral deflections.
   2. Branch piping shall remain perpendicular to main piping and/or risers.
   3. Vertical piping shall remain plumb without deflections.
   4. Vertical piping shall be rigidly supported, or anchored at both top and bottom, and wherever necessary to prevent movement and/or shearing forces at branch connections.

C. Cast Iron Soil Piping Systems:
   1. Where piping is suspended on centers in excess of 18 inches by means of non-rigid hangers, provide sway braces, of design, number and location in accordance with the Cast Iron Soil Pipe Institute's Cast Iron Soil Pipe and Fittings Handbook to prevent horizontal pipe movement.
   2. Additionally, brace piping 5 inches and larger to prevent horizontal movement and/or joint separation. Provide braces, blocks, rodding or other suitable method at each branch opening, or change of direction in accordance with the Cast Iron Soil Pipe Institute's Cast Iron Soil Pipe and Fittings Handbook to prevent horizontal pipe movement.

3.04 SLEEVES

A. Set sleeves in position in formwork. Provide reinforcing around sleeves.

B. Extend sleeves through floors one inch above finished floor level. Caulk sleeves full depth and provide floor plate.

C. Where piping penetrates floor, ceiling, or wall, close off space between pipe and adjacent work with firestopping insulation and caulk seal air and water tight in accordance with Section 07 84 00. Provide close fitting metal collar or escutcheon covers at both sides of penetration.

D. Provide chrome plated brass setscrew held escutcheons at finished wall and floor surfaces.

END OF SECTION

SECTION 220553
PLUMBING IDENTIFICATION

PART 1 GENERAL

1.01 SUMMARY
A. Identification of Plumbing products, valves, equipment and piping systems installed under Division 22.

1.02 REFERENCES
A. ANSI/ASME A13.1 – Scheme for the Identification of Piping Systems.

1.03 SUBMITTALS
A. Submit product data for plumbing identification.

B. Submit valve chart and schedule, including valve tag number, location, and function.

PART 2 PRODUCTS

2.01 MANUFACTURERS:
A. Seton, Brimer Industries, Brady Corporation, Kolbi Pipe Marker Co., or accepted equal.

2.02 MATERIALS
A. Color: Unless specified otherwise, conform with ANSI/ASME A13.1.

B. Plastic Nameplates: Laminated three-layer plastic with engraved black letters on light contrasting background color. Minimum size 6” x 4”. Equal to Seton M0927 Series.

C. Brass Valve Tags: Brass with engraved black letters prefixed with a “Plbg”. Tag size minimum 1 1/2” diameter with stainless steel beaded chain to secure to valve.

D. Plastic Pipe Markers: Factory fabricated, flexible, semi- rigid plastic, preformed to fit around pipe or pipe covering. Color to match system being identified and printed markings indicating flow direction arrow and fluid or gas being conveyed.

E. Locator Dot: Self-adhesive vinyl label, ¾” diameter, color to match system being identified.

PART 3 EXECUTION

3.01 PREPARATION
A. Degrease and clean surfaces to receive adhesive for identification materials and for stencil painting.

B. Prepare surfaces as recommended by manufacturer for stencil painting.

3.02 INSTALLATION
A. Plastic Nameplates: Install with corrosive-resistant mechanical fasteners, or adhesive.

B. Brass Valve Tags: Install with stainless steel beaded chain.

C. Plastic Pipe Markers: Install in accordance with manufacturer's instructions.

D. Valves: Identify valves’ function in main and branch piping with tags. Provide a self-adhesive vinyl label at all locations where valves are located above a suspended ceiling. Provide color to match system being identified. Install on ceiling grid under valve.

E. Piping: Identify piping, exposed, concealed and at each access panel in concealed areas, with either plastic tape pipe markers, plastic pipe markers or stenciled painting. Identify service and flow direction. Identify temperature of the hot water system(s). Install in clear view and save where pipelines are located above or below the normal line of vision, the lettering shall be placed below or above the horizontal centerline of the pipe. Locate identification not to exceed 20 feet on straight runs at branches, risers and drops, adjacent to each valve and in each room or space less than 20 feet.

F. Equipment: Stencil equipment name on each major piece of equipment or provide plastic nameplate with equipment name on each major piece of equipment.

G. Remote Alarms: Provide plastic nameplate to identify function, type and location of equipment alarm is serving. Mount on wall adjacent to alarm.

H. Ensure that all service and hose bibb valves including all shutoffs are tagged. Other valves installed in locations that are not adjacent to the fixture or appliance shall be identified as well.

3.03 VALVE CHART AND SCHEDULE

A. Provide valve chart and schedule in aluminum frame with clear plastic shield. Install at location directed in mechanical room.

B. Provide a copy to be included with the operation and maintenance manuals.

END OF SECTION

SECTION 220593
CLEANING AND TESTING

PART 1 GENERAL

1.01 SUBMITTALS

A. Quality Control Submittals
   1. Test Reports: Submit test results on Test Records for all systems tested. Include the following:
      a. Type of test.
      b. Date, time and duration of test.
      c. Results of test.
      d. Signature of authority who witnessed test.

1.02 QUALITY ASSURANCE

A. Regulatory Requirements:
   1. Perform factory testing of factory fabricated equipment in complete accordance with the authorities having jurisdiction and manufacturer's representative.
   2. Perform field testing of piping systems in complete accordance with the local utilities, other Authorities Having Jurisdiction and as specified.

1.03 SEQUENCE AND SCHEDULING

A. Transmit written notification of proposed date and time of operational tests to the Architect/Engineer and the Owner at least five (5) days in advance of such tests.

B. Perform Cleaning and Testing Work in the presence of the Owner or the Owner's Representative.

C. Pressure test piping systems at the roughing-in stage of installation, before piping is enclosed by the General Construction Division, and at other times as directed. Perform test operations in sections as required and directed, to progress the Work in a satisfactory manner and not delay the general construction of the building.

D. Valve or cap-off sections of piping to be tested, utilizing valves required to be installed in the permanent piping systems, or temporary valves or caps as required to perform the Work.

1.04 CORRECTIONAL ACTION

A. Where testing reveals faulty conditions, reconstruct the system and retest the system.

1.05 PROJECT CONDITIONS

A. Protection: During test work, protect controls, gauges, accessories and other system components which are not designed to withstand test pressures. Do not utilize permanently installed gauges for field testing of systems.

PART 2 PRODUCTS

2.01 MATERIALS

A. Test Equipment and Instruments: Type and kind as required for the particular system under test.

B. Test Media (air, water, gas): As specified for the particular piping or system under test.

C. Cleaning Agent: As specified for the particular piping, apparatus or system being cleaned.

PART 3 EXECUTION

3.01 PRELIMINARY WORK

A. Thoroughly clean pipe and tubing prior to installation. During installation, prevent foreign matter from entering systems. Prevent if possible and remove stoppages or obstructions from piping and systems.

B. Thoroughly clean compressed air, control air, refrigerant pipe and similar system prior to pressure or vacuum testing.

3.02 PRESSURE TESTS – PIPING

A. Piping system shall be tight under test and shall not show loss in pressure or visible leaks, during test operations or after the minimum duration of time as specified. Remove piping which is not tight under test; remake joints and repeat test until no leaks occur.

B. Water Systems:
   1. Fire protection water inside buildings.
   2. Domestic water (potable cold, domestic hot and recirculation) inside buildings:
      a. Before fixtures, faucets, trim and accessories are connected, perform hydrostatic test at 125psig for 2 hours.
      b. After fixtures, faucets, trim and accessories are connected, perform hydrostatic retest at 75 psig for 2 hours.
   3. Underground: Perform hydrostatic test at 125psig for 2 hours.

D. Gas Piping: Before back filling or concealment, perform air test of duration and pressure as required by the local gas company. However, for gas piping designed for pressures of from 4” to 6” water column, air test at 15” HG for one hour, without drop in pressure. Test gas piping with air only. Check joints for leaks with soap suds.

E. Drainage, Vent, Conductor and Roof Drain Piping: Perform tests before fixtures are installed. Test by filling the entire system with water, and allowing to stand for 3 hours, with no noticeable loss of water. Test joints under a minimum head of 10 feet of water, except the uppermost section. Test the uppermost section to overflowing.

F. Drainage and Vent Final Test: A smoke test shall be provided after plumbing fixtures have been installed. Fill traps with water and then introduce into the entire system a pungent, thick smoke produced by one or more smoke machines. When the smoke appears at the stack openings on the roof, the stack openings shall be closed and a pressure equivalent to a 1” water column (248.8 Pa) shall be maintained for 15 minutes before inspection starts.

3.03 TESTING OF EQUIPMENT, APPARATUS AND APPURTENANCES

A. Relief Valves: Increase pressure in equipment or apparatus to relief valve setting, to test opening of valves at required relief pressures.

3.04 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

A. Prior to starting Work, verify system is complete, flushed and clean.

B. Ensure PH of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or hydrochloric acid.

C. Inject disinfectant, free chlorine in liquid, powder, tablet, throughout system to obtain 50 to 80 mg/1 residual.

D. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 % of outlets.

E. Maintain disinfectant in system for 24 hours.

F. If final disinfectant residual tests less than 24 mg/1, repeat treatment.

G. Flush disinfectant from system until residual is equal to that of incoming water or 1.0 mg/1.

H. Take samples no sooner than 24 hours after flushing, from 5 % of outlets and from water entry, and analyze in accordance with AWWA C651.

END OF SECTION

SECTION 220700
INSULATION

PART 1 GENERAL

1.01 SUMMARY

A. Insulation of all domestic cold, hot water, hot water recirculating and domestic chilled water piping systems.

B. Insulation of pumped discharge piping where indicated.

C. Insulation of drain and water supplies at handicapped accessible fixtures.

1.02 REFERENCES

A. ASTM C547 – Mineral Fiber Preformed Pipe Insulation.

B. ANSI/ASTM C195 - Mineral Fiber Thermal Insulation Cement.

C. ASTM C449 - Mineral Fiber Hydraulic-setting Thermal Insulating and Finishing Cement.

D. ASTM C534 - Flexible Elastomeric Foam.

E. ASTM E84 - Surface Burning Characteristics of Building Materials.

F. NFPA 255 - Surface Burning Characteristics of Building Materials.

G. UL 723 - Surface Burning Characteristics of Building Materials.

H. International Plumbing Code.

I. International Energy Conservation Code.

J. International Building Code.

1.03 SUBMITTALS

A. Include product description. Submit schedule with list of materials and thickness for each service, and locations.

1.04 QUALITY ASSURANCE

A. Applicator: Company specializing in piping insulation application with five successfully completed projects of similar scope.

B. Materials: Flame spread rating of 25 or less and a smoke developed rating of 50 in accordance with ASTM E84.

C. All materials, sealants, etc., to meet UL Environment Formaldehyde Free Verification requirements. Formaldehyde is prohibited.

D. Provide water-based mastic and sealants only.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Manville.

B. Certainteed.

C. Owens-Corning.

D. Accepted Equal.

2.02 PIPE INSULATION

A. Fiberglass: Glass fiber insulation 4 # density. Conform with FS HH-I-558B, Form D, Type III, Class 12 and ANSI/ASTM C547; "k" value of 0.24 at 75ºF; non-combustible.

B. Flexible Elastomeric Foam: Chemically expanded unicellular elastomeric material conforming to ASTM C534, possessing the following physical properties:
   1. Pipe Insulation: Density of 5 to 7 pcf; a thermal conductivity (k value at 75°F of 0.28 maximum; operating temperature range of –20°F to 200°F.
   2. Sheet Insulation: Density of 6 pcf; a thermal conductivity (k value at 75° F of 0.28 maximum; operating temperature range of –20°F to 200°F.

2.03 JACKET MATERIAL

A. All Purpose Jacket: Vapor barrier type, factory or field applied over fiberglass insulation, comprised of a Kraft paper outer cover bonded to aluminum foil, and reinforced with fiberglass yarn. Jacket material shall be treated for permanent fire and smoke resistance. A vapor barrier jacket seal shall be accomplished with a 1½" longitudinal flap, and 3" wide butt strips, factory supplied, for making circumferential joints.
   1. Fire and Smoke Hazard Classification Rating (composite, including jacket and adhesive, ASTM E-84):
      a. Flame Spread: 25 or less.
      b. Smoke Developed: 50 or less.
   2. Water Vapor Permeability (ASTM E-96): 0.02 perm.
   3. Tensile Strength: 40 lb./in. width.
   4. Mullen Burst: 70 psi.

B. PVC Jacket: ASTM D1784 Class 14253-C flame spread rating of 25 or less, smoke developed rating of 50 or less, white smooth finish, 20 mil thickness. Jacketing shall be suitable for complete covering of pipe insulation and piping accessories and shall include all required straight lengths and preformed fittings.

2.04 FITTING INSULATION

A. Fiberglass Insulation System:
   1. Pre-molded fitting insulation: Same thickness as the adjacent pipe covering.
      a. Conform to FS-HH-I-558B, Form E, Class 16.
   2. PVC/Fiberglass Fitting Insulation: Polyvinylchloride pre-molded flexible fitting cover with batt type, pre-cut fiberglass insert.
      a. PVC: Conform with FS L-P-535C, Composition A, Type II, Grade GU.
      b. Fiberglass: Conform with FS-HH-I-558B, Form B, Type I, Class 7&8.
   3. Miter Cut Fitting Insulation: Fabricated from materials employed for pipe insulation.

B. Flexible Elastomeric Foam Insulation System: Miter cut fitting insulation, fabricated from materials employed for pipe insulation.

2.05 MISCELLANEOUS MATERIALS

A. Adhesive:
   1. Vapor Barrier Jacket Adhesive: Childers, CP-97.
   2. Canvas Jacket Adhesive: Childers, CP-50
   3. Reinforcing Membrane Adhesive: Childers, CP-50;
   4. Flexible Elastomeric Foam Adhesive: Armstrong 520.

B. Joint Sealant for Fiberglass Insulation: Childers, CP-35

C. Vapor Barrier Coating: Childers, CP-30A

D. Cement:
   1. Insulating Cement: ASTM C195, asbestos free.
   2. Finishing Cement: ASTM C449/C449M.

E. Reinforcing Membrane:
   1. Polyester Cloth: 8 x 8 mesh per sq. in., 0.7 oz. per sq. yd.; Foster Products Division, Mast-a-fab.
   2. Glass Yarn Cloth: 20 x 20 mesh per sq. in.; Johns-Manville, Duramesh fabric.

F. Sealing Tape: Vapor barrier, color matching, of same material as the pipe or fitting cover to which applied; as manufactured by Arno Inc., Compac Corp., Fasson Adhesive Co.; or as recommended by the manufacturer of the jacket material to which applied.

G. Banding Wire: Steel, 20 gage, galvanized; annealed.

H. Thumb Tack Fastener: Stainless steel, with serrated shank.

I. Wood Blocks: Hardwood, preservative treated; 1” wide, 3” minimum length; inner and outer surfaces contoured to fit the curvature of the pipe, and insulation shield.

J. Wood Dowel Plugs: Hard wood, preservative treated.

K. Shield: 18 gage galvanized steel shield, 180-degree segment, 12” long.

L. Insulate d Saddle: 9” phenolic foam insulation sized to match piping insulation with a 6” steel shield with bottom rib to fit inside clevis hanger.

PART 3 EXECUTION

3.01 PREPARATION

A. Install materials after piping has been tested and accepted.

B. All Work to be clean and dry before installing insulation.

3.02 GENERAL INSTALLATION

A. Install materials in accordance with manufacturer's instructions.

B. Continue insulation with vapor barrier through non-fire rated assemblies.

C. In exposed piping, locate insulation and cover seams in least visible locations.

D. On insulated piping with vapor barrier, insulate fittings, valves, unions, flanges and strainers.

E. On insulated piping without vapor barrier and piping conveying fluids 140º F or less, do not insulate flanges and unions at equipment, but bevel and seal end of insulation at such locations.

F. Provide an insert, not less than 6” long, of same thickness and contour as adjoining insulation, between support shield and piping, but under the finish jacket, on piping 2” diameter or larger, to prevent insulation from sagging at support points. Inserts shall be cork or other heavy density insulating material suitable for the planned temperature range. Factory fabricated inserts may be used.

G. Neatly finish insulation at supports, protrusions and interruptions.

H. Jackets:
1. Indoor, Concealed Applications: Insulated pipes conveying fluids above ambient temperature shall have all service jackets, with or without vapor barrier, factory-applied or field-applied. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish. PVC jackets may be used.
2. Indoor, Concealed Applications: Insulated piping conveying fluids below ambient temperature including cold water and roof conductors shall have vapor barrier, all service jackets with self sealing lap, factory-applied. Insulate fittings, roof drain bodies, joints, and valves with molded insulation of like material and thickness as adjacent pipe, and finish with glass cloth and vapor barrier adhesive. PVC jackets may be used.
3. Indoor, Exposed Applications: For pipe exposed in mechanical equipment rooms or in finished spaces, insulate as for concealed applications. Finish with canvas jacket; size for finish painting.

3.03 INSTALLATION OF FIBERGLASS INSULATION

A. Seal jacket longitudinal flap with vapor barrier jacket adhesive. Rub out all wrinkles and smooth excess sealant flush with outer surface of jacket.

B. Apply a coating of vapor barrier jacket adhesive to each section of insulation to be joined, and apply butt strips in like manner as above. Apply butt strips to overlap 1½” on each side of the sections joined.

C. PVC/Fiberglass Fitting Insulation: Tuck the ends of the pre-cut insulation batt snugly into the throat of the fitting, and tuck-in the edges adjacent to the pipe insulation. Install fitting cover and seal as follows:
1. Cold Service Insulation: Seal the overlap in the throat of the fitting cover, and the butt joint of the cover with the adjacent pipe insulation, with 2” wide sealing tape (a product of the fitting cover manufacturer). Extend the tape 1” over the adjacent pipe insulation and overlap upon itself at least 2” on the downward side.
2. Hot Service Insulation: Secure the cover with outward clinch staples, thumb tack fasteners, or sealing tape.

D. Pre-Molded and Miter cut Fitting Insulation: Insulate to the same thickness as the adjoining pipe insulation. Apply joint sealant to the mating edges of the sections, and to the butt joint. Secure sections together with banding wire; bend twisted ends into the insulation. Apply a leveling coat of insulating cement to fill the voids and smooth irregularities.
1. Cold Service Insulation: Cover fitting insulation with two 1/8” thick applications of vapor barrier coating, with a layer of reinforcing membrane bedded between coats. Lap membrane at least 2” over itself, and the adjacent pipe insulation. Apply a 6 ounce canvas jacket over the fitting, secured with adhesive. Lap canvas at least 2” over itself, and the adjacent pipe insulation.
   a. Omit canvas on concealed installations.
2. Hot Service Insulation: Apply a 6 ounce canvas jacket to the fitting insulation, secured with adhesive. Lap canvas at least 2” over itself.
   a. Omit canvas on concealed installations.

3.04 INSTALLATION OF FLEXIBLE ELASTOMERIC FOAM INSULATION

A. Where possible, slip insulation over the pipe, and seal butt joints with adhesive. Where the slip-on technique is not possible, slit the insulation and install; re-seal with adhesive, making sure the mating surfaces are completely joined.

B. Insulate fittings and valves with miter cut sections. Use templates provided by the manufacturer, and assemble the cut sections in accordance with the manufacturer's printed instructions.
   1. Insulate threaded fittings and valves with sleeved fitting covers. Overlap and seal the covers to the adjoining pipe insulation.

C. Carefully mate and seal with adhesive all contact surfaces to maintain the integrity of the vapor barrier of the system.

3.05 INSTALLATION AT HANGERS

A. Reset and realign hangers and supports if they are displaced while installing the piping insulation.

B. Install insulation filler pieces at all hangers for cold service piping, to prevent crushing the insulation.
   1. Fiberglass Insulation: Use insulated clevis hangers specified with built-in filler pieces.
   2. Flexible Elastomeric Foam Insulation: Install wood blocking or wood dowel plug filler pieces of the same thickness as the insulation. Slot the insulation, insert the filler pieces between the pipe and insulation shield, and secure in place with adhesive.

C. Provide insulation shield or insulated saddle on all hangers to prevent damage to insulation.

3.06 INSULATION SHIELDS/INSULATED SADDLES

A. Provide on all hangers to prevent damage to insulation.
   1. Secure to hanger to prevent movement.

3.07 PIPING INSULATION SCHEDULE

PIPING	INSULATION TYPE	PIPE SIZE	INSULATION THICKNESS
Domestic Cold Water: Above Ground	Glass Fiber Flexible or Elastomeric Foam	1" and under	½"
		1¼" and over	1"
Domestic Hot Water: Supply	Glass Fiber Flexible or Elastomeric Foam	1¼" and under	1"
		1½" and over	1½"
Domestic Hot Water: Recirculation	Glass Fiber or Flexible Elastomeric Foam	1¼" and under	1"
		1½" and over	1½"

END OF SECTION

SECTION 221000
PLUMBING PIPING

PART 1 GENERAL

1.01 SUMMARY

A. Pipe, fittings and joints for the various plumbing systems required to complete Work.

1.02 REFERENCES

A. ANSI B31.9 – Building Service Piping.

B. ASME Sec. 9 – Welding and Brazing Qualifications.

C. B16.1 – Cast Iron Pipe Flanges and Flanged Fittings Class 25, 125, 250 and 800.

D. B16.3 – Malleable Iron Threaded Fittings.

E. ASME B16.4 – Cast Iron Threaded Fittings Class 125 and 250.

F. B16.18 – Cast Bronze Solder-Joint Pressure Fittings.

G. B16.22 – Wrought Copper and Bronze Solder-Joint Pressure Fittings.

H. B16.23 – Cast Copper Alloy Solder-Joint Drainage Fittings - DWV.

I. B16.29 – Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings – DWV.

J. ASTM A47 – Ferritic Malleable Iron Castings.

K. ASTM A53 – Pipe, Steel, Black and Hot-Dipped Zinc Coated, Welded and Seamless.

L. ASTM A74 – Cast Iron Soil Pipe and Fittings.

M. ASTM A120 – Pipe, Steel, Black and Hot Dipped Zinc Coated Galvanized, Welded and Seamless, for Ordinary Uses.

N. ASTM B32 – Solder Metal.

O. ASTM B75 – Seamless Copper Tube.

P. ASTM B88 – Seamless Copper Water Tube, Type K annealed.

Q. ASTM B251 – Wrought Seamless Copper and Copper-Alloy Tube.

R. ASTM B306 – Copper Drainage Tube (DWV).

S. ASTM C564 – Rubber Gaskets for Cast Iron Soil Pipe and Fittings.

T. AWWA C651 – Disinfecting Water Mains.

U. CISPI 301 – Cast Iron Soil Pipe and Fittings for Hubless Cast Iron Sanitary Systems.

V. CISPI 310 – Joints for Hubless Cast Iron Sanitary Systems.

W. ANSI/AWWA C104/A21.4 – Ductile Iron Water Piping – Cement Mortar Lining.

X. ANSI/AWWA C110, C111/A21.10, A21.11 – Ductile Iron Fittings and Joints.

Y. ASTM D1248 – Polyethylene Pipe and Fittings.

Z. ASTM D2146 – Polypropylene Pipe and Fittings.

AA. ASTM D2665 – Polyvinyl Chloride (PVC) Pipe and Fittings.

BB. ASTM D3222 – Polyvinyl Dene Fluoride (PVDF) Pipe and Fittings.

CC. ASTM D2661 – Acrylonitrile – Butadiene – Styrene (ABS) Pipe and Fittings.

1.03 SUBMITTALS

A. Product Data: Provide data on pipe materials, pipe fittings, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

B. Provide schedule indicating type of material to be utilized for each system.

1.04 QUALITY ASSURANCE

A. All piping shall comply with International Plumbing Code.

B. Welding and brazing materials and procedures shall comply to ASME Code and applicable State Labor Regulations.

C. All components manufactured for potable water use shall contain no more than a weighted average of 0.25 percent lead with respect to the wetted surfaces of piping, fittings, accessories and meet the requirements of NSF/ANSI 372, third-party testing and certification.

E. All water piping, pipe fittings and components intended to supply drinking water shall meet the requirements of NSF/ANSI 61.

1.05 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum three years documented experience.

B. Installer: Company specializing in performing the Work of this Section, with a minimum of 5 years' experience.

C. Submit certified welding and brazing certificates signed by the Division 22 Contractor for each person who will be performing the Work. Welders are required to be ASME B31 certified.

D. Upon request, furnish names and addresses of similar projects that each person has worked on which meet the experience criteria.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products at site.

B. Provide temporary protective coating where required.

C. Protect all piping systems from entry of foreign materials by temporary end caps, closures on pipe, fittings and valves until installation of system is complete.

1.07 OPERATION AND MAINTENANCE

A. Provide two “No-Hub” coupling wrenches of type and size required for future service and maintenance. Turn-over to Owner and obtain receipt.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Black/Galvanized Steel Pipe: Allied Tube, Bull Moose, Wheatland Tube Company, Republic Steel, U.S. Steel, or accepted equal.

B. Copper Pipe and Tubing: Anaconda, Chase, Mueller, Revere or accepted equal.

C. Cast Iron Pipe and Fittings: American Cast Iron Pipe Co, Tyler Pipe (Subsidiary of Tyler Corp.), Charlotte Pipe and Foundry Co., United States Pipe and Foundry Co., or accepted equal.

D. No Hub Cast Iron Pipe Couplings: Tyler Pipe (Subsidiary of Tyler Corp.), Charlotte Pipe and Foundry Co., Clamp-All, Anald “Husy”, or accepted equal.

2.02 MATERIALS

A. Sanitary Drainage System:
   1. Underground Sanitary Waste and Vent Piping:
      a. Cast Iron Pipe and Fittings: ASTM A74 service weight.
         1) Joints: Hub and Spigot
            a) ASTM – C564 Neoprene gasket system
            b) Lead and Oakum.
   2. Above Ground Sanitary Waste and Vent Piping:
      a. Cast Iron Pipe and Fittings: CISPI 301, Hubless, service weight.
         1) Joints: CISPI 310 Neoprene gasket with stainless steel clamp and shield assemble.
      b. Copper Tube: AASTM-B306, DWV (Not for use on urinal waste).
         1) Fittings: ASME B16.23 cast bronze, or ASME B16.26 wrought copper, drainage type.
         2) Joints: ASTM B32, solder, grade 95TA.
      c. Steel Pipe: ASTM A 53 or A 120 Schedule 40 galvanized.
         1) Fittings: ASME B16.3 malleable iron, or ASME B16.4 cast iron, drainage type, galvanized.
         2) Joints:
            a) ASME B16.1 flanged.
            b) ASME B16.3, ASME B16.4 screwed.
      d. Brass Pipe: ASTM B43, chrome plated.
         1) Fittings: B16.23, cast bronze, chrome plated.
         2) Joints: Screwed

B. Domestic Water System:
   1. Above Ground Domestic Water System:
      a. Size 4” and under Copper Pipe ASTM B88, Type L, Hard drawn.
         1) Fittings: ASME B16.18 cast bronze, or ASME B16.22 wrought copper, pressure type.
         2) Joints: ASTM B32 solder grade 95TA, Flux conforming to ASTM B813.
            OR
         1) Fittings: ASME B16.18 cast bronze, or ASME B16.22 wrought copper, pressure type with EPDM O-ring seal.
         2) Joints: Press fit with electro-hydraulic crimping tool.

C. Gas Piping System:
   1. Above Ground Gas Piping:
      a. Steel Pipe: ASTM A53 or A 120 Schedule 40, black
         1) Fittings: ASME B16.3 malleable iron.
         2) Joints:
            a) B16.3 screwed (sizes 2” and under)
            b) Welded sizes 2½” and over

2.03 FLANGES, UNIONS AND COUPLINGS

A. Sizes 2” and Under:
   1. Ferrous Pipe: 150 psig galvanized or black malleable iron threaded unions.
   2. Copper Tube and Pipe: 150 psig bronze union soldered.

B. Sizes 2½” and Over:
   1. Ferrous Pipe: 150 PSIG galvanized or black malleable iron, welded flange, 1/16” thick, pre-formed Neoprene gasket.
   2. Copper Tube and Pipe: 150 PSIG bronze flange slip-on, 1/16” thick, pre-formed Neoprene gasket.

C. Dielectric Couplings: Galvanized or plated steel union, threaded or soldered end, water impervious isolation barrier.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify location and inverts of existing utilities before starting Work.

B. Verify all existing conditions at site.

C. Verify piping routes, elevations, connection points prior to start of Work to insure of proper installation.

3.02 PREPARATION

A. Prepare piping systems installation in accordance with manufacturer's recommendation for particularly type of system installed.

B. Remove dirt, scale, or any foreign matter from inside and outside of pipe prior to assembly.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Provide dielectric connections wherever jointing dissimilar metals.

C. Make allowances for expansion and contraction.

D. Cut pipe and tube ends square, ream before joining.

E. Route piping in orderly manner to conserve building space and not interfere with use of space.

F. Maintain pipe gradient, provide valve with capped hose adapter at low points of system.

G. Group piping whenever possible at common elevations.

H. Provide clearance for installation of insulation and access to valves and fittings.

I. Use fittings for offsets and direction changes.

J. Provided access doors to maintain valves and equipment installed in concealed locations. Furnish size and location to General Construction Division.

K. Establish elevations of buried piping outside the building to ensure not less than cover specified. (3'-0" for drainage and gas piping, 5'-0" for water piping).

L. Install valves with stems upright.

M. Excavate and backfill in accordance with Section 31 23 16, Excavation.

N. Prepare pipe, fittings, accessories, hangers and supports not prefinished, ready for finish painting. Refer to Section 09900, Painting and Coating.

O. Where pipe support members are welded to structural framing, scrape, clean and apply one coat of zinc rich primer to welding.

P. Install bell and spigot pipe with bell end upstream.

Q. Provide flashing and seal watertight all piping penetrations through weathered or waterproofed walls, floors and roofs.

R. Provide fittings and adaptors as recommended by material manufacturer when connecting to existing piping systems or when connecting piping or dissimilar material. Rubber pipe clamps will not be an accepted method of connecting to piping. Verify proposed method of pipe connections with Engineer prior to installation.

S. Paint all gas piping, both inside and outside building with two coats of urethane alkyd gloss enamel, color Safety Yellow. Manufactured by Benjamin Moore & Co., or accepted equal.

T. Do not route plumbing piping directly above electrical panelboards, switchboards, cabinets and similar equipment. Any piping located above and within 6 feet of the top of electrical equipment shall be relocated at no additional cost to the Owner. Any piping more than 6 feet above electrical panelboards shall be panned with drain as directed by the Engineer.

3.04 ERECTION TOLERANCES

A. Establish invert elevations, slopes for drainage systems according to code requirements and elevations indicated. Maintain gradients.

B. Slope water piping and arrange to drain at low points.

3.05 FIELD QUALITY CONTROL

A. Obtain and pay for all required applications, permits and fees necessary to complete work.

B. Clean, test, disinfect all new piping in accordance with Section 22 05 93, CLEANING AND TESTING.

C. Provide written test reports to the Engineer of all systems including the following:
   1. Type of test.
   2. Date, time, duration of test.
   3. Results of test.
   4. Signature of authority who witnessed test.

D. After installation of domestic hot water recirculating piping systems and equipment, balance system, including existing or renovated systems. (If applicable balance entire system or systems to obtain proper circulation throughout the building).

END OF SECTION

SECTION 223000
PLUMBING SPECIALTIES

PART 1 GENERAL

1.01 SUMMARY

A. Floor drains, cleanouts, flashings.

B. Drain valves.

C. Water hammer arrestors, air chambers.

D. Water closet floor flange.

E. Gas pressure regulators.

F. Fasteners.

G. Inline Trap Seal

H. Booster Pump

1.02 REFERENCES

A. International Building Code, International Plumbing Code.

B. ASME AI12.6.3, CSA B79, Floor Drains, ASME AI12.36.2 Cleanouts.

C. ANSI AI12.26.1/PDI WH-201 Water Hammer Arrestors.

1.03 SUBMITTALS

A. Product Data: Catalog sheets, specifications, dimensional data, rough in requirements, finishes and manufacturers installation instructions for each item specified.

1.04 OPERATION AND MAINTENANCE

A. Provide operation, maintenance and inspection data, replacement part numbers and service location and telephone number.

B. Special tools: Deliver the following to the Owner's Representative and obtain receipt.
   1. Tools for vandal resistant fasteners: One for each type and size.
   2. T-handle wrench for cleanout plugs: One for each type and size.
   3. Wall hydrant T handle locking key for each hydrant and hose bibb.
   4. Torque wrench to fasten no-hub coupling clamps: Provide two (one standard, one with extension).

C. Instruction:
   1. Provide start-up, operation and service instruction for all equipment installed with Owner's personnel responsible for the operation of equipment.
   2. Provide documentation to the Architect after instruction of personnel has been completed. Include the following information:
      a. Date, time and duration of instruction.
      b. Name of equipment.
      c. Signature of all personnel instructed.

1.05 QUALITY ASSURANCE

A. All components manufactured for potable water use shall contain no more than a weighted average of 0.25 percent lead with respect to the wetted surfaces of piping, fittings, valves, pumps, accessories and meet the requirements of NSF/ANSI 372, third-party testing and certification.

B. Valves, water piping, pipe fittings and components that convey drinking water shall conform with NSF 61.

PART 2 PRODUCTS

2.01 FLOOR DRAIN TYPE A (All locations unless otherwise indicated)

A. Drain Body: Coated cast iron, two-piece body with reversible flashing clamp, minimum 9" diameter drainage flange, corrosion resistant bolts, trap primer connection, weep holes, bottom outlet, and inside caulk connection.

B. Strainer Head: Round, minimum 7" square nickel bronze with threaded shank for height adjustment.

C. Strainer Grate: Polished nickel bronze, heel proof; secured with stainless steel vandal resistant fasteners.

D. Acceptable Drain Series: Josam 30000, Smith 2010, Wade W1100, and Zurn Z415.

2.02 CLEANOUTS

A. Manufacturers: Smith, Josam, Zurn or accepted equal.

B. Cleanout Plug:
   1. Cast brass or bronze, with threaded end, and raised or countersunk head.
      a. Tapped head for attachment of cleanout wall or deck plate covers where required.
   2. Anti-Seize Lubricant: Never-Seez by Bostik Chemical Group, Broadview, IL; Molycote 1000 by Dow Corning Corp., Midland, MI; Anti-Seize Lubricant by Loctite Corp., Newington, CT.

C. Cleanout: Threaded pipe fitting or cast iron ferrule with gas tight cleanout plug

D. Cleanout Wall Plate (WPCO): Round, stainless steel or polished chrome plated bronze cover plate with vandal resistant fastener to secure to cleanout plug. Equal to J R Smith #4452

E. Cleanout Deck Plate (DPCO):
   1. Standard duty floor cleanout fitting with coated cast iron body; round, polished nickel bronze scoriated top secure to cleanout plug with vandal resistant fastener; threaded height adjustment, cast iron head, gas tight cleanout plug, and screwed connection. Equal to J.R. Smith Model 4120, 4140 and 4150 Series.
      a. Provide with flashing clamp and flashing when installed above grade over a crawlspace or other floor.

2.03 FLASHINGS

A. Provide flexible flashing and metal counterflashing where piping penetrate weather or waterproofed walls, floors, and roofs. Coordinate with General Contractor.

B. Flash piping penetrating roof and other waterproof construction. Project piping 12" minimum above finished roof surface with chlorinated polyethylene (CPE) sheet liner 40 mil thickness worked 1" minimum into hub, 10" minimum clear on sides with 24" x 24" sheet size. For pipes through outside walls, turn flanges back into wall and caulk, metal counter flash and seal.

C. Flash floor drains and floor cleanouts in floors with topping over finished areas or crawl spaces with lead, 10" clear on sides with chlorinated polyethylene (CPE) sheet liner 40 mil thickness 24" x 24" sheet size. Fasten flashing to drain clamp device.

2.04 DRAIN VALVE

A. Cast brass body with renewable units, hose bibb vacuum breaker (ASSE 1011) with drainage feature, and removable cast iron handwheel with vandal resistant fastener.
   1. Valve must be completely assembled to make hose connection.
   2. Connections: ½" or ¾" threaded or solder end inlet, and ¾" hose bibb outlet.

2.05 WATER HAMMER ARRESTORS

A. Hydropneumatically controlled with permanently sealed expansion chamber pre-charged with non-combustible gas; threaded connection, and conforming to ASME A112.26.1M – Water Hammer Arrestors, and ASSE 1010 -Water Hammer Arrestors.
   1. Bellows Type: Stainless steel construction with elastomer or stainless steel bellows.
   2. Piston Type: Hard drawn copper body with brass piston, cap and adapter; and elastomer seals.

2.06 WATER CLOSET FLOOR FLANGE

A. For use with DWV copper tubing: Cast brass, not less than 48 ounces total weight, notched and slotted, soldered connection.

B. For use with cast iron soil pipe: Cast iron, not less than 90 ounces total weight, notched and slotted, length as required for proper installation, caulked connection.

C. For use with DWV PVC Pipe: One piece solid PVC plastic with notched and slotted stainless steel swivel ring, solvent cement connection.

2.07 GAS PRESSURE REGULATORS

A. Provide gas pressure regulators for the emergency generator. The emergency generator will be provided by Division 26. Obtain the gas flow requirements for the equipment being installed prior to ordering regulators. Coordinate all work with Division 26.

B. Manufacturers: Itron, Fisher, Sensus or accepted equal.

C. Cast iron body, interchangeable brass orifice, spring-loaded, self operated regulator with internal relief, field interchangeable adjustment spring. 1 lb. inlet pressure 14" w.c. outlet pressure. Size as indicated on Drawing. Make equal to Itron Model B42R Series.

D. Provide gas pressure gauge with lockable shut-off valve on outlet side of each gas regulator to verify and adjust gas flow required for equipment. After regulator is adjusted to proper gas flow, remove pressure gauge and turn over to owner, obtain receipt. Cap or plug shut-off valve outlet and lock shut-off valve closed.

2.08 FASTENERS

A. Corrosion resistant fasteners: Stainless steel, brass or bronze bolts are acceptable. Coated, plated or galvanized steel bolts are not acceptable.

B. Vandal resistant fasteners: Allen or Spanner head bolts are acceptable. Philips or slotted fasteners are not acceptable.

2.09 INLINE TRAP SEAL

A. Waterless Inline Drain Trap Seal. HDPE (High Density Poly Ethylene) housing with heavy duty silicone diaphragm and soft EPDM sealing gasket. Floor rating ASSE 1072 AF GW. Make equal to Rectorseal Sure Seal or accepted equal.

2.10 BOOSTER PUMP BP-1

A. The booster pump is an all-in-one, self-priming 1.15 HP (1250W) domestic water pressure booster pump featuring integrated Bluetooth connectivity. It delivers a maximum head of 180.5 ft, a max operating pressure of 116 psi, and uses standard 1-inch NPT connections. Provide with inlet filter. Make equal to Grundfos SCALA1 5-55.

PART 3 EXECUTION

3.01 GENERAL

A. Install the Work of this Section in accordance with the manufacturer's printed installation instructions, unless otherwise specified.

B. Locate plumbing specials at locations and elevations indicated by Architectural Drawings.

3.02 FLOOR DRAINS

A. Protect weep holes from plugging during installation. Clean out weep holes after installation to remove obstructions.

B. Set drainage flange flush with top of the structural floor slap, or at elevation otherwise indicated.

C. After membrane waterproofing is installed and cured, secure the clamping ring.

D. Adjust strainer head to height indicated. If height is not indicated, set at ½" below finished floor elevation.

E. After floor installation and finish is completed, clean strainer grate and clean and paint cast iron floor drain bodies, sediment buckets and grate. Paint color to match floor where installed.

3.03 CLEANOUTS

A. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.

B. Encase exterior cleanouts in concrete flush with grade. Size 12" x 12" x 4" thick.

C. Provide brass carpet marker for cleanouts located in carpeted areas.

D. Clean cover after floor installation and finish is completed.

3.04 DRAIN VALVE

A. Install on water supply mains, at branch lines to fixtures or equipment, low points of system and where indicated or noted to facilitate system drainage.

3.05 WATER HAMMER ARRESTORS

A. Install on cold and hot water mains where indicated and on branch piping supplying fixtures utilizing “quick” closing valves.

B. Provide isolation valve for servicing.

C. Provide with access door if located within a concealed ceiling or wall.

3.06 GAS PRESSURE REGULATORS

A. Install in accordance with manufacturers written instructions.

B. Install in an accessible location.

C. Regulators installed indoors that require venting shall be vented directly to the outdoors.

D. Install a tee fitting with one opening capped or plugged between the regulator and its up stream shut-off valve. Position tee fitting to allow connection of a pressure-measuring instrument and to serve as a sediment trap.

E. Install a tee fitting with one opening capped or plugged not less than 10 pipe diameters downstream of regulator to allow connection of a pressure measuring instrument.

END OF SECTION

SECTION 224000
PLUMBING FIXTURES

PART 1 GENERAL

1.01 SUMMARY

A. Water closets.

B. Lavatories.

C. Mop Service Basin.

D. Urinal.

E. Water Coolers.

1.02 REFERENCES

A. ANSI/ASME A112.6.1 - Supports for Off-the-Floor Plumbing Fixtures for Public Use.

B. ASME A112.18.1 - Finished and Rough Brass Plumbing Fixture Fittings.

C. ANSI/ASME A112.19.1 - Enameled Cast Iron Plumbing Fixtures.

D. ANSI/ASME A112.19.2 - Vitreous China Plumbing Fixtures.

E. ADA Compliance Requirements

F. ANSI/ASME A112.19.5 - Trim for Water-Closet Bowls, Tanks, and Urinals (Dimensional Standards).

G. ANSI/ARI 1010 - Drinking-Fountains/Water Coolers.

1.03 SUBMITTALS

A. Submit product data for Plumbing Fixtures and Trim.

B. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, finishes and manufacturer's installation instructions.

C. Listed manufacturers and their series and/or model numbers do not imply unconditional specification approval. The series and/or model numbers listed may not be current, but are included as an acceptable series of products that must still comply with the written description and specification. Custom modifications may be required to make the series and/or model numbers listed comply with these written descriptions and specifications.

1.04 QUALITY ASSURANCE

A. Each fixture and fitting shall be plainly and permanently marked with the manufacturer's name or trade mark.

B. Acid resistant surfaces shall be plainly and permanently marked with the manufacturer's label or symbol indicated acid resistance.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site.

B. Accept fixtures on site in factory packaging. Inspect for damage.

C. Protect fixtures from damage at all times including after installation.

1.06 PROJECT CONDITIONS

A. Verify that field measurements are as instructed by the manufacturer.

B. Confirm that casework is constructed with adequate provision for the installation of countertop sinks.

1.07 SPARE MATERIALS

A. Special Tools: Furnish the following tools labeled with names and locations to be used. Turn tools over to Owner or Owners Representative and obtain receipt.
   1. Keys for stops (furnished with stops).
   2. Tools for Vandal Resistant Fasteners: Two for each type and size.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Plumbing Fixtures and trims shall be as manufactured by the listed manufacturers.
   1. China and Enameled Cast Iron Fixtures: American Standard, Crane Company, Eljer Plumbingware, Division of Wallace Murray, Kohler Company, ToTo or accepted equal.
   2. Stainless Steel Fixtures: Just Manufacturing Company, Elkay Manufacturing Company, Superior Stainless Steel Products, Inc., Mi-Fab, Acorn, Bradley, Karran, ICM/Teddy FSE, or accepted equal.
   3. Water Closet Seats: Bemis, Church, Beneke Corporation, Sperzel, Kohler, American Standard, ToTo or accepted equal.
   4. Flush Valves: Sloan Valve Company, Watrous Incorporated, Zurn Industries Inc., ToTo or accepted equal.
   5. Fittings and Carrier: Jay R. Smith Manufacturing Company, Josam Manufacturing Company, Zurn Industries Inc., Wade, Mi-Fab, or accepted equal.
   6. Mop Service Basins/Laundry Tubs: Fiat Products, Inc., E.L. Mustee & Sons, Inc., The Swan Corporation, Stern Williams, or accepted equal.
   7. Drinking Fountains/Water Coolers: Halsey Taylor, Haws, Elkay, Bradley, Stern Williams, or accepted equal.
   8. Showers:
      a. Mixing Valves: Powers, Lawler, Leonard, Moen, Symmons or accepted equal.
      b. Shower Basins: Fiat, E.L. Mustee, Swan, Stern Williams, Kohler, or accepted equal.

B. Fixture Trim:
   1. Shall be supplied as a part of the fixture unless otherwise specified.
   2. Polished chrome plated brass.
   3. 17 gauge minimum for all drainage traps, tubing, etc.
   4. Listed by NYS DEC where applicable.
   5. As manufactured by McGuire Manufacturing Company, Inc., Kohler Company, T&S Brass and Bronze Works, Inc., Chicago Faucet, Eljer Company, Crane Company, American Standard, Delta Faucet Company, Connecticut Stamping & Bending (CS&B).

C. Listed manufacturers and their series and/or model numbers do not imply unconditional specification approval. The series and/or model numbers listed, are included as acceptable series of products that must still comply with the written description and specification. Custom modifications may be required to make the series and/or model numbers listed comply with these written descriptions and specifications.

2.02 MATERIALS – GENERAL

A. Vitreous China: First quality, smooth, uniform color and texture and having a fused-on glaze covering on all surfaces exposed to view.
   1. Surfaces shall be free of chips, craze, warpage, cracks and discolorations. All surfaces in contact with walls or floors shall be flat, with warpage not to exceed 1/16 inch per foot.
   2. Color: White unless otherwise noted.

B. Fixture Trim: Brass, bronze with chrome plating or stainless steel, to be supplied as a part of the fixture unless otherwise specified.
   1. Brass piping: IPS standard weight, with 125 lb. cast brass fittings.
   2. Brass tubing: 16 B&S gauge.
   3. Stainless steel: 18-8 type 302 or 304 unless otherwise specified.

C. Trim Finishes (Exposed to View):
   1. Brass or bronze: Polished or satin finished chrome plating, 0.02 mil chromium over 0.2 mil nickel plating.
   2. Stainless steel: Invisible welds and seams, and unless otherwise specified, polished to No. 4 commercial finish.

D. Fixture Hold-down Bolts: Steel, plated for corrosion resistance.
   1. Cap nuts: Metal, polished and chrome plated.

E. Combination Faucets: Faucets shall turn counter to each other for the on and off positions.

F. Vandal Resistant Construction: Secure removable components in place with vandal resistant fasteners or devices which cannot be removed without the use of special tools.
   1. Vandal Resistant Fasteners: Allen or spanner head bolts are acceptable; other types will be considered if submitted. Phillips head and slotted head fasteners are not acceptable.

2.03 WATER CLOSETS

A. Water Closet Type WC-1
   1. Vitreous china, full size, floor mounted, floor outlet, siphon jet water closet, maximum 1.28 gallon flush, pressure clean operating system, 15” high elongated bowl with integral flushing rim, close-coupled tank/bowl combination with tank locking device, equal to American Standard Cadet Pro model # 215CA.104.
   2. Water closet seat as specified herein.

B. Water Closet Type WC-2 (Handicapped)
   1. Vitreous china, full size, floor mounted, floor outlet, siphon jet water closet, maximum 1.28 gallon flush, pressure clean operating system, 17” high elongated bowl with integral flushing rim, close-coupled tank/bowl combination with tank locking device, handicapped accessible, equal to American Standard Cadet Pro model # 215AA.104. Provide handle on wide side of fixture.
   2. Water closet seat as specified herein.

C. Water Closet Seats (All location unless otherwise specified).

D. Solid white plastic with anti-microbial agent, fire resistant, open front type with combination check and self-sustaining hinge, stainless steel bolts **without** cover. Equal to Beneke Sani-Shield FRSS series.

2.04 LAVATORIES

A. Lavatory Type L-1:
   1. Vitreous china, wall-hung lavatory 20" x 18" with 5" high back, drillings for trim specified, rectangular basin with splash lip, front overflow, and soap depression and punched for concealed arm carrier. Equal to American Standard Model# 0355.012
   2. Trim: Electronic Proximity Lavatory Faucet.
      a. Electronic faucet with proximity operation. 4" center set with vandal-resistant solid brass construction. Water pressure range from 20 to 125 psi. Single inlet. 18" flexible inlet hose with 3/8" compression fitting for connection to control box. 0.5GPM, battery operated, Thermostatic mixing valve. 20"flexible inlet hoses with 3/8" compression fittings. ASSE 1070 certified down to 0.35 gpm/1.3 L/min. Make equal to American Standard model# 605B.205.
   3. ½ " IPS x 3/8" OD chrome plated wall supplies with loose key stops, flexible stainless steel risers and chrome plated cast brass set screw escutcheons.
   4. 17 gage chrome plated cast brass open grid drain assembly. 17 Gage chrome plated brass 1 ½" adjustable P-trap with bottom clean-out plug, chrome plated brass set screw escutcheon.
   5. Cover: Conceal piping under lavatory with ADA conforming single piece rigid hi-impact white vinyl shield trimmed to fit lavatory basin secured with vandal resistant fasteners. Equal to True Bro Lav Shield series.

B. Lavatory Carriers and Supporting Devices:
   1. Manufacturers: J.R. Smith, Josam, Zurn, Wade or accepted equal.
   2. General: Ferrous metal members of carriers and supporting devices with the exception of chrome plated shall be factory painted for corrosion resistance, vandal resistant trim.
   3. Chair Carrier: Steel pipe uprights, 1¼" IPS minimum diameter, or 1" x 3" steel tubing uprights, with cast iron or welded steel feet, drilled for bolting to the floor construction. Each carrier shall be provided with the appropriate fixture supporting devices specified, or recommended by the carrier manufacturer's Fixture Support Selection Guide.
      a. Concealed Arms: Steel, with fixture locking lugs, leveling screws and a means of attaching, positioning and securing the fixture to the carrier.

2.05 MOP SERVICE BASINS

A. MSB-1, 36" x 36" x 12".
   1. Receptor: Terrazzo made of black and white marble chips cast in grey Portland cement with a compressive strength of not less than 3,000 psi. Terrazzo surface shall be ground and polished with stainless steel caps on all curbs.

B. Drain Fitting: Stainless steel body integral to the receptor, ready for connection. Strainer grate shall be stainless steel, removable for cleaning. 3" IPS in size.

C. Service Fitting: Chrome plated combination supply fitting with exposed supplies from top, vandal resistant with hose bibb spout having the following features:
   1. Renewable units.
   2. Four arm indexed metal handles.
   3. Integral vacuum breaker.
   4. Five foot length of rubber hose with threaded connector to fit the hose bibb and wall bracket.

5. Mop hanger bracket.
6. Bottom wall plate support.

D. Rim Guards: Stainless steel.

E. Wall Guards: Stainless steel.

F. Make:
1. Terrazzo Basin: Fiat TSB-3002.
2. Service Faucet: Fiat #830-AA
3. Hose & Hose Bracket: Fiat #932-AA
4. Mop Hanger: Fiat #889-CC
5. Silicone Sealant: Fiat #833-AA
6. Wall Guards: Fiat MSB 3636

2.06 URINAL

A. Urinal Type UR-1:
1. Vitreous china, white wall hung washout urinal, with shields, elongated rim, integral trap, removable stainless steel strainer, ¾" top spud inlet, 0.5 GPF, 2" threaded outlet. Equal to 6590.001 American Standard Washbrook series.
2. Flush Valve: Exposed chrome plated, diaphragm type flush valve with oscillating handle, escutcheon, integral screwdriver stop, vacuum breaker. Unit shall be ultralow consumption 0.5 gallon per flush type. Equal to Sloan Royal 186-0.5 series.
3. Chair Carrier as specified herein.

B. Urinal Chair Carrier: Steel pipe uprights, 1¼" IPS minimum diameter or 1" x 3" steel tubing uprights, with cast iron or welded steel feet, drilled for bolting to the floor construction. Provide with upper and lower bearing plates with appropriate supporting devices recommended by the carrier manufacturer's fixture support selection guide. Equal to J.R. Smith Fig. 0637 series.
1. Ferrous metal members of carriers and supporting devices with the exception of chrome plated or porcelain enameled cast iron, shall be factory painted for corrosion resistance.
2. Vandal Resistant Trim: Polished chrome plated metal cap nuts and washers retained with set screws or other accepted method of securing.

2.07 ELECTRIC WATER COOLER(S)

A. Type EWC-1:
1. Wall mounted refrigerated type, vandal resistant, ADA compliant, two level water cooler with a bottle filling station. One basin arranged and accepted for use by the physically handicapped; the other basin arranged for general use. Bottle filling station located over accessible basin. Equal to Elkay Model LZSTL8WSLK series.
2. Unit shall have stainless steel basin top and cabinet with front access panel, push button control, flow regulator, vandal resistant bubbler or [modified with flexi-guard safety bubbler], wall mounted bottle filling station, sensor operated, 1.1 GPM flow with 20 second auto shut-off, water filter, in-line strainer, quick connect water fitting. Provide with in-wall mounting plate and with support legs as required.
3. No lead design, NSF/ANSI-61 certified, UL listed.
4. 1/6 HP, 120 VAC, 60 hertz, hermetically sealed compressor and control system with a capacity of 8.0 gph of 50° F water based on 80° inlet water temperature and 90° F ambient. Temperature control with adjustable thermostat.
5. 17 gauge cast brass, 1 ¼" x 1 ½" end outlet with continuous waste drain, 17 gauge cast brass 1 ½" adjustable P-trap with bottom clean out plug. ½" IPS x 3/8" O.D. compression straight or angled supply stop with wheel handle. 3/8" O.D. type L soft copper tube supply in length to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.

3.02 PREPARATION

A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install each fixture with trap, easily removable for servicing and cleaning.

C. Provide chrome plated rigid or flexible supplies to fixtures with loose key and screwdriver stops, reducers, and set screw escutcheons.

D. Install components level and plumb.

E. Install and secure fixtures in place with wall supports, wall carriers and bolts.

F. Seal fixtures to wall and floor surfaces with a white sealant of a type intended for this purpose.

G. Provide all fixtures to be vandal resistant.

3.04 INTERFACE WITH OTHER PRODUCTS

A. Review all shop drawings related to fixture installation. Confirm location and size of fixtures and openings before rough-in and installation.

3.05 ADJUSTING

A. Adjust Work and leave all fixtures operating properly.

B. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

C. Adjust timing on flush valves.

3.06 CLEANING

A. Clean all Work at completion of the project.

B. At completion, clean plumbing fixtures and equipment.

3.07 PROTECTION OF FINISHED WORK

A. Protect finished Work to prevent damage.

B. Do not permit use of fixtures.

3.08 FIXTURE HEIGHTS

A. Install fixtures to heights above finished floor as indicated on Fixture Mounting Height Schedule shown on Architectural Drawings or as directed by Architects.

3.09 FIXTURE ROUGH-IN SCHEDULE

A. Schedule:

	(Minimum Sizes)			
	Hot Water	Cold Water	Waste	Vent
Water Closet (Tank Type):	-	½ inch	4 inch	2 inch
Lavatory:	½ inch	½ inch	1½ inch	1½ inch
Urinals:	-	3/4 inch	1½ inch	1½ inch
Service Sink/Mop Service Basin:	½ inch	½ inch	3 inch	1½ inch
Water Coolers:	-	½ inch	1½ inch	1½ inch

Notes:
1. Headers for gang fixtures to be full size entire length. Provide shock absorbers as required.

END OF SECTION

SECTION 230000
GENERAL REQUIREMENTS FOR DIVISION 23

PART 1 GENERAL

1.01 BID AND CONTRACT DOCUMENTS

A. All Work in this Division is subject to the provisions of the General Conditions, Supplementary General Conditions and Requirements of Division 1 General Requirements.

B. By submitting the bid, the Contractor acknowledges that he has not received any verbal directives from the Owner, Architects and Engineers (and their employees and sub-consultants) at any time before, during or after the bid. He further acknowledges that he has verified with all his sub-contractors, suppliers, vendors, and their representatives that they have not received any verbal directives from the Owner, Architects and Engineers (and their employees and sub-consultants) at any time before, during or after the bid. The Contractor further acknowledges that all changes to the Bid Documents have been only in the form of formal addendum.

C. By starting Work on this project, the Contractor acknowledges that all directives, field orders and change order will be only from the Owner or his Designated Representative and only in writing. All other directives verbal or otherwise will be at the Contractor's own risk.

1.02 SCOPE OF WORK

A. The scope of this Work includes heating, ventilating and air conditioning systems for the project as indicated on the Contract Documents, including, but not limited to the following:
   1. Removal of existing furnaces and infrared heaters and associated controls.
   2. Heating & ventilation systems including air turnover units, fans, ductwork, ductwork accessories, registers, grilles, etc.
   3. Replacement of existing air inlet and outlets and associated ductwork and accessories.
   4. Control wiring to motor controllers, temperature sensors, line and low voltage thermostats, interlock wiring, control wiring to HVAC equipment, control transformers, etc.
   5. Temperature control system.
   6. Testing, adjusting and balancing.
   7. All necessary cutting, patching and firestopping.
   8. Miscellaneous items shown and/or specified.

1.03 PERMITS AND INSPECTIONS

A. Permits: Contractor shall acquire all required permits required for execution of the Work of this Division and shall pay all fees and charges for same.

1.04 CODES AND STANDARDS

A. Building Code of New York State: Provide all Work in compliance with and meet the requirements of the code.

B. National Electrical Code: All Work covered under these Contract Documents shall conform to the National Electrical Code.

C. Standards: All equipment shall meet all the requirements of ANSI, NEMA, ASHRAE, and SMACNA standards.

D. Listing: All equipment and devices for which Underwriters Laboratories has a listing service, shall be UL listed and bear the UL listing label.

E. All materials and installation shall comply with:
1. Building Code of New York State.
2. Existing Building Code of New York State.
3. Energy Conservation Construction Code of New York State.
4. Fire Code of New York State.
5. Mechanical Code of New York State.
6. Fuel Gas Code of New York State.
7. National Fire Protection Association (NFPA).
8. New York State Department of Labor Rules and Regulations.
9. New York Board of Fire Underwriters.
10. Americans with Disabilities Act.
11. Local Utilities.
12. Authorities Having Jurisdiction.
13. Federal and State Occupational Safety and Health Administration.
14. Local Municipality Codes and Ordinances.

F. In case of conflict between the Contract Documents and the requirements of any Code or Authorities Having Jurisdiction, the most stringent requirements of the aforementioned shall govern.

G. Should this Division perform any Work that does not comply with the requirements of the applicable Building Codes, State Laws, Local Ordinances, Industry Standards and/or Power Company regulations, he shall bear all costs arising in correcting the deficiencies, as approved by the Architect/Owner.

1.05 LOCAL AUTHORITY HAVING JURISDICTION (AHJ)

A. This Document does not supercede any Code, local or otherwise. All Contractors must be aware of any local requirements and Codes that may affect this project. The AHJ will make all final decisions concerning all code interpretations. Any discrepancies must be reported to the Architect or Engineer within 24 hours. Any code violations are the responsibility of the Contractor and the Contractor shall promptly make all required corrections.

1.06 DEFINITIONS

A. "Engineer" shall mean RAM-TECH Engineers, P.C.

B. "Accepted" means written permission to use a material or system.

C. "Provide" shall mean to deliver to installation site, install, and connect complete and make operational.

D. "Furnish" means to supply and deliver to site, unload, and set in location determined by Architect.

E. "Install" means to mount and connect complete and make operational the equipment or device.

1.07 SUBMITTALS

A. Submit Shop Drawings on all items of equipment and materials to be furnished and installed as required, arranged by specification section number. Include review stamp and table of contents/bill of materials. Do not combine materials from different specification Sections.

B. If submitting electronically, in addition to the requirements above, provide one (1) single-sided color hard copy of every submittal required directly to the Engineer. This includes submittal drawings that are larger than 11" x 17". Reduced scale photocopies will not be acceptable. Failure to abide by these requirements will result in an immediate ACTION C – REVISE AND RESUBMIT without review. All individual items and options within the submittal shall be clearly highlighted or otherwise identified.

C. Operation and maintenance manuals and record drawings shall not be submitted electronically. Provide hard copies only; one (1) copy shall be sufficient.

D. Listed manufacturers and their series and/or model numbers do not imply unconditional specification approval. The series and/or model numbers listed may not be current or correct, but are included as an acceptable series of products that must still comply with the written description and specification. Provision of products, based solely on model numbers listed in the specifications does not constitute automatic acceptance. Approved submittals of all product data are still required.

1.08 QUALITY ASSURANCE

A. Install all Work true to line and grade, parallel and close to walls and parallel to lines of building and maintaining maximum headroom. Do not install ductwork, piping, equipment, etc. across doors, windows or other openings.

B. All equipment shall be accessible for operation, service, etc.

C. All equipment and material shall be new, unused and without any defects.

1.09 PROTECTION OF PERSONS AND PROPERTY

A. Make provisions to prevent moisture and foreign matter from entering piping, equipment, etc.

B. Contractor shall be responsible for all damages until Work is fully accepted. Replace all damaged equipment and material.

C. Assume responsibility for construction safety at all times. Include, as part of Contract, all trench or building shoring, scaffolding, shield, dust protection, mechanical/electrical protection, safety railings, barriers and other safety features required to provide safety conditions for all Workmen and site visitors.

1.10 EXAMINATION OF SITE

A. Examine all Drawings including other Divisions.

B. Examine all existing conditions and ascertain access to site, available storage and delivery facilities.

C. Verify all governing dimensions at site and building.

1.11 OBSTACLES, INTERFERENCE AND COOPERATION

A. Drawings show general design and arrangement. Verify exact location and elevations at the job location. Do not scale plans and diagrams.

B. Drawings do not show all offsets, fittings, interferences and elevation changes. Adjust installation of piping, ductwork, equipment location, etc. to accommodate Work with the obstacles and interferences. Where rearrangement is necessary, report same to Engineer for review. Obtain written acceptance for all changes.

C. Cooperate with all Contractors and Owner and determine the exact route of all piping, ductwork, raceway and location of all equipment.

1.12 CONCEALMENT

A. Unless otherwise specifically indicated, all Work shall be concealed above ceiling space, in wall space and elsewhere throughout the building.

B. In areas with no ceilings, install only after Architect reviews and comments on arrangement and appearance.

1.13 COORDINATION

A. Review all construction Drawings and coordinate all Shop Drawings with Work specified under all divisions of the specifications. Division 23 is responsible to coordinate and cooperate with other Divisions' Work so that Work can be installed and maintained substantially as called for.

B. Under no circumstances shall this Division route any piping, ductwork or other equipment foreign to the electrical installation in the dedicated equipment space located directly above both new and existing electrical panelboards and electrical equipment, which is a violation of the National Electrical Code (NEC) Article 110.26(E)(1). Failure to adhere to this requirement will necessitate removal and relocation or rerouting of said piping or ductwork by this Division at no additional cost to the Owner or other trades.

1.14 OPENINGS, SLEEVES AND CHASES

A. Certain chases, openings and shafts will be provided as shown as part of General Construction Plans and Specifications.

B. Provide all other openings and sleeves for ductwork, pipe, etc. through floors, walls, partitions, ceilings, roofs, etc. for Division 23 Work.

C. Assume responsibility for correct and final location and size of such openings: furnish templates if required. Correct improperly located and sized or omitted chases and openings as required. Plug all abandoned sleeves left as part of this Division.

1.15 FLASHING, SEALING AND FIRESTOPPING

A. Seal where piping or ductwork passes through or is affixed to general construction.

B. Provide flashing, sealing and waterproofing for wall, floor and roof openings without affecting roof guarantee or bond.

C. Piping entering through waterproof walls, floors and partitions: Provide Thunderline Corporation "Link-Seal" or accepted substitute for sealing the annular space between the piping and sleeves.

D. Provide firestopping for openings through fire and smoke barriers, maintaining minimum required rating of floor, ceiling or wall assembly. Refer to Section 23 05 10.

1.16 CUTTING AND PATCHING

A. Contractor shall do all cutting and patching of existing surface required for installation of Work installed under this Contract.

B. Repaired surfaces shall match existing surface.

C. Method of cutting shall be approved by the Engineer.

1.17 PAINTING

A. Prepare surfaces of Work installed under this Division by cleaning, removing rust, etc.

B. Paint all exposed Work in existing areas to match existing conditions.

1.18 STORAGE AND PROTECTION OF MATERIALS

A. Store materials on base, minimum 6" above ground or floor. Equip with waterproof or windproof cover for items subject to moisture damage.

B. Store in orderly manner so as not to interfere with other Work or obstruct access to buildings or facilities.

C. Replace items stolen or damaged at no cost to the Owner.

1.19 EQUIPMENT CONNECTIONS

A. Provide complete piping connections to all equipment as called for on Drawings and as specified.

B. Obtain approved roughing diagrams and exact location of equipment for items furnished under other Divisions of the specifications. Do not rough in without approved Drawing.

1.20 CONTINUITY OF SERVICE

A. Building will be used by Owner during the construction period.

B. Keep all systems operative; make temporary connections as required.

C. Do not shut off any service without written permission from the Owner or Owner’s Representative. Schedule systems shutdown with Owner, providing a minimum of 72 hour notice.

1.21 TESTS

A. Perform operations required for the complete testing of all systems, equipment and related Work as called for.

B. Perform all tests required by local municipalities, utilities, or other governing bodies, boards or agencies having jurisdiction. Provide date and time of testing.

1.22 OWNER INSTRUCTIONS

A. Instruct designated Owner's personnel on the proper operation and care of systems and equipment, before final acceptance of the Work. Obtain written acknowledgement from person instructed prior to final payment. Submit to Architect with final acceptance request.

1.23 CONTRACTOR'S CERTIFICATION

A. All submittals shall bear the Contractor's stamp, certifying the review and approval of submittal, verification of field measurements and compliance with Contract Documents. It shall specifically be as follows:

Contractor acknowledges that all items submitted herein are provided for the base Contract Cost; and that he has reviewed the submittal information contained herein; and that he has determined and verified the materials, field measurements and field construction criteria related thereto, and that he has checked and coordinated the information contained in the submittal with the requirements of all Work in the Contract Documents and other Contracts in the Project.

_____ _____

Contractor's Signature Date

B. All submittals without the above certification will be returned, rejected.

END OF SECTION

SECTION 230509
WIRING FOR EQUIPMENT INCLUDED IN DIVISION 23

PART 1 GENERAL

1.01 SUMMARY

A. Provide all necessary electrical control wiring for all motors, motor controllers and equipment included under this Division unless otherwise noted. Power wiring shall be by Division 26, unless otherwise specified.

B. Provide indicating devices, interface equipment, control transformers, starter coils, relays, contactors, and all related wiring, conduit and other apparatus required to operate and control each mechanical system and to perform the functions specified.

C. Provide all materials and field work necessary to connect control components factory supplied as part of the equipment controlled, unless specified otherwise.

1.02 SUBMITTALS

A. Division 23 shall deliver two copies of accepted wiring diagrams required for wiring connections to the Division 26 Contractor.

PART 2 PRODUCTS

2.01 WIRES AND CABLES

A. Provide wire and cable suitable for the temperature, conditions and location where installed.

B. Use single conductor insulated wire, minimum size at No. 12 AWG.

C. Conductor Material: Annealed copper, 98% conductivity, for all wires and cables. Provide stranded conductors for power and control circuits of all sizes. Aluminum conductors are prohibited.

D. Insulation: Unless otherwise required, provide THHN/THWN insulation for all locations where installed. Insulation voltage rating shall be 600 volts.

E. All conductors installed indoors shall conform to the Building Code of New York State requirements for combustion toxicity tests.

F. Color coding for phase identification shall be in accordance with the following table:

Phase	Three Phase 120/208 Volt	Three Phase 277/480 Volt
Ground	Green	Green
Neutral	White	Gray
A or L1	Black	Brown
B or L2	Red	Orange
C or L3	Blue	Yellow

2.02 RACEWAYS

A. Rigid Steel Conduit: Galvanized on the outside and enameled on the inside or hot dipped on the outside and inside.

B. Steel Electrical Metallic Tubing: Electro-galvanized on the outside and enameled on the inside.

C. Flexible Steel Conduit: Hot dipped galvanized steel strip shaped into interlocking convolutions.

D. Liquidtight Flexible Metal Conduit: Heavy galvanized steel core, of interlocked construction with oil resistant thermoplastic cover.

E. Minimum ¾" size conduit shall be provided.

2.03 MISCELLANEOUS HARDWARE

A. Provide miscellaneous bolts, nuts, washers, anchor bolts, inserts, fittings, rods etc. for complete and operational installation.

PART 3 EXECUTION

3.01 PREPARATION

A. Before installing any Work, layout the proposed course for the conduits and have same accepted.

3.02 EXAMINATION

A. This Division shall be responsible for verifying voltages, phase, horsepower/kW sizes, lug sizes and wiring sizes with the Division 26 contractor. Any changes in the equipment and wiring between the design make and the unit furnished shall borne by this Division at no increased cost in the Contract.

3.03 INSTALLATION OF WIRING

A. For any electrical wiring performed by this Division, obtain an inspection and certificate from the New York Board of Fire Underwriters and submit it prior to application for final payment.

B. Install all Work in accordance with the manufacturer's instructions and per the National Electrical Code. Comply with all applicable sections of Division 26.

C. Control Wiring: This Division shall provide all control wiring. Control wiring includes, but is not limited to, wiring to wiring between control panels or equipment, wiring to control transformers, etc.

D. All wiring shall be installed in approved raceway system. Provide 115 volts AC (+10%) to each Energy Management System (EMS) Controller from the nearest normal power branch circuit panelboard. Where equipment to be controlled is on stand-by (generator) power, provide 115 volts AC (+10%) to each Energy Management System (EMS) Controller serving such equipment from the nearest stand-by power branch circuit panelboard. Clearly indicate circuit breaker used. Provide replacement circuit breaker if no spare is available. Provide a minimum #12 AWG green ground wire for each circuit. Power to all EMS control components (ie: damper motors, valve actuators, control transformers, etc.) shall be by Division 23. Update panelboard directories.

3.04 RACEWAY SCHEDULE

A. Rigid Steel Conduit: Install in all locations indicated on the Drawings, including:
   1. Conduit stub-ups.
   2. In outdoor, above grade locations.
   3. All areas subject to mechanical damage or wet and damp locations.
   4. In hazardous locations.

B. Steel Electrical Metallic Tubing:
   1. May be installed concealed as branch circuit conduits in hollow areas in dry locations, including:
      a. Hollow concrete masonry units, except where cores are to be filled.
      b. Drywall construction with sheet metal studs, except where studs are less than 3½" deep.
   2. May be installed exposed in dry locations, in Mechanical and Electrical Rooms only.

C. Flexible Metal Conduit:
   1. Use 1-3 feet of flexible steel conduit for final conduit connection to:
      a. Motors with open, drip-proof or splash-proof housings.
      b. Equipment subject to vibration (dry locations).
      c. Equipment requiring flexible connection for adjustment or alignment (dry locations).
      d. Recessed lighting fixtures in suspended ceilings.
   2. Install equipment grounding conductor in all flexible metal conduit and bond at each box or equipment to which conduit is connected.

D. Liquidtight Flexible Metal Conduit:
   1. Use 1-3 feet of Liquidtight flexible metal conduit for final conduit connect to:
      a. Motors with weather-protected or totally enclosed housings.
      b. Equipment subject to vibration and in damp or wet locations.
      c. Equipment requiring flexible connection for adjustment or alignment in damp or wet locations.
   2. Install equipment grounding conductor in all Liquidtight flexible metal conduit and bond at each box or equipment to which conduit is connected.

END OF SECTION

SECTION 230510
FIRESTOPPING

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes field constructed assemblage of firestopping products and materials for the following:
   1. Penetrations through fire-rated floor construction.
   2. Penetrations through fire-rated walls and partitions.
   3. Penetrations through smoke barriers.

1.02 REFERENCE

A. American Society for Testing and Materials (ASTM) Publications:
   - E 84: Standard Test Methods for Surface Burning Characteristics of Building Materials.
   - E 119: Methods of Fire Tests of Building Construction and Materials.
   - E 814: Standard Method of Fire Tests of Through-Penetration Fire Stops.
   - C 719: Adhesion and Cohesion of Elastomeric Joint Sealants under Cyclic Movements.
   - C 920: Standard Specification of Elastomeric Joint Sealants.

B. Underwriter's Laboratories Inc. (UL) Publications:
   - UL 263: Fire Tests of Building Construction and Materials.
   - UL 723: Surface Burning Characteristics of Building Materials.
   - UL 1479: Fire Tests of Through-Penetration Firestops.
   - UL 2079: Standard for Fire Tests of Joint Systems.

   Underwriters Laboratories "Fire Resistance Directory" (Current Year).

C. Miscellaneous Publications:
   1. Factory Mutual Approval Guide (Current Year).
   2. Warnock Hersey Certification Listings.

1.03 DEFINITIONS

A. Fire Rated Assembly: Includes all fire rated walls, floors, floor/ceiling and roof system assemblies. Ratings shall be as per ASTM E 119 or UL 263.

B. Firestop System: Firestop systems prevent the spread of smoke, fire and toxic gases through openings in the fire rated assemblies or through joints between wall and floor or roof assemblies or other expansion or seismic joints (also known as firesafing), for a specified period of time, incorporating the use of specific products installed in a specific manner.

C. Flame Spread/Smoke Developed Ratings: Numerical value of a material when tested in accordance with ASTM E 84.

D. F - Rating: The time period that a through-penetration firestop limits the spread of flame and hot gases through fire resistive construction, including the penetrating items, when tested in accordance with the time-temperature curve defined in ASTM E 119.

E. T - Rating: The time period that a through-penetration firestop limits temperature rise through the fire resistive construction, including the penetrating items, as defined in ASTM E 119.

1.04 SUBMITTALS

A. Submit complete list of all firestopping systems and materials to be utilized, including documentation of UL or FM Classifications or approved third party testing. Include all of the individual materials required for each complete system. Indicate manufacturer's product name and number for each material.

B. Submit copies of manufacturer's product data, specifications, recommendations, standard details and installations instructions for all firestop assemblies.

1.05 QUALITY ASSURANCE

A. Installations shall be performed by an experienced firestopping contractor who is certified, licensed or otherwise qualified by the firestopping manufacturer to install the manufacturer's products as per specified requirements.

B. Single-Source Responsibility: Where possible, obtain through-penetration firestop systems for each kind of penetration and construction condition indicated from a single manufacturer.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver firestopping products to Project site in original, unopened containers or packages with intact and legible manufacturer's labels identifying product and manufacture; date of manufacture; lot number; shelf life, if applicable; qualified testing and inspecting agency's classification marking applicable to project; curing time and mixing instructions for multi-component materials.

B. Store and handle firestopping materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants or other causes.

C. Conspicuously mark “REJECTED” on materials which have been damaged and remove from the site. Do not use rejected materials on this project.

D. Material Safety Data Sheets (MSDS) will be available on the site for all materials. Follow manufacturer's guidelines for use, handling and disposal.

1.07 PROJECT CONDITIONS

A. Environmental Conditions: Do not install firestopping when ambient or substrate temperatures are outside limits permitted by firestopping manufacturers or when substrates are wet.

B. Ventilation: Ventilate firestopping per firestopping manufacturer's instructions by natural means or, where this is inadequate, forced air circulation.

C. Coordinate Work: Coordinate construction of openings and penetrating items with other Divisions to ensure that designated through-penetration firestop systems are installed per specified requirements.

1.08 WARRANTY

A. All firestop and firesafing materials shall be warranted, in writing, by the manufacturer against any defects in materials and manufacturing.

B. Completed installation shall be warranted, in writing, by the installer against defects in workmanship.

1.09 ENVIRONMENTAL REQUIREMENTS

A. All materials shall be asbestos free and non-carcinogenic.

B. Firestop materials shall contain no flammable or toxic solvents and shall not produce toxic or flammable outgassing during the drying or curing process.

C. Firestop materials used shall not require solvent based chemicals for clean-up purposes.

D. Water-based, non-toxic firestop materials shall be used in lieu of silicone or solvent based materials.

E. Firestop Materials shall be low-VOC (Volatile Organic Compounds).

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with requirements, provide products from one of the following manufacturers as shown below:
   1. International Protective Coatings Corporation (design make).
   2. 3M Company.
   3. Dow Corning.
   4. Metacaulk.
   5. S T I.
   6. HILTI, Inc.

2.02 PHYSICAL REQUIREMENTS

A. Through-penetration firestop systems and firestop devices shall be tested in accordance with ASTM E 814 using F and T- ratings, shall be classified for use with the particular type of penetrating material used, and shall maintain the same integrity as the fire barrier being sealed.

B. All products used shall be water-resistant after drying or curing and shall be unaffected by high humidity, condensation or transient water exposure.

C. Penetrations containing loose electrical, data, or communications cabling shall be protected using firestopping systems that allow unrestricted cable changes without damage to the seal.

D. Maximum flame spread of 25 and smoke development of 50 when tested in accordance with ASTM E 84 (except intumescent moldable putty).

E. All materials shall have a minimum one year shelf life.

F. Materials and system designs shall not require ampacity derating in power cable installations.

G. Materials supplied under this specification shall be compatible with all materials used in the building construction.

2.03 MATERIALS

A. Water-based thixotropic firestop sealant available in caulkable, trowelable or pourable formulations; IPC Flamesafe FS 900 Series.

B. Water-based, elastomeric, intumescent firestop sealant; IPC Flamesafe FS 1900.

C. Intumescent, moldable firestop putty; IPC Flamesafe FS 1000-1077-1100 Series.

D. Pre-engineered, plant fabricated, self-sealing firestop collar device manufactured from galvanized steel lined with a heat-activated intumescent moldable putty. Device to be installed on the job site with no additional component fabrication required; IPC Flamesafe Firestop Collar Device System.

E. Reusable heat expanding bags used as a permanent firestop system; IPC Flamesafe or KBS Sealbags.

F. Cementitious, firestop compound, job site mixed either by hand or using mortar or plastering machine with a worm gear type pump. Designed for large penetrations; IPC Flamesafe Mortar.

G. Safing sealant in curtain wall joints and other construction joints to stop smoke, gas and fire migration; IPC Flamesafe C700 Sealant.

PART 3 EXECUTION

3.01 INSPECTION

A. Examine adjoining construction and the conditions under which the work is to be completed. Do not proceed with work until any unsatisfactory conditions detrimental to the proper and timely completion of the work have been corrected.

B. Verify that openings and items (penetrations) passing through them are ready to receive the work of this section.

C. Verify that field dimensions are as shown on the drawings and as recommended by the manufacturer.

3.02 PREPARATION

A. Surface cleaning: Clean out openings and joints immediately prior to installing firestopping to comply with recommendations of firestopping manufacturer and the following requirements:
   1. Remove all foreign materials from surfaces of opening and joint substrates and from penetrating items that could interfere with adhesion of firestopping.
   2. Clean opening and joint substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with firestopping. Remove loose particles remaining from cleaning operation.
   3. Remove laitance and form release agents from concrete.

B. Priming: Prime substrates where recommended by firestopping manufacturer using that manufacturer's recommended products and methods.

3.03 INSTALLATION

A. Comply with the through-penetration firestop manufacturer's installation instructions and drawings pertaining to products and applications indicated.

B. Confirm all requirements of the specific through-penetration system used prior to installation of any elements of the work. Verify material, maximum diameter, minimum weight, installation thickness/density, annular space, etc.

C. Coordinate with fire protection and other trades to assure that all pipe, conduit, cable and other items which penetrate fire rated construction have been permanently installed prior to installation of firestops and smoke seals. Schedule and sequence work to assure partitions and other construction that would conceal penetrations are not erected prior to the installations of firestop, firesafing and smoke seals.

D. Apply firestops and smoke seals in all locations required by national, municipal and local governing laws and codes.

E. Apply firestopping materials only when the temperature of the surfaces to be filled and surrounding air temperature comply with the manufacturer's printed instructions.

F. Personal safety gear shall be utilized in accordance with manufacturer's instructions, material and environmental considerations.

3.04 FIELD QUALITY CONTROL

A. Verify that system(s) are installed in all specified and/or indicated locations in rated assemblies.

B. Verify that proper, specified firestopping materials are used in the firestop system and that system is installed in strict accordance with the latest independent testing agency or manufacturer's latest published requirements.

C. Install forming/damming materials and other accessories of types required to support fill materials during their application and in the position needed to produce the cross-sectional shapes and depths required to achieve fire ratings of designated through-penetration firestop systems. After installing fill materials, remove forming materials and other accessories not indicated as permanent components of firestop systems.

D. Install fill materials for through-penetration firestop systems by proven techniques to produce the following results:
   1. Completely fill voids and cavities formed by openings, forming materials, accessories and penetrating items.
   2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
   3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes. Install any covering materials or finish as per design requirements and manufacturer's instructions.

E. The penetration of any walls or partitions by any wiring or cables without conduit is not permitted. No bare wire penetrations are permitted.

F. After installation, properly identify all firestop systems. Identification shall occur at location where system has been installed and shall include:
   1. Identify the firestopping system that has been installed as being a "Rated Through-Penetration Firestop System - Do Not Disturb".
   2. Use label, minimum 3" by 5", yellow and black OSHA colors with manufacturers, building owner representative and/or contractor clearly identified.

G. Do not proceed to enclose firestopping with other construction until local building inspectors or Authority Having Jurisdiction have inspected the Work and given approval to close the Work.

H. Where necessary, repairs shall be made and repaired installations shall be reinspected.

3.05 CLEANING

A. Clean off excess fill materials and sealants adjacent to openings and joints as work progresses by methods and with cleaning materials accepted by manufacturers of firestopping products and of products in which opening and joints occur.

B. Protect firestopping during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated firestopping immediately and install new materials to produce firestopping complying with specified requirements.

END OF SECTION

SECTION 230529
SUPPORTS AND ANCHORS

PART 1 GENERAL

1.01 SUMMARY

A. Pipe, duct, and equipment hangers, supports, inserts and associated anchors.

B. Equipment bases and supports.

C. Sleeves and seals.

1.02 REFERENCES

A. MSS SP-69-96: Pipe Hangers and Supports

1.03 SUBMITTALS

A. Indicate hanger and support framing and attachment methods.

B. Submit shop drawings as follows:
   1. Details of trapeze hangers and upper hanger attachments for piping 4 inches in diameter and over. Include the number and size of pipe lines to be supported on each type of trapeze hanger.
   2. Details of pipe hanger and support framing and attachment methods.
   3. Details and method of installing sway braces for cast iron soil pipe.
   4. Details and method of installing restraints, anchors, and supports for grooved end piping systems.

C. Product Data: Catalog sheets, specifications and installation instructions for each item specified except fasteners.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Empire.

B. Anvil.

C. Carpenter & Paterson

D. Michigan.

E. Or accepted equal.

2.02 MISCELLANEOUS HANGERS AND SUPPORTS

A. Beam Clamps:
   1. Material: Malleable Iron.
   2. Service: Recommended for use on American Standard I-beams and wide flange beams.
   3. UL listed/FM approved.
   4. Manufacturer and Model:
      a. C-Clamp: Grinnell Fig. 86 or accepted equal.
      b. Center Beam Clamp: Grinnell Fig. 217 or accepted equal.
      c. Side Beam Clamp: Grinnell Fig. 225 or accepted equal.

2.03 HANGER RODS

A. Steel Hanger Rods: Cadmium plated threaded both ends, threaded one end, or continuous threaded.

2.04 CONCRETE FASTENERS

A. Steel shell and expander plug for threaded connection; size fasteners to suit threaded hanger roads.

B. Manufacturer: Phillips (Design Make), Rawl Plug, or accepted equal.

2.05 FLASHING

A. Metal Flashing: 26 ga. galvanized steel

B. Flexible Flashing: 47 mil thick butyl, compatible with roofing.

C. Caps: Steel, 22 ga. minimum; 16 ga. at fire resistant elements.

2.06 EQUIPMENT SUPPORTS

A. Provide supports fabricated from steel channel, angle, and/or pipe as shown or specified.

2.07 FINISH

A. Cadmium plated steel hangers and supports.

B. Bolts, Nuts, Washers, Lags and Screws: Cadmium plated or galvanized, size and type to suit application

PART 3 EXECUTION

3.01 EQUIPMENT CURBS, BASES AND SUPPORTS

A. Construct support of steel members. Brace and fasten with flanges bolted to structure.

3.02 FLASHING

A. Provide flexible flashing and metal counterflashing where piping and ductwork penetrate weather or waterproofed walls, floors, and roofs.

3.03 LEAD PAINT HAZARD

A. Work shall be conducted under the assumption that the existing roof and floor slab metal decks and structural steel contain lead surfaces, shall comply with all applicable OSHA, Federal, State, and Local Regulations. Contractor shall take appropriate precautions to protect workers when performing related work adjacent to these surfaces.

END OF SECTION

SECTION 230553
HVAC IDENTIFICATION

PART 1 GENERAL

1.01 SUMMARY
A. Identification of mechanical products installed under Division 23.

1.02 REFERENCES
A. ANSI/ASME A13.1 - Scheme for the Identification of Piping Systems.

1.03 SUBMITTALS
A. Submit product data for mechanical identification.

B. Submit list of wording, symbols, letter size and color coding for mechanical identification.

PART 2 PRODUCTS

2.01 MATERIALS
A. Color: Unless specified otherwise, conform with ANSI/ASME A13.1.

B. Plastic Nameplates: Laminated three-layer plastic with engraved black letters on light contrasting background color.

C. Stencil Painting: Quick drying, no-smearing, gas and oil resistant paint manufactured for these types of applications.

PART 3 EXECUTION

3.01 PREPARATION
A. Degrease and clean surfaces to receive adhesive for identification materials and for stencil painting.

3.02 INSTALLATION
A. Plastic Nameplates: Install with corrosive-resistant mechanical fasteners, or adhesive.

B. Equipment: Identify fans and air handling equipment with plastic nameplates or stencil painting.

C. Controls: Identify control panels and major control components outside panels with plastic nameplates.

END OF SECTION

SECTION 230593
TESTING, ADJUSTING AND BALANCE

PART 1 GENERAL

1.01 SUMMARY

A. Testing, adjustment, and balancing of air systems.

B. Measurement of pre-construction and final operating condition of HVAC systems.

1.02 REFERENCES

A. AABC - National Standards for Field Measurement and Instrumentation, Total System Balance.

B. ASHRAE - Systems Handbook: Chapter, Testing, Adjusting and Balancing.

C. NEBB - Procedural Standards for Testing, Balancing and Adjusting of Environmental Systems.

1.03 SUBMITTALS

A. Submit name of adjusting and balancing agency for review within 30 days after award of Contract.

B. Submit test reports as a submittal.

C. Prior to commencing work, submit draft reports indicating adjusting, balancing, and equipment data required.

D. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Architect/Engineer and for inclusion in operating and maintenance manuals.

E. Provide reports in soft cover, letter size, 3-ring binder manuals, complete with index page and indexing tabs, with cover identification at front and side. Include set of reduced drawings with air outlets and equipment identified to correspond with data sheets, and indicating thermostat locations.

F. Include detailed procedures, agenda, sample report forms and copy of AABC National Project Performance Guaranty prior to commencing system balance.

1.04 REPORT FORMS

A. Submit reports on AABC National Standards for Total System Balance.

B. Forms shall include the following information:

1. Title Page:
    a. Company name
    b. Company address
    c. Company telephone number
    d. Project name
    e. Project location
    f. Project Architect
    g. Project Engineer
    h. Project Contractor
    i. Project altitude

2. Instrument List:
    a. Instrument
    b. Manufacturer
    c. Model
    d. Serial number
    e. Range
    f. Calibration date
3. Air Moving Equipment:
    a. Location
    b. Manufacturer
    c. Model
    d. Air flow, specified and actual
    e. Return air flow, specified and actual
    f. Outside air flow, specified and actual
    g. Total static pressure (total external), specified and actual
    h. Inlet pressure
    i. Discharge pressure
    j. Fan RPM
4. Fan Data:
    a. Location
    b. Manufacturer
    c. Model
    d. Fan RPM
5. Electric Motors:
    a. Manufacturer
    b. HP/BHP
    c. Phase, voltage, amperage; nameplate, actual, no load.
    d. RPM
    e. Service factor
    f. Starter size, rating, heater elements
5. V-Belt Drive:
    a. Identification/location
    b. Required driven RPM
    c. Driven sheave, diameter and RPM
    d. Belt, size and quantity
    e. Motor sheave, diameter and RPM
    f. Center to center distance, maximum, minimum, and actual
6. Duct Traverse:
    a. System zone/branch
    b. Duct size
    c. Area
    d. Design velocity
    e. Design air flow
    f. Test velocity
    g. Test air flow
    h. Duct static pressure
    i. Air temperature
    j. Air correction factor
7. Air Distribution Test Sheet:
    a. Air terminal number
    b. Room number/location
    c. Terminal type
    d. Terminal size
    e. Area factor
    f. Design velocity

g. Design air flow
h. Test (final) velocity
i. Test (final) air flow
j. Percent of design air flow

1.05 PROJECT RECORD DOCUMENTS

A. Submit record documents.

B. Accurately record actual locations of flow balancers and settings.

1.06 QUALITY ASSURANCE

A. Agency shall be company specializing in the adjusting and balancing of systems specified in this Section with minimum of 5 successfully completed projects of similar scope certified by AABC.

B. Total system balance shall be performed in accordance with AABC National Standards for Field Measurement and Instrumentation, Total System Balance. ASHRAE - Systems Handbook.

1.07 SEQUENCING AND SCHEDULING

A. Sequence Work to commence after completion of systems and schedule completion of Work before Substantial Completion of Project.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 EXAMINATION

A. Before commencing Work, verify that systems are complete and operable. Ensure the following:
1. Equipment is operable and in a safe and normal condition.
2. Temperature control systems are installed complete and operable.
3. Proper thermal overload protection is in place for electrical equipment.
4. Final filters are clean and in place. If required, install temporary media in addition to final filters.
5. Duct systems are clean of debris.
6. Correct fan rotation.
7. Access doors are closed and duct end caps are in place.
8. Air outlets are installed and connected.
9. Duct system leakage has been minimized.

B. Report any defects or deficiencies noted during performance of services to Architect/Engineer.

C. Promptly report abnormal conditions in mechanical systems or conditions which prevent system balance.

D. If, for design reasons, system cannot be properly balanced, report as soon as observed.

E. Beginning of Work means acceptance of existing conditions.

3.02 PREPARATION

A. Provide instruments required for testing, adjusting, and balancing operations. Make instruments available to Architect/Engineer to facilitate spot checks during testing.

B. Provide additional balancing devices as required.

3.03 INSTALLATION TOLERANCES

A. Adjust air handling systems to plus or minus 10 percent for supply systems and plus or minus 10 percent for return and exhaust systems from figures indicated.

3.04 ADJUSTING

A. Recorded data shall represent actually measured, or observed condition.

B. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.

C. After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.

D. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.

E. At the time of final inspection, the Contractor shall recheck, in the presence of the Engineer and Owner, random selections of data, water and air quantities, air motion and sound levels recorded in the certified report. Points and areas for recheck shall be as selected by the Engineer. Measurement and test procedures shall be as approved for work forming basis of certified report.

F. Selection for Recheck (Specific Plus Random): In general, selections for recheck will not exceed 25 percent of the total number tabulated in the report, except that special air systems may require a complete recheck for safety reasons.

G. Retests: If random tests elicit a measured deviation of ten percent or more from that recorded in the certified report listing at ten percent or more of the recheck selections, the report shall be automatically rejected. In the event the report is rejected, all systems shall be readjusted and tested, new data recorded, new certified reports submitted and new inspection tests made.

H. Check and adjust systems approximately six months after final acceptance and submit report.

3.05 AIR SYSTEM PROCEDURE

A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities.

B. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.

C. Measure air quantities at air inlets and outlets.

D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.

E. Use volume control devices to regulate air quantities only to extent that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers.

F. Vary total system air quantities by adjustment of fan speeds. Provide drive changes required. Vary branch air quantities by damper regulation.

G. Provide system schematic with required and actual air quantities recorded at each outlet or inlet.

H. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan. Make allowances for 50 percent loading of filters.

END OF SECTION

SECTION 230923
DIRECT DIGITAL CONTROL SYSTEM

PART 1 GENERAL

1.01 SUMMARY

A. The Contractor shall provide and install an integrated Energy Management System (EMS) based on state-of-the-art microprocessor technology. The system shall encompass all of the points described on the drawings and described herein. The system shall be complete in all respects including all control components, hardware and software required for proper system operation as described herein or as indicated on the drawings.

B. The system shall be compatible and interoperate/interface completely with Automated Logic Energy Management Systems.

C. All points shall be fully defined and usable at the existing Owner's operator's workstation. The system shall be configured as intelligent standalone distributed network processors, application specific controllers, and integrators for 3rd party controllers for HVAC, lighting and fire systems. This distributed architecture shall allow the operator workstations to function as an operator I/O and archive device only. All points will be fully accessible both for uploading and downloading.

D. All materials and equipment used shall be standard components, regularly manufactured for this and/or other systems and not custom designed especially for this project. All systems and components shall have been thoroughly tested and proved in actual use in any installation similar to that proposed for the herein. Factory test installations are not acceptable as a "similar" acquisition.

E. The EMS Contractor shall furnish and install all necessary hardware, provide and load all specified software, and turn over to the Owner's a completely operational system capable of performing all specified control and data acquisition.

F. This Work shall include all electrical interlock and control wiring, connections to and interconnections between all HVAC equipment and appurtenances furnished and/or controlled under this contract.

G. Provide all field devices including remote input/output devices, sensors, transmitters, relays, contactors, transducers, communication hardware and associated electronics required for complete system operation.

1.02 COMPATIBILITY

A. The building is served by an existing Automated Logic Energy Management and Control System. The new system components shall be of the same type, the programming language shall be the same as existing.

B. The extension of the subject building's control system shall be compatible with the Owner's existing above described master stations, permitting complete communication of all parameters hereinafter described without encumbering the existing system's operation relative to this and other buildings (locations). Gateways and PC desktop icons that "link" to separate systems is not acceptable. Any costs associated with connecting to the existing Energy Management System, including licensed software, programming, training, etc. shall be the responsibility of the EMS Contractor (no additional cost to the Owner). The contractor must demonstrate their ability to perform the integration to the existing Automated Logic System prior to submittal acceptance and invoicing for any EMS related work.

1.03 REFERENCED STANDARDS, CODES AND ORDINANCES

A. It is the responsibility of the EMS Contractor to be familiar with all codes, rules, ordinances, and regulations of the Authority Having Jurisdiction and their interpretations which are in effect at the site of the Work.

B. The latest issue of applicable standards and recommended practices of the following agencies in effect shall form a part of the specification to the extent each agency's relative standards or recommended practices apply to the Systems and its components as specified herein.

1. Federal Communications Commission (FCC)
2. American National Standards Institute (ANSI)
3. American Society of Mechanical Engineers (ASME)
4. Electronic Industries Association (EIA)
5. Institute of Electrical and Electronics Engineers (IEEE)
6. National Electrical Manufacturers Association (NEMA)
7. National Fire Protection Association (NFPA)
8. Underwriters Laboratories (UL)
9. Occupational Safety and Health Administration (OSHA)
10. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)

C. The EMS Contractor shall be solely responsible for compliance with all health and safety regulations, performing the Work in a safe and competent manner, and use industry accepted installation procedures required for the Work as outlined in these documents.

D. All systems equipment, components, accessories, software and installation hardware shall be new and free from defects and shall be UL listed where applicable. All components shall be in current production and shall be a standard product of the system or device manufacturer. Refurbished or reconditioned components are unacceptable. Each component shall bear the make, model number, device tag number (if any), and the UL label as applicable. All Systems components of a given type shall be the product of the same manufacturer.

1.04 QUALITY ASSURANCE

A. Complete field testing, adjustment and checkout of the Energy Management System shall be performed by the manufacturer's representative as specified.

B. Control system manufacturer shall have a minimum of 10 years experience with Energy Management (EMS) systems. Installing Contractor shall be manufacturer of equipment. The Energy Management System Contractor shall have a minimum of 10 years experience in temperature control field and shall have installed no less than 10 EMS of this size and complexity. Contractor shall have a factory-trained service office.

C. 40 hours of on-site training of Facility maintenance personnel shall be provided.

D. The Contract Documents are not intended to show all details. The Contractor shall secure satisfactory information before submitting the proposal/bid and include in the proposal/bid a sum sufficient to cover all items of labor and material required for the complete installation of the devices and systems described herein.

E. All Work performed for this project will comply with all codes, laws and governing bodies. The Contractor shall be responsible for obtaining and payment of all permits.

1.05 EMS SINGLE SOURCE RESPONSIBILITY

A. The EMS Contractor shall be fully responsible for the proper operation of the Energy Management Control System, including but not limited to, sensors and controls, communication links, and peripheral devices. After the installation, the Contractor shall be responsible for the debugging and calibration of the EMS.

B. The EMS Contractor shall also be fully responsible for providing and loading the specified software packages, to include the loading of all necessary operational parameters. Any debugging of software problems shall be performed solely by the EMS Contractor.

C. The Contractor shall have factory trained engineers on staff, fully capable of providing start-up assistance, Owner's personnel instruction, routine maintenance and twenty-four hour emergency maintenance service on all system components. The Contractor shall have a minimum of 10 years experience, specifically in the installation of temperature control systems.

D. The Contractor shall also have the capability to interface with the EMS from a remote location through the specified modem over any voice grade telephone lines.

1.06 SUBMITTALS

A. Product Data: Manufacturer's technical product data for Energy Management system components furnished; indicate dimensions, performance characteristics, electrical characteristics, and include installation and start-up instructions, as applicable.

B. DDC System Summary Forms: Provide data summary forms to be approved by the Engineer to define the following information for inclusion into the EMS for each point in the system by the Contractor:
   1. Description of each piece of equipment and the functions to be controlled.
   2. For each DDC function, a listing of digital and/or analog hardware required to interface the Energy Management System to the equipment.
   3. Listing of all digital and analog alarms.
   4. Listing of all EMS application programs associated with each piece of equipment. This listing shall include all control algorithms and mathematical equations. The listing shall be in easy to understand English format.

C. Point List: List of each control input and output; the device it is controlling; the location of the device, and the symbol or label of the control point in the software.

D. Temperature Control Drawings:
   1. Provide wiring diagrams indicating all required electrical wiring, clearly differentiating between factory and field installed wiring. Include equipment manufacturer's wiring diagram clearly indicating Energy Management System interface.
   2. Provide control drawings with an outline of each system being controlled and location of devices. Label each control device with setting and adjustable range.

E. Sequence of Operation: A detailed sequence of operation describing exact method of control.

F. Field Test Results: Results of functional and diagnostic tests and calibrations.

G. Training Materials: Provide course outline and materials for each class at least six weeks before first class. Training shall be furnished via instructor-led sessions, computer-based training, or web-based training. Engineer will modify course outlines and materials if necessary to meet Owner's needs. Engineer will review and approve course outlines and materials at least three weeks before first class.

H. Operation and Maintenance Data: Provide software and maintenance manuals as described below:
   1. Software Manuals: The software manual shall describe programming and testing, starting with a system overview and proceeding to a detailed description of each software feature. The manual shall instruct the user on programming or reprogramming any portion of the DDC System. This shall include control programs, algorithms, mathematical equations, variables, set points, time periods, messages, and other information necessary to load, alter, test and execute the system.
   2. Maintenance Manual: The maintenance manual shall provide descriptions of Maintenance on all system components, including sensors and controlled devices. They shall cover inspection, periodic preventative maintenance, fault diagnosis, and repair or replacement of defective components.
   3. Include these manuals, product data, DDC system summary forms and "as-built" point lists, temperature control Drawings and sequences of operation in the Operation and Maintenance Manual.

1.07 WARRANTY

A. The Energy Management and Control System, including all hardware and software components, shall be warranted for a period of one year following the date of final acceptance of the system, guaranteeing service calls within 8 hours of notification during Monday through Friday and 24 hours on weekends. Provide service, parts and labor to correct all system defects arising during this period without cost to the Owner.

B. Provide four complete inspections (one in each season), to inspect, calibrate, and adjust controls as required, and submit written reports to the Owner.

C. The option for continued maintenance and monitoring for years 2, 3, 4 and 5 shall be made available to the Owner.

1.08 ELECTRICAL WORK AND SAFETY REQUIREMENTS

A. Electrical work shall be in accordance with Division 26, applicable NFPA, ANSI C2 and UL requirements. Fully enclose or properly guard electrical wiring, terminal blocks and other high voltage contacts and mark to prevent accidental injury to personnel.

B. All wiring associated with and required by the EMS shall be the responsibility of the EMS Contractor.

C. Comply with all the latest Federal, State, and Local rules, regulations, and ordinances having jurisdiction over this work, including OSHA requirements as they apply to the Owner. These codes shall supersede the specifications and drawings. All Work under this contract shall be in accordance with the latest editions of the National Electrical Code and the electric codes in the locale in which the work is being performed.

D. The term "wiring" shall be construed to include furnishing of wire, conduit, miscellaneous materials, and labor as required for mounting and connecting electrical control devices, and providing electrical interlocks between equipment. Low voltage sensor wiring shall be installed per NEC and local codes.

E. All line voltage interlock wiring is to be run in thin-wall conduit in equipment rooms and in rigid conduit, when installed in floor slabs or underground areas.

F. Low voltage (below 30 volts AC or DC) electronic control wiring in concealed but accessible locations may be installed without conduit.

G. All cable runs in concealed but accessible areas shall be approved for plenum installation or run in conduit.

H. Utilize EMT in all mechanical rooms and where exposed to damage.

I. All control wiring for sensors, transducers, communication networks, etc. shall be twisted, shielded #18 gage wire with plenum-rated jacket.

J. All control wiring in concealed, but accessible, areas shall be marked every ten (10) feet with a plastic tag indicating wire is part of "Energy Management System".

1.09 CONTROL ENCLOSURES

A. All controllers, transducers and associated control components shall be mounted in metal or plastic control cabinets.

B. Metal cabinets shall be of metal (aluminum or steel) construction.

C. The cabinet door shall be key lockable and be supported by a piano-type hinge the entire length of the door. The cabinet shall carry a UL50 listing for line voltage applications and meet NEMA 1 standards as a minimum. Cabinets shall be grounded as per Division 26 requirements.

1.10 MANUFACTURER'S RECOMMENDATIONS

A. Where installation procedures, or any part thereof, are required to be in accordance with the recommendations of the manufacturer of the material being installed, furnish printed copies of these recommendations to the Engineer. Failure to furnish these recommendations shall be cause for rejection of material.

PART 2 PRODUCTS

2.01 GENERAL

A. This specification defines the minimum equipment and performance requirements for a direct digital Energy Management System. The Energy Management System shall be capable of performing, without any additional equipment, all of the automatic temperature control and energy management functions described herein.

B. The Energy Management System shall monitor and control the equipment as indicated in the System Summary Sheet and with respect to the "Description of Operation" specified herein and/or described on the Drawings. Provide all hardware and software necessary to accomplish these operations. This includes all relays and transducers required to perform the sequences intended.

C. The system shall be UL 916 approved as an Energy Management System.

D. All output signals will be provided with manual override switches in the associated control panel to allow manual operation.

E. All control functions shall be executed via direct digital control algorithms.

F. The user shall be able to customize control strategies and sequences of operation as desired.

G. Computer equipment shall operate satisfactory within a range of 0ºC to 50ºC and from 10% to 90% relative humidity.

H. Materials, software and equipment used in the Energy Management System shall be essentially the cataloged products of the manufacturers, regularly engaged in the production of such materials or equipment shall be the manufacturer's latest standard design that complies with the specification requirements. Each major component and software packages shall have the manufacturer's name and address and the model and serial number on a nameplate securely attached in a conspicuous place.

I. Acceptable Manufacturers: Automated Logic (Design Make). (No substitutions)

2.02 SYSTEM ARCHITECTURE

A. The control system shall consist of a high-speed, peer-to-peer network of DDC controllers and a web-based operator interface. Depict each mechanical system and building floor plan by a point-and-click graphic. A web server with a network interface card shall gather data from this system and generate web pages accessible through a conventional web browser on each PC connected to the network. Operators shall be able to perform all normal operator functions though the web browser interface.

B. The Energy Management System shall be capable of integrating multiple building functions including equipment supervision and control, alarm management, energy management, and historical data collection and archiving.

C. The system shall directly control HVAC equipment as specified in Sequences of Operation. Each zone controller shall provide occupied and unoccupied modes of operation by individual zone. Furnish energy conservation features such as optimal start and stop, night setback, request-based logic and demand level adjustment of setpoints as specified in Appendix A.

D. The Energy Management System shall consist of the following:
   1. Standalone network panels
   2. Standalone application specific controllers (ASCs)
      The system shall have a modular architecture, and shall permit expansion of both capacity and functionality through the addition of sensors, actuators, standalone network panels, and operator devices.

E. System architectural design shall eliminate dependence upon any single device for alarm reporting and control execution. Each network panel shall operate independently by performing its own specified control, alarm management, operator I/O, and historical data collection. The failure of any single component or network connection shall not interrupt the execution of control strategies at other operational devices.

F. Standalone network panels shall be able to access any data from, or send control commands and alarm reports directly to any other network panel or combination of panels on the network without dependence upon a central processing device, including a Central File Server. Standalone network panels shall also be able to send alarm reports to multiple operator workstations, terminals, and printers without dependence upon a central processing device or File Server.

2.03 STANDALONE NETWORK PANELS

A. Standalone network panels shall be microprocessor based, multi-tasking, multi-user, real-time digital control processors. Each standalone network panel shall consist of modular hardware with plug-in enclosed processors, communication controllers, power supplies, and input/output modules. A sufficient number of controllers shall be supplied to fully meet the requirements of this specification and the attached point list.

B. Memory: Each network panel shall have sufficient memory to support its own operating system and databases including:
1. Control Processes
2. Energy Management Applications
3. Alarm Management
4. Historical/Trend Data for all points
5. Maintenance Support Applications
6. Custom Processes
7. Operator I/O
8. Dial-Up Communications
9. Manual Override Monitoring
10. Lighting Control Points
11. Integrator Software for 3rd Party Controllers
12. Transaction Logging for all points
13. Password Access Control

C. Point Types: Each network panel shall support the following types of point inputs and outputs:
1. Digital Inputs for status/alarm contacts.
2. Digital Outputs for on/off equipment control.
3. Analog Inputs for temperature, pressure, humidity, flow, and position measurements.
4. Analog Outputs for valve and damper position control, and capacity control of primary equipment.
5. Pulse Inputs for pulsed contact monitoring.

D. Expendability: The system shall be modular in nature, and shall permit easy expansion through the addition of software applications, workstation hardware, field application specific controllers, integrator panels, sensors, and actuators.

E. Serial Communication Ports: Standalone network panels shall provide at least two RS-232C serial data communication ports for simultaneous operation of multiple operator I/O devices such as industry standard printers, laptop workstations, PC workstations, and panel mounted or portable network panel Operator's Terminals. Standalone network panels shall allow temporary use of portable devices without interrupting the normal operation of permanently connected modems, printers, or network terminals.

F. Integrated On-Line Diagnostics: Each network panel shall continuously perform self-diagnostics, communication diagnosis and diagnosis of all subsidiary equipment. The network panel shall provide both local and remote annunciation of any detected component failures, or repeated failure to establish communication. Indication of the diagnostic results shall be provided at each network panel, and shall not require the connection of an operator I/O device.

G. Surge and Transient Protection: Isolation shall be provided at all network terminations, as well as all field point terminations to suppress induced voltage transients consistent with IEEE Standard 587-1980. Isolation levels shall be sufficiently high as to allow all signal wiring to be run in the same conduit as high voltage wiring where acceptable by electrical code.

H. Power fail Restart: In the event of the loss of normal power, there shall be an orderly shutdown of all standalone network panels to prevent the loss of database or operating system software. Non-Volatile memory shall be incorporated for all critical controller configuration data, and battery back-up shall be provided to support the real-time clock and all volatile memory for a minimum of 72 hours. Upon restoration of normal power, the network panel shall automatically resume full operation without manual intervention. Should network panel memory be lost for any reason, the user shall have the capability of reloading the network panel via the local area network, via the local RS-232C port, or via telephone line dial-in.

I. Integral Operator Interface: Each standalone network panel shall include a menu-driven, liquid-crystal display with touchpad interface (Network Terminal). The Network Terminal shall include:
   1. Touchscreen input 16-line x 40 character, 256 x 128 dot-matrix, backlit liquid crystal, multiple point display screen.
   2. Fully prompted menu driven input.
   3. Total access to information and commands anywhere within the network.
   4. Context-sensitive Online Help screens.
   5. English commands and point descriptors, totally consistent with Operator Workstation interface.
   6. Six levels of password access.

2.04 APPLICATION SPECIFIC CONTROLLERS - HVAC APPLICATIONS

A. Each Standalone Network Controller shall be able to extend its performance and capacity through the use of remote Application Specific Controllers (ASCs).

B. Each ASC shall operate as a standalone controller capable of performing its specified control responsibilities independently of other controllers in the network. Each ASC shall be a microprocessor-based, multi-tasking, real-time digital control processor.

C. Each ASC shall have sufficient memory to support its own operating system and data bases including:
   1. Control Processes
   2. Energy Management Applications
   3. Operator I/O (Portable Service Terminal)

D. The operator interface to any ASC point data or programs shall be through any network-resident PC workstation, or any PC or portable operator's terminal connected to any network panel in the network.

E. Application Specific Controllers shall directly support the temporary use of a portable service terminal. The capabilities of the portable service terminal shall include but not be limited to the following:
   1. Display temperatures
   2. Display status
   3. Display setpoints
   4. Display control parameters
   5. Override binary output control
   6. Override analog setpoints
   7. Modification of gain and offset constants

F. Power fail Protection: All system setpoints, proportional bands, control algorithms, and any other programmable parameters shall be stored such that a power failure of any duration does not necessitate reprogramming the controller.

G. Configuration and Download: The ASCs shall have the capability of receiving configuration and program loading by the following:
   1. Locally, via a direct connect portable laptop service tool.
   2. Over the network, from the portable laptop service tool.
   3. From the Operator Workstation, via the communication networks.

2.05 WEB BASED CONTROL SYSTEM

A. General Description: BAS Supplier shall provide web-based access to the system as part of standard installation. User shall be able to access all displays of real-time data that are part of the BAS via a standard Web browser. Web browser shall tie into the network via owner-supplied Ethernet network connection. Web-page host shall be a separate device that resides on the BAS BACnet network, but is not the BAS server for the control system. BAS server must be a separate computer from the Web-page host device to ensure data and system integrity. The web-page software shall not require a per user licensing fee or annual fees. The web-page host must be able to support on average 50 simultaneous users with the ability to expand the system to accommodate an unlimited number of users.

B. Browser Technology: Browser shall be standard version of Microsoft IE 5.5 or later and Netscape Navigator 4.76 or later. No special vendor-supplied software shall be needed on computers running browser. All displays shall be viewable and the Web-page host shall directly access real-time data from the BAS BACnet network. Data shall be displayed in real time and update automatically without user interaction. User shall be able to change data on displays if logged in with the appropriate user’s name and password.

C. Communications:
   1. Web-page host shall include two Ethernet network connections. One network connection shall be dedicated to BAS BACnet network and shall be used to gather real-time data from all the BACnet devices that form the BAS. This network shall communicate via BACnet, allowing the Web-page host to gather data directly from units on the local LAN or from other projects connected over a WAN. This network shall also provide the connection to the BAS server for Web page generation.
   2. The second Ethernet connection shall provide the physical connection to the Internet or an IP-based WAN. It shall be the port that is used for the browser to receive Web pages and data from the Web-page host. The Web-page host shall act as a physical barrier between the BAS network and the WAN or Internet connection that allows the browser to receive web pages and data. The two separate network connections provide for a physical barrier to prevent raw BACnet traffic being exposed on the IP network.
   3. The Web-page host shall provide for complete isolation of the IP and BACnet networks by not routing networking packets between the two networks.
   4. BAS BACnet Ethernet network shall be provided and installed by the BAS supplier. Owner shall provide and incur any monthly charges of WAN/Internet connection.

D. Display of Data:
   1. Web page graphics shown on browser shall be replicas of the BAS displays. User shall need no additional training to understand information presented on Web pages when compared to what is shown on BAS displays. Web page displays shall include animation just as BAS displays. Fans shall turn, pilot lights shall blink, coils shall change colors, and so on.
   2. Real-time data shall be shown on all browser Web pages. This data must be directly gathered via the BACnet network and automatically updated on browser Web page displays without any user action. Data on the browser shall automatically refresh as changes are detected without re-drawing the complete display.
   3. It shall be possible for user from browser Web page to change data if the user is logged on with the appropriate password. Clicking on a button or typing in a new value shall change digital data. Using pull-down menus or typing in a new value shall change analog data.
   4. Data displays shall be navigated using pushbuttons on the displays that are simply clicked on with the mouse to select a new display. Alternatively, the standard back and forward buttons of the browser can be used for display navigation.

E. Web Page Generation: Web pages shall be generated automatically from the BAS displays that reside on the BAS server. User shall access Web-page host via the network and shall initiate a web page generation utility that automatically takes the BAS displays and turns them into Web pages. The Web pages generated are automatically installed on the Web page host for access via any computer's standard browser. Any system that requires use of an HTML editor for generation of Web pages shall not be considered.

F. Password Security and Activity Log: Access via Web browser shall utilize the same hierarchical security scheme as BAS system. User shall be asked to log in once the browser makes connection to Web-page host. Once the user logs in, any and all changes that are made shall be tracked by the BAS system. The user shall be able to change only those items that the user has authority to change. A user activity report shall show any and all activity of the users that have logged in to the system regardless of whether those changes were made using a browser or via the BAS workstation.

G. BACnet Communication: Web-page host shall communicate using the ASHRAE BACnet protocol standard to all devices on the BAS network.

2.06 NETWORKING/COMMUNICATIONS

A. Local Area Network:

1. Network panels shall directly reside on a local area network such that communications may be executed directly between controllers, directly between work stations, and between controllers and workstations on a peer to peer basis.
2. Dynamic Data Access: All operator devices, either network resident or connected via dial up modems, shall have the ability to access all point status and application report data, or execute control functions for any and all other devices via the local area network. Access to data shall be based upon logical identification of building equipment. Access to system data shall not be restricted by the hardware configuration of the Energy Management System. The hardware configuration of the EMS network shall be totally transparent to the user when accessing data or developing control programs.
3. General Network Design: Network design shall include the following provisions:
   a. High speed data transfer rates for alarm reporting, quick report generation from multiple controllers, and upload/download efficiency between network devices. The minimum baud rate shall be 2.5 Megabaud.
   b. Support of any combination of controllers and operator workstations directly connected to the local area network. A capability of 50 devices shall be supported on a single local area network.
   c. Detection and accommodation of single or multiple failures of either workstations, network panels or the network media. The network shall include provisions for automatically reconfiguring itself to allow all operational equipment to perform their designated functions as effectively as possible in the event of single or multiple failures.
   d. Message and alarm buffering to prevent information from being lost.
   e. Error detection, correction, and retransmission to guarantee data integrity.
   f. Default device definition to prevent loss of alarms or data, and ensure alarms are reported as quickly as possible in the event an operator device does not respond.
   g. Use of an industry standard IEEE 802.x protocol. Communications must be of a deterministic nature to assure calculable performance under worst-case network loading.
   h. Synchronization of the real time clocks in all network panels shall be provided.

4. Auto-dial/auto answer communications shall be provided to allow standalone network panels to communicate with remote operator stations on an intermittent basis via telephone lines.
5. Standalone network panels shall analyze and prioritize all alarms to minimize the initiation of calls. Non-critical alarms shall be buffered in memory and reported as a group of alarms, or until an operator manually requests an upload of all alarms.
6. The auto-dial program shall include provisions for handling busy signals, "no-answers", an incomplete data transfers. Default devices shall be called when communications cannot be established with primary devices.
7. Dial-up workstations: The Operator at the dial-up workstation shall be able to perform all control functions, all report functions, and all database generation and modification functions as described for workstations connected via the local area network. Routines shall be provided to automatically answer calls, and either file or display information sent from remote network panels. The fact that communication is taking place with remote control systems over telephone lines shall be completely transparent to an operator.
    a. An operator shall be able to access remote buildings by selection of any Energy by its logical name. The PC dial-up program shall maintain a user-definable cross-reference of buildings and associated telephone numbers, so the user shall not be required to remember or manually dial telephone numbers.
    b. The PC workstation may serve as an operator device on a local area network, as well as a dial-up workstation for multiple auto-dial network panels or networks. Alarm and data file transfers handled via dial-up transactions shall not interfere with local area network activity, nor shall local area network activity keep the workstation from handling incoming calls.
8. Dial-up communications shall make use of Hayes compatible 28,800 baud modems and voice grade telephone lines. Each standalone network panel shall have its own modem.

2.07 INTEGRATION WITH THIRD-PARTY MANUFACTURER'S EQUIPMENT

A. General: The Energy Management System (EMS) shall be capable of interoperating with multiple building systems supplied by different manufacturers. The EMS shall be able to receive, react to, and in some cases, return information from multiple building systems. Point inputs and outputs from the third-party controllers shall have real-time interoperability with EMS software features such as: Control Software, Energy Management, Custom Process Programming, Alarm Management, Historical Data and Trend Analysis, Totalization, and Dial-Up and Local Area Network Communication, as mentioned earlier in the specification.

B. Networking/Communications:
1. The EMS shall support any combination of third-party controllers (if more than one third-party manufacturer is being integrated) on a single distributed network.
2. A minimum of 100 third-party controllers shall be supported on a single network.
3. Integration shall be by RS-232 or RS-485 technologies. Third party controllers shall be connected to the network as other application specific controllers on the distributed network. Third party integrations that are connected directly to I/O ports on the operator workstation or file servers for point passing are not acceptable.
4. All third-party integration packages shall be fully documented and supported as a standard product from the control manufacturers factory which shall provide long-term customer support. Custom integrations that are not factory supported are not acceptable.

2.08 SYSTEM SOFTWARE FEATURES

A. Control Software Description:
   1. Pre-Tested Control Algorithms: The network panels shall have the ability to perform the following Pre-tested control algorithms:
      a. Two Position Control
      b. Proportional Control
      c. Proportional plus Integral Control
      d. Proportional, Integral, plus Derivative Control
      e. Automatic Control Loop Tuning
   2. Equipment Cycling Protection: Control software shall include a provision for limiting the number of times each piece of equipment may be cycled within any one-hour period.
   3. Heavy Equipment Delays: The system shall provide protection against excessive demand situations during start-up periods by automatically introducing time delays between successive start commands to heavy electrical loads.
   4. Power fail Motor Restart: Upon the resumption of normal power, the network panel shall analyze the status of all controlled equipment, compare it with normal occupancy scheduling, and turn equipment on or off as necessary to resume normal operation.

B. Energy Management Applications: Network panels shall have the ability to perform any or all of the following energy management routines:
   1. Time of Day Scheduling
   2. Calendar Based Scheduling
   3. Holiday Scheduling
   4. Temporary Schedule Overrides
   5. Optimal Start
   6. Optimal Stop
   7. Night Setback Control
   8. Enthalpy Switchover (Economizer)
   9. Peak Demand Limiting
   10. Temperature Compensated Load Rolling
   11. Fan Speed/CFM Control
   12. Heating/Cooling Interlock
   13. Hot Water Reset
   14. Chilled Water Reset
   15. Supply Air Reset

C. Alarm Management: Alarm management shall be provided to monitor, buffer, and direct alarm reports to operator devices and memory files. Each network panel shall perform distributed, independent alarm analysis and filtering to minimize operator interruptions due to non-critical alarms, minimize network traffic, and prevent alarms from being lost. At no time shall the network panel's ability to report alarms be affected by either operator activity at a PC Workstation or local I/O device, or communications with other panels on the network.

D. Historical Data and Trend Analysis: A variety of Historical data collection utilities shall be provided to automatically sample, store, and display system data in all of the following ways.

E. Runtime Totalization: Standalone network panels shall automatically accumulate and store runtime hours for binary input and output points as specified in the Execution portion of this specification.
   1. The Totalization routine shall have a sampling resolution of one minute or less.
   2. The user shall have the ability to define a warning limit for Runtime Totalization. Unique, user-specified messages shall be generated when the limit is reached.

2.09 TEMPERATURE SENSORS

A. Temperature sensors shall be RTD type. Analog temperature sensors shall provide an output signal that varies continuously with the sensed temperature, within a specified range. Binary temperature sensors shall provide an output signal that is either on or off depending upon whether the sensed temperature is above or below the setpoint temperature. All sensors of a particular category shall be of the same type and manufacturer. Provide temperature sensors suitable for one or more of the following mounting methods:
   1. Insertion Type - Suitable for insertion into air ducts at any angle, and shall have a minimum insertion of 6".
   2. Immersion Type - Suitable for immersion into fluids in tanks or pipes with separable well and heat transfer compound.
   3. Averaging Type with Extended Element - Suitable for duct mounting to obtain average temperature by sampling along a capillary tube element not less than eight (8) feet in length.
   4. Outside Air Sensing Type - Shall have sun shades to minimize solar effects and shall be mounted to minimize building outside air film effects.
   5. Sensors Public Spaces (Corridors, stairwells, etc.) shall be flush plate types with no local control. Capability.
   6. Space Type - shall be provided with guards in classrooms and where indicated on drawings.
   7. Space Type - shall be provided with occupied/unoccupied override switches.
   8. Space Type - shall be provided with local control adjustment to allow up to +3°F (adjustable) differential from setpoint.

B. The following shall apply to temperature sensors:
   1. All external trim material shall be completely corrosion resistant with all parts assembled into a watertight, vibration-proof, heat resistant assembly.
   2. Sensor wells shall be brass and compatible with the sensor.

2.10 CURRENT SWITCH

A. Current switch shall be solid state self-powered and designed to sense AC current in a conductor passed through its circular window opening and provide an on/off status indication of the powered equipment.

B. Manufacturer: Veris Type 705, 800, 735.

2.11 OPERATOR INTERFACE

A. Basic Interface Description:
   1. The Operator Workstation is existing. The new systems shall be included on the existing Operator Workstation and all points will be mapped to updated graphics for systems included in the project. The system operator shall perform all person machine interface functions (ie. -start/stop, setpoints) by use of the mouse and by finger touch on monitor screen. Touch devices which overlay on monitor screen are not acceptable.

2. The operator interface shall allow the operator to perform commands including, but not limited to, the following:
    a. Start-up or shutdown selected equipment.
    b. Adjust setpoints.
    c. Add/Modify/Delete time programming.
    d. Enable/Disable process execution.
    e. Lock/Unlock alarm reporting for each point.
    f. Enable/Disable Totalization for each point.
    g. Enable/Disable Trending for each point.
    h. Override PID Loop setpoints.
    i. Enter temporary override schedules.
    j. Define Holiday Schedules.
    k. Change time/date.
    l. Enter/Modify analog alarm limits.
    m. Enter/Modify analog warning limits.
    n. View limits.
    o. Enable/Disable Demand Limiting for each meter.
    p. Enable/Disable Duty Cycle for each load.
3. Reports shall be generated automatically or manually, and directed to either displays, printers, or disk files.

B. Color graphic floor plan displays, and system schematics for each piece of mechanical equipment, including air handling units, pumps, chillers, etc. shall be provided as specified in the Scope of Work portion of this specification to optimize system performance analysis and speed alarm recognition.
1. The operator interface shall allow users to access the various system schematics and floor plans via a graphical penetration scheme, menu selection, or text-based commands.
2. Dynamic temperature values, humidity values, flow values, and status indication shall be shown in their actual respective locations, and shall automatically update to represent current conditions without operator intervention.
3. The windowing environment of the PC Operator Workstation shall allow the user to simultaneously view several graphics at the same time to analyze total building operation, or to allow the display of a graphic associated with an alarm to be viewed without interrupting work in progress.

C. All temperature and equipment control strategies and energy management routines shall be definable by the operator. System definition and modification procedures shall not interfere with normal system operation and control.

PART 3 EXECUTION

3.01 COORDINATION

A. Ensure installation of components is complementary to installation of similar components in other systems.

B. Coordinate installation of system components with existing mechanical equipment and controls.

C. Ensure system is completed and commissioned.

3.02 INSTALLATION

A. Each system installation shall be supervised, tested, adjusted, and approved by authorized representative of the manufacturer of the system device and equipment.

B. Submit written statement from the authorized representative of the manufacturer of the system devices and equipment that the completed system has been inspected and tested and is approved.

C. All products shall be installed in strict accordance with the manufacturer's printed instructions.

D. Failure modes shall be tailored for each system's controlled devices. In the event of a controller failure, all valves, dampers, etc., shall fail-safe. Controller failure shall not inhibit existing safety controls (low limits as required, smoke detectors, flow switches, etc.) from performing their intended function.

E. Wiring:
   1. Wiring installation shall be in accordance with National Electrical Code Requirements, and Division 16 Electrical Specifications.
   2. All power and control wiring (above 30 volts) shall be installed in NEC approved metallic raceway system. Cross-sectional area of all wires installed in a conduit shall not exceed 40% of the cross-sectional area of the conduit in which they are enclosed.
   3. Low voltage temperature control wiring (below 30 volts):
      a. Low voltage wiring shall be shall be installed in NEC approved metallic raceway system, unless otherwise specified. For concealed low voltage wiring installed above accessible ceilings, open wiring may be run.
      b. Low voltage wiring in exposed areas of the building with existing exposed conduit shall be installed in conduit.
      c. Low voltage wiring in exposed areas of the building with no existing exposed conduit shall be installed in surface raceway.
   4. Locations (areas above accessible ceilings) where low voltage temperature control wiring is specifically allowed to be installed without metallic raceway system, open wiring shall be installed in a neat workmanlike manner and as follows:
      a. Bundled and independently supported at maximum of 10’ intervals from the building structure. Excessive sagging is not allowed.
      b. Run parallel to building structure.
      c. Located minimum of 12" away from hot water piping.
      d. Located minimum 36" from heat coil compartment of any HVAC system.
      e. Secured to each equipment housing it enters, so as to prevent having constant pulling tension at the termination.
   5. Provide 115 VAC (+10%) to each Controller from the nearest available branch circuit panel, clearly indicate circuit breaker used. Provide circuit breaker if no spare is available. Provide a #12 AWG THHN green ground wire. Power to all EMS control components (ie: damper motors, valve actuators, etc.) will be by the EMS Contractor.
   6. Provide all trunk cable between Controllers within each system; cable type as required by equipment supplier.

3.03 SERVICE AND GUARANTEE

A. After completion of the installation, representatives of the temperature control contractor shall calibrate and adjust all controls, and place them in complete operating condition. The control system herein specified shall be free from defects in workmanship and material under normal use and service.

3.04 RECORD DRAWINGS

A. Record drawings will be supplied by the Contractor after the system has been accepted but prior to final payment. Drawings shall represent the as-built condition of the system and incorporate all information supplied with the approved submittal. All drawings shall be done in AUTOCAD.

3.05 ACCEPTANCE

A. Upon completion and checkout of the system, the Contractor shall request in writing, the Owner's Representative to inspect and approve the satisfactory operation of the control system. If the inspection yields unacceptable items, the Owner's Representative shall prepare a punch list. After all items appearing on the punch list are completed, a second written request for system approval will be made. As each item is approved, an appropriate notation will be entered on the system report at the time of joint inspection with countersignature of the Owner's Representative and date. A copy of this report will be made for the Owner's Representative. When the punch lists are complete, or when the Owner is substantially benefiting from the use of the system, the Contractor shall notify the Owner's Representative, in writing, of the start of substantial completion and warranty. The Contractor shall request "final acceptance" after substantial completion and after record drawings and maintenance manuals.

3.06 TESTS

A. This Work shall include pre-delivery testing of major components, field testing and adjustment of major subsystems and of the complete EMS, and an on-site final operational acceptance test of the complete operational EMS. Provide performance certifications of the required tests. Acceptance of tests by the Owner/Engineer shall not relieve the Contractor of responsibility for the complete system meeting the requirements of these specifications after installation.

B. Field Test: After installation of the field panels and related peripherals, and the field interface devices and sensors, calibrate equipment and check transmission media.

C. Operational Acceptance Test: Conduct final operational test on the complete, totally installed and operational Energy Management System to demonstrate that it is functioning properly in accordance with all requirements of this specification. Conduct a full follow-up test in the off season from initial start-up. Demonstrate the correct operation of all monitored and controlled points as well as the operation and capabilities of all sequences, reports, specialized control algorithms, diagnostics, and all other software. Final acceptance of the system shall be made, provided the Contractor has satisfied all other requirements of this specification.

D. The EMS Contractor shall provide to the Engineer for operational acceptance the following documents generated by the EMS.
   1. All Points Summary
   2. Alarm Point Summary
   3. Alarm Message Summary
   4. Totalization Summary
   5. Trend Log of Temperature Points Over 24 Hour Period
   6. Start/Stop times for all Mechanical Systems
   7. Optimal Start/Stop Parameters
   8. Software Documentation for all EMS Programs installed in Application Specific Controllers and Central Station

E. Where it is required for the Contractor to modify, alter, add or remove hardware or software programs of the EMS or related accessories for the purpose of testing, these changes shall be done as required by the Contractor until such time acceptable performance of the EMS has been established. Problems which occur within approved hardware or software shall be corrected in an appropriate fashion under guarantee. Any such occurrence shall not void previous approval; however, the Contractor shall be responsible for prompt remedial action. Appropriate logs, schedules, and reports shall be maintained by the Engineer to reflect these items and their address.

1. Prior to final acceptance, a complete demonstration and readout of the computer real-time responsibilities of surveillance and command shall be performed in the presence of the Engineer. This demonstration, having satisfactorily met previously approved submittals, shall, with the Owner's Representative's written acceptance, allow commissioning of the EMS for on-line testing.
2. Upon successful completion of system installation, the Engineer shall be requested in writing to inspect and approve the satisfactory operation of all components of the EMS. Upon receipt of a detailed "punch list" from the Engineer, an installation inspection report shall be submitted by the EMS contractor showing each outstanding item on the punch list. After all items appearing on the installation/inspection report are completed, a second written request for system approval will be made to the Engineer. As each or all items are approved, an appropriate notation will be entered at the time of joint, inspection on the system report with counter signature of the Owner and Engineer. A copy of this report will be made for the Owner.
3. Problems which occur within approved hardware or software shall be corrected in an appropriate fashion under guarantee. Any such occurrence shall not void previous approval; however, the Contractor shall be responsible for prompt remedial action. Appropriate logs, schedules, and reports shall be maintained by the Engineer to reflect these items and their redress.

3.07 OPERATOR INSTRUCTION

A. After system commissioning the Contractor shall provide on-site operator instruction to the Owner's operating personnel. Operator instruction during normal working hours shall be performed by competent representatives familiar with the installed system.

B. At a time mutually agreed upon with the Owner's Representative, the Control Contractor shall give (20) hours of instructions to the Owner's designated personnel on the operation of all equipment in the system and describe its intended use.

C. An Owner’s manual, prepared for the project by the Control Contractor be used during instruction. Three (3) copies of the Owner's manual shall be provided to the Owner's Representatives a minimum of three weeks prior to training.

D. All product documentation including operator user manuals and product data shall be provided on CD-ROM.

3.08 SEQUENCES OF OPERATION

A. Air Turnover Units (ATU-1 & ATU-2) Controls:

1. Air Turnover Units (ATU-1 & ATU-2) shall operate as follows:
   a. During occupied periods in the winter mode (outside air temperature below 60ºF), the air turnover unit burner shall operate to maintain the return air temperature at 65ºF adjustable and the unit fan shall operate continuously. The burner operation shall be reset by the space temperature sensor.

b. During unoccupied periods in the winter mode, the unit fan shall operate intermittently and the burner shall operate to maintain the unoccupied space heating setpoint of 55ºF adjustable.

c In the summer mode (outside air temperature above 60ºF), the air turnover unit shall be off.

B. Provide local panel for each Air Turnover Unit with the following:

a. System on/off indication.
b. System occupied/unoccupied mode indication.
c. System fan on/off and speed indication for each fan.
d. Outside air temperature indication.
e. Unit supply air temperature indication.
f. Gas heater discharge air temperature indication
g. Filter indication

C. Exhaust Fans - General Services:

1. Provide fan start-stop/status/alarm functions.
2. Exhaust fans shall operate under the following sequences:
   a. General Building Exhaust Fans: Controlled to operate continuously during occupied periods and be off during unoccupied periods.
   b. Automatic air dampers associated with each fan shall open when the fan is energized and close when the fan is off.

E. Alarms:

1. Provide control unit alarming function for indicating controller malfunctions and loss of power for all EMS control units.
2. Provide high and low temperature alarm limits for all sensed temperatures. Some examples are as follows:
   a. Space (Occupied)
      - Low: More than 3°F (adjustable) below setpoint.
   b. Space (Unoccupied)
      - Low: Below 55°F (adjustable)
3. Provide additional alarms as required, specified or shown.
4. Each alarm shall have a corresponding programmed message to the operator which shall be displaced immediately and repeated four times per hour unit acknowledged.

3.09 START-UP AND COMMISSIONING DDC SYSTEM (BMS)

A. Prior to installing the database and energy management strategies into the and before starting-up the system, the BMS contractor shall have presented a complete scope and outline of such strategies to the owner for his written approval.

B. The contractor shall be required to provide not less than 25 hours of time within the first twelve months subsequent to the completion of the installation work to be used in working together with the owner in fine-tuning the EMS strategies that were developed and installed in the BMS prior to initial start-up. The contractor shall be required to provide any modifications to the initial programming as necessary to have the building HVAC equipment operate in satisfactory and safe fashion and the interior environment remain satisfactory during the various daily building operating modes as deemed acceptable to the Owner.

C. The contractor shall secure written acknowledgment of the completion of the initial installation work and the completion of the post installation fine-tuning work from the Owner.

3.10 PERSONNEL TRAINING

A. Training:
   1. Provide start-up, operation and service training for all installed equipment to the Owner's personnel who will be responsible for the operation of the equipment.
   2. All training shall be video recorded and stored on DVD, to be turned over to Owner. Obtain receipt.
   3. Upon completion of training, provide a record of completed training to the Owner.

B. Specific Training Requirements:
   1. Provide specific training per the following schedule: Total Training Hours:
   2. Classroom sessions, 4 hours each.
   3. Hands-on training sessions, 4 hours each.

END OF SECTION

SECTION 233100
DUCTWORK

PART 1 GENERAL

1.01 SUMMARY

A. Metal and flexible ductwork.

B. Duct cleaning.

1.02 REFERENCES

A. ASHRAE - Handbook Fundamentals; Chapter 33 - Duct Design.

B. ASHRAE - Handbook Equipment; Chapter 1 - Duct Construction.

C. ASTM A 90 - Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles.

D. ASTM A 525 - General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.

E. ASTM A 527 - Steel Sheet, Zinc-Coated (Galvanized) by Hot-Dip Process, Lock Forming Quality.

F. NFPA 90A - Installation of Air Conditioning and Ventilating Systems.

G. NFPA 90B - Installation of Warm Air Heating and Air Conditioning Systems.

H. SMACNA - Metal and Flexible HVAC Duct Construction Standards.

I. UL 181 - Factory-Made Air Ducts and Connectors.

1.03 DEFINITIONS

A. Duct Sizes: Inside clear dimensions. For lined ducts, maintain sizes inside lining.

B. Low Pressure: Three pressure classifications: 1/2 inch WG positive or negative static pressure; 1 inch WG positive or negative static pressure and 2 inch WG positive or negative static pressure. All low pressure ductwork shall be constructed to the 2 inch WG pressure-velocity classification.

1.04 QUALITY ASSURANCE

A. SMACNA: Gages of materials, fabrication, reinforcement, sealing requirements, installation, and method of supporting ductwork shall be in accordance with the SMACNA HVAC Duct Construction Standards manuals.

B. Installation shall be by contractor with SMACNA certified training.

1.05 REGULATORY REQUIREMENTS

A. Construct ductwork to NFPA 90A and NFPA 90B standards.

PART 2 PRODUCTS

2.01 MATERIALS

A. General: Non-combustible or conforming to requirements for Class 1 air duct materials, or UL 181.

B. Steel Ducts: ASTM A525 or ASTM A527 galvanized steel sheet, lock-forming quality. Ductwork shall have a minimum G60 coating, except for exterior unpainted ductwork and condenser water sump, which shall have a G90 coating. Ductwork specified to be painted shall be Galvannealed Steel

C. Insulated Flexible Ducts:

1. Flexible duct wrapped with flexible glass fiber insulation, enclosed by seamless aluminum pigmented plastic vapor barrier jacket; maximum 0.23 K value at 75ºF.
2. Manufacturer's product shall meet Underwriters Laboratories Spec. UL181 and NFPA 90A, flame spread 25, smoke developed 50.
3. Insulation shall be 1½", 3/4# density fiberglass blanket, rated for up to 6" S.P. positive, 6,000 FPM, ½" S.P. negative.
4. Provide certification that materials used have been tested and listed by the Building Code of New York State regarding Toxicity/Combustion testing standards.
5. Acceptable Manufacturers: Owens Corning "Fiberglas Valuflex", Thermaflex, Genflex SLR.

D. Fasteners: Rivets, bolts, or sheet metal screws.

E. Sealant: Non-hardening, water resistant, fire resistive, compatible with mating materials; liquid used alone or with tape, or heavy mastic. Tapes shall not be used to seal joints. Sealant equal to Iron Grip IG-601 or accepted equal.

F. Hanger Rod: Galvanized steel, stainless steel, or aluminum; threaded both ends, threaded one end, or continuously threaded.

2.02 LOW PRESSURE DUCTWORK (FABRICATION)

A. Fabricate and support ductwork and provide duct material, gages, reinforcing and sealing in accordance with SMACNA Metal and Flexible HVAC Duct Construction Standards and ASHRAE handbooks. All ductwork shall be constructed to the 2" WG/2500 fpm pressure-velocity classification. All ductwork shall receive Class A sealant, regardless of SMACNA requirements.

B. All rectangular ductwork shall be in accordance with the latest SMACNA Standards with regard to; duct gage thickness, reinforcement spacing, bracing, and hangers and supports. All longitudinal seams shall be made with a Pittsburgh Lock (Type L-1) or SMACNA equivalent. Transverse joints on ducts over 14" shall be made with the Ductmate, Ward or Nexus ductwork connection system. Transverse joints on ductwork smaller than 14" may be made with slip and drive joint or SMACNA equivalent.

C. Construct T's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows are used, provide air foil turning vanes. Where acoustical lining is indicated, provide turning vanes of perforated metal with glass fiber insulation.

D. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible. Divergence upstream of equipment shall not exceed 30 degrees; convergence downstream shall not exceed 45 degrees.

E. Provide easements where low pressure ductwork conflicts with piping and structure. Where easements exceed 10 percent duct area, split into two ducts maintaining original duct area.

F. Connect flexible ducts to metal ducts with draw bands, adhesive plus sheet metal screws. Metal collars shall be used where flexible ducts are connected to metal ducts and shall be a minimum of 2" in length.

G. Dissimilar Metals: Separate dissimilar metals used for ductwork with 12 oz. Vinyl coated woven fiberglass duct connector fabric, such as Duro Dyne's Glasseal. No separation is required between screws or rivets and the materials in which they are inserted.

H Sealant: Non-hardening, water resistant, fire resistive, compatible with mating materials; liquid, mastic, gaskets, or mastic embedded fabric. Tapes shall not be used to seal joints. Sealant equal to Iron Grip 1G-601 or accepted equal.

I. Provide standard 45 degree lateral wye takeoffs unless otherwise indicated.

J. Wet exhaust system ductwork (i.e. intake and exhaust plenums, etc.) shall be fabricated with seams and welded/soldered to be watertight.

2.03 PLENUMS

A. Fabricate plenums in accordance with SMACNA Metal and Flexible HVAC Duct Construction Standards. Solder joints watertight.

2.04 DUCTWORK SUPPORT MATERIALS

A. Except as otherwise indicated, provide hot-dipped galvanized steel fasteners, anchors, rods, straps, trim and angles for support of ductwork.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install ductwork to allow maximum headroom. Properly seam, brace, stiffen, support and render ducts mechanically airtight.

B. Provide necessary transformation pieces, and flexible fabric connections for ductwork connected to all air handling equipment.

C. Provide volume dampers at every branch take off and to each air outlet.

D. Connect diffusers or troffer boots to low pressure ducts with 5 feet maximum length of flexible duct. Hold in place with strap or clamp.

E. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.

3.02 SEALING SEAMS, JOINTS, AND PENETRATIONS

A. Seal ductwork in accordance with the SMACNA Manual. Low pressure ductwork to be seal Class A. Leakage of system to be a maximum of 5%.

B. Use liquids, mastics, gaskets, or mastic embedded fabric. Tapes shall not be used to seal joints.

C. Non VOC sealants and adhesives are mandatory.

3.03 DUCTWORK APPLICATION SCHEDULE

AIR SYSTEM	MATERIAL
Low Pressure Supply, Return and General Exhaust	Galvanized Steel
Low Pressure Supply, Return and General Exhaust (Exposed in Finished Spaces)	Galvanized Steel
Intake and Exhaust Plenums	Galvanized steel all joints welded/soldered. watertight
Outside Air Intake	Galvanized Steel all joints welded/soldered. watertight

3.04 DUCTWORK SUPPORTS

A. Hangers, Rectangular Ducts: Ducts with semi-perimeter of up to 30", provide 1" x 22 ga. strap. Semi-perimeter of up to 72", provide 1" x 18 ga. strap. Ducts with semi-perimeter greater than 72", provide trapeze hanger with all thread rod. All above as per SMACNA Standards.

B. Hangers, Round Duct: Ducts up to 24" diameter, provide 1" x 22 ga. strap hangers. Ducts up to 36" diameter, provide 1" x 20 ga. strap hangers. Ducts larger than 36" diameter, provide two 3/8" rod hangers with (2) 1" x 18 ga. straps around duct. The above as per SMACNA Standards.

3.05 ADJUSTING AND CLEANING

A. Clean duct systems with high power vacuum machines. Protect equipment that may be harmed by excessive dirt with filters, or bypass during cleaning. Provide adequate access into ductwork for cleaning purposes.

END OF SECTION

SECTION 233300
DUCTWORK ACCESSORIES

PART 1 GENERAL

1.01 SUMMARY

A. Volume control dampers

B. Fire Dampers.

C. Flexible duct connections.

1.02 REFERENCES

A. NFPA 90A - Installation of Air Conditioning and Ventilating Systems.

B. SMACNA - Low Pressure Duct Construction Standards.

C. UL 33 - Heat Responsive Links for Fire-Protection Service.

D. UL 555 - Fire Dampers and Ceiling Dampers.

1.03 SUBMITTALS

A. Submit shop drawings and product data.

B. Submit manufacturer's installation instructions.

PART 2 PRODUCTS

2.01 VOLUME CONTROL DAMPERS

A. Fabricate in accordance with SMACNA Low Pressure Duct Construction Standards, and as indicated.

B. Splitter dampers: Not permissible.

C. Fabricate single blade dampers for duct sizes to 11 x 24 inch.

D. Fabricate multi-blade damper of opposed blade pattern with maximum blade sizes 12 x 72 inch. Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware.

E. Provide locking, indicating quadrant regulators on single and multi-blade dampers. Where rod lengths exceed 30 inches provide regulator at both ends.

F. On insulated ducts mount quadrant regulators on stand-off mounting brackets, bases, or adapters.

2.02 FIRE DAMPERS

A. Fabricate in accordance with NFPA 90A and UL 555, NFPA 101 and as indicated. All fire dampers shall be UL listed for the application. Dampers shall be 1-1/2 hour rated 80% free area.

B. Fabricate curtain type dampers of galvanized steel with interlocking blades. Provide stainless steel closure springs and latches for horizontal installations. Configure with blades in the air stream (A Style).

C. Makes: Ruskin, Prefco, Air Balance.

D. Design Make: Ruskin Model IBD2 A Style or accepted equal.

2.03 FLEXIBLE DUCT CONNECTIONS

A. Fabricate in accordance with SMACNA low pressure duct construction standards.

B. UL listed fire-retardant neoprene coated woven glass fiber fabric, per NFPA 90A, minimum density 36 oz. per sq. yd., approximately 6" wide, crimped into metal edging strip.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install accessories in accordance with manufacturer's instructions.

B. Provide balancing dampers at points on low pressure supply, return, and exhaust systems where branches are taken from larger ducts as required for air balancing.

C. Provide fire dampers at locations indicated and where ducts and outlets pass through fire rated walls and where required by authorities having jurisdiction. Install with required perimeter mounting angles, sleeves, breakaway duct connections, corrosion resistant springs, bearings, bushings and hinges. Install per UL and NFPA.

D. Demonstrate re-setting of fire dampers to authorities having jurisdiction and Owner's Representative.

END OF SECTION

SECTION 233423
POWER VENTILATORS

PART 1 GENERAL

1.01 SUMMARY

A. Down blast exhaust fans

B. Up blast range hood roof exhausters.

C. Square in-line centrifugal blowers

D. Ceiling fans.

1.02 PRODUCTS FURNISHED, BUT NOT INSTALLED UNDER THIS SECTION

A. Roof curbs.

1.03 REFERENCES

A. AMCA 99 - Standards Handbook.

B. AMCA 210 - Laboratory Methods of Testing Fans for Rating Purposes.

C. AMCA 300 - Test Code for Sound Rating Air Moving Devices.

D. SMACNA - Low Pressure Duct Construction Standard.

1.04 SUBMITTALS

A. Submit product data and manufacturer's installation operation and maintenance instructions.

1. Product Data: Manufacturer’s technical product data for fans, including specifications, capacity ratings, fan performance curves with operating point clearly indicated, sound power levels for both fan inlet and outlet at rated capacity, gages and finishes of materials, dimensions, weights and accessories furnished.
2. Shop Drawings: Assembly-type shop drawings showing fan dimensions, required clearances, construction details and field connection details.

B. Submit schedules of fans and accessories

C. Submit manufacturer’s installation instructions.

D. Submit Operation and Maintenance Data: Maintenance instructions including lubrication instructions, motor and drive replacement and spare parts lists. Include this data, product data, shop drawings and wiring diagrams in the Operation and Maintenance Manual.

1.05 QUALITY ASSURANCE

A. Performance Ratings: Conform to AMCA 210.

B. Fabrication: Conform to AMCA 99.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS (ROOF EXHAUSTERS)

A. Cook (design make).

B. Carnes

C. Penn

D. Greenheck

2.02 GENERAL

A. Provide fans of sizes and arrangement as indicated, and of capacities and having accessories as scheduled or specified

B. Fans used shall not increase motor size or noise level above that of specified fans; or increase tip speed by more than 10 percent, or increase inlet/outlet air velocity by more than 20 percent, from specified fans. Fans shall be capable of accommodating static pressure variations of plus or minus 10 percent.

C. Base performance on sea level conditions.

D. Statically and dynamically balance fans to eliminate vibration or noise transmission to occupied areas.

E. On belt driven fans, provide balance variable and adjustable pitch sheaves so desired RPM is obtained with sheaves set at mid-position.

F. Provide belt guards on belt driven fans.

G. Provide ½" mesh safety screen where inlet and outlet is exposed.

H. Factory prime coat fan wheels and housing.

I. Fan manufacturer to provide vibration isolation required.

2.03 HVLS CEILING FAN

A. Contractor shall provide fan with all equipment and accessories required for hanging and proper installation as specified or shown on the Contract Drawings.

B. Ceiling hung, white direct drive, three blades, secondary cable support assembly, 20 lbs. weight.

C. Motor to be permanent split capacitor type with sealed ball bearings and be suitable for use with solid state speed controller.

D. Capacity as scheduled.

E. Complete unit to be UL listed, Standard 507.

F. Accessories
   1. Solid state speed controller.
   2. Fan guard.

G. Make: Big Ass Fans (Design Make), Macro Air, Sky Blade Johnston Titan Air Inc., Moffitt Ventilation Solutions.

2.04 CABINET CEILING EXHAUST FANS

A. Centrifugal Fan Unit: Direct driven, with galvanized steel housing lined acoustic insulation, resilient mounted motor, with cord and plug, gravity backdraft damper in discharge; equal to Cook, Gemini or accepted equal.

B. Configuration/Installation:
   1. Ceiling Mounted: Type 4C.

C. Inlet Grille (Ceiling Units): Molded white plastic or aluminum with baked white enamel finish.

D. UL Listed.

E. Speed Controller: Provide speed controller for final system balancing.

F. Capacity: As Scheduled.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Do not operate fans for any purpose until ductwork is clean, filters are in place, bearings lubricated, and fan has been test run under observation.

C. Install fans as indicated with resilient mountings and flexible electrical leads.

D. Install flexible connections specified in Section 23 33 00 between fan inlet and discharge ductwork. Ensure metal bands of connectors are parallel with minimum one inch flex between ductwork and fan while running.

E. Install fan restraining snubbers as required. Flexible connectors shall not be in tension while running.

F. Provide sheaves required for final air balance.

G. Provide safety screen where inlet or outlet is exposed.

H. Provide motorized dampers on discharge of exhaust fans whether specified or indicated.

I. Roof curbs shall be installed prior to roofing system. Coordinate curb locations with C-Trade Contractor. Secure roof exhausters with lag screws to roof curb.

J. Provide access and service space around and over fans as indicated, but in no case less than that recommended by manufacturer.

K. Range hood fan installation to conform to NFPA 96.

END OF SECTION

SECTION 233700
AIR OUTLETS AND INLETS

PART 1 GENERAL

1.01 SUMMARY
A. Diffusers

B. Registers/grilles

C. Stationary roof ventilators.

1.02 PRODUCTS FURNISHED, BUT NOT INSTALLED UNDER THIS SECTION
A. Roof curbs.

1.03 REFERENCES
A. AMCA 500 - Test Method for Dampers and Shutters.

B. ANSI/NFPA 90A - Installation of Air Conditioning and Ventilating Systems.

C. ARI 650 - Air Outlets and Inlets.

D. ASHRAE 70 - Method of Testing for Rating the Air Flow Performance of Outlets and Inlets.

E. SMACNA - Low Pressure Duct Construction Standard.

1.04 SUBMITTALS
A. Provide product data for items required for this project.

B. Submit schedule of outlets and inlets indicating type, size, location, application, and noise level.

C. Review requirements of outlets and inlets as to size, finish, and type of mounting prior to submitting product data and schedules of outlets and inlets.

1.05 QUALITY ASSURANCE
A. Test and rate performance of air outlets and inlets in accordance with ADC Equipment Test Code 1062 and ASHRAE 70.

B. Conform to NSI/NFPA 90A.

1.06 REGULATORY REQUIREMENTS
A. Conform to ANSI/NFPA 90A.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS - GRILLES AND REGISTERS
A. Carnes

B. Tuttle & Bailey

C. Titus

D. Design Make: Titus

E. Or accepted equal.

2.02 GENERAL

A. See schedule on Drawings for diffuser and register types.

B. Provide air inlets and outlets sized for less than NC-30 rating at all locations.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install items in accordance with manufacturer's instructions.

B. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.

C. Install diffusers to ductwork with air tight connection.

D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, regardless of whether dampers are specified as part of the diffuser, or grille and register assembly.

END OF SECTION

SECTION 235545
INDIRECT FIRED AIR ROTATION UNIT

PART 1 GENERAL

1.01 SUMMARY

A. Indirect fired air rotation unit.

B. Unit Controls.

C. Maintenance service.

1.02 REFERENCES

A. ANSI/Z223.1 (NFPA 54) - National Fuel Gas Code.

B. ARI 210/240 - Unitary Air-Conditioning and Air-Source Heat Pump Equipment.

C. NFPA 90A - Installation of Air Conditioning and Ventilating Systems.

D. ARI 270 - Sound Rating of outdoor Unitary Equipment.

1.03 SUBMITTALS

A. Submit Shop Drawings and Product Data: Indicate dimensions, duct and service connections, accessories, controls, electrical nameplate data, and wiring diagrams. Indicate gas burner inlet pressure requirements and compliance with ANSI and Factory Mutual requirements.

B. Submit fan data; include fan performance curve with operating point clearly plotted.

C. Submit electrical requirements for power supply wiring including wiring diagrams for interlock and control wiring, clearly indicating factory-installed and field-installed wiring.

D. Submit Manufacturer's Installation Instructions: Indicate rigging, assembly, and installation instructions.

E. Submit Operation and Maintenance data; include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listing. Include this data and other submittal data in the Operation and Maintenance Manual; in accordance with Division 1 Requirements.

1.04 QUALITY ASSURANCE

A. Comply with applicable regulations, ANSI Requirements and have factory mutual approval.

B. Factory test to check construction, controls and operation of unit and provide certification.

C. Regulatory Requirements:
   1. Unit shall be factory tested and the design, construction and installation shall be in accordance with the following: NFPA, UL and all State and Local codes or regulations having jurisdiction.
   2. Electrical components shall be UL listed.

D. Manufacturer's representative to perform field test of operation after installation.

1.05 DELIVERY

A. Deliver each unit as an integral factory packaged assembly.

1.06 MAINTENANCE

A. Maintenance Service: A fully equipped authorized service organization capable of guaranteeing response within 8 hours to service calls shall be available 24 hours a day, 7 days a week to service the completed Work.

1.07 EXTRA PARTS

A. Extra Materials: Provide with each unit, one spare set of air filters Suitable box and label spare filters as to their usage.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Johnson-Marcraft

B. Titan Air Inc.

C. Moffitt Ventilation Solutions.

D. Design Make: Johnson-Marcraft

2.02 AIR TURNOVER UNITS:

A. General

1. Provide packaged air rotation unit (ARU) having gas burner suitable for indoor floor mounting.
2. Unit shall be self-contained, packaged, factory assembled and prewired, consisting of cabinet and frame, supply fan, heat exchanger and burner, vibration isolation, controls, air filters, etc.
3. The unit shall be manufactured and installed in accordance with the requirements of the underwriter's laboratory standard; "ductless large open building heating and cooling equipment - category lZPG" and bear the official UL label.
4. The unit shall be factory assembled and tested prior to shipping and disassemble for shipping and reassembled on site by the awarded contractor as required.
5. System and accessories to be ul listed and approved as a complete unit. Unit shall be manufactured to FM standards as required.
6. Unit configuration: vertical with horizontal discharge.

B. Frame construction: shall be angle iron framing with 3/16" horizontal flange and 1/8" vertical framing and factory painted, suitably reinforced and braced to permit the loading, shipping, unloading and rigging to the unit location and general handling of completed sections without damage to external or internal components or misalignment of factory assembled components due to normal handling techniques.

C. Cabinet construction: 18-gauge a-60 bonderized steel suitable for factory painting. The panels shall be factory assembled using flat bar screwed construction and have a reinforced steel angle flange assembly. Unit shall be factory painted using factory standard enamel finish.

D. Access panels: hinged access doors in the unit housing shall be provided to permit ready access to all internal components. The access doors shall be a minimum of 18-gauge galvanized steel. The doors shall be designed to swing out. The doors shall be provided with a continuous 16-gauge stainless steel piano hinge. The unit's wall panels shall an integral part of the doorframe. The unit's fan compartment access for inspection and adjustment shall be ul approved. A warning placard shall be affixed at the access door indicating that the unit is to be shut off before opening the door and entering the fan compartment.

E. Return air filter frame and air filters: filter frame shall be fabricated of 16-gauge galvanized steel and painted to match the unit's color. Filters shall be upstream service, mounted at floor level for ease of access. Filters will be washable natural hair and vegetable media, 1-inch depth.

F. Insulation: the air mover and inlet module shall have ½" sound insulation installed using welded pin construction. The heater module shall have ½" thermal insulation installed throughout. No insulation shall be provided in the outlet sections.

G. Supply fans:
   1. The supply fans, a minimum of one per unit, shall consist of a propeller fan with a smooth inlet venturi motor mount. The propeller blade shall be supported by two bearings, which shall be of a self-aligning, ball bearing type and shall be designed for at least 100,000 hours average life.
   2. Fans shall have the capacity, and class, as scheduled.
   3. Blower shafts - blower shafts shall be solid ground and polished. The shafts shall not pass through their first critical speed when the unit comes up to the rated rpm. Shaft shall be coated with a rust inhibitor.
   4. V-belt drives - all v-belt drives shall be standard capacity dual belt type, furnished in matched sets with reinforced rubber belts. The sheaves shall be of a cast iron type.
   5. The service factor used for v-belt drive selection shall be not less than 1.25.
   6. Lubrication - mount all grease fittings directly on the bearings.
   7. Motors shall be odp, 1800 rpm, 460-volt, 3 phase, 60 hz. Motor horsepower shall be as indicated on the schedule. Motors will be manufacturer's premium efficiency design.

H. Heat exchanger:
   1. Multi-pass, welded construction, drum and tube style heat exchanger.
   2. Primary surfaces are to be type 400 series stainless steel 11-gauge minimum. All other surfaces are to be 14-gauge minimum.

I. Heaters that incorporate induced draft fans are not permitted.

J. Fixed gas burner: forced draft flame retention type. Burner shall be listed by and bear the UL label.
   1. The burner shall burn the specified quantity of fuel without objectionable vibration, noise or pulsation with not more than 20% excess air and less than 50 ppm co in the products of combustion. Manufacturer to submit NO2 generation rates for manufacturer's burner throughout operational range.
   2. The burner shall incorporate a stainless-steel flame retention type combustion head for long life and efficient operation. Multiport type gas firing heads are preferred and deviation from this specification must be noted.
   3. Primary-secondary air control shall be a design function of the combustion head. Combustion heads requiring an internal adjustment will not be accepted.

4. The burners are to be equipped with a cast blower housing with integral fan scroll. Other types will be accepted based on owner approval and must be submitted as such.
5. A permanent observation port shall be provided in the burner to allow observation of both the pilot and main flame.

K. Gas Train:
1. The gas train piping shall include a 1/4" npt pressure tapping with 1/4” pipe plug upstream and downstream of valve and regulator in the gas train.
2. Furnish and install one manually operated ball valve upstream of all valves.
3. Provide one main gas pressure regulator with vent to outside atmosphere, in accordance with local codes.
4. A manually operated gas valve shall be located downstream of both automatic gas valves to permit leakage testing of the valves.
5. Gas pressure supervision shall be provided by approved pressure switches interlocked to accomplish a non-recycling safety shutdown in the event of either no or low gas pressure.

L. Gas Burner Safety Controls:
1. An additional temperature high limit safety shall be provided to shut down the burner. Once cooled down burner shall be allowed to operate again.
2. Pre-purge operation of the burner fan shall be provided.
3. A manual restart of the burner shall be necessary in the event of shutdown due to flame failure.
4. All three-phase motors shall be controlled and protected by an automatic starter with thermal overload protection. Starter shall be interlocked to prevent burner operation when overload relays are tripped out.
5. Supply a burner mounted diaphragm airflow switch to prevent the energization of the main fuel valves in the event of insufficient combustion air.
6. A factory pre-wired control cabinet should be supplied with burner. Cabinet is mounted on or near burner. Cabinet to house the flame safeguard control, programming purge timer, burner motor starter, fuses, control switches and relays as specified hereinafter.
7. Provide in the control cabinet individual lights with nameplates to indicate "power on" and "main fuel valve on".
8. The burner shall be equipped with suitable fuel and air controls to assure smooth main flame ignition.
9. Electronic safety combustion controls shall be supplied complete with ultraviolet flame scanner to monitor the pilot and main flame. A programming relay similar to Honeywell RM7897, RM7845 or RM7840 shall be furnished. It shall be so utilized as to provide intermittent type gas-electric ignition and pre-ignition purge timer.

M. Discharge Louvers: Vertical louvers painted to match cabinet finish.

N. Controls:
1. There shall be a locking control cabinet with flame failure alarm horn, temperature controls, and displaying pilot lights to indicate "power on", and "call for heat" light indicator.
2. The power panel shall have a locking dead front main power cabinet with disconnect and containing necessary fuses, sub-circuits, magnetic starters with 3-leg protection, relays and contactors requiring only single 3-phase connection.
3. The control panel shall contain an emergency shutdown circuit that may be supervised by the fire protection system in the facility. At owner's option this can be accomplished with an external power source of either 120 volts or 24 volts.

4. The unit shall incorporate factory-mounted transformers to step down the main power supply voltage to be 120 volts and 24 volts (as required).
5. DDC type controller (Carel, or equivalent) provided by ARU manufacturer.
6. BAS Interface Card – BACNET/LON/MODBUS/Web capable.
7. Two high temperature limits shall be installed, one for automatic reset (factory set at 200°f) and one for manual reset (factory set at 250°f).

O. Performance Ratings
1. Refer to schedule on Contract Drawings.

PART 3 EXECUTION

3.01 INSTALLATION

1. Install units in complete accordance with the manufacturers' printed instructions, and as indicated.
2. Provide all piping, electrical and ductwork connections to units.

3.02 FIELD QUALITY CONTROL

A. Preliminary Requirements: Employ the services of a Company Field Advisor of the rooftop heat recovery unit manufacturer for the following:
1. Inspect unit installations prior to start-up.
2. Supervise initial start-up of machine.
3. Instruction of State Personnel.

B. Pre-Start-Up, Start-Up and Instruction: Upon completion of the installation of the unit, to the satisfaction of the Company Field Advisor, start-up and preliminary testing shall be accomplished under the Company Field Advisor's supervision. When all necessary adjustments have been made and unit is properly operating, the Company Field Advisor shall instruct State Personnel in the operation and maintenance of the unit and accessories. Provide a minimum of 4 hours for instruction purposes exclusive of all pre-start-up and start-up time.

END OF SECTION

SECTION 260000
GENERAL REQUIREMENTS FOR DIVISION 26

PART 1 GENERAL

1.01 BID AND CONTRACT DOCUMENTS

A. All Work in this Division is subject to the provisions of the General Conditions, Supplementary General Conditions and Requirements of Division 1 General Requirements.

B. By submitting the bid, the Contractor acknowledges that he has not received any verbal directives from the Owner, Architects and Engineers (and their employees and sub-consultants) at any time before, during or after the bid. He further acknowledges that he has verified with all his sub-contractors, suppliers, vendors, and their representatives that they have not received any verbal directives from the Owner, Architects and Engineers (and their employees and sub-consultants) at any time before, during or after the bid. The Contractor further acknowledges that all changes to the Bid Documents have been only in the form of formal addendum.

C. By starting Work on this project, the Contractor acknowledges that all directives, field orders and change order will be only from the Owner or his Designated Representative and only in writing. All other directives verbal or otherwise will be at the Contractor's own risk.

1.02 SCOPE OF WORK

A. The scope of this Work includes heating, ventilating and air conditioning systems for the project as indicated on the Contract Documents, including, but not limited to the following:
   1. Removal of existing electrical equipment as indicated on Drawings.
   2. New power distribution system, including the provision of an electrical distribution system study.
   3. Lighting and power systems for the alterations and areas shown.
   4. Wiring devices and branch circuitry in areas shown.
   5. Power wiring systems for mechanical and miscellaneous electrical equipment etc.
   6. Fire Alarm System.
   7. All necessary cutting, patching and firestopping.
   8. Miscellaneous items shown and/or specified.

1.03 NEW YORK STATE LICENSE

A. The Division 26 Contractor shall possess a license to specifically install fire alarm and security systems.

1.04 PERMITS AND INSPECTIONS

A. Inspection Certificate: A third party independent electrical inspection and certificate is required. The independent electrical inspector shall be certified by the International Association of Electrical Inspectors.
   1. Commonwealth Electrical Inspection Service, Inc. (585-624-2380).
   2. Independent Consolidated Electrical Inspection Service, Inc. (315-735-5233).
   3. Middle Department Inspection Agency, Inc. (MDIA) (315-337-3480).
   4. New York Atlantic-Inland, Inc. (315-843-5155).
   5. The Inspector, LLC (315-247-9162).

B. Permits: Contractor shall acquire all required permits required for execution of the Work of this Division and shall pay all fees and charges for same.

1.05 CODES AND STANDARDS

A. Building Code of New York State: Provide all Work in compliance with and meet the requirements of the code.

B. National Electrical Code: All Work covered under these Contract Documents shall conform to the National Electrical Code.

C. Standards: All equipment shall meet all the requirements of ANSI, NEMA, ASHRAE, and SMACNA standards.

D. Listing: All equipment and devices for which Underwriters Laboratories has a listing service, shall be UL listed and bear the UL listing label.

E. All materials and installation shall comply with:
   1. Building Code of New York State.
   2. Existing Building Code of New York State.
   3. Energy Conservation Construction Code of New York State.
   4. Fire Code of New York State.
   5. Mechanical Code of New York State.
   6. Fuel Gas Code of New York State.
   7. National Fire Protection Association (NFPA).
   8. New York State Department of Labor Rules and Regulations.
   9. New York Board of Fire Underwriters.
   10. Americans with Disabilities Act.
   11. Local Utilities.
   12. Authorities Having Jurisdiction.
   13. Federal and State Occupational Safety and Health Administration.
   14. Local Municipality Codes and Ordinances.

F. In case of conflict between the Contract Documents and the requirements of any Code or Authorities Having Jurisdiction, the most stringent requirements of the aforementioned shall govern.

G. Should this Division perform any Work that does not comply with the requirements of the applicable Building Codes, State Laws, Local Ordinances, Industry Standards and/or Power Company regulations, he shall bear all costs arising in correcting the deficiencies, as approved by the Architect/Owner.

1.06 LOCAL AUTHORITY HAVING JURISDICTION (AHJ)

A. This Document does not supercede any Code, local or otherwise. All Contractors must be aware of any local requirements and Codes that may affect this project. The AHJ will make all final decisions concerning all code interpretations. Any discrepancies must be reported to the Architect or Engineer within 24 hours. Any code violations are the responsibility of the Contractor and the Contractor shall promptly make all required corrections.

1.07 DEFINITIONS

A. "Engineer" shall mean RAM-TECH Engineers, P.C.

B. "Accepted" means written permission to use a material or system.

C. "Provide" shall mean to deliver to installation site, install, and connect complete and make operational.

D. "Furnish" means to supply and deliver to site, unload, and set in location determined by Architect.

E. "Install" means to mount and connect complete and make operational the equipment or device.

1.08 SUBMITTALS

A. Submit Shop Drawings on all items of equipment and materials to be furnished and installed as required, arranged by specification section number. Include review stamp and table of contents/bill of materials. Do not combine materials from different specification Sections.

B. If submitting electronically, in addition to the requirements above, provide one (1) single-sided color hard copy of every submittal required directly to the Engineer. This includes submittal drawings that are larger than 11" x 17". Reduced scale photocopies will not be acceptable. Failure to abide by these requirements will result in an immediate ACTION C – REVISE AND RESUBMIT without review. All individual items and options within the submittal shall be clearly highlighted or otherwise identified.

C. Operation and maintenance manuals and record drawings shall not be submitted electronically. Provide hard copies only; one (1) copy shall be sufficient.

D. Listed manufacturers and their series and/or model numbers do not imply unconditional specification approval. The series and/or model numbers listed may not be current or correct, but are included as an acceptable series of products that must still comply with the written description and specification. Provision of products, based solely on model numbers listed in the specifications does not constitute automatic acceptance. Approved submittals of all product data are still required.

1.09 QUALITY ASSURANCE

A. Install all Work true to line and grade, parallel and close to walls and parallel to lines of building and maintaining maximum headroom. Do not install ductwork, piping, equipment, etc. across doors, windows or other openings.

B. All equipment shall be accessible for operation, service, etc.

C. All equipment and material shall be new, unused and without any defects.

1.10 PROTECTION OF PERSONS AND PROPERTY

A. Make provisions to prevent moisture and foreign matter from entering piping, equipment, etc.

B. Contractor shall be responsible for all damages until Work is fully accepted. Replace all damaged equipment and material.

C. Assume responsibility for construction safety at all times. Include, as part of Contract, all trench or building shoring, scaffolding, shield, dust protection, mechanical/electrical protection, safety railings, barriers and other safety features required to provide safety conditions for all Workmen and site visitors.

1.11 EXAMINATION OF SITE

A. Examine all Drawings including other Divisions.

B. Examine all existing conditions and ascertain access to site, available storage and delivery facilities.

C. Verify all governing dimensions at site and building.

1.12 OBSTACLES, INTERFERENCE AND COOPERATION

A. Drawings show general design and arrangement. Verify exact location and elevations at the job location. Do not scale plans and diagrams.

B. Drawings do not show all offsets, fittings, interferences and elevation changes. Adjust installation of piping, ductwork, equipment location, etc. to accommodate Work with the obstacles and interferences. Where rearrangement is necessary, report same to Engineer for review. Obtain written acceptance for all changes.

C. Cooperate with all Contractors and Owner and determine the exact route of all piping, ductwork, raceway and location of all equipment.

1.13 CONCEALMENT

A. Unless otherwise specifically indicated, all Work shall be concealed above ceiling space, in wall space and elsewhere throughout the building.

B. In areas with no ceilings, install only after Architect reviews and comments on arrangement and appearance.

1.14 COORDINATION

A. Review all construction Drawings and coordinate all Shop Drawings with Work specified under all divisions of the specifications. Division 23 is responsible to coordinate and cooperate with other Divisions' Work so that Work can be installed and maintained substantially as called for.

B. Under no circumstances shall this Division route any piping, ductwork or other equipment foreign to the electrical installation in the dedicated equipment space located directly above both new and existing electrical panelboards and electrical equipment, which is a violation of the National Electrical Code (NEC) Article 110.26(E)(1). Failure to adhere to this requirement will necessitate removal and relocation or rerouting of said piping or ductwork by this Division at no additional cost to the Owner or other trades.

1.15 OPENINGS, SLEEVES AND CHASES

A. Certain chases, openings and shafts will be provided as shown as part of General Construction Plans and Specifications.

B. Provide all other openings and sleeves for ductwork, pipe, etc. through floors, walls, partitions, ceilings, roofs, etc. for Division 23 Work.

C. Assume responsibility for correct and final location and size of such openings: furnish templates if required. Correct improperly located and sized or omitted chases and openings as required. Plug all abandoned sleeves left as part of this Division.

1.16 FLASHING, SEALING AND FIRESTOPPING

A. Seal where piping or ductwork passes through or is affixed to general construction.

B. Provide flashing, sealing and waterproofing for wall, floor and roof openings without affecting roof guarantee or bond.

C. Piping entering through waterproof walls, floors and partitions: Provide Thunderline Corporation "Link-Seal" or accepted substitute for sealing the annular space between the piping and sleeves.

D. Provide firestopping for openings through fire and smoke barriers, maintaining minimum required rating of floor, ceiling or wall assembly. Refer to Section 23 05 10.

1.17 CUTTING AND PATCHING

A. Contractor shall do all cutting and patching of existing surface required for installation of Work installed under this Contract.

B. Repaired surfaces shall match existing surface.

C. Method of cutting shall be approved by the Architect.

1.18 PAINTING

A. Prepare surfaces of Work installed under this Division by cleaning, removing rust, etc.

B. Paint all exposed Work in existing areas to match existing conditions.

1.19 STORAGE AND PROTECTION OF MATERIALS

A. Store materials on base, minimum 6" above ground or floor. Equip with waterproof or windproof cover for items subject to moisture damage.

B. Store in orderly manner so as not to interfere with other Work or obstruct access to buildings or facilities.

C. Replace items stolen or damaged at no cost to the Owner.

1.20 EQUIPMENT CONNECTIONS

A. Provide complete piping connections to all equipment as called for on Drawings and as specified.

B. Obtain approved roughing diagrams and exact location of equipment for items furnished under other Divisions of the specifications. Do not rough in without approved Drawing.

1.21 CONTINUITY OF SERVICE

A. Building will be used by Owner during the construction period.

B. Keep all systems operative; make temporary connections as required.

C. Do not shut off any service without written permission from the Owner or Owner's Representative. Schedule systems shutdown with Owner, providing a minimum of 72 hour notice.

1.22 TESTS

A. Perform operations required for the complete testing of all systems, equipment and related Work as called for.

B. Perform all tests required by local municipalities, utilities, or other governing bodies, boards or agencies having jurisdiction. Provide date and time of testing.

1.23 OWNER INSTRUCTIONS

A. Instruct designated Owner's personnel on the proper operation and care of systems and equipment, before final acceptance of the Work. Obtain written acknowledgement from person instructed prior to final payment. Submit to Architect with final acceptance request.

1.24 CONTRACTOR'S CERTIFICATION

A. All submittals shall bear the Contractor's stamp, certifying the review and approval of submittal, verification of field measurements and compliance with Contract Documents. It shall specifically be as follows:

Contractor acknowledges that all items submitted herein are provided for the base Contract Cost; and that he has reviewed the submittal information contained herein; and that he has determined and verified the materials, field measurements and field construction criteria related thereto, and that he has checked and coordinated the information contained in the submittal with the requirements of all Work in the Contract Documents and other Contracts in the Project.

_____ _____

Contractor's Signature Date

B. All submittals without the above certification will be returned, rejected.

END OF SECTION

SECTION 260001
ELECTRICAL DISTRIBUTION SYSTEM STUDY

PART 1 GENERAL

1.01 RELATED SECTIONS

A. The following Division 16-E Section must be coordinated and included in the project.
   1. Section 262416, PANELBOARDS

1.02 SUMMARY

A. The following are the general requirements for a Short Circuit, Protective Device Coordination and Arc Flash study. The Electrical Contractor shall perform a study for the purposes of estimating worst case available short circuit current values and Arc Flash incident energy. The final study will be generated based on the final electrical equipment submittals and the final installed conductor lengths for all feeders.

B. Study shall use a robust electrical power system design and analysis software which complies with requirements of standards and guides specified in this Section. Manual calculations are not acceptable

C. Based on the findings of the final report, the electrical contractor shall adjust all required protective device settings based on the results of the protective device coordination and/or Arc Flash study.

D. The electrical contractor shall also install Arc Flash PPE (Personal Protective Equipment) labels on all new and existing panelboards as part of the Arc Flash Study.

1.03 SUBMITTALS

A. Quality Control Submittals: Prior to start of the Work required by this Section, submit the credentials of the certified engineering and instrumentation service firm to the Engineer for review, verification and approval.

B. The following submittals shall be made after the approval process for system protective devices has been completed. Submittals shall be “hard copy” power and digital, but not just digital form.
   1. Complete input data report, including computed generated protected device settings report.
   2. Load Flow, Short Circuit & Arc Flash analyzer reports in MS Excel format. Short Circuit & Arc Flash result analyzer reports shall indicate worst case scenario conditions and associated results.
   3. Short Circuit Study, Device Duty and Equipment Evaluation Reports.
   4. Coordination Study Report including computer generated Time-current Characteristic Curves (TCC).
   5. Arc Flash Study Report and Personal Protective Equipment Labels.
   6. Electronic and paper copy of computer software (project) model.

C. The analysis must be submitted and approved prior to the submission of any power equipment specified in the referenced Sections above, as these cannot be reviewed and approved until proper equipment has been determined. The Contractor's failure to submit a timely analysis and obtain approval of same shall not be the basis for any delay claim.

1.04 QUALITY ASSURANCE

A. Codes and Standards:

1. Electrical Code Compliance: Comply with applicable local electrical code requirements of the Authority Having Jurisdiction and the National Electrical Code.
2. NFPA Compliance: Comply with applicable requirements of NFPA 70E, "Standard for Electrical Safety Requirements for Employee Workplaces."
3. Institute of Electrical and Electronics Engineers (IEEE) Compliance: Comply with recommended practices contained in IEEE standards as follows:
   a. IEEE Standard 141, "Recommended Practice for Electric Power Distribution and Coordination of Industrial and Commercial Power Systems".
   b. IEEE Standard 241, "Recommended Practice for Electric Power Systems in Commercial Buildings".
   c. IEEE Standard 242 for short circuit currents and coordination time intervals.
   d. IEEE Standard 399 for general study procedures.
   e. IEEE Standard 1015, "Recommended Practice for Applying Low-Voltage Circuit Breakers Used in Industrial and Commercial Power Systems".
   f. IEEE Standard 1584, "Guide for Performing Arc Flash Hazard Calculations".
4. American National Standard Institute (ANSI) Compliance: Comply with recommended practices contained in ANSI standards as follows:
   a. ANSI C37.010, "Standard Applications Guide for AC High Voltage Circuit Breakers Rated on a Symmetrical Current Basis".
   b. ANSI C37.13, "Standard for Low Voltage AC Power Circuit Breakers Used in Enclosures".
   c. ANSI C37.41, "Standard Design Tests for High Voltage Fuses, Distribution Workplace Enclosed Single-Pole Air Switches, Furse Disconnecting Switches and Accessories".
   d. ANSI C57.12.00, "Standard General Requirements for Liquid-Immersed Distribution, Power and Regulating Transformers".

1.05 QUALIFICATIONS

A. Contractor shall secure the services of a certified engineering and instrumentation service firm in order to perform a complete and thorough coordination study of this project's electrical system for the purpose of determining all proper system protective relay settings and to implement these settings. The service firm commissioned to perform the above Work shall obtain all pertinent data from the switchgear manufacturer, Contract Documents and site inspections in order to assure that all recommended relay setting values are properly determined and implemented.

B. The firm per performing the studies shall be experienced in the application of computer software used for studies, having performed successful studies of similar magnitude on electrical systems using similar devices.

C. A Professional Engineer, licensed in New York, shall be responsible for supervision and approval of the study. All elements of the study shall be performed under the direct supervision and control of the Professional Engineer.

D. The Registered Professional Electrical Engineer shall have a minimum of five (5) years of experience in performing power system studies.

E. The equipment manufacturer or approved engineering firm shall demonstrate experience with Arc Flash Hazard Analysis by submitting names of at least ten (10) actual arc flash hazard analysis it has performed in the past year

1.06 SEQUENCING AND SCHEDULING

A. After receiving approved submittal, transmit written notification of proposed date and time of breaker testing and calibration to the Owner's Representative at least 14 days in advance of such tests.

PART 2 PRODUCTS

2.01 MATERIALS

A. Short circuit and coordination study software must be completed utilizing computer modeling of manufacturer's equipment intended for this project. No hand generated studies will be accepted.

B. Test Equipment and Instruments: Type and kind as required for the particular system under test.

2.02 POWER SYSTEM ANALYSIS SOFTWARE PROGRAM (SOFTWARE)

A. Software shall have a robust Quality Assurance Program in place and subject to QA audits and assessments.

B. Studies shall be performed using the latest version of approved software, such as ETAP, SKM or approved equal.

C. Software Program Requirements: Software shall comply with the aforementioned IEEEE Standards.

PART 3 EXECUTION

3.01 POWER SYSTEM DATA

A. Gather and tabulate the following input data to support the power systems study:
   1. Product Data for overcurrent protective devices involved in overcurrent protective device coordination studies. Use equipment designation tags that are consistent with electrical distribution system diagrams, overcurrent protective device submittals, input and output data, and recommended device settings.
   2. Maximum fault contribution of utility service entrance. Provide backup in the form of a letter from Power Company.
   3. Electrical Distribution System Diagram: In hard-copy and electronic-copy formats, showing the following:
      a. Circuit-breaker and fuse-current ratings and types.

b. It should be noted that the existing main distribution panelboard MDP is a General Electric Spectra Series Type APNB panelboard with a 600A/3P GE SGLA36AT0600 current limiting main circuit breaker and six existing GE SFLA and SELA current limiting distribution breakers, all with adjustable settings.
c. Cables: Indicate conduit material, sizes of conductors, conductor material, insulation, and length.
d. Motor horsepower and code letter designation according to NEMA MG1.

4. Data sheets to supplement electrical distribution system diagram, cross referenced with tag numbers on diagram, showing the following:
a. Special load consideration's, including starting inrush currents and frequent starting and stopping.
b. Transformer characteristics, including primary protective device, magnetic inrush current, and overload capability.
c. Motor full-load current, locked rotor current, service factor, starting time, type of start, and thermal-damage curve.
d. Generator thermal-damage curve.
e. Ratings, types, and settings of Power Company's overcurrent protective devices.
f. Special overcurrent protective device settings or types stipulated by the Power Company.
g. Time-current-characteristic curves of devices indicated to be coordinated.
h. Manufacturer, frame size, interrupting rating in amperes RMS symmetrical, ampere or current sensor rating, long-time adjustment range, short-time adjustment range, and instantaneous adjustment range for circuit breakers.
i. Manufacturer and type, ampere-tap adjustment range, time-delay adjustment range, instantaneous attachment adjustment range, and current transformer ratio for overcurrent relays.
j. Panelboards ampacity, and interrupting rating in amperes RMS symmetrical.

B. Software shall have the ability to utilize typical data such as %Z, X/R ratios for transformers, etc. in case these values cannot be ascertained from submittals and existing documentation and/or field data collection.

C. Various system operating configurations of the system including status of switching devices and load status (continuous, intermittent, spare), etc. shall be modeled as part of the project database using a configuration management tool.

D. Study related scenarios including data revisions, engineering properties, study solution parameters and network topology shall be setup. In the event of system changes, these scenarios may be utilized at a later date to re-run the studies.

3.02 SHORT CIRCUIT STUDY

A. Software shall have the ability to generator a single Fault Current report that includes the Device Duty Evaluation as per ANSI/IEEE C37 standards.

B. Calculate the maximum available short circuit current in amperes rms symmetrical at circuit-breaker positions of the electrical power distribution system. The calculation shall be for a current immediately after initiation and for a three-phase bolted short circuit at each of the following:
   1. Distribution panelboard.
   2. Branch panelboards.

C. Study electrical distribution system from the normal power source throughout the electrical distribution system for the Project. Include studies of system switching configurations and alternate operations that could result in maximum fault conditions.

D. Calculate momentary and interrupting duties on the basis of maximum available fault current at every bus to include but limited to:
   1. Electric utility's supply termination point
   2. Incoming switchgear
   3. Low voltage switchgear
   4. Branch circuit panelboards
   5. Other significant locations throughout the system

E. Calculations to verify interrupting ratings of overcurrent protective devices shall comply with IEEE 241 and IEEE 242

F. Short Circuit Study report shall include:
   1. Show calculated X/R ratios and equipment interrupting rating (1/2-cycle) fault currents on electrical distribution system diagram.
   2. Calculation methods and assumptions including any adjustments used when considering resistance and impedance tolerances.
   3. One-line diagram of the system being evaluated with available fault at each bus.
   4. Typical calculations.
   5. Comparison of Short Circuit results from different scenarios in a single display.
   6. Results, conclusions, and recommendations.
   7. Evaluation Report:
      a. For 600 V overcurrent protective devices, ensure that interrupting ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.
      b. For devices and equipment rated for asymmetrical fault current, apply multiplication factors listed in the standards to 1/2-cycle symmetrical fault current.
      c. Verify adequacy of phase conductors at maximum three-phase bolted fault currents; verify adequacy of equipment grounding conductors and grounding electrode conductors at maximum ground-fault currents. Ensure that short circuit withstand ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.
      d. Software shall have the ability to generate a single Fault Current report that includes the Device Duty Evaluation as per ANSIIIEEE C37 standards.

G. Software shall utilize data revisions to track system data changes such as "As Found" and "Recommended" settings.

3.03 PROTECTIVE DEVICE COORDINATION STUDY

A. Perform coordination study using approved computer software program. Prepare a written report using results of fault-current study. Comply with IEEE 399.
   1. Calculate the maximum and minimum 1/2-cycle short circuit currents.
   2. Calculate the maximum and minimum interrupting duty (5 cycles to 2 seconds) short circuit currents.
   3. Calculate the maximum and minimum ground fault currents.

B. Software shall be capable of plotting and diagramming time-current-characteristic curves as part of its output. Computer software program shall report device settings and ratings of all overcurrent protective devices and shall demonstrate selective coordination by computer-generated, time-current coordination plots.

C. Software shall be able to perform a Sequence of Operation that evaluates, verifies, and confirms the operation and selectivity of the protective devices for various types of faults directly from the one-line diagram and via normalized Time Current Characteristic Curve views.

D. Generate a report that highlights detected violations and concerns of equipment protection and device coordination:
   1. List possible corrections and adjustments of protective device settings.
   2. Provide violation descriptions with each detection provided.

E. Comply with IEEE 241 recommendations for fault currents and time intervals.

F. Conductor Protection: Protect cables against damage from fault currents according to ICEA P-32-382, ICEA P-45-482, and conductor melting curves in IEEE 242. Demonstrate that equipment withstands the maximum short circuit current for a time equivalent to the tripping time of the primary relay protection or total clearing time of the fuse. To determine temperatures that damage insulation, use curves from cable manufacturers or from listed standards indicating conductor size and short circuit current.

G. Transformer Protection: Protect transformers against damage from through fault currents according to ANSI C57.109, IEEE C57.12.00, IEEE 242.

H. Low-Voltage Circuit Breakers: IEEE 1015 and IEEE C37.20.1

I. Coordination Study Report: Prepare a written report indicating the following results of coordination study:
   1. Computer generated Overcurrent Protective Devices report must include:
      a. Device tag.
      b. Current transformer ratios; and tap, time-dial, and instantaneous-pickup values.
      c. Circuit breaker sensor rating; and long-time, short-time, and instantaneous settings.
      d. Fuse current rating and type

e. Ground fault relay-pickup and time-delay settings

2. Coordination Curves: Prepared to determine settings of overcurrent protective devices to achieve selective coordination. Graphically illustrate that adequate time separation exists between devices installed in series, including power utility company's upstream devices. Prepare separate sets of curves for the switching schemes and for emergency periods where the power source is local generation. Show the following information:
   a. Device tag.
   b. Voltage and current ratio for curves.
   c. Three-phase and single-phase damage points for each transformer.
   d. Melting and clearing curves for fuses.
   e. Cable damage curves.
   f. Transformer inrush points.
   g. Maximum fault-current cutoff point.

J. Provide a computer generated data sheet report for setting of overcurrent protective devices.

K. Software shall utilize data revisions to track system data changes such as "As Found" and "Recommended" settings.

3.04 ARC FLASH STUDY

A. Perform Arc Flash analysis according to the IEEE 1584 guidelines and equations presented in NFPA 70E-2015, Annex D. Analysis shall be performed in conjunction with Short Circuit analysis and Protective Device Time-Current Coordination analysis.

B. Incident Energy and Flash protection boundary shall be calculated at all location where energized Work could be performed such as panelboards.

C. Working distances shall be based on IEEE 1584. The calculated arc flash protection boundary shall be determined using those working distances.

D. Calculations must be performed to represent the maximum and minimum contributions of fault current magnitude for normal and emergency operating conditions. The minimum calculation shall assume that the utility contribution is at a minimum and shall assume a minimum motor load. Conversely, the maximum calculation shall assume a maximum contribution from the utility and shall assume motors to be operating under full-load conditions.

E. Multiple system configurations and operating conditions shall be considered and greatest incident energy must be selected for each equipment location.
   1. Provide a tabular view report of all configurations and operating conditions used
   2. Provide calculation methods and assumptions including any adjustments used when considering resistance and impedance tolerances.

F. When applicable, Utility Minimum and Maximum contributions should be considered.

G. Include scenarios when the main source protective devices are or are not adequately isolated from the bus and may fail to operate or be capable of de-energizing the arc fault before it escalates into a line-side arc fault.

H. Arc flash computation shall include both line and load side of main breaker calculations, where necessary.

I. The Arc flash analysis shall include all locations.

J. Arc Flash Study Report:
1. Arc Flash reports shall compare results from the various arc flash hazard assessments and be capable of filtering the "worst case" Arc Flash analysis results coming from different scenarios in a single table report.
2. Provide a report in a tabulated format that displays the sequence of operation of protective devices during an arc fault.
3. Recommendations for arc flash energy reduction including the use of arc reduction maintenance switches, current limiting fuses, replacement of overcurrent protective devices and/or trip units, or replacement of equipment with arc resistant or preventative designs.

K. Software shall utilize data revisions to track system data changes such as "As Found" and "Recommended" setting.

L. Arc Flash Warning Labels:
1. Consultant shall provide a 3.5 in. x 5 in. thermal transfer type label of high adhesion polyester for each work location analyzed.
2. All labels will be based on recommended overcurrent device settings and will be provided after the results of the analysis have been presented and after any system changes, upgrades or modifications have been incorporated in the system.
3. The label shall include the following information, at a minimum:
   a. Location.
   b. Nominal voltage.
   c. Flash protection boundary.
   d. Hazard risk category.
   e. Incident energy.
   f. Working distance.
   g. Engineering study number, revision number and issue date.
4. Arc Flash warning label sample is shown below:
5. Labels shall be machine printed, with no field markings.
6. Arc flash labels shall be provided in the following manner and all labels shall be based on recommended overcurrent device settings.
   a. For each 480 and applicable 208 volt panelboard, one arc flash label shall be provided.
7. Labels shall be installed by the engineering services division of the company under the Startup and Acceptance Testing contract portion.
   a. Steps that would be involved in modifying and/or expanding system topology for the future revisions and/or upgrades of the equipment and the plant electrical distribution configuration
   b. The use of the device library and the procedures in creating new devices or modifying existing devices

3.05 MANUFACTURERS CERTIFICATION

A. A qualified factory-trained manufacturer’s representative shall certify in wiring that the equipment has been installed, adjusted and tested in accordance with the manufacturer’s recommendations, with the settings provided by the electric system study.

B. The Contractor shall provide three (3) copies of the manufacturer’s representative’s certification.

END OF SECTION

SECTION 260510
FIRESTOPPING

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes field constructed assemblage of firestopping products and materials for the following:
   1. Penetrations through fire-rated floor construction.
   2. Penetrations through fire-rated walls and partitions.
   3. Penetrations through smoke barriers.

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM) Publications:
   - E 84: Standard Test Methods for Surface Burning Characteristics of Building Materials.
   - E 119: Methods of Fire Tests of Building Construction and Materials.
   - E 814: Standard Method of Fire Tests of Through-Penetration Fire Stops.
   - C 719: Adhesion and Cohesion of Elastomeric Joint Sealants under Cyclic Movements.
   - C 920: Standard Specification of Elastomeric Joint Sealants.

B. Underwriter's Laboratories Inc. (UL) Publications:
   - UL 263: Fire Tests of Building Construction and Materials.
   - UL 723: Surface Burning Characteristics of Building Materials.
   - UL 1479: Fire Tests of Through-Penetration Firestops.
   - UL 2079: Standard for Fire Tests of Joint Systems.

   Underwriters Laboratories "Fire Resistance Directory" (Current Year).

C. Miscellaneous Publications:
   1. Factory Mutual Approval Guide (Current Year).
   2. Warnock Hersey Certification Listings.

1.03 DEFINITIONS

A. Fire Rated Assembly: Includes all fire rated walls, floors, floor/ceiling and roof system assemblies. Ratings shall be as per ASTM E 119 or UL 263.

B. Firestop System: Firestop systems prevent the spread of smoke, fire and toxic gases through openings in the fire rated assemblies or through joints between wall and floor or roof assemblies or other expansion or seismic joints (also known as firesafing), for a specified period of time, incorporating the use of specific products installed in a specific manner.

C. Flame Spread/Smoke Developed Ratings: Numerical value of a material when tested in accordance with ASTM E 84.

D. F - Rating: The time period that a through-penetration firestop limits the spread of flame and hot gases through fire resistive construction, including the penetrating items, when tested in accordance with the time-temperature curve defined in ASTM E 119.

E. T - Rating: The time period that a through-penetration firestop limits temperature rises through the fire resistive construction, including the penetrating items, as defined in ASTM E 119.

1.04 SUBMITTALS

A. Submit complete list of all firestopping systems and materials to be utilized, including documentation of UL or FM Classifications or approved third party testing. Include all of the individual materials required for each complete system. Indicate manufacturer's product name and number for each material.

B. Submit copies of manufacturer's product data, specifications, recommendations, standard details and installations instructions for all firestop assemblies.

1.05 QUALITY ASSURANCE

A. Installations shall be performed by an experienced firestopping contractor who is certified, licensed or otherwise qualified by the firestopping manufacturer to install the manufacturer's products as per specified requirements.

B. Single-Source Responsibility: Where possible, obtain through-penetration firestop systems for each kind of penetration and construction condition indicated from a single manufacturer.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver firestopping products to Project site in original, unopened containers or packages with intact and legible manufacturer's labels identifying product and manufacture; date of manufacture; lot number; shelf life, if applicable; qualified testing and inspecting agency's classification marking applicable to project; curing time and mixing instructions for multi-component materials.

B. Store and handle firestopping materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants or other causes.

C. Conspicuously mark “REJECTED” on materials which have been damaged and will be removed from the site. Do not use rejected materials on this project.

D. Material Safety Data Sheets (MSDS) will be available on the site for all materials. Follow manufacturer's guidelines for use, handling and disposal.

1.07 PROJECT CONDITIONS

A. Environmental Conditions: Do not install firestopping when ambient or substrate temperatures are outside limits permitted by firestopping manufacturers or when substrates are wet.

B. Ventilation: Ventilate firestopping per firestopping manufacturer's instructions by natural means or, where this is inadequate, forced air circulation.

C. Coordinate Work: Coordinate construction of openings and penetrating items with other Divisions to ensure that designated through-penetration firestop systems are installed per specified requirements.

1.08 WARRANTY

A. All firestop and firesafing materials shall be warranted, in writing, by the manufacturer against any defects in materials and manufacturing.

B. Completed installation shall be warranted, in writing, by the installer against defects in workmanship.

1.09 ENVIRONMENTAL REQUIREMENTS

A. All materials shall be asbestos free and non-carcinogenic.

B. Firestop materials shall contain no flammable or toxic solvents and shall not produce toxic or flammable outgassing during the drying or curing process.

C. Firestop materials used shall not require solvent based chemicals for clean-up purposes.

D. Water-based, non-toxic firestop materials shall be used.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with requirements, provide products from one of the following manufacturers as shown below:
   1. International Protective Coatings Corporation (design make).
   2. 3M Company.
   3. Dow Corning.
   4. Metacaulk.
   5. S T I.
   6. Flamesafe.
   7. Hilti.

2.02 PHYSICAL REQUIREMENTS

A. Through-penetration firestop systems and firestop devices shall be tested in accordance with ASTM E 814 using F and T- ratings, shall be classified for use with the particular type of penetrating material used, and shall maintain the same integrity as the fire barrier being sealed.

B. All products used shall be water-resistant after drying or curing and shall be unaffected by high humidity, condensation or transient water exposure.

C. Penetrations containing loose electrical, data, or communications cabling shall be protected using firestopping systems that allow unrestricted cable changes without damage to the seal.

D. Maximum flame spread of 25 and smoke development of 50 when tested in accordance with ASTM E 84 (except intumescent moldable putty).

E. All materials shall have a minimum one-year shelf life.

F. Materials and system designs shall not require ampacity derating in power cable installations.

G. Materials supplied under this specification shall be compatible with all materials used in the building construction.

2.03 MATERIALS

A. Water-based thixotropic firestop sealant available in caulkable, trowelable or pourable formulations; IPC Flamesafe FS 900 Series.

B. Water-based, elastomeric, intumescent firestop sealant; IPC Flamesafe FS 1900.

C. Intumescent, moldable firestop putty; IPC Flamesafe FS 1000-1077-1100 Series.

D. Pre-engineered, plant fabricated, self-sealing firestop collar device manufactured from galvanized steel lined with a heat-activated intumescent moldable putty. Device to be installed on the job site with no additional component fabrication required; IPC Flamesafe Firestop Collar Device System.

E. Reusable heat expanding bags used as a permanent firestop system; IPC Flamesafe or KBS Sealbags.

F. Cementitious, firestop compound, job site mixed either by hand or using mortar or plastering machine with a worm gear type pump. Designed for large penetrations; IPC Flamesafe Mortar.

G. Safing sealant in curtain wall joints and other construction joints to stop smoke, gas and fire migration; IPC Flamesafe C700 Sealant.

PART 3 EXECUTION

3.01 INSPECTION

A. Examine adjoining construction and the conditions under which the Work is to be completed. Do not proceed with Work until any unsatisfactory conditions detrimental to the proper and timely completion of the Work have been corrected.

B. Verify that openings and items (penetrations) passing through them are ready to receive the Work of this Section.

C. Verify that field dimensions are as shown on the Drawings and as recommended by the manufacturer.

3.02 PREPARATION

A. Surface cleaning: Clean out openings and joints immediately prior to installing firestopping to comply with recommendations of firestopping manufacturer and the following requirements:
   1. Remove all foreign materials from surfaces of opening and joint substrates and from penetrating items that could interfere with adhesion of firestopping.
   2. Clean opening and joint substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with firestopping. Remove loose particles remaining from cleaning operation.
   3. Remove laitance and form release agents from concrete.

B. Priming: Prime substrates, where recommended by firestopping manufacturer using that manufacturer's recommended products and methods.

3.03 INSTALLATION

A. Comply with the through-penetration firestop manufacturer's installation instructions and Drawings pertaining to products and applications indicated.

B. Confirm all requirements of the specific through-penetration system used prior to installation of any elements of the Work. Verify material, maximum diameter, minimum weight, installation thickness/density, annular space, etc.

C. Coordinate with fire protection and other trades to assure that all pipe, conduit, cable and other items which penetrate fire rated construction have been permanently installed prior to installation of firestops and smoke seals. Schedule and sequence Work to assure partitions and other construction that would conceal penetrations are not erected prior to the installations of firestop, firesafing and smoke seals.

D. Apply firestops and smoke seals in all locations required by national, municipal and local governing laws and codes.

E. Apply firestopping materials only when the temperature of the surfaces to be filled and surrounding air temperature comply with the manufacturer's printed instructions.

F. Personal safety gear shall be utilized in accordance with manufacturer's instructions, material and environmental considerations.

3.04 FIELD QUALITY CONTROL

A. Verify that system(s) are installed in all specified and/or indicated locations in rated assemblies.

B. Verify that proper, specified firestopping materials are used in the firestop system and that system is installed in strict accordance with the latest independent testing agency or manufacturer's latest published requirements.

C. Install forming/damming materials and other accessories of types required to support fill materials during their application and in the position needed to produce the cross-sectional shapes and depths required to achieve fire ratings of designated through-penetration firestop systems. After installing fill materials, remove forming materials and other accessories not indicated as permanent components of firestop systems.

D. Install fill materials for through-penetration firestop systems by proven techniques to produce the following results:
   1. Completely fill voids and cavities formed by openings, forming materials, accessories and penetrating items.
   2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
   3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes. Install any covering materials or finish as per design requirements and manufacturer's instructions.

E. The penetration of any walls or partitions by any wiring or cables without conduit is not permitted. No bare wire penetrations are permitted.

F. After installation, properly identify all firestop systems. Identification shall occur at location where system has been installed and shall include:
   1. Identify the firestopping system that has been installed as being a "Rated Through-Penetration Firestop System - Do Not Disturb".
   2. Use label, minimum 3" by 5", yellow and black OSHA colors with manufacturers, building owner representative and/or contractor clearly identified.

G. Do not proceed to enclose firestopping with other construction until local building inspectors have inspected the Work and given approval to close the Work.

H. Where necessary, repairs shall be made and repaired installations shall be reinspected.

3.05 CLEANING

A. Clean off excess fill materials and sealants adjacent to openings and joints as Work progresses by methods and with cleaning materials accepted by manufacturers of firestopping products and of products in which opening and joints occur.

B. Protect firestopping during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated firestopping immediately and install new materials to produce firestopping complying with specified requirements.

END OF SECTION

SECTION 260519
CABLES AND WIRES

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes building wires and cables, and wiring connectors and connections for power, lighting, signal, control and related systems rated 600 volts and less.

B. Provide all labor and materials necessary to perform the Work required for the complete installation and operation of related Work on all Contract Documents.

C. Type AC Armored Cable and Type MC Metal-Clad Cable is permitted for use on this project for branch circuits only.

1.02 REFERENCES

A. National Fire Protection Association (NFPA):

No. 70	National Electrical Code; Article 310.

B. Underwriters Laboratories, Inc. (UL):

UL 83	Thermoplastic-Insulated Wires and Cables.
UL 486A	Wire Connectors and Soldering Lugs for use with Copper Conductors.
UL 493	Thermoplastic-Insulated Underground Feeder and Branch-Circuit Cables.
UL 2196	Standard for Tests for Fire Resistive Cables

C. American Society for Testing and Materials:

Std B3	Standard Specification for Soft or Annealed Copper Wire
Std B8	Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard or Soft
Std B496	Standard Specification for Compact Round Concentric-Lay-Stranded Copper Conductors

D. National Electrical Manufacturers Association (NEMA): Insulated Cable Engineers Association, Inc. (ICEA):

Std No. WC5	Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy. (ICEA S-61-402).

E. Institute of Electrical and Electronic Engineers (IEEE):

Std 82	Test Procedure for Impulse Voltage Tests on Insulated Conductors.

1.03 SUBMITTALS

A. Provide product data for electrical wires, cables and connectors.

1.04 QUALITY ASSURANCE

A. Conform to applicable codes and regulations regarding toxicity of combustion products of insulating materials.

B. Provide components that are listed and labeled by UL.

1.05 DELIVERY

A. Mark and tag insulated conductors for delivery to the Site.

1.06 COOPERATION

A. Determine required separation between cable and other Work.

B. Determine cable routing to avoid interference with other Work.

1.07 PROJECT CONDITIONS

A. Verify that field measurements are as shown on Drawings.

B. Wire and cable routing shown on Drawings is approximate unless dimensioned. Route wire and cable as required to meet Project Conditions.

C. Where wire and cable routing are not shown, and destination only is indicated, determine exact routing and lengths required.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Wire and Cable:
   Cerro Wire LLC.
   Colonial Wire & Cable Co.
   Encore Wire Corporation.
   General Cable Technologies Corporation.
   OMNI Cable.
   Republic Wire, Inc.
   Southwire Company.
   United Copper Industries.
2. Connectors for Wires and Cable Conductors:
   AMP Special Industries
   3M Company
   Burndy Corp.
   Cooper Crouse Hinds.
   Dossert Mfg. Corp.
   Hubbell Killark.
   Ideal Industries Inc.
   O-Z/Gedney Co.
   Thomas & Betts Corp.

2.02 WIRES AND CABLES

A. Provide wire and cable suitable for the temperature, conditions and location where installed.

B. Use single conductor insulated wire, installed in raceway. The use of MC, flexible metal clad cable is permitted on this project for branch circuits only.

C. Insulation Voltage Rating: 600 volts.

D. Conductors: Provide solid conductors for power and lighting circuits No. 10 AWG and smaller. Provide stranded conductors for sizes No. 8 AWG and larger and for control circuits.

E. Conductors for Fire Alarm Systems: Provide solid only copper conductors.

F. Conductor Material: Annealed copper, 98 percent conductivity, for all wires and cables. Aluminum conductors prohibited.

G. Insulation:
1. Provide flame-retardant, heat- and moisture-resistant Polyvinyl Chloride THHN/THWN-2 insulation for all branch circuit conductor sizes, except as noted herein; General Cable Spec 5290 or accepted equal.

H. Minimum size shall be No. 12 AWG for branch and other circuits.

I. Color coding for phase identification in accordance with the following table:

	Single Phase	Three Phase	Three Phase
Phase	120/208 Volt	120/208 Volt	277/480 Volt
Ground	Green	Green	Green
Neutral	White	White	Gray
A or L1	Black	Black	Brown
B or L2	Red	Red	Orange
C or L3	---	Blue	Yellow

Where neutral conductors of different systems are installed in the same raceway or enclosure, each conductor shall have an outer covering of white with a readily distinguishable different colored stripe (not green) running along the insulation, or other and different means of identification as allowed by Section 200-6(a) or (b) of the National Electrical Code.

J. Temperature Limitations: The temperature rating associated with the ampacity of a conductor shall be selected and coordinated so as not to exceed the lowest temperature rating of any connected termination, conductor, or device, per NEC 110.14.

2.03 METAL CLAD CABLE (MC CABLE)

A. Description: Type MC, flexible metal clad cable with protective galvanized steel metal armor conforming to UL 1569 requirements.

B. Conductor**:** Solid conductor copper with insulated green grounding conductor.

C. Insulation Voltage Rating: 600 volts.

D. Insulation Material: THHN/THWN.

E. Insulation Temperature Rating: 90 degrees C.

F. Armor Material: Interlocked galvanized steel.

G. Armor Design: Green-striped interlocked galvanized steel metal tape.

H. Jacket: None.

I. Make-up: Three or four conductors, including one full size green ground conductor, plus bare bonding wire, with full phase identification.

J. Make: AFC Type MC Tuff, MC, or accepted equal.

K. For non-healthcare lighting and low voltage circuit applications, provide flexible metal-clad cable with galvanized interlocking steel strip, #12 AWG minimum with #16 AWG solid twisted jacket pair (purple/gray) control cables, equal to AFC MC Tuff Luminary cable.

2.04 CONNECTORS FOR CONDUCTORS

A. Provide UL-listed factory-fabricated, solderless metal connectors of sizes, ampacity ratings, materials, types and classes for applications and for services indicated. Use connectors with temperature ratings equal to or greater than those of the wires upon which used.

B. Connectors specified are part of a system. Furnish connectors and components, and use specific tools and methods as recommended by connector manufacturer to form complete connector system

C. Splices:
1. Spring Type: Amerace Corp. Elastimold Div.'s Buchanan B-Cap, Electrical Products Div./3M's Scotchlok Type Y, R, G, or B, Ideal Industries Inc.'s Wing Nuts or Wire Nuts, or Thomas & Betts Corp.'s Piggies.
2. Indent Type with Insulating Jacket: Amerace Corp. Elastimold Div.'s Buchanan Pressure Connectors, Ideal Industries Inc.'s Crimp Connectors, or Thomas & Betts Corp.'s STA-KON.
3. Indent Type (Uninsulated): Burndy Corp.'s Hydent, or Thomas & Betts Corp.'s Compression Connectors.

D. Terminals: Nylon insulated pressure terminal connectors as manufactured by Amp Special Industries, Burndy Corp., Ideal Industries Inc., Panduit Corp., Thomas & Betts Corp., or Wiremold Co.

E. Lugs:
1. Single Cable (Compression Type Lugs): Copper, one or 2 hole style (to suit conditions), long barrel; Burndy Corp.'s Hylug YA, Ideal Industries Inc.'s CCB or CCBL, or Thomas & Betts Corp.'s 54930BE or 54850BE Series.
2. Single Cable (Mechanical Type Lugs): Copper, one or 2 hole style (to suit conditions); Burndy Corp.'s Quicklug Series, or Thomas & Betts Corp.'s Locktite Series.
3. Multiple Cable (Mechanical Type Lugs): Copper, configuration to suit conditions; Burndy Corp.'s Quicklug Series, or Thomas & Betts Corp.'s Locktite Series.

2.05 TAPES

A. Insulation Tapes:
1. Plastic Tape: Bishop Electric Corp.'s No. 85, Electrical Products Div./3M's Scotch 88, Plymouth Rubber Co.'s Premium CW.
2. Rubber Tape: Bishop Electric Corp.'s No. W-963, Electrical Products Div./3M's Scotch 33, or Plymouth Rubber Co.'s Splicing Compound ASTM.
3. Moisture Sealing Tape: Bishop Electric Corp.'s No. 4000T, Electrical Products Div./3M's Scotch 2200 or 2210, or Plymouth Rubber Co.'s Plyseal.
4. Electrical Filler Tape: Bishop Electric Corp.'s No. 125T, Electrical Products Div./3M's Scotchfil, or Plymouth Rubber Co.'s Slipknot Filler Tape.
5. Color Coding Tape: Bishop Electric Corp.'s No. 112T, Electrical Products Div./3M's Scotch 35, or Plymouth Rubber Co.'s Slipknot 37.

2.06 WIRE-PULLING COMPOUNDS

A. To suit type of insulation; American Polywater Corp.'s Polywater, Electro Compound Co.'s Y-Er-Ease, Greenlee Tool Div.'s Green 80, Gould Inc.'s Electrical Component Div.'s WGY, Hillcrest Laboratories Inc.'s Polylube 7, or Ideal Industries Inc.'s Aqua-Gel, Yellow 77 or Wire-Lube.

PART 3 EXECUTION

3.01 GENERAL

A. Install conductors in interior raceways after the raceway system is completed and plastering in specific Work areas of the building are finished.

B. Install conductors in outside and underground raceways after raceway system is completed.

C. No grease, oil, or lubricant other than wire-pulling compounds specified may be used to facilitate the installation of conductors.

D. Use nylon line, polyethylene line, or manila rope as pull-rope when installing conductors in conduits.

3.02 EXAMINATION

A. Verify that Work likely to damage wire and cable has been completed.

3.03 WIRING METHODS

A. Use building wire, Type THHN/THWN-2 insulation, in raceway:
   1. For concealed dry interior locations.
   2. For exposed dry interior locations.
   3. Above accessible ceilings.

B. Use building wire, Type THHN/THWN-2 insulation, in raceway:
   1. For wet or damp interior locations.
   2. For exterior locations.
   3. For underground installations.

C. Use wiring methods indicated on Drawings.

3.04 INSTALLATION OF WIRES AND CABLES

A. Install electrical cables, wires, and connectors in compliance with NEC and the manufacturers' instructions.

B. Cooperate with other Divisions for the exact installation of all cable.

C. Completely and thoroughly swab raceway before installing wire.

D. Pull conductors simultaneously where more than one is being installed in same raceway. Use UL listed pulling compound or lubricant for building wire No.4 AWG and larger, and for smaller conductors where approved.

E. Use pulling means including fish tape, cable, rope, and basket weave wire/cable grips which will not damage cables or raceways. Do not use rope hitches for pulling attachment to wire or cable.

F. Conceal all cable in finished spaces.

G. Protect exposed cable from damage.

H. Keep conductor splices to minimum.

I. Install splice and tap connectors that possess equivalent or better mechanical strength and insulation rating than conductors being spliced.

J. Use splice and tap connectors that are compatible with conductor material.

K. Provide adequate length of conductors within electrical enclosures and train the conductors to terminal points with no excess. Bundle multiple conductors, with conductors larger than No. 10 AWG cabled in individual circuits. Make terminations so there is no bare conductor at the terminal.

L. Support cables above accessible ceiling and in crawlspace, using spring metal clips or plastic cable ties to support cables from structure. Do not rest cable on ceiling panels or crawlspace floor.

M. Install cable supports for all vertical feeders in accordance with NEC Article 300.19 and NEC Table 300.19(A). Provide split wedge type which firmly clamps each individual cable and tightens due to cable weights.

N. Neatly train and lace wiring inside boxes, equipment, and panelboards.

3.05 INSTALLATION OF MC CABLE

A. For use on normal power lighting and receptacle circuits and normal power and control lighting circuits only, in dry, concealed locations.

B. For branch circuit wiring in wood framed construction (wood joists and wood stud partitions), install conductors parallel with joists or studs and attach to the side of these timbers by galvanized straps spaced not more than 4 feet apart. DO NOT USE STAPLES. Install conductors through holes bored in the center of the timbers when running at right angles to joists or studs. Do not attach the conductors to the edge of joists or studs.

C. For branch circuit wiring in moveable metal partitions and moveable gypsum partitions, install conductors in accordance with partition manufacturers recommendations.

D. For use only on circuits in dry, concealed locations and where furred out walls will not accommodate minimum ¾" raceways.

E. MC cable is not permissible for equipment circuits or feeders.

F. Secure to structure at intervals not exceeding six feet per National Electrical Code.

G. Use EMT out of panelboards to first lighting fixture, then MC cable for remainder of circuit. For receptacle circuits, use EMT out of panelboards to above-ceiling outlet box at first room where circuit devices are located, then MC cable for remainder of circuit, confined to that room.

H. Provide MC insulated throat cable bushings at each termination point to prevent armor jacket from damaging conductor. Use special steel box connectors with insulated throat bushings designed for MC cable.

3.06 CIRCUITING

A. Install a maximum of three (3) single phase circuits in a single raceway (six current carrying conductors' maximum plus three ground), unless otherwise specifically called for on the Drawings; no exceptions.

B. Install a maximum of one (1) three phase circuit in a single raceway, unless otherwise specifically called for on the Drawings.

C. Provide separate neutral and ground for every circuit; shared neutrals and grounds may not be used.

D. Install conductors of size shown on Drawings. Where size is not indicated for branch circuit wiring, the minimum size allowed is No. 12 AWG.

E. Use No. 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet.

F. Maximum voltage drop permissible for any branch circuits or feeder circuits shall be limited to 3%.

G. Install green copper grounding wire for every circuit.

3.07 INSTALLATION OF CONNECTORS

A. Clean conductor surfaces before installing lugs and connectors.

B. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.

C. Splices:
   1. Dry Locations:
      a. For Conductors No. 8 AWG or Smaller: Use spring type pressure connectors or indent type pressure connectors with insulating jackets (except where special type splices are required).
      b. For Conductors No. 6 AWG or Larger: Use uninsulated indent type pressure connectors.

      Fill indentations with electrical filler tape and apply insulation tape to insulation equivalent of the conductor, or insulate with heat shrinkable splices.
   2. Damp Locations: As specified for dry locations, except apply moisture sealing tape over the entire insulated connection (moisture sealing tape not required if heat shrinkable splices are used).
   3. Wet Locations: Use uninsulated indent type pressure connectors and insulate with resin splice kits or heat shrinkable splices.

D. Terminations:
   1. For Conductors No. 10 AWG or Smaller: Use terminals for:
      a. Connecting control and signal wiring to terminal strips.
      b. Connecting wiring to equipment designed for use with terminals.
   2. For Conductors No. 8 AWG or Larger: Use compression or mechanical type lugs for:
      a. Connecting cables to flat bus bars.
      b. Connecting cables to equipment designed for use with lugs.
   3. For conductor sizes larger than terminal capacity on Equipment: Reduce the larger conductor to the maximum conductor size that terminal can accommodate (reduced section not longer than one foot). Use compression or mechanical type connectors suitable for reducing connection.

3.08 CONTROL AND SIGNAL WIRING INSTALLATION

A. Except where otherwise required, install a separate power supply circuit for each system so that malfunctions in any system will not affect other systems.

B. Where separate power supply circuits are not shown, connect the systems to the nearest panelboards of suitable voltages, which are intended to supply such systems and have suitable spare circuit breakers or space for installation.

3.09 FIELD QUALITY CONTROL

A. Inspect wire and cable for physical damage and proper connection.

B. Measure tightness of bolted connections and compare torque measurements with manufacturer's recommended values.

C. Prior to energizing, check installed wires and cables with megohm meter to determine insulation resistance levels to assure requirements are fulfilled.

D. Prior to energizing, test wires and cables for electrical continuity and for short-circuits.

E. Subsequent to wire and cable hook-ups, energize circuits and demonstrate proper functioning. Correct malfunctioning units, and retest to demonstrate compliance.

END OF SECTION

SECTION 260521
WIRING FOR MOTORS AND MOTOR CONTROLLERS

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes information on the electrical power wiring for all motors and motor controllers included under this Division.

1.02 PRODUCTS INSTALLED BUT FURNISHED BY OTHER DIVISIONS

A. The following items will be furnished by Divisions 21, 22 and 23 for installation and connection to power wiring.
   1. Fan speed controllers.
   2. Disconnect switches (when finished with equipment).
   3. Variable speed drives.
   4. Convenience receptacles at rooftop units.
   5. Other equipment as indicated on Drawings and Schedules.

1.03 SUBMITTALS

A. Division(s) 21, 22 and 23 will deliver two (2) copies of accepted wiring diagrams required for power wiring and connections under Division 26.

PART 2 PRODUCTS

2.01 POWER WIRING

A. Materials: As specified under Sections 260533 and 260519.

2.02 NAMEPLATES

A. General: Precision engraved letters and numbers with uniform margins, character size minimum 3/16 inch high.
   1. Phenolic: Two color laminated engravers stock, 1/16 inch minimum thickness, machine engraved to expose inner core color (white).
   2. Materials for Outdoor Applications: As recommended by nameplate manufacturer to suit environmental conditions.

B. Motor Equipment: Provide nameplates for all motor equipment, indicating motor designation, voltage, phase, horsepower rating and source of power.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that required utilities are available, in proper location, and ready for use.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Power Wiring: Provide power wiring and connections for equipment installed by others and as shown on the Drawings.

C. Control Equipment: Set and connect the items to power wiring, listed under 1.2 - PRODUCTS INSTALLED BUT FURNISHED BY OTHER DIVISIONS.

D. Control Wiring: Not included in Division 26 Contract, unless specifically noted on the Drawings.

E. Nameplates: Identify each motor controller, indicating motor controlled:
   1. NEMA 1 Enclosures: Rivet or bolt nameplate to the cover.

2. NEMA 3R and 4 Enclosures: Attach nameplates to the cover using adhesive specifically designed for the purpose, or mount nameplate on wall or other conspicuous location adjacent to switch. Do not penetrate enclosure with fasteners.

END OF SECTION

SECTION 260526
GROUNDING AND BONDING

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes general criteria required for grounding and bonding. Locations, details and extent of electrical grounding and bonding are as indicated on the Drawings and schedules and as specified herein.

B. Provide all labor, materials and equipment necessary to perform the Work required for the complete installation and operation of Work.

1.02 REFERENCES

A. Electrical Code Compliance: Comply with applicable local code requirements of the authority having jurisdiction and the applicable articles of NEC.

B. UL Compliance: Comply with applicable requirements of UL Standards No.'s 467, "Electrical Grounding and Bonding Equipment", and 869, "Electrical Service Equipment", pertaining to grounding and bonding of systems, circuits and equipment.

C. Federal Specifications: Comply with all applicable federal specifications.

D. IEEE Compliance: Comply with applicable requirements and recommended installation practices of IEEE Standards 80, 81, 141 and 142 pertaining to grounding and bonding of systems, circuits and equipment.

E. National Electrical Safety Code (NESC): Comply with all applicable section of the code.

F. ANSI J-STD 607A: Commercial Building Grounding and Bonding Requirements for Telecommunications.

1.03 SYSTEM DESCRIPTION

A. Provide all service grounding and bonding. Cooperate with the other Divisions of Work such as HVAC, Fire Protection, Plumbing and General Construction.

1.04 DEFINITIONS

A. Ground: A conducting connection, whether intentional or accidental, between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the earth.

B. Grounded: Connected to earth or to some conducting body that serves in place of the earth.

C. Grounded Conductor: A system or circuit conductor that is intentionally grounded.

D. Grounding Conductor: A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.

E. Grounding Conductor, Equipment: The conductor used to connect the noncurrent-carrying metal parts of equipment, raceways, and other enclosures to the system grounded conductor and/or the grounding electrode conductor at the service equipment or at the source of a separately derived system.

F. Grounding Electrode Conductor: The conductor used to connect the grounding electrode to the equipment grounding conductor and/or to the grounded conductor of the circuit at the service equipment or at the source of a separately derived system.

1.05 SUBMITTALS

A. Product Data: Submit manufacturer's product data, specifications and installation instructions.

1.06 QUALITY ASSURANCE

A. Codes and Standards: As indicated in Article 1.02.

B. Test the grounding resistance using an “Earth Megger”, or accepted equal, per test equipment manufacturer's recommendations and submit test results for review. Submit equipment make and model with results.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver equipment in factory-fabricated containers or wrappings, which properly protect equipment from damage.

B. Store equipment in original packaging. Store inside well-ventilated area protected from weather, moisture, soiling, extreme temperatures, humidity; laid flat and blocked off ground.

C. Handle equipment carefully to prevent damage, breaking, and scoring of finishes. Do not install damaged units or components; replace with new.

PART 2 - PRODUCTS

2.01 MATERIAL

A. Ground Clamps (Cable to Pipe): Mechanical type of silicon bronze; Burndy GAR, GD, GP, GK; O-Z/Gedney ABG, CG, DG, EG, FG, HG; Thomas & Betts 3902, BU series, or accepted equal.

B. Ground Clamp (Cable to Rod): Mechanical type of silicon bronze; Joslyn J8A92AB, McGraw Edison DN13G5, or accepted equal.

C. Ground Lugs: Burndy Hylug YA-2L, YA-2LN, YA-2, YA-2N; Thomas & Betts 54204 series, 54850 series, or accepted equal.

D. Exothermic Weld: Provide fusion welds specifically designed for type and size of cable, rods, etc.; Erico Products Inc. Cadweld Process, or accepted equal.

E. Ground Rods: Copper-clad (minimum 0.10 jacket) steel ground rods, minimum ¾” diameter by 10’-0” long, unless otherwise indicated on the Drawings.

F. Plate Electrodes: Copper plates minimum 0.06 inches thick by 2’- 0” square feet surface area.

G. Grounding Electrode Conduit and Bonding Conductor: Bare stranded copper, minimum #4/0. Size shall meet NFPA 70 requirements.

H. Equipment Grounding Conductor: THWN insulated, stranded copper, size as indicated on the Drawings.

I. Hardware: Silicon bronze bolts, nuts, flat & lock washers, etc. as manufactured by Burndy, Dossert Corp., Everdur, O-Z/Gedney, or accepted equal.

2.02 TELECOMMUNICATIONS GROUNDING BUSBAR

A. Telecommunications Grounding Busbar (TGB Pattern): Solid copper grounding busbar assembly, nominally ¼" thick x 2" wide x 12" long with hole patterns as recommended by BICSI and ANSI/EIA/TIA-607 standards, U.L. Listed. Suitable for wall mounting completely preassembled with solid copper busbar, insulators, stand-off brackets, stainless steel bolts and complete hardware kit, as manufactured by Chatsworth Products Inc. 13622-012 series, Cooper B-Line SBTGBK series, or Newton Instrument Company 2213090010 series.

B. Telecommunications Main Grounding Busbar (TMGB Pattern): Solid copper grounding busbar assembly, nominally ¼" thick x 4" wide x 20" long with hole patterns as recommended by BICSI and ANSI/EIA/TIA-607 standards, U.L. Listed. Suitable for wall mounting completely preassembled with solid copper busbar, insulators, stand-off brackets, stainless steel bolts and complete hardware kit, as manufactured by Chatsworth Products Inc. 40153-020 series, Cooper B-Line SBTMGB20K series, or Newton Instrument Company 2213110010 series.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that final backfill and compaction have been completed before driving rod electrodes.

3.02 INSTALLATION

A. Install products in accordance with the manufacturer's instructions.

B. For below grade, pullbox, and other outdoor applications, make grounding and bonding connections using exothermic welds.

C. Quantity, spacing and location of ground rods shall be as called for on the Drawings, and as required to achieve specified resistance to ground.

D. All other connections use silicon bronze hardware and ground clamps, ground lugs or compression connectors to suit the job conditions.

E. Solder is prohibited from connections.

F. Provide service grounding per NEC and the Power Company's requirements.

G. Provide separate insulated equipment grounding conductor within each feeder and branch circuit raceway per NEC Table 250-122 or as indicated, whichever is larger. Terminate each end on suitable lug, bus or bushing.

H. Bond all equipment and metallic boxes per NEC. Provide bonding connection to all water pumps, including domestic water. Surface of pipe shall be thoroughly cleaned immediately prior to making connection.

I. Bond the incoming fire water main, as is applicable.

J. Bond all metallic shields and metallic supporting structures, metallic conduits, wireways, metal enclosures or busways, cable boxes, equipment housings, cable trays, ladder racks, equipment racks, frames, protectors, cabinets and all non-current carrying metallic parts of the installed telecommunications services with minimum #6 AWG green insulated copper conductor to the telecommunications grounding busbar (TGB). The metallic conduit system shall be used for equipment and enclosure grounding, but not as a system ground conductor.

K. Bond all telecommunications grounding busbars (TMGB's and/or TGB's) with minimum #4/0 AWG bare copper ground conductor to main electrical service grounding system.

L. Conduit that only contains a grounding conductor, and is provided for its mechanical protection, shall be bonded to that conductor at the entrance and exit from the conduit.

M. Bond all metallic piping (air, water, gas, oxygen and vacuum, etc.) to ground in accordance with National Electrical Code (NEC) Article 250.104(B).

3.03 FIELD QUALITY CONTROL

A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

B. Use suitable test instrument to measure resistance to ground of system. Perform testing in accordance with test instrument manufacturer's recommendations using the fall-of-potential method.

END OF SECTION

SECTION 260529
SUPPORTING DEVICES

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes secure support from the building structure for electrical items by means of hangers, supports, anchors, sleeves, inserts, seals, and associated fastenings.

1.02 REFERENCES

A. National Fire Protection Association (NFPA):
No 70 National Electrical Code

B. National Electrical Manufacturers Association (NEMA):
FB 1 Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies

1.03 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Product data for each type of product specified.

C. Shop Drawings indicating details of fabricated products and materials.

D. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.

1.04 QUALITY ASSURANCE

A. Electrical Component Standard: Components and installation shall comply with NFPA 70, "National Electrical Code."

B. Electrical components shall be listed and labeled by UL, ETL, CSA, or other approved, nationally recognized testing and listing agency that provides third-party certification follow-up services.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Slotted Metal Angle and U-Channel Systems:
   Allied Tube & Conduit
   American Electric
   B-Line Systems, Inc.
   Cinch Clamp Co., Inc.
   GS Metals Corp.
   Haydon Corp.
   Kin-Line, Inc.
   Unistrut Diversified Products
2. Conduit Sealing Bushings:
   Bridgeport Fittings, Inc.
   Cooper Industries, Inc.
   Elliott Electric Mfg. Corp.

GS Metals Corp.
Killark Electric Mfg. Co.
Madison Equipment Co.
L.E. Mason Co.
O-Z/Gedney
Producto Electric Corp.
Raco, Inc.
Red Seal Electric Corp.
Spring City Electrical Mfg. Co.
Thomas & Betts Corp.

2.02 COATINGS

A. Coating: Supports, support hardware, and fasteners shall be protected with zinc coating or with treatment of equivalent corrosion resistance using approved alternative treatment, finish, or inherent material characteristic. Products for use outdoors shall be hot dipped galvanized.

2.03 MATERIALS

A. Fasteners: Furnish all fasteners and hardware compatible with the materials and methods required for attachment of supporting devices.
   1. Slotted - Type Concrete Inserts: Galvanized pressed steel plate complying with ASTM A283; box-type welded construction with slot designed to receive steel nut and with knockout cover; hot dipped galvanized in compliance with ASTM A 386.
   2. Masonry Anchorage Devices: Expansion shields complying with Federal Specification FF-S-325, as follows:
      a. Furnish lead expansion shields for machine screws and bolts ½" and smaller; head-out embedded nut type, single unit class, Group I, Type 1, Class 1.
      b. Furnish lead expansion shields for machine screws and bolts larger than ½" in size; head-out embedded nut type, multiple unit class, Group I, Type 1, Class 2.
      c. Furnish bolt anchor expansion shields for lag bolts, zinc alloy, long-shield anchors class, Group II, Type 1, Class 1.
      d. Furnish bolt anchor expansion shields for bolts, closed-end bottom bearing class.

B. Group II, Type 2, Class 1.
   1. Toggle Bolts: Tumble-wing type, complying with Federal Specification FF-B-588, class and style as required.
   2. Nuts, Bolts, Screws, Washers:
      a. General: Furnish zinc-coated fasteners, with galvanizing complying with ASTM A 153 for exterior use or where built into exterior walls. Furnish fasteners for the type, grade and class required for the particular installation.
      b. Standard Nuts and Bolts: Regular hexagon head type, complying with ASTM A307, Grade A.
      c. Lag Bolts: Square head type, complying with Federal Specification FF-B-561.
      d. Machine Screws: Cadmium plated steel, complying with Federal Specification FF-S-92.
      e. Wood Screws: Flat head carbon steel, complying with Federal Specification FF-S-111.
      f. Plain Washers: Round, general assembly grade carbon steel, complying with Federal Specification FF-W-92.

g. Lock Washers: Helical spring type carbon steel, complying with Federal Specification FF-W-84.

C. "C" Beam Clamps:
1. For ¾" to 2" Conduit Maximum: Caddy Fastener Div./Erico Products Inc. BC Series; HIT Spring Steel Fasteners, Inc. CH Series.
2. For 3" Conduit Maximum: Kindorf Elec. Prod. Div/Midland Ross Corp. 500 Series beam clamp with 6HO-B Series hanger; Gedney Electric Co. IS-500 Series beam clamp with H-OWB Series hanger; Appleton Electric Co. BH-500 series beam clamp with H50W/B Series hangers.
3. For 4" Conduit Maximum: Kindorf Elec. Prod. Div./Midland Ross Corp. E-231 beam clamp and E-234 anchor clip and C-149 series lay-in hanger; Unistrut Corp. P2676 beam clamp and P-1659A Series anchor clip with J1205 Series lay-in hanger.
4. For Threaded Rods (100 lbs. load max.): Caddy Fastener Div./Erico Products Inc. Cat. No. BC-4A; HIT Spring Steel Fastener Inc. master clamp MC.
5. For Threaded Rods (200 lbs. load max.): Kindorf Elec. Prod. Div./Midland Ross Corp. 500 Series; Gedney Electric Co. IS-500 Series; Appleton Electric Co. BH-500 Series.
6. For Threaded Rods (300 lbs. load max.): Kindorf Elec. Prod. Div./Midland Ross Corp. E-231 beam clamp and E-234 anchor clip; Unistrut Corp. P2676 beam clamp and F-1659A Series anchor clips.

D. Fastening Fittings for Wood and Existing Masonry: Versabar Corp. VX-4310, VX-2308, VX-4308, VX-4309; Kindorf Elec. Prod. Div./Midland Ross Corp. E-243, E-244, E-245, E-170; Unistrut Corp. P2682.

E. Pipe Straps: Two-hole steel conduit straps with Galv-Krom finish, Kindorf Elec. Prod. Div./Midland Ross Corp. C-144 or C-280 Series.

F. Pipe Clamps: One-hole malleable iron type clamps, Kindorf Elec. Prod. Div./Midland Ross Corp. HS-400 Series; Gedney Electric Co.14-50 Series.

G. Deck Clamps: Caddy Fastener Div./Erico Products Inc. DH-4-T1 Series; HIT Spring Steel Fasteners, Inc. RD Series.

H. Fixture Stud and Strap: Steel Electrical Products Div. FE-431; Gedney Electric Co. SL-134.

I. Channel Support System and Accessories: Furnish 12 gage galvanized steel channel and accessories as manufactured by:
1. Kindorf Elec. Prod. Div./Midland Ross Corp., B-905 (1½" x 1½"), B-909 (1½" x 17/8"), B-903 (1½" x 3").
2. Unistrut Corp.; P-3000 (1-3/8" X 1-5/8"), P-5500 (1-5/8" X 2-7/16"), P-5500 (1-5/8" X 3 ¼").
3. B-Line Division, The Binkley Co.; B-22 (1-5/8" X 1-5/8"), B-12 (1-5/8" X 2-7/16"), B-11 (1-5/8" X 3 ¼").
4. Versabar Corp.; VA-1 (1-5/8" X 1-5/8"), VA-3 (1-5/8" X 2 ½").

J. Channel Support Pipe Straps: Kindorf C105, C106.

K. Rooftop Conduit Supports: A strut conduit mounted on a base support adjustable up to 5 3/8" manufactured from polycarbonate resin with 12" length of strut. All metal parts shall be either stainless steel or hot dipped galvanized. Provide with support pad. Make equal to Miro Industries Model No. 2.5, Erico CADDY PYRAMID PSA Series.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Provide anchors, fasteners and supports in accordance with NECA "Standard of Installation".

C. Fasten supports to building structure.

D. Attachment of Conduit System:
   1. Wood Construction: Attach conduit to wood construction by means of pipe straps or pipe clamps and wood screws or lag bolts.
   2. Masonry Construction: Attach conduit to masonry construction by means of pipe straps or pipe clamps and masonry anchorage devices.
   3. Steel Beams: Attach conduit to steel beams by means of "C" beam clamps and hangers.
   4. Steel Decking:
      a. For Steel Decking with Hanger Tabs: Use deck clamps and hangers.
      b. For Steel Decking without Hanger Tabs: Attach conduit to steel decking by means of pipe straps, pipe clamps or hangers. Fasten straps, clamps or hangers to steel decking with welded threaded studs, machine screws, self-drilling, self-tapping fasteners, or with 3/8" threaded steel rod, welded to a 4" X 4" X ¼" steel plate and installed through ½" hole in roof deck.
   5. Multiple Parallel Conduit Runs: Use channel support system.
   6. Conduit Above Suspended Ceiling: Do not rest conduit directly on runner bars, T-bars, etc. Support conduit from permanent structure or construction above suspended ceiling.

E. Channel Support System: Install channel support system as high as possible; coordinate with other trades' work.

F. Combination Channel Support Raceway System: Install system as high as possible; coordinate with other trades' work. Install accessories as required to use channel support as a combination channel support raceway system.

G. Support of Luminaires: Refer to Specification Section 265113 for support of all luminaires shown on the Drawings.

H. Do not drill or cut structural members, unless specifically permitted by Architect in writing.

I. Install surface mounted cabinets and panelboards with minimum of four anchors.

J. In wet or damp locations, use steel channel supports to stand cabinets and panelboards one (1) inch off wall.

K. Use sheet metal channel to bridge studs above and below cabinets and panelboard recessed in hollow partitions.

L. For prefabricated rooftop conduit supports, support a minimum of 5" above roof. Obtain the services of the roofing contractor to securely attach and anchor the conduit supports to the roof without voiding the roof warranty. Space the conduit supports at maximum 10'-0" apart or as otherwise directed by manufacturer.

END OF SECTION

SECTION 260533
RACEWAYS

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes raceways for electrical wiring. Types of raceways in this section include the following:
   1. Rigid Steel Conduit.
   2. Steel Electrical Metallic Tubing.
   3. Flexible Metal Conduit.
   4. Liquid-tight Flexible Metal Conduit
   5. Rigid Nonmetallic Conduit
   6. Wireways, Fittings, and Accessories.

1.02 REFERENCES

A. National Fire Protection Association (NFPA):
   No. 70 National Electrical Code, the following Articles:

344,	Rigid Metal Conduit.
348,	Flexible Metal Conduit.
350,	Liquid-tight Flexible Metal Conduit.
352,	Rigid Nonmetallic Conduit.
358,	Electrical Metallic Tubing.
360,	Flexible Metallic Tubing.
362,	Electrical Nonmetallic Tubing.
376,	Metal Wireways.
378,	Nonmetallic Wireways.

B. Underwriters Laboratories, Inc. (UL):

UL 1	Flexible Metal Electrical Conduit.
UL 6	Rigid Metal Electrical Conduit.
UL 360	Liquid-tight Flexible Steel Conduit, Electrical.
UL 514B	Fittings for Conduit and Outlet Boxes.
UL 651	Schedule 40 and 80 PVC Conduit.
UL 797	Electrical Metallic Tubing.
UL 870	Electrical Wireways, Auxiliary Gutters, and Associated Fittings.

C. National Electrical Manufacturers Association (NEMA)

NEMA, TC 6	PVC and ABS Plastic Utilities Duct for Underground Installation.
NEMA, TC 8	Extra-Strength PVC Plastic Utilities Duct for Underground Installation.
NEMA, TC 9	Fittings for ABS and PVC Plastic Utilities Duct for Underground Installation.
NEMA, TC 10	PVC and ABS Plastic Communications Duct and Fittings for Underground Installation.
NEMA, RN1	PVC Coated Galvanized Rigid Steel conduit.

D. American National Standards Institute (ANSI):

ANSI-C80.1	Specification for Rigid Steel Conduit, Zinc-Coated.
ANSI-C80.2	Specification for Rigid Steel Conduit, Enameled.
ANSI-C80.3	Specification for Electrical Metallic Tubing, Zinc-Coated.
ANSI/NEMA FB 1	Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.

E. American Society for Testing and Materials (ASTM):
ASTM F 512 Standard Specification for Smooth Wall Polyvinylchloride (PVC) Conduit and Fittings for Underground Installation.

1.03 SUBMITTALS

A. General: Submit the following products in accordance with Conditions of Contract and Division 1 Specification Sections.

1.04 QUALITY ASSURANCE

A. Electrical Component Standard: Components and installation shall comply with NFPA 70 "National Electrical Code."

B. NEMA Compliance: Comply with applicable requirements of NEMA standards pertaining to raceways.

C. UL Compliance and Labeling: Comply with applicable requirements of UL standards pertaining to electrical raceway systems. Provide raceway products and components listed and labeled by UL, ETL, or CSA.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect, and handle products to site in accordance with the specifications.

B. Accept conduit on site. Inspect for damage.

C. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

D. Protect PVC conduit from sunlight.

1.06 COOPERATION

A. Cooperate with other Work as necessary to interface installation of electrical raceways and components.

1.07 PROJECT CONDITIONS

A. Verify actual field measurements with Drawings.

B. Verify routing and termination locations of conduit prior to rough-in.

C. Conduit routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Metal Conduit and Tubing:
AFC, Division of Nortek, Inc.
Allied Tube and Conduit
Carol Cable Co., Inc.
Cerro Wire & Cable Corp.
LTV Steel Company
Raco, Inc.
Robroy Industries, Inc.
Southwire

Thomas & Betts Corp.
Triangle PWC Inc.
Wheatland Tube Company.

2. Nonmetallic Conduit and Tubing:
Allied Tube & Conduit; Division of Tyco
Canfex PVC Products
Carlon
Ipex
Kraloy

3. Conduit Bodies:
American Electric
Appleton Electric Co.
Carlon
Crouse-Hinds
O-Z/Gedney
Spring City Electrical Mfg. Co.

4. Wireway:
Hoffman Engineering Co.
Pentair
Robroy Industries, Inc.
Keystone Columbia Inc.
Square D Schneider Electric

2.02 RACEWAYS

A. Rigid Steel Conduit: Galvanized on the outside and enameled on the inside or hot dipped galvanized on the outside and inside.

B. Steel Electrical Metallic Tubing (EMT): Electro- galvanized with zinc chromate coating on the outside and enameled on the inside.

C. Conduit for Fire Alarm Circuits: All new conduit in unfinished areas, whether exposed or concealed, shall be painted red or be pre-manufactured safety red.

D. Flexible Metal Conduit: Hot dipped galvanized steel strip shaped into interlocking convolutions.

E. Liquidtight Flexible Metal Conduit: Heavy galvanized steel core, of interlocked construction with oil resistant thermoplastic cover.

F. Rigid Nonmetallic Conduit: Schedule 40 Polyvinylchloride (PVC), unless otherwise noted.

G. Wireways, Fittings and Accessories: General purpose NEMA 1 ANSI 49 gray polyester powder painted finish inside and outside, 16 gauge for sizes 2.5” x 2.5” up to 6” x 6” and 14 gauge for sizes 8” x 8” and larger, with or without knockouts. Keystone Columbia Inc.'s KFW or KFWH Lay-In Wireway System, or Square D Co.'s Square-Duct Combination Lay-In Wireway System LD Series.

2.03 FITTINGS AND ACCESSORIES

A. Insulated Bushings: Appleton Electric Co.'s BU50I Series, Gould Inc.'s Efcor 55-50 Series, Midwest Electric Mfg. Corp.'s 1031 Series, O-Z/Gedney Co.'s IBC- 50 Series, Raco Inc.'s 1132 Series, or Thomas & Betts Corp.'s 1222 Series.

B. Plastic Bushings for 3/4" Conduit: Appleton Electric Co.'s BBU50, BBU75, Gould Inc.'s Efcor PB1, PB2, Midwest Electric Mfg. Corp.'s 931, 932, O-Z/Gedney Co.'s IB-50, IB-75, Raco Inc.'s 1402, 1403, or Thomas & Betts Corp.'s 222, 223.

C. Insulated Grounding Bushings: Appleton Electric Co.'s GIB-50 Series, Gould Inc.'s Efcor 56-50-8 Series, Midwest Electric Mfg. Corp.'s GLL Series, O-Z/Gedney Co.'s IBC-50L Series, Raco Inc.'s 1212 Series, or Thomas & Betts Corp.'s 3870 Series.

D. Connectors and Couplings:
1. Locknuts: Appleton Electric Co.'s BL-50 Series Gould Inc.'s Efcor 151 Series, Midwest Electric Mfg. Corp.'s 10 Series, O-Z/Gedney Co.'s 1-50S Series, Raco Inc.'s 1002 Series, or Thomas & Betts Corp.'s 141 Series.
2. Grounding Wedge: Thomas & Betts Corp.'s 3650 Series, or accepted equal.
3. Couplings (For Rigid and IMC Conduit): Standard threaded couplings as furnished by conduit manufacturer.
4. Three Piece Conduit Coupling (For Rigid and IMC Conduit): Gould Inc.'s Efcor 165 Series, Midwest Electric Mfg. Corp.'s 190 Series, O-Z/Gedney Co.'s 4-50 Series, Raco Inc.'s 1502 Series, or Thomas & Betts Corp.'s 675 Series.
5. EMT set-screw connectors and couplings shall not be permissible.
6. Compression Type (For EMT 3/4” and larger): Appleton Electric Co.'s TW-50CS1, TWC-50CS Series, EMT 2241, 2231 Series, Gould Inc.'s Efcor 760, 750 B Series, Midwest Electric Mfg. Corp.'s 660S, 1650 Series, Raco Inc.'s 2912, 2922 Series, Tomic Electric's TW120, TW140 Series, or Thomas & Betts Corp.'s 5120, 5123 Series.
7. Flexible Metal Conduit Connectors: Midwest Electric Mfg. Corp.'s 1708, 1736 Series, O-Z/Gedney Co.'s C-8T, 24-34T, ACV-50T Series, or Thomas & Betts Corp.'s Nylon Insulated Tite-Bite Series.
8. Sealtite Connectors (For Liquidtight Flexible Metal Conduit): Appleton Electric Co.'s STB Series, Ideal Industries Inc. 75-521 Series, Midwest Electric Mfg. Corp.'s LTB Series, O-Z/Gedney Co.'s 4Q-50T Series, Raco Inc.'s 3512 Series, or Thomas & Betts Corp.'s 5332 Series.

E. Conduit Bodies (Threaded): Appleton Electric Co.'s Unilets, Crouse-Hinds Co.'s Condulets, Gould Inc.'s Efcorlets, or O-Z/Gedney Co.'s Conduit Bodies.

F. Sealing Fittings: Appleton Electric Co.'s EYS, ESU w/Apelco C sealing compound, Crouse-Hinds Co.'s EYS, EZS w/Chico A sealing compound, or accepted equal.

G. Vertical Conductor Supports: Kellems Div. Harvey Hubbell Conduit Riser Grips, O-Z/Gedney Co.'s Type M, Type R, or accepted equal.

H. Expansion Fittings:
1. Zinc Electroplate Finish: Appleton Electric Co.'s XJ, Crouse-Hinds Co's XJ, Midwest Electric Mfg. Corp.'s XJ, or OZ/Gedney Co.'s AX (TX for EMT), with external bonding jumper.
2. Electrogalvanized Steel: Crouse Hinds Co.'s XJG, with internal grounding.
3. Aluminum: OZ/Gedney Co.'s AX, with external bonding jumper.

I. Deflection Fittings: Crouse-Hinds Co.'s XD, or OZ/Gedney Co.'s Type DX.

PART 3 EXECUTION

3.01 RACEWAY INSTALLATION - GENERAL

A. Number of Circuits in Raceway: Each raceway may enclose up to a maximum of three circuits unless otherwise indicated on the Drawings.

B. Conduit Installed Concealed:
   1. Install conduit for all circuit Work concealed in the floors, ceilings, walls, or partitions of the building unless otherwise indicated on the Drawings.
   2. Route conduit in and under slab from point-to-point, as follows:
      a. ¾" and smaller conduits may be installed in floor slabs on grade. Do not cross conduits in concrete slabs.
      b. Conduits larger than ¾" in floor slabs on grade shall be run in depressions below slab bottom. Pour concrete around conduit before slab is poured.
   3. If any portions of the conduit system cannot be installed concealed due to field conditions encountered in the building, report such conditions to Architect and await acceptance in writing before proceeding.

C. Conduit Installed Exposed:
   1. Install vertical runs perpendicular to the floor.
   2. Install runs on the ceiling perpendicular or parallel to the walls.
   3. Install horizontal runs parallel to the floor.
   4. Do not run conduits near heating pipes. Maintain 12" clearance between conduit and surfaces with temperatures exceeding 104°F.
   5. Installation of conduit directly on the floor will not be permitted.

D. Conduit Size: Not smaller than ¾" electrical trade size. For underground installations, not less than 1".

E. Provide plastic or insulated bushings on all conduits prior to pulling conductors; no exceptions.

F. Conduit Ends:
   1. Arrange conduit terminations in cabinet with ends at the same level.
   2. Plug ends of conduits with caps to exclude dirt, moisture and other foreign material until wiring is installed.
   3. Use two locknuts and insulated bushing on end of each conduit entering cabinet or galvanized box (plastic bushing may be used on ¾" conduit.
   4. Use conduit hubs or sealing locknuts to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.
   5. Use insulated grounding bushings on the ends of conduits that are not directly connected to the enclosure (such as stub-ups under equipment, etc.) and bond between bushings and enclosure with equipment grounding conductor.
   6. Use insulated grounding bushings or grounding wedges on ends of conduit for terminating and bonding equipment grounding conductors (when required) if cabinets or boxes are not equipped with grounding/bonding screws or lugs.

G. Conduit Bends:
   1. For ¾" conduits, bends may be made with manual benders. For all conduit sizes larger than ¾", manufactured or field fabricated offsets or bends with an accepted hydraulic bender may be used.
   2. Install no more than three 90-degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams.

H. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers. Do not use other supports, ie. suspended ceilings, suspended ceiling supporting members, lighting fixtures, conduits, mechanical piping or mechanical ducts.

I. Independently support conduit at 8 feet on centers. Support within 12 inches of changes of direction and within 12 inches of each enclosure to which connected.

J. Group related conduits; support using conduit rack. Construct rack using steel channel; provide space on each for 25 percent additional conduits.

K. Fasten conduit supports to building structure and surfaces under provisions of Section 2605 29, SUPPORTING DEVICES.

L. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.

M. Do not attach conduit to ceiling support wires.

N. Arrange conduit to maintain headroom and present neat appearance.

O. Provide suitable fittings to accommodate expansion and deflection where conduit crosses control and expansion joints.

P. Provide suitable pull rope in each empty conduit except sleeves and nipples.

Q. Install conduit to preserve fire resistance rating of partitions and other elements, using materials and methods specified.

R. Route conduit through roof openings for piping and ductwork or through suitable roof jack with pitch pocket. Cooperate with other trades in the location with roofing installation and with Conditions of Contract and as specified.

S. Existing raceways may not be reused unless specifically noted on the Drawings.

T. All new exposed conduit shall be painted in accordance with Section 099100, Painting to match surrounding finished areas.

U. Paint all fire alarm conduit red or provide pre-manufactured safety red conduit in unfinished areas, whether exposed or concealed.

3.02 FIRE-RATED CABLE/CONDUIT ASSEMBLY INSTALLATION

A. Install special 2-hour fire-rated conduit cable in EMT or rigid steel conduit per Article 3.03 below and support cable and conduit assembly as specified in Section 26 05 19, Article 3.05.

3.03 MAINTAINING FIRE RESISTANCE

A. Conduit and equipment shall be firestopped to prevent the passage of flame, smoke, fumes and hot gases. Refer to Section 260510, FIRESTOPPING. Refer to Section 07841, Through-Penetration Firestop Systems.

3.04 RACEWAY SCHEDULE

A. Rigid Steel Conduit: Install in all locations indicated on the Drawings, including:
   1. Conduit Stub-ups.
   2. In outdoor, above grade locations.
   3. All areas subject to mechanical damage or wet and damp locations.
   4. In underground installations, within five (5) feet from foundation wall.
   5. In crawlspaces.
   6. In hazardous locations.

7. Shall be installed for all emergency power systems in wet and damp locations, for mechanical protection per NFPA 99.

B. Steel Electrical Metallic Tubing:
   1. May be installed concealed for branch and feeder circuit conduits.
   2. May be installed concealed as branch circuit conduits in hollow areas in dry locations, including:
      a. Hollow concrete masonry units, except where cores are to be filled.
      b. Drywall construction with sheet metal studs, except where studs are less than 3½" deep.
   3. May be installed exposed in dry locations and in Mechanical and Electrical Rooms where not exposed to physical damage only.
   4. Shall be installed for all emergency power systems, for mechanical protection per NFPA 99.

C. Flexible Metal Conduit:
   1. Use for final conduit connection to recessed lighting fixtures in suspended ceilings. Use not more than 4-6 feet of minimum ¾" flexible metal conduit between junction box and fixture.
   2. Use not more than 1-3 feet of flexible metal conduit for final conduit connection to:
      a. Dry type transformers.
      b. Motors with open, drip-proof or splash-proof housings.
      c. Equipment subject to vibration (dry locations).
      d. Equipment requiring flexible connection for adjustment or alignment (dry locations).
   3. Install equipment grounding conductor in all flexible metal conduit and bond at each box or equipment to which conduit is connected.

D. Liquid-tight Flexible Metal Conduit:
   1. Use not more than 1-3 feet of liquidtight flexible metal conduit for final conduit connection to:
      a. Motors with weather-protected or totally enclosed housings.
      b. Equipment subject to vibration and in damp or wet locations.
      c. Equipment requiring flexible connection for adjustment or alignment in damp or wet locations.
      d. Lighting fixtures installed in "hard", gypsum type ceilings.
   2. Install equipment grounding conductor in all liquidtight flexible metal conduit.

E. Rigid Nonmetallic Conduit:
   1. Use for underground raceway systems more than five (5) feet from foundation wall, void of traffic. Refer to Section 260543, UNDERGROUND CONDUIT SYSTEM.
   2. In concrete slabs.
   3. In corrosive environments, where indicated.

F. Wireways: May be used indoors in dry locations for exposed raceway between grouped, wall mounted equipment and where otherwise shown.

3.05 CONNECTOR AND COUPLING SCHEDULE

A. For Rigid Steel and Intermediate Metal Conduit: Use threaded type connectors and couplings. Use 3-piece conduit coupling where neither piece of conduit can be rotated.

B. For Steel Electrical Metallic Tubing: Provide insulated type connectors. Use gland and ring compression type for tubing size ¾" to 1". Use compression type for tubing size 1¼" and larger. Die cast construction is prohibited.

C. For Flexible Metal Conduit: Use flexible steel conduit connectors.

D. For Liquidtight Flexible Metal Conduit: Use Sealtite connectors.

E. For Rigid Nonmetallic Conduit: Use conduit manufacturers standard connectors and couplings.

3.06 ADJUSTING AND CLEANING

A. Upon completion of installation of raceways, inspect interiors of raceways; clear all blockages and remove burrs, dirt, and construction debris.

END OF SECTION

SECTION 260553
ELECTRICAL IDENTIFICATION

PART 1 GENERAL

1.01 SUMMARY

A. Identification of Electrical products, equipment and conduit and cable systems installed under Division 26, including but not limited to the following:
   1. Buried electrical line warnings.
   2. Identification labeling for raceways, cables, conductors and wall plates.
   3. Operational instruction signs.
   4. Warning and caution signs.
   5. Equipment labels and signs.
   6. Ceiling markers for accessible devices.

B. Provide identification on all equipment, raceways, boxes, conductors and devices. Electrical identification includes, but is not limited to, warning signs, nameplates, cable tags, wire markers, phase identification tape, identification labels and nominal system voltage designation labels.

C. Electrical identification shall be permanent, machine printed, appropriately sized and provided such that it is easily read upon approach or within enclosures.

1.02 REFERENCES

A. ANSI/ASME A13.1 – Scheme for the Identification of Piping Systems.

B. NFPA 70 – National Electrical Code.

C. Other Division 26 Sections for additional specific electrical identification associated with specific items.

1.03 SUBMITTALS

A. Submit product data for electrical identification.

B. Submit list of wording, symbols, letter size, and color coding for electrical identification.

C. Submit schedule with type of identification to be utilized for each system.

D. Submit shop drawings, depicting special nomenclature for instructions, control-by-event or explanation of systems operations for:
   1. Switchgear.
   2. Unit substations.
   3. Switchboards.
   4. Key interlocks.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by the following:
   1. Allen Systems Inc.
   2. American Labelmark Co.
   3. Calpico, Inc.
   4. Cole-Flex Corp.
   5. Emed Co., Inc.
   6. George-Ingraham Corp.
   7. Glen Ellen, Inc.
   8. Ideal Industries, Inc.

9. Kraftbilt
10. LEM Products, Inc.
11. Markal Corp.
12. National Band and Tag Co.
13. Panduit Corp.
14. Radar Engineers Div., EPIC Corp.
15. Seton Name Plate Co.
16. Standard Signs, Inc.
17. W.H. Brady Co.

2.02 MATERIALS

A. Adhesive Marking Labels for Raceways: Pre-printed, flexible, self-adhesive labels with legend indicating voltage and service (EMERGENCY, LIGHTING, POWER, LIGHT, POWER D.C., AIR CONDITIONING, COMMUNICATIONS, CONTROL, FIRE ALARM, etc.).
   1. Label Size: as follows:
      a. Raceways 1 Inch and Smaller: 1-1/8 inches high by 4 inches long.
      b. Raceways Larger than 1 Inch: 1-1/8 inches high by 8 inches long.
   2. Color: Black legend on orange background.

B. Underground Line Marking Tape: Warning tape of continuous lettering and capable of being identified by a metal detector.
   1. For electrical Work, provide 6 inch wide, detectible heavy gauge, 4.5 mil red polyethylene with solid aluminum foil core labeled with black letters "CAUTION BURIED ELECTRIC LINE BELOW"; equal to Seton Identification Products Item #85517, or accepted equal by Craftmark Identification Systems, Kolbi Pipe Marker Co., or Panduit.
   2. For high voltage Work, provide 6 inch wide, detectible heavy gauge, 4.5 mil red polyethylene with solid aluminum foil core labeled with black letters "CAUTION BURIED HIGH VOLTAGE LINE BELOW"; equal to Seton Identification Products Item #85520, or accepted equal by Craftmark Identification Systems, Kolbi Pipe Marker Co., or Panduit.
   3. For communication Work, provide 6 inch wide, detectible heavy gauge, 4.5 mil orange polyethylene with solid aluminum foil core labeled with black letters “CAUTION, BURIED COMMUNICATION LINE BELOW”, equal to Seton Identification Products Item #85516, or accepted equal by Craftmark Identification Systems, Kolbi Pipe Marker Co., or Panduit.
   4. For fiber optic Work, provide 6 inch wide, detectible heavy gauge, 4.5 mil orange polyethylene with solid aluminum foil core labeled with black letters “CAUTION, BURIED FIBER OPTIC CABLE BELOW”, equal to Seton Identification Products Item #85518, or accepted equal by Craftmark Identification Systems, Kolbi Pipe Marker Co., or Panduit.
   5. For telecommunications Work, provide similar marking tape as above, except 3” wide, orange in color and labeled with black letters “CAUTION BURIED CABLE LINE BELOW”, equal to Seton Identification Products Item #85505, or accepted equal by Craftmark Identification Systems, Kolbi Pipe Marker Co., or Panduit.

C. Wire/Cable Designation Tape Markers: Vinyl or vinyl-cloth, self-adhesive, wraparound, cable/conductor markers with preprinted numbers and letter.

D. Aluminum, Wraparound, Cable Marker Bands: Bands cut from 0.014 inch thick, aluminum sheet, fitted with slots or ears for securing permanently around wire or cable jacket or around groups of conductors. Provide for legend application with stamped letters or numbers.

E. Plasticized Card Stock Tags: Vinyl cloth with preprinted and field-printed legends to suit the application. Orange background, except as otherwise indicated, with Eyelet for fastener.

F. Baked-Enamel Warning and Caution Signs for Interior Use: Preprinted aluminum signs, punched for fasteners, with colors, legend, and size appropriate to the location and use.

G. Exterior Metal-Backed Butyrate Warning and Caution Signs: Weather-resistant, nonfading, preprinted cellulose acetate butyrate signs with 20-gauge, galvanized steel backing, with colors, legend, and size appropriate to the location and use. Provide 1/4-inch grommets in corners for mounting.

H. Fasteners for Metal Signs: Self-tapping stainless-steel screws or number 10/32 stainless steel machine screws with nuts and flat and lock washers.

I. Adhesive Ceiling Grid Marking Labels: Pre-punched, colored labels of size, shape, color and preprinted identifications determined by Owner.

J. Phenolic for Electrical Equipment: Two color laminated engravers stock, 1/16 inch minimum thickness, machine engraved to expose inner core color (white).

PART 3 EXECUTION

3.01 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials and for stencil painting.

3.02 INSTALLATION

A. Lettering and Graphics: Coordinate names, abbreviations, colors, and other designations used in electrical identification work with corresponding designations specified or indicated. Install numbers, lettering, and colors as approved in submittals and as required by code.

B. Install identification devices in accordance with manufacturer's written instructions and requirements of NEC.

C. Sequence of Work: Where identification is to be applied to surfaces that require finish, install Identification after completion of finish Work.

D. Emergency Lighting Fixtures and Automatic Load Control Relays:
1. Provide identification labels attached to the fixtures so they are readily discernible by a person standing on the normal walking surface in the area, for testing purposes.

E. Switchboards, Panelboards, Equipment Cabinets, Control Panels, Generators, Uninterruptible Power Supplies, Disconnect Switches, Enclosed Circuit Breakers and Motor Controllers: Raceway Identification:
1. Provide nameplate with equipment identification as indicated on Drawings.
2. Indicate source and location of the source.
3. Provide nominal system voltage designation labels on cover.
4. For disconnect switches and enclosed circuit breakers, indicate the equipment designation and location which the disconnect serves.
5. For motor controllers, indicate the motor designation, location and the type of service.

F. Transfer Switches:
1. Provide nameplate with equipment identification as indicated on Drawings.
2. Indicate equipment designation and location which the transfer switch serves.

3. Indicate normal and standby/emergency sources and locations of the sources.
4. Provide nominal system voltage designation labels on cover.

G. Raceway Identification:
1. Low Voltage Raceways: Identify each exposed raceway shown on the single line riser diagram every 20 feet with the installed conductor operating voltage and distribution system designation using adhesive marking labels. Use red base for emergency feeders and black base for normal feeders. (Ie. 208 VOLT LIFE SAFETY, 480 VOLT GENERAL, 240 VOLT NORMAL, 277 VOLT EMERGENCY, etc.).
2. Clean surface of dust, loose material, and oily films before applying adhesive labels.
3. Empty Conduit Runs and Conduits with Conductors for Future Use:
   a. Provide cable tags and identification labels.
   b. Indicated proposed future use.
   c. Label conduits and conductors at both ends, including location of the other end.

H. Identify Junction Boxes, Pull Boxes and Enclosures: Code-required caution sign for boxes shall be pressure-sensitive, self-adhesive label indicating nominal system voltage with feeder, branch circuit and control circuit numbers in black, preprinted on orange background. Install on outside of box cover. Also label box covers with identity of contained branch circuits, feeders and control circuits, the sources and locations of the sources and the loads and locations of the loads served.

I. Underground Electrical or Communications Line Identification: During trench backfilling, for exterior underground power, signal, and communications lines, install continuous underground line marker located directly above full length of ductbank and approximately 12 inches below finished grade. Use metallic detection type for all underground installations. Where multiple types of lines are installed in a common trench or concrete envelope, install multiple line markers.

J. Cable and Conductor Identification: Securely fasten identifying metal tags of aluminum wraparound marker bands to cables, feeders, and power circuits in vaults, pull boxes, junction boxes, manholes, and switchboard rooms with 1/4-inch steel letter and number stamps with legend to correspond with designations on Drawings. If metal tags are provided, attach them with approximately 55-lb test monofilament line or one-piece self-locking nylon cable ties.
1. Tag or label conductors as follows:
   a. Future Connections: Conductors indicated to be for future connection or connection under another contract with identification indicating source and circuit numbers.
   b. Multiple Circuits: Where multiple branch circuits or control wiring or communications/signal conductors are present in the same box or enclosure (except for three-circuit, four-wire home runs), label each conductor or cable. Provide legend indicating source, voltage, circuit number, and phase for branch circuit wiring. Phase and voltage of branch circuit wiring may be indicated by means of coded color of conductor insulation. For control and communications/ signal wiring, use color coding or wire/cable marking tape at terminations and at intermediate locations where conductors appear in wiring boxes, troughs, and control cabinets. Use consistent letter/number conductor designations throughout on wire/cable marking tapes.

c. Match identification markings with designations used in panelboards shop drawings, Contract Documents, and similar previously established identification schemes for the facility's electrical installations.

2. For exterior circuits, include identification of the building from which it originates.

K. Apply warning, caution, and instruction signs and stencils as follows:

1. Install warning, backfeed warning, caution, flash protection, or instruction signs where required by NEC, where indicated, or where reasonably required to assure safe operation and maintenance of electrical systems and of the items to which they connect.
2. Emergency Operating Signs: Install engraved laminate signs with white legend on red background with minimum 3/8 inch high lettering for emergency instructions on power transfer, load shedding, or other emergency operations.
3. Fused and Non-Fused Motor Disconnect Switches: Install engraved laminate signs with white legend on red background with minimum 3/8 inch high lettering with the following designation - "DANGER, DO NOT START OR STOP MOTOR WITH THIS SWITCH. USE FOR ISOLATION ONLY".

L. Install equipment/system circuit/device identification as follows:

1. Apply equipment identification labels of engraved plastic-laminate on each major unit of electrical equipment in building, including central or master unit of each electrical system. This includes communication/signal/alarm systems, unless unit is specified with its own self-explanatory identification. Except as otherwise indicated, provide single line of text, with 1/2-inch-high lettering on 1-1/2-inch-high label (or larger where multiple lines are required), white lettering in black field designating the equipment served. Utilize red field for equipment connected to an emergency source or fire alarm system. Text shall match terminology and numbering of the Contract Documents and shop drawings. Electrical equipment nameplates shall also designate line side source (i.e., FED FROM "_____" LOCATED IN ROOM "____") in smaller 1/4 inch lettering. Smaller nameplate lettering may be used where adequate nameplate mounting space is not available, but in no case shall the lettering be smaller than 1/8-inch. Apply labels mechanically with machine screws or pop rivets for each unit of the following categories of electrical equipment for electrical equipment and panelboard designations.
   a. Automatic transfer switch.
   b. Battery chargers.
   c. Boxes (Pull, Junction, or Branch Circuit) when given specific designation on drawings.
   d. Clock master control center.
   e. Communication/special systems cabinets and backboards.
   f. Contactors.
   g. Control devices.
   h. Disconnect switches.
   i. Distribution panelboards protective devices.
   j. Emergency generator set.
   k. Emergency power off (EPO) stations.
   l. Fire alarm system field processing units, terminal cabinets, peripheral monitor and control modules, fire phone cabinets and remote duct detector test stations.
   m. Generator tool kit cabinets.
   n. Ground buses and terminal bars.
   o. Low voltage relay panels.
   p. Motor controllers.
   q. Designate motor function (i.e., "CW Pump No. P-1"), not "P-1".

r. Main overcurrent device or main lug section and motor controllers in motor control centers.
s. other systems.
t. Panelboards.
u. Pushbuttons.
v. Strip terminal cabinets.
w. Security panels.
x. Single-pole switches and fractional horsepower manual starters used for motor disconnect switch.
y. Separately mounted circuit breakers.
z. Standard telecommunication system.
aa. Transformers.

2. Refer to appropriate sections for other nameplate and device plate marking requirements and nomenclature.
3. Attach nameplates mechanically after finish painting.

M. Ceiling Markers for Accessible Devices:
1. Furnish and install punched color tape markers, or color coded markers as determined by Owner. Affix to ceiling grid or to access panel to indicate which ceiling or access panel is to be removed to obtain access to control/monitoring devices, duct mounted smoke detectors, system type occupancy sensor control units, etc.

N. Fire Alarm:
1. Fire alarm junction boxes and pull fittings shall be painted to identify them as components of the fire alarm system as compared to other systems. Red is the typical paint color for the fire alarm system components, although the color should match the Owner's standards.
2. Remote Smoke Detector Lamps and Test Stations: Provide nameplate indicating the location of the connected device.
3. Initiation Devices, Notification Appliances and Fire Alarm Relays: Provide device identification and address identification label.

O. Communications:
1. Comply with applicable EIA, TIA and ANSI Standards
2. Equipment Cabinets, Terminal Cabinets, Control Panels, Patch Panels and Racks: Provide nameplates with equipment identification and label termination blocks and ports.
3. Data Outlets: Provide device identification label on faceplate. Identify equipment designation and location from which it originates.
4. Label per Owner's standards and direction.

P. Security: Provide device identification labels and identify equipment designation and location from which it originates.

Q. Install labels at locations indicated and at locations for best convenience of viewing without interference with operation and maintenance of equipment.

END OF SECTION

SECTION 260923
AUTOMATIC CONTROLS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A The following Division 26 Section must be coordinated and included in the project.
1. SECTION 262726, WIRING DEVICES

1.02 SUMMARY

A Extent of lighting control equipment Work is indicated by Drawings.

B Types of indoor lighting control equipment specified in this section include the following:
1. Analog Motion Sensor Controls
2. Low voltage Lighting Controls

C Types of outdoor lighting control equipment specified in this Section include the following:
1. Time Control Switches
2. Photoelectric Control

1.03 SUBMITTALS

A Product Data: Submit manufacturer's data on control equipment and components.

B Shop Drawings: Submit layout Drawings of control equipment and components.

C Wiring Diagrams: Submit wiring and/or schematic diagrams for control equipment and components showing control and interconnection wiring, including connections to equipment components and electrical power feeders. Differentiate between portions of wiring that are manufacturer-installed and portions that are field-installed.

D Maintenance Manuals: Furnish maintenance manuals that contain equipment cuts, operating instructions, troubleshooting procedures, and spare parts list for equipment. Ensure manual includes operating instructions in addition to instructions for maintenance of the system.

1.04 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of control equipment and ancillary equipment, of types, ratings and capacities required, whose products have been in satisfactory use in similar service for not less than 5 years.

B Installer's Qualifications: Firm with at least five successfully completed projects of similar scope.

C Codes and Standards:
1. Electrical Code Compliance: Comply with applicable local electrical code requirements of the Authority Having Jurisdiction and NEC as applicable to construction, installation of lighting control and communications equipment.
2. UL Compliance: Provide lighting control equipment and components that are UL-listed and labeled.
3. NEMA Compliance: Comply with applicable requirements of NEMA's Stds Pub No. 250, "Enclosures for Electrical Equipment (1000-Volts Maximum)."
4. International Energy Conservation Code.
5. ANSI/ASHRAE/IESNA 90.1 requirements.

1.05 DELIVERY, STORAGE AND HANDLING

A Deliver control equipment and components in factory-fabricated type containers or wrappings, which properly protect equipment from damage.

B. Store control equipment in original packaging and protect from weather and construction traffic.

C Handle control equipment carefully to prevent physical damage to equipment and components. Do not install damaged equipment; remove from site and replace damaged equipment with new.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A Provide indoor control equipment of one of the following (for each type and rating of equipment):
1. Eaton Greengate (800-553-3879).
2. Hubbell Building Automation (800-698-3242).
3. Sensor Switch, Inc. (800-922-9641).
4. Legrand WattStopper, Inc. (800-879-8585).

B Subject to compliance with requirements, provide outdoor lighting control equipment of one of the following (for each type and rating of equipment):
1. Eaton Greengate.
2. Intermatic Inc.
3. Paragon Electric Co.
4. Tork Inc.

2.02 INDOOR CONTROL EQUIPMENT

A General: Provide factory fabricated motion sensor controls consisting of passive infrared, ultrasonic motion and sound detecting systems which scans an area in search of changes in temperature, motion and sound caused by the presence, or absence, of people within the desired viewing area. When no presence is detected for a period of up to 20 minutes, the lights are switched off.

B Dual Technology Ceiling Mounted Occupancy Sensors
1. Unit shall feature 360 degree viewing angle, with square feet of viewing area as noted below.
2. Capable of switching all types of lighting loads: LED, fluorescent and incandescent loads, UL listed.
3. Load capacity as required per individual room arrangement. Provide additional relays when wattage to be controlled exceeds that specified for control unit.
4. Unit shall have flat, unobtrusive appearance. Finish shall be white.
5. Equip with all necessary control units, power packs, relays, backboxes, mounting plates, etc. for complete operation.
6. Sensor shall be low voltage type with power pack rated for 120/277 VAC operation. Power pack shall be rated for amperage as determined by load to be switched.
7. Unit shall have factory preset 20 minute time delay, but can be field adjusted to other (5, 10, 15 or 30 minutes) time delays via DIP switches.
8. Sensors shall utilize Dual Sensing Verification Principle for coordination between ultrasonic and passive infrared (PIR) technologies. Detection of both technologies must occur in order to activate the lighting systems. Upon verification, detection by either shall hold lighting on.

9. UL listed with minimum 5-year warranty.
10. Type "C1" shall provide 1000 square foot coverage and be ceiling mounted and rated 120/277 VAC with wattage as determined in field; Sensor Switch CM series with DP20 Power Pack, Legrand WattStopper DT-300 series with BZ-150 power pack, or accepted equal by Hubbell.

C Ultrasonic Ceiling Mounted Occupancy Sensors

1. Unit shall feature 360 degree viewing angle, with square feet of viewing area as noted below.
2. Capable of switching all types of lighting loads: LED, fluorescent and incandescent loads, UL listed.
3. Load capacity as required per individual room arrangement. Provide additional relays when wattage to be controlled exceeds that specified for control unit.
4. Unit shall have flat, unobtrusive appearance. Finish shall be white.
5. Equip with all necessary control units, power packs, relays, backboxes, mounting plates, etc. for complete operation.
6. Sensor shall be low voltage type with power pack rated for 120/277 VAC operation. Power pack shall be rated for amperage as determined by load to be switched.
7. Unit shall have factory preset 20 minute time delay, but can be field adjusted to other (5, 10, 15, 20 or 30 minutes) time delays via DIP switches.
8. Ultrasonic sensing shall be volumetric in coverage with a frequency of 40 kHz. It shall utilize Advanced Signal Processing that automatically adjusts the detection threshold dynamically to compensate for changing levels of activity and airflow throughout the controlled space.
9. Type "C2" shall provide 2000 square foot coverage and be ceiling mounted and rated 120/277 VAC with wattage as determined in field; Sensor Switch Legrand WattStopper UT- 300 series with BZ-150 power pack, Eaton Greengate OAC-U series, or Hubbell OMNI US series.
10. Type "C3" shall be for use in long hallways, up to 16' wide x 56' long, ceiling mounted and rated 120/277 VAC with wattage as determined in field; Legrand WattStopper UT-305-3 Series, Hubbell OMNI US series, or accepted equal.

D Dual Technology Wall Mounted Occupancy Sensors

1. Occupancy sensor intended for small rooms with minor motion and when dimming is not required, such as toilet rooms, waiting rooms, etc.
2. Unit shall have manual off override and be programmed to operate as a vacancy sensor, but shall have the choice of MANUAL-ON or AUTO-ON operation.
3. Unit shall have 20’ x 15’ nominal PIR viewing range and 15’ x 15’ ultrasonic viewing range for minor motion and 35’ x 30’ nominal PIR viewing range and 20’ x 20’ ultrasonic viewing range for major motion; positive detector indication.
4. Capable of switching all types of lighting loads: LED, fluorescent and incandescent, UL listed.
5. Dual element detection with time-out delay adjustable from 5 minutes to 30 minutes. Unit can be field adjusted for 5, 15, or 30 minute time delays.
6. Provide dual technology which combines the benefits of passive infrared (PIR) and ultrasonic detection technology utilizing an operating frequency of 40 kHz. Equipped with high/low PIR sensitivity adjustment and fully variable ultrasonic adjustment.
7. Selectable audible and/or visual alert for impending shutoff.
8. Color as selected by Architect protruding less than 1" from wall plate, mounts in single gang outlet box and utilizes decorator style rectangular opening with stainless steel, satin finish wall plate.

9. Type “W2” shall be rated for minimum 800 watts at 120 VAC or 1200 watts at 277 VAC as required, 2 or 3 wire switch; Eaton Greengate ONW-D series, Legrand WattStopper DW-100 series, Acuity/n-Light nWSX PDT LV series, Hubbell LODT series.

E Dual Technology Wall Mounted Dimmer/Occupancy Sensors

1. Occupancy sensor intended for rooms with minor motion and when dimming is required, such as small offices, conference rooms, break rooms, etc.
2. Unit shall have manual off override and be programmed to operate as a vacancy sensor.
3. Unit shall have 20’ x 15’ nominal PIR viewing range for minor motion and 15’ x 15’ ultrasonic viewing range for minor motion and 35’ x 30’ nominal PIR viewing range and 20’ x 20’ ultrasonic viewing range for major motion; positive LED detector indication.
4. Capable of switching all types of lighting loads: LED, fluorescent and incandescent, UL listed.
5. Dimming control signal 0-10 VDC, and allow fully functional multi-way control from up to four (4) locations.
6. Dual element detection with time-out delay adjustable from 5 minutes to 30 minutes. Unit can be field adjusted for 3, 5, 15, or 30 minute time delays via DIP switches.
7. Provide dual technology which combines the benefits of passive infrared (PIR) and ultrasonic detection technology utilizing an operating frequency of 40 kHz. Equipped with high/low PIR sensitivity adjustment and fully adjustable ultrasonic adjustment.
8. Selectable audible and/or visual alert for impending shutoff.
9. Color as selected by Architect protruding less than 1" from wall plate, mounts in single gang outlet box and utilizes decorator style rectangular opening with stainless steel, satin finish wall plate.
10. Type “D1” shall be rated for minimum 1000 watts at 120 or 277 VAC; SensorSwitch WSXA Series, Legrand WattStopper DW-311 series, Hubbell Lighthawk LHDMMTS series.

2.03 LOW VOLTAGE INDOOR LIGHTING CONTROLS

A Low Voltage Dimming Lighting Control Wall Stations for LED Luminaires:

1. Provide digital ON/OFF pushbutton style with detectable audible “click”, with LED pilots to indicate operation. Switch shall also have distinct RAISE and LOWER buttons to dim the luminaire. These shall also have LED pilots. Refer to detail on the Drawings.
2. Buttons shall be engraved or permanently identified as to their operation.
3. Lighting level shall return to the previous preset level when the pushbutton is turned on.
4. Unit shall be circuited with the ceiling occupancy (vacancy type) sensor so the occupant is required to manually turn ON the lights when re-entering the room.
5. Provide Color as selected by Architect for normal power with stainless steel, satin finish wallplate as specified in Section 262726.
6. Schedule:
   a. Type “WS1” wall stations shall control lighting from one (1) location.
   b. Type “WS3” wall stations shall control lighting from two (2) locations.
   c. Type “WS4” wall stations shall control lighting from three (3) locations.
7. Design Make: SensorSwitches PODMA-D Legrand Wattstopper LMDM-101 series, Hubbell NXSW-ORLO series.

B Digital Daylighting Responsive Ceiling Sensors, Type “DS”

1. Digital daylighting sensors shall work with load controllers and relay panels to provide automatic switching or dimming daylight harvesting capabilities for any load type connected to the controller or panel. Daylighting sensors shall be interchangeable without the need for rewiring.
2. Open loop multi-zone sensors measure only daylight, not electric light, in the space and control a single lighting zone.
3. Digital daylighting sensors shall include the following features:
   a. The sensor’s internal photodiode shall only measure lightwaves within the visible spectrum. The photodiode’s spectral response curve shall closely match the entire photopic curve. The photodiode shall not measure energy in either the ultraviolet or infrared spectrums. The photocell shall have a sensitivity of less than 5% for any wavelengths less than 400 nanometers or greater than 700 nanometers.
   b. Sensor light level range shall be from 1-6,553 footcandles (fc).
   c. The capability of ON/OFF or dimming, for each controlled zone, depending on the selection of load controller(s) and load binding to controller(s).
   d. For switching daylight harvesting, the photosensor shall provide a field-selectable deadband, or a separation, between the “ON Setpoint” and the “OFF Setpoint” that will prevent the lights from cycling excessively after they turn off.
   e. For dimming daylight harvesting, the photosensor shall provide the option, when the daylight contribution is sufficient, of turning lights off or dimming lights to a field-selectable minimum level.
   f. Photosensors shall have a digital, independently configurable fade rate for both increasing and decreasing light level in units of percent per second.
   g. Photosensors shall provide adjustable cut-off time. Cut-off time is defined by the number of selected minutes the load is at the minimum output before the load turns off. Selectable range between 0-240 minutes including option to never cut-off.
   h. Optional wall switch override shall allow occupants to reduce lighting level to increase energy savings or, if permitted by system administrator, raise lighting levels for a selectable period of time or cycle of occupancy.
   i. Integral infrared (IR) transceiver for configuration and/or commissioning with a handheld configuration tool, to transmit detected light level to wireless configuration tool, and for communication with personal remote controls.
   j. Configuration LED status light on device that blinks to indicate data transmission.
   k. Status LED indicates test mode, override mode and load binding.
   l. Recessed switch on device to turn controlled load(s) ON and OFF.
   m. BACnet object information shall be available for the following daylighting sensor objects, based on the specific photocell’s settings:
      1) Light level
      2) Day and night setpoints
      3) Off time delay
      4) On and off setpoints
      5) Up to three zone setpoints
      6) Operating mode – on/off, bi-level, tri-level or dimming
   n. A choice of accessories to accommodate multiple mounting methods and building materials. The photosensors shall be mounted to a ceiling mounted outlet box, securely anchored to structure.
   o. Any load or group of loads in the room can be assigned to a daylighting zone.
   p. Each load within a daylighting zone can be individually enabled or disabled for discrete control (load independence).

q. All digital parameter data programmed into a photosensor shall be retained in non- volatile FLASH memory within the photosensor itself. Memory shall have an expected life of no less than 10 years.

4. Open loop digital photosensors shall include the following additional features:
   a. An internal photodiode that measures light in a 100-degree angle, cutting off the unwanted light from bright sources outside of this cone.
   b. Automatic self-calibration, initiated from the photosensor, a wireless configuration tool or a PC with appropriate software.
   c. Automatically establishes application-specific setpoints following self-calibration. For switching operation, an adequate deadband between the ON and OFF setpoints shall prevent the lights from cycling; for dimming operation a sliding setpoint control algorithm with separate Day and Night setpoints shall prevent abrupt ramping of loads.
5. Make: Type “DR” open loop photosensor, SensorSwitch CM ADC Legrand WattStopper LMLS- 500 Series, or accepted equal by Eaton Greengate, Acuity/n-Light, or Hubbell.

PART 3 EXECUTION

3.01 EXAMINATION

A Examine areas and conditions under which control equipment is to be installed and notify Architect in writing of conditions detrimental to proper completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected.

3.02 INSTALLATION OF CONTROL EQUIPMENT

A Install control system components and ancillary equipment as indicated, in accordance with equipment manufacturer's written instructions, and with recognized industry practices, to ensure that lighting control equipment complies with requirements. Comply with requirements of NEC, and applicable portions of NECA's "Standard of Installation" pertaining to general electrical installation practices.

B Coordinate with other electrical Work, including raceways, and electrical boxes and fittings, as necessary to interface installation of lighting control equipment Work.

3.03 INSTALLATION OF MOTION SENSOR CONTROLS

A All units shall be secured to an outlet box and per manufacturer's written installation instructions; Drawings are for informational purposes only. Manufacturer shall have field-trained rep available to assist Contractor during installation.

B All necessary wiring diagrams shall be furnished to Contractor by manufacturer for installation.

C All sensors shall be adjusted in field to pick up door swing within range of viewer; Contractor shall adjust or move device as required.

D Provide all necessary control units, relays, wallplates, mounting brackets, filters, sensor covers, backboxes and other equipment necessary to make completely operational system. All equipment but sensor shall be recess mounted, concealed.

E All control units shall be wired such that wall switches (if present) can switch room lamps off. Program occupancy sensor control so that the occupant is required to manually turn ON the lights when re-entering the room, in compliance with the Energy Conservation Code.

F Provide all required additional sensors for complete room coverage as required by system.

G Wall sensors shall be mounted at same height as switches.

H Provide complete written checkout signed by manufacturer's representative, Contractor and Owner's Site Representative after complete installation of system.

I All occupancy sensor wiring, including both power and control wiring, shall be installed in raceway systems as specified.

J Wire vacancy sensors so that lighting shuts off at or less than 15 minutes after the occupant leaves the room. It will be necessary for the occupant to manually turn the lights back on.

K Wire the occupancy sensors that control the split-wire controlled receptacles so that the top portion of each controlled duplex receptacle shuts off less than 20 minutes after the occupant leaves the room. It is not necessary for the occupant to manually turn the receptacles back on; they shall automatically energize upon returning to the room.

3.04 PERSONNEL TRAINING

A Building Operating Personnel Training: Train Owner's building personnel in procedures for starting-up, testing and operating lighting control system equipment.

B Provide two (2) 1-hour sessions to train facility personnel on the use, operation and maintenance of the system.

3.05 COMMISSIONING

A A registered design professional shall provide evidence that the lighting control systems have been tested to:

1. Confirm occupancy sensors acceptable performance of placement, sensitivity and settings.
2. Confirm time switches and schedule controls are correctly programmed, functioning and documented.
3. Confirm daylighting responsive controls are properly located, calibrated, accessible and function to adjust lighting in response to available daylight.
4. Submit written documentation certifying performance.

END OF SECTION

SECTION 261000
SERVICE ENTRANCE

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. The following Division 26 Sections must be coordinated and included in the project:
   1. Section 26 00 00, GENERAL REQUIREMENTS FOR DIVISION 26.
   2. Section 26 05 26, GROUNDING.

1.02 SUMMARY

A. The extent of service entrance work is indicated by the Drawings and Schedules.

B. This Section includes coordination with Power Company for the building. All Power Company fees and charges will be paid by the Owner.

C. This section includes complete overhead service and metering equipment provisions for the building.

1.03 DEFINITIONS

A. Service Conductors: Supply conductors which extend from Existing Utility Pole to service equipment of premises supplied.

B. Service Entrance Conductors (overhead or underground system): Service conductors between the terminal of service equipment and point of connection to service lateral. If service equipment is located outside building walls, there may be no service entrance conductors or they may be entirely outside building.

C. Service Equipment: Required equipment, consisting of a main service circuit breaker or switch and fuses and their accessories, located near point of entrance of supply conductors to a building, or other structure or an otherwise defined area. It is intended to constitute the main control and means of cutoff of electrical supply.

1.04 SUBMITTALS

A. Submit all products and accessories provided under this Section.

1.05 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of service entrance equipment of types, sizes, and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installer's Qualifications: Firm with at least five successfully completed projects of similar scope.

C. Perform Work in accordance with Power Company's written requirements.

D. Codes and Standards:
   1. Electrical Code Compliance: Comply with applicable local code requirements of the authority having jurisdiction and NEC, including Articles 230, 250, and 338, as applicable to installation, and construction of service entrances.
   2. NEMA Compliance: Comply with applicable construction; and installation requirements of NEMA standards for service entrance equipment and accessories.

3. UL Compliance: Comply with construction and installation requirements of UL standards for service entrance equipment and accessories. Provide service entrance equipment and accessories which are UL-listed and labeled, and marked, "SUITABLE FOR USE AS SERVICE EQUIPMENT."
4. National Electrical Safety Code: Maintain all clearances as outlined herein.
5. IEEE Compliance: Comply with applicable requirements of IEEE Std 241 pertaining to service entrances.
6. National Grid's Specifications for Electrical Installations.

1.06 SERVICE CHARACTERISTICS

A. Primary Power Company's service originates from an existing overhead utility pole, approximate location as shown on Drawings.

B. Utilization Voltage in the building shall be nominal 120/208 volts, three phase, four wire, solidly grounded 60 Hz. system.

C. Source of secondary service is from existing Utility Company pole mounted transformers. Secondary service runs overhead from the existing transformers to the main service equipment located in the building Electric Room.

1.07 POWER COMPANY COORDINATION

A. The Power Company is New York State Electric & Gas (NYSEG).

B. Cooperate with Owner, Power Company, etc. for the electric system interruptions and switching requirements.

1.08 DESCRIPTION OF WORK

A. Electrical Contractor shall make all secondary terminations.

B. All secondary cabling and associated overhead work shall be provided by the Electrical Contractor.

C. Electrical Contractor shall provide metering compartment, CT's, conduit, cabling and other equipment, etc. as required by the Power Company.

1.09 FIELD MEASUREMENTS

A. Verify in field that measurements are as indicated on Drawings.

1.10 PRE-INSTALLATION CONFERENCE

A. Convene as required but minimum of one week prior to commencing Work of this Section, with the Power Company and submit minutes of meeting.

1.11 SEQUENCE AND SCHEDULING

A. Schedule delivery of service entrance equipment which permits ready building ingress for large equipment components to their designated installation spaces. Coordinate delivery of equipment with the installation of other building components.

B. New service equipment, cabling, etc. shall be installed and ready to be energized prior to de-energizing existing service equipment.

PART 2 PRODUCTS

2.01 POWER COMPANY METERING ACCOMMODATION

A. Verify all metering requirements with Power Company's Meter & Test Department before proceeding. Provide meter cabinet(s), channel, fuses and disconnect(s) as required and catalog cut sheets for Power Company approval.

B. Contractor shall provide all Power Company metering, instrument transformers, meter cabinets, meter transformer enclosures and mountings, etc. per Power Company's specifications.

C. Contractor shall provide all wiring and conduit from metering transformers to metering equipment. Provide minimum continuous 1½" rigid galvanized steel conduit.

D. Power Company will determine the exact location of metering equipment at the site. Provide and mount a meter board for each indoor installation, comprised of painted ¾" fir plywood exterior grade board.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions under which service entrance equipment and components are to be installed, and notify in writing of conditions detrimental to proper completion of the Work. Do not proceed with the Work until satisfactory conditions have been corrected in a manner acceptable to the Owner.

B. Verify that service equipment is ready to be connected and energized.

3.02 POWER COMPANY METERING ACCOMMODATIONS

A. Verify all installation requirements with the Power Company before proceeding.

B. Contractor shall provide all Power Company metering, instrument transformers, meter cabinets, meter transformer enclosures and mountings, etc. per Power Company's specifications. Provide proper clearances required.

C. Contractor shall provide all wiring and conduit from metering transformers to metering equipment. Provide minimum continuous 1½" rigid galvanized steel conduit.

D. Provide grounding, connections and miscellaneous equipment as required.

E. Power Company will determine the exact location of metering equipment.

F. Provide painted ¾" plywood exterior grade metering backboard as required. Securely mount in a true vertical, accessible position and provide a clear space for mounting the Power Company's metering devices. Provision shall be made for air circulation behind the meter board to inhibit "dry rot".

3.03 FIELD QUALITY CONTROL

A. Prior to energization of service entrance equipment, check accessible connections for compliance to manufacturer's torque tightening specifications.

B. Prior to energization of service entrance equipment, check with ground resistance tester, phase-to-phase and phase-to-ground insulation resistance levels to ensure requirements are fulfilled.

C. Prior to energization, check circuitry for electrical continuity, and for short circuits.

D. The contractor is responsible for disconnecting and reconnecting the secondary cables for meggering and ringing out at the transformer pad.

3.04 GROUNDING

A. Provide equipment grounding connections for service entrance equipment as indicated and as required by Code. Tighten connections to comply with tightening torques specified in UL Std 486A to assure permanent and effective grounding.

3.05 DEMONSTRATION

A. Upon completion of installation of service entrance equipment and electrical circuitry, energized circuitry and demonstrate capability and compliance with requirements. Where possible, correct malfunctioning units at site, then retest to demonstrate compliance; otherwise, remove and replace with new units, and retest to demonstrate compliance.

END OF SECTION

SECTION 262416
PANELBOARDS

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes construction criteria required for panelboards. The extent, location and details of panelboard and enclosure Work, including cabinets and cutout boxes, are as indicated on the Drawings and schedules and as specified herein.

B. Types of panelboards in this Section include the following.
1. 120/208 Volt, Three Phase, Four Wire Distribution Panelboards.
2. 120/208 Volt, Three Phase, Four Wire Lighting and Appliance Panelboards.

C. Load centers, which are commonly used for residential and light commercial and industrial applications, are not acceptable for use on this project.

D. Provide all labor, materials and equipment necessary to perform the Work required for the complete installation and operation of all Work.

1.02 REFERENCES

A. Electrical Code Compliance: Comply with applicable local code requirements of the authority having jurisdiction and the applicable articles of NEC.

B. NEMA Compliance:

1.	Publication No. 250	Enclosure for Electrical Equipment.
2.	AB 1	Molded Case Circuit Breakers.
3.	PB 1	Panelboards.
4.	PB 1.1	Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.

C. UL Compliance: All panelboards shall be UL-listed and labeled. Comply with all applicable UL standards:

1.	UL 50	Electrical Cabinets & Boxes.
2.	UL 67	Electrical Panelboards.
3.	UL 486 A	Wire Connectors & Soldering Lugs for Use with Copper Conductors

D. Federal Specifications:

1.	FS W-C-375	Circuit Breakers, Molded Case, Branch Circuit and Service

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions on each type of panelboard.

B. Shop Drawings: Include the following for each panelboard:
1. Cabinet and Gutter size, including outline and support point dimensions.
2. Voltage and Current Rating.
3. Panelboard short circuit rating. Indicate if rating is fully rated equipment rating or where specifically acceptable, UL listed integrated equipment short circuit rating.
4. Circuit Breaker enumeration (frame, trip rating, poles, interrupting rating).
5. Details of door construction.
6. Other accessories.

C. Maintenance Data: Submit maintenance data and parts list for each panelboard and accessory; including "trouble-shooting" maintenance guide. Include that data, product data, and Shop Drawings in a maintenance manual.

1.04 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of panelboards of sizes, types and ratings required, whose products have been in satisfactory use in similar service for not less than 10 years.

B. Installer's Qualifications: Firms with at least five successfully completed projects of similar scope.

C. Codes and Standards: As indicated in Article 1.02.

D. Minor Changes: Minor changes and modifications of ampere rating, lug sizes, fuse sizes, etc., within the confines of standard catalog ratings, if required by the Engineer before or during the submittal review, shall be provided by Division 26 without any change in Contract sum.

E. All panelboards shall be of the same make.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver panelboard in factory-fabricated containers or wrappings, which properly protect equipment from damage.

B. Store equipment in original packaging. Store inside well ventilated area protected from weather, moisture, soiling, extreme temperatures, humidity, laid flat and blocked off ground.

C. Handle equipment carefully to prevent damage, breaking, and scoring of finishes. Do not install damaged units or components; replace with new.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, provide panelboard products of one of the following:
   1. Siemens Energy & Automation, Inc.
   2. General Electric Company
   3. Eaton Corporation Cutler Hammer
   4. Square D Schneider Electric

2.02 PANELBOARDS

A. Physical Characteristics:
   1. 14 gauge or greater, galvanized code grade steel, NEMA type 1 unless otherwise noted.
   2. Cabinet size nominally 6" deep X 20" wide for 240 Volt lighting and branch circuit panelboards.
   3. For panelboards rated 400 amperes and higher, cabinet size shall minimally be 8-1/4" deep x 32" wide.
   4. Dead front with rustproofed trim and door, and flush rustproof steel hinges.
   5. Finish in manufacturer's standard gray enamel.
   6. Flush or surface mounted as indicated on the Drawings.

7. Gutters on all four sides, adequate for the required wiring.
8. Increased gutter space for gutter taps, sub-feed wiring, through feed wiring, oversize lugs, etc.
9. All panelboard trims shall permit access to both the circuit breaker section and gutter space without removing the entire door. Provide hinged-trim cover, which permits hinged access to gutter space by removing several screws. This requirement applies to surface and flush mounted panelboards, and multi-section panelboards. Submittals which fail to meet the above mentioned door construction requirements will be rejected in their entirety; no exceptions.
10. Standard manufacturer's lock and two keys for each lock.
11. Three main and one neutral bus, unless otherwise called for. Provide solid copper bus bars. Ampere rating of bus bars shall be as shown on Drawings, but not less than frame size of main circuit breaker or main lugs or panelboard rating; whichever is greater.
12. Full capacity copper neutral bus bar in all panelboards.
13. Copper equipment grounding bus, securely bonded to the box.
14. Copper lugs.
15. Sections designated "space" or "provisions for future breaker" shall be equipped with bus stubs or tapped bus to accept future circuit breaker.
16. Directory frame within plastic inside of door; typewritten.
17. Unless otherwise indicated on Drawings, all panelboards shall be full section, equipped with 42 poles. Provision of a main circuit breaker shall not reduce the number of branch circuit spaces to 38 or 39 poles.
18. Provide multi-section panelboards with all code required sub-feed lugs, accessories and devices for panels with greater than 42 poles.
19. Provide engraved nameplate on face of panelboard, designation as shown on the Drawings. Information shall include specific location of panel (floor/building), Voltage levels (high or low), type of power (essential vs. normal) and particular branch of the essential systems. Emergency power labels shall be made in red: 6.5” long x 2.25” wide with white letters. Normal power labels shall be made in black: 6.5” long x 2.25” wide with white letters. Use minimum ¼” high text. For emergency power panelboards, provide white letters on red background with minimum ¼” high text. For normal power panelboards, provide white letters on black background.
20. Identification nameplate indicating manufacturer's name and model number, ampacity of main bus and main circuit phase, wires and type of replacement circuit breakers to be used shall be in plain view and right side up when circuit breaker door is opened. Nameplates obstructed by gutter door or otherwise, or installed upside down, will be deemed unacceptable and be rejected.

B. Electrical Characteristics:
1. Voltage and current rating as indicated on the Drawings.
2. Short circuit rating not less than rating indicated on Drawings.
3. Panelboards and circuit breakers shall be fully rated; series rated breakers and panelboards not acceptable.

C. Circuit Breaker Characteristics:
1. Provide bolted bus connections.
2. Multi-pole breakers with common internal trips.
3. Breakers shall be quick-make and quick-break toggle mechanism.
4. 75 degrees Centigrade terminal rating.
5. Provide integral thermal magnetic, molded case breakers with non-adjustable, l ong time, thermal overload, instantaneous electromagnetic trip unit.

6. Use adjustable magnetic instantaneous trips for 200 ampere frames and larger.
7. Provide circuit breaker handle lock-on devices, as called for.
8. Provide type "SWD" circuit breakers where used as a switch for lighting circuits. Provide special nameplate designation.
9. Provide type “HACR” circuit breakers where used for motor loads. Provide special nameplate designation.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions under which are to be installed and supported. Notify in writing of conditions detrimental to proper completion of the Work.

3.02 INSTALLATION OF PANELBOARDS

A. Provide all miscellaneous bolts, nuts, washers, etc. made of rust resistant material.

B. Mount panelboard with a maximum of 6'-0" to the centerline of the highest operating handle of breaker. Mount panel level and plumb.

C. Touch-up all scratches.

D. Provide engraved nameplate on outside trim of all panelboards using designations noted on Drawings. Inside of panelboard door, state panel name, where fed from, size of conductors, voltage, etc.

E. Provide filler plates for unused spaces in panelboards.

F. Set flush cabinets so that the edges will be flush with the finished wall line. Where space will not permit flush type cabinets to be set entirely in the wall, set cabinet as nearly flush as possible, and cover the protruding sides with the trim extending over the exposed sides of the cabinet and back to the finished wall line.

G. Provide typewritten directory with room numbers, function, etc. to positively identify each branch circuit. Contractor shall use ACTUAL room numbers; not necessarily those indicated on the Architectural floor plans. Indicate size of feeder servicing panelboard. Identify date directory was updated. On existing panelboards, identify date each branch circuit was updated.

H. Provide a permanent posted note on all new branch circuit panelboards containing multi-phase branch circuits that notes color coding used for the phases conductors, per NEC Section 210-4(d).

I. In addition to the installed branch circuit conduits, provide one (1) empty 1” conduit with pullrope to above accessible ceiling space for all surface and flush mounted panelboards. In addition, for all flush mounted panelboards, provide four (4) empty ¾” conduits with pullrope to above accessible ceiling space above the panelboard.

J. Branch circuit number identification indicated on the floor plans and on individual panelboard schedules are for informational purposes only. Contractor shall adjust circuits as required to balance all loads in each panelboard among the phases of that panelboard.

3.03 GROUNDING

A. Provide equipment grounding connections for panelboard enclosures as indicated. Tighten connections to comply with tightening torques specified in UL 486A to assure permanent and effective grounds.

B. Provide panelboard bonding between normal and emergency panelboard(s) serving the same patient vicinity, per NEC 517-14.

3.04 FIELD QUALITY CONTROL

A. Prior to energization of electrical circuitry, check all accessible connections to manufacturer's tightening torque specifications.

B. Prior to energization of panelboards, check with ground resistance tester phase-to-phase and phase-to-ground insulation resistance levels to ensure requirements are fulfilled.

C. Prior to energization, check panelboards for electrical continuity of circuits, and for short-circuits.

D. Measure steady state load currents at each panelboard feeder. Should the difference at any panelboard between phases exceed 20 percent, rearrange circuits in the panelboard to balance the phase loads within 20 percent. Take care to maintain proper phasing for multi-wire branch circuits.

E. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding.

3.05 ADJUSTING AND CLEANING

A. Adjust operating mechanisms for free mechanical movement.

B. Touch-up scratched or marred surfaces to match original finishes.

C. Prior to date of substantial completion, completely clean the interior and exterior of all panelboards. Be careful to remove all dirt, dust, foreign material, etc., and repair to new condition as required.

3.06 DEMONSTRATION

A. Subsequent to wire and cable hook-ups, energize panelboards and demonstrate functioning in accordance with requirements. Where necessary, correct malfunctioning units, and then retest to demonstrate compliance.

END OF SECTION

SECTION 262716
OUTLET, JUNCTION AND PULL BOXES

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes wall and ceiling outlet boxes, junction boxes, pull boxes, cabinets and fittings for electrical installations and certain types of electrical fittings not covered in other Sections. Types of products specified in this Section include:
   1. Outlet and device boxes.
   2. Pull and junction boxes.
   3. Cabinets.
   4. Fittings

1.02 REFERENCES

A. National Fire Protection Association (NFPA):
   NFPA 70 National Electrical Code, including the following Articles:
   300, Wiring Methods.
   312, Cabinets, Cutout Boxes and Meter Socket Enclosures.
   314, Outlet, Device, Pull, and Junction Boxes.

B. National Electrical Manufacturers Association (NEMA)
   NEMA OS 1 Sheet-Steel Outlet Boxes, Device Boxes, Covers and Box Supports.
   NEMA 250 Enclosures for Electrical Equipment (1000 Volts Maximum).

C. Underwriters Laboratories, Inc. (UL):
   UL 50 Electrical Cabinets and Boxes.
   UL 514A Electrical Metallic Outlet Boxes.
   UL 514B Fittings for Conduit and Outlet Boxes.

1.03 DEFINITIONS

A. Cabinets: An enclosure designed either for surface or for flush mounting and having a frame, or trim in which a door or doors may be mounted.

B. Device Box: An outlet box designed to house a receptacle device or a wiring box designed to house a switch.

C. Enclosure: A box, case, cabinet, or housing for electrical wiring or components.

D. Hinged Door Enclosure: An enclosure designed for surface mounting and having swinging doors or covers secured directly to and telescoping with the walls of the box.

E. Outlet Box: A wiring enclosure where current is taken from a wiring system to supply utilization equipment.

F. Wiring Box: An enclosure designed to provide access to wiring systems or for the mounting of indicating devices or of switches for controlling electrical circuits.

1.04 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Product data for cabinets and enclosures with classification higher than NEMA 1.

C. Shop drawings for outlet boxes, junction boxes, and pull boxes, enclosures and cabinets that are to be shop fabricated, (nonstock items). For shop fabricated junction and pull boxes, show accurately scaled views and spatial relationships to adjacent equipment. Show box types, dimensions, and finishes.

1.05 QUALITY ASSURANCE

A. UL Listing and Labeling: Items provided under this Section shall be listed and labeled by UL.

B. National Electrical Code Compliance: Components and installation shall comply with NFPA 70 "National Electrical Code".

C. NEMA Compliance: Comply with NEMA Standard 250, "Enclosures for Electrical Equipment (1000 Volts Maximum)".

1.06 PROJECT CONDITIONS

A. Verify that field measurements are as shown on Drawings.

B. Verify exact locations of all outlet boxes prior to rough-in. Pay particular attention to walls on which both outlet boxes for receptacles and finned tube radiation are located; cooperate with Division 23.

C. Electrical boxes are shown on Drawings in approximate locations unless dimensioned. Install at location required for box to serve intended purpose.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Cabinets:
   Electric Panelboard, Inc.
   Erikson Electrical Equipment Co.
   Hoffman Enclosures, Inc.
   Parker Electrical Mfg. Co.
   Spring City Electrical Mfg. Co.
   Square D Co.
2. Boxes and Fittings:
   Adalet-PLM.
   Cooper Industries, Inc.
   Killard Electric Mfg. Co.
   O-Z/Gedney.
   Robroy Industries, Inc.
   Raco
   Spring City Electrical Mfg. Co.
   Thomas & Betts
   Woodhead Industries, Inc.

2.02 OUTLET, JUNCTION AND PULL BOXES

A. Galvanized Steel Outlet Boxes: Standard galvanized steel boxes and device covers as manufactured by Appleton Electric Co., Electrical Products Div., Midland-Ross (Steel City), or Raco Inc.

B. Galvanized Steel Junction and Pull Boxes: Code gauge, galvanized steel screw cover boxes as manufactured by Gray Metal Products Inc., Hoffman Enclosures, Inc., Keystone Columbia Inc., or Queen Products Co. Inc.

C. Threaded Type Boxes:
   1. Outlet Boxes:
      a. Zinc Electroplate: Zinc electroplate malleable iron or cast iron alloy boxes as produced by Appleton Electric Co., Crouse-Hinds Co., or O-Z/Gedney Co., with zinc electroplate steel covers to suit application.
      b. Hot Dipped Galvanized: Hot dipped galvanized malleable iron or cast iron alloy boxes as produced by Crouse-Hinds Co., or O-Z/Gedney Co., with stainless steel cover screws, and hot dipped malleable iron covers gasketed or ungasketed to suit application.
   2. Junction And Pull Boxes:
      a. Cast Iron/Zinc Electroplate: Zinc electroplate cast iron boxes as produced by Appleton Electric Co., Crouse-Hinds Co., or O-Z/Gedney Co., with zinc electroplate steel or cast iron cover.
      b. Cast Iron/Hot Dipped Galvanized: Hot dipped galvanized cast iron boxes as produced by Crouse-Hinds Co., or O-Z/Gedney Co., with stainless steel cover screws and hot dipped cast iron cover gasketed or ungasketed to suit application.
      c. Provide gasketed cover by box manufacturer. Provide threaded hubs.
      d. All units located outdoors at grade shall be flush mounted, 12” square by 12” deep, and set in concrete measuring 24” square by 24” deep.

D. Specific Purpose Outlet Boxes: As fabricated by manufacturers for mounting their equipment.

E. Finishing Collar or Combination Finishing Collar/Outlet Box (Surface Mounted Equipment Used With Exposed Raceway):
   1. Finishing Collar: Same finish and peripheral dimensions as the equipment base, including provisions for mounting, slots to fit over raceway and of depth to cover outlet box and extend back to ceiling or wall.
   2. Combination Finishing Collar/Outlet Box: Same finish and peripheral dimensions as the equipment base, gauge or thickness of metal as required by National Electrical Code, including provisions for mounting, and knockouts or threaded bosses for entrance of raceway.

2.03 CABINETS

A. All cabinets shall comply with UL50, “Electrical Cabinets and Boxes”.

PART 3 EXECUTION

3.01 PREPARATION

A. Before proceeding with the installation of junction boxes and pull boxes, check the locations with the Architect and have same approved.

3.02 INSTALLATION

A. Install electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.

B. Mounting Position of Wall Outlets For Wiring Devices: Unless otherwise indicated, install boxes so that the long axis of each wiring device will be vertical.

C. Align adjacent wall-mounted outlet boxes for switches, thermostats, and similar devices with each other.

D. Use flush mounting outlet boxes in finished areas.

E. Do not install flush mounting boxes back-to-back in walls; provide minimum 6 inch separation. Provide minimum 24” separation in acoustic rated walls.

F. Outlet boxes for receptacles and communications outlets located on same wall as finned tube radiation shall be mounted horizontally below fin. Not all of these locations are identified on the drawings; cooperate with the Division 23 to determine areas affected.

G. Height of Wall Outlets: Unless otherwise indicated, locate outlet boxes with the centerline of the device at the following elevations above finished floor:

Wall Mounted Luminaires	6’-6”	unless otherwise noted.
Exit Lights	8’-0”	where ceiling height allows a minimum of 6 inch clearance between ceilings and top of exit light, otherwise mount exit light so that its top is 6 inches below finished ceiling. Adjust height and clearances as required to suit installation over doors.
Switches	4’-0”	unless otherwise noted.
Single and Duplex Receptacles	1’-6”	unless otherwise noted or located on same wall as finned tube radiation. If so, mount horizontally below fin.
Multi Outlet Strips		As indicated on drawings.
Communications Outlets	1’-6”	unless otherwise noted or location on same wall as finned tube radiation
Telephone Outlets	1’-6”	unless otherwise noted or location on same wall as finned tube radiation.
Telephone Outlets (Wall Mounted Phones)	4’-0”	
Computer Outlets	1’-6”	unless otherwise noted or location on same wall as finned tube radiation.
Fiber Optics Outlets	1’-6”	unless otherwise noted or location on same wall as finned tube radiation.
Television Outlets	1’-6“	unless otherwise noted or location on same wall as finned tube radiation.
Clocks	7’-6”	unless otherwise noted.
Manual Fire Alarm Stations	4’-0”	
Alarm Indicating Appliances (Bells, horns, or chimes)	not less than 7’- 6”	to top of appliance, where the ceiling height allows a minimum of 6 inches clearance between ceiling and top of appliance, whichever is lower. Refer to NFPA 72.
Strobes	6’-8”	to bottom of strobe lens and no greater than 8’- 0” above finished floor to top of strobe lens. Refer to NFPA 72.
Emergency Power-Off Pushbutton	4’-0”	
Boiler Shutdown Switch	4’-0”	

H. Use gang box where more than one device is mounted together. Do not use sectional box.

I. Use gang box with plaster ring for single device outlets.

J. Supplementary Junction and Pull Boxes: In addition to junction and pull boxes indicated on the Drawings and required by the NEC, provide supplementary junction and pull boxes as follows:
   1. When required to facilitate installation of wiring.
   2. At every third 90 degree turn in conjunction with raceway sizes over 1 inch.
   3. At intervals not exceeding 100 feet in conjunction with raceway sizes over 1 inch.
   4. To preserve fire resistance rating of partitions and other elements, using materials and methods under the provisions of Division 1 Specification Sections.

3.03 OUTLET, JUNCTION, AND PULL BOX SCHEDULE

A. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.

B. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.

C. Boxes For Concealed Conduit System:
   1. Depth: To suit job conditions and also comply with Article 314 of the National Electrical Code.
   2. For luminaires and ceiling mounted boxes:
      a. Use 4 inch octagon or square galvanized steel outlet boxes.
      b. Use adjustable steel channel fasteners for hung ceiling outlet box.
      c. Do not fasten boxes to ceiling support wires.
      d. Support boxes independently of conduit, except cast box that is connected to two rigid steel conduits both supported within 12” of box.
   3. For Junction and Pull Boxes: Use galvanized steel boxes with flush covers.
   4. For Switches, Receptacles, Etc:
      a. Plaster or Cast-In-Place Concrete Walls: Use 4” or 4-11/16” galvanized steel boxes with device covers.
      b. Walls Other Than Plaster or Cast-In-Place Concrete: Use type of galvanized steel box which will allow wall plate to cover the opening made for the installation of the box.
      c. Minimum size of outlet boxes for ground fault interrupter (GFI) receptacles shall be 4 inches square x 2-1/8 inches deep, with device covers for the wall material and thickness involved.
      d. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
      e. Use stamped steel bridges to fasten flush mounting outlet box between studs.
      f. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
   5. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
   6. Cooperate with others for the mounting heights and locations of outlets mounted above counters, benches and backsplashes.
   7. Outlet boxes for receptacles and various communications outlets located on same wall as finned tube radiation shall be mounted horizontally below fin. Cooperate with Division 23 to determine areas affected; not all locations are identified on the drawings.
   8. Boxes in noncombustible walls or ceilings shall be so installed that the front edge will not set back more than 1/4 inch from the finished surface; in combustible walls or ceilings, boxes shall be flush. Provide all extension rings, device covers, etc. as required to accomplish this per NEC Article 314.20.

9. Repair all plaster, drywall or plasterboard around edges of box to be in compliance with NEC Article 314.21.

D. Boxes For Exposed Conduit System:
   1. General:
      a. Use zinc electroplate or hot dipped galvanized steel malleable iron or cast iron alloy outlet, junction, and pull boxes in conjunction with ferrous raceways in dry and damp locations unless otherwise specified or indicated on the Drawings.
      b. Use hot dipped galvanized malleable iron or cast iron alloy outlet boxes in conjunction with ferrous raceways in wet locations unless otherwise specified or indicated on the Drawings.
      c. Use hot dipped galvanized cast iron junction and pull boxes in conjunction with ferrous raceways in wet locations unless otherwise specified or indicated on the Drawings.
   2. Conduit Sizes ¾" and 1": Use threaded type boxes.
   3. Conduit Sizes Over 1" (Wet Locations): Use threaded type boxes.
   4. Conduit Sizes Over 1" (Dry Locations and Damp Locations): Use galvanized steel boxes.
   5. Finishing Collar or Combination Finishing Collar/Outlet Box (Surface Mounted Equipment Used With Exposed Raceway):
      a. Use finishing collar where surface mounted equipment is installed on an exposed raceway outlet box and the equipment base is larger than the outlet box.
      b. Use combination finishing collar/outlet box where surface mounted equipment is not indicated to be installed on an exposed raceway outlet box, but raceway cannot be run directly into equipment body due to equipment design.

E. Specific Purpose Outlet Boxes:
   1. Use to mount equipment when available and suitable for job conditions.
   2. Unless otherwise specified, use threaded type boxes for exposed conduit system, steel (painted) for surface metal raceway system and galvanized steel for recessed installations.
   3. Fire alarm system outlet boxes located in unfinished areas, whether exposed or concealed, shall be painted red.

F. Large Pull Boxes: Boxes larger than 100 cubic inches in volume or 12" in any dimension.
   1. Interior Dry Locations: Use hinged metal cabinets and enclosures.
   2. Other Locations: Use surface mounted cast metal box.

G. Outdoor Grade Mounted Junction and Pullboxes: Set cast boxes in concrete bases flush with finished grade.

3.04 INSTALLATION OF CABINETS AND HINGED DOOR ENCLOSURES

A. Mount with fronts straight and plumb.

B. Set cabinets in finished spaces flush with walls.

3.05 ADJUSTING

A. Adjust flush mounting outlets to make front flush with finished wall material.

B. Install knockout closure in unused box opening.

3.06 GROUNDING

A. Electrically ground all outlet boxes, junction boxes, pull boxes, metallic cabinets, and enclosures. Where wiring to item includes a grounding conductor, provide a grounding terminal in the interior of the cabinet, box or enclosure.

3.07 CLEANING AND FINISH REPAIR

A. Upon completion of installation, inspect components. Remove burrs, dirt, and construction debris and repair damaged finish including chips, scratches, abrasions and weld marks.

B. Galvanized Finish: Repair damage using a zinc-rich paint recommended by the manufacturer.

C. Painted Finish: Repair damage using matching corrosion inhibiting touch-up coating.

END OF SECTION

SECTION 262726
WIRING DEVICES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. The following Division 26 Sections must be coordinated and included in the project.
   1. Section 26 09 23, AUTOMATIC CONTROLS.

1.02 SUMMARY

A. This Section includes the following:
   1. Wall Switches.
   2. Lighting Control Wall Stations for LED Luminaires:
   3. Receptacles.
   4. Special Purpose Receptacles.
   5. Wall Plates.
   6. Flush Floor Boxes.

B. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.03 REFERENCES

A. Standards referenced in the text of this Section are listed below according to source, designation, and publication title. Revision of standards occur periodically and may happen before this Section is updated in the future. Where sources of publications are identified below by name only, including acronym or abbreviation, refer to Division 1 Section "Definitions and Standards."
   1. Underwriters Laboratories Inc. (UL):

UL 20	General-Use Snap Switches.
UL 486A	Wire Connectors and Soldering Lugs for Use with Copper Conductors.
UL 498	Electrical Attachment Plugs and Receptacles.
UL 943	Ground-Fault Circuit Interrupters.

   2. National Electrical Manufacturers Association (NEMA):

Std Pub/No. PR 2	Enclosures for Plugs, Receptacles and Connectors of the Pin and Sleeve Type.
Std Pub/No. PR 3	Guide to Pin and Sleeve Plugs, Receptacles, and Connectors.
Std Pub/No. WD 1	General-Purpose Wiring Devices.
Std Pub/No. WD 6	Wiring Device Configurations.

   3. Americans with Disabilities Act Accessibility Guidelines for Building and Facilities (ADAAG).

1.04 SUBMITTALS

A. Provide product data for each type device specified, with manufacturer's catalog information showing dimensions, colors, and configurations. Provide in bound brochure.

B. Include samples of each product if different from manufacturer or catalog number specified.

1.05 QUALITY ASSURANCE

A. Regulating Requirements: Comply with provisions of NFPA 70 "National Electrical Code." Provide wiring devices which are listed and labeled by UL and comply with applicable UL and NEMA standards.

1.06 SEQUENCE AND SCHEDULING

A. Schedule installation of wall plates after the surface upon which they are installed has received final finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, provide products by one of the following:
   1. Hubbell Incorporated (Design Make).
   2. Pass & Seymour/Legrand.
   3. Eaton/Arrow Hart and Eaton/Crouse-Hinds.
   4. Appleton Electric.
   5. Automatic Switch Co.

B. Wiring devices manufactured by Bryant Electric are not equal to the specified devices herein, and will not be accepted.

2.02 WIRING DEVICES

A. General: Provide wiring devices, in types, characteristics, grades, colors, and electrical ratings for applications indicated which are UL listed and which comply with NEMA WD 1 and other applicable UL and NEMA standards.
   1. Provide ivory color devices except as specifically indicated. Adjust manufacturer's catalog designations accordingly.
   2. Use red colored toggle switches and receptacles for emergency powered circuits.
   3. Use red toggle switches for emergency powered lighting circuits.

B. Wall Switches:
   1. General: Provide industrial, extra heavy-duty specification grade device with copper alloy contact arm, heavy duty bumper pads for quiet, smooth operation, high strength thermoplastic polycarbonate toggle, and silver alloy contacts.
   2. Local Switches, Single Pole: Ivory toggle, 20 ampere, 120/277 VAC; Hubbell's HBL1221 series, Pass & Seymour's PS20AC1 series or Eaton/Arrow Hart's AH1221 series.
   3. Local Switches, Three-Way: Ivory toggle, 20 ampere, 120/277 VAC; Hubbell's HBL1223 series, Pass & Seymour's PS20AC3 series or Eaton/Arrow Hart's AH1223 series.
   4. Local Switches, Four-Way: Ivory toggle, 20 ampere, 120/277 VAC; Hubbell's HBL1224 series, Pass & Seymour's PS20AC4 series or Eaton/Arrow Hart's AH1224 series.
   5. Lighted Toggle Switches: Clear polycarbonate toggle lighted in OFF position, 20 ampere, 120 VAC, single pole or three-way; Hubbell's HBL1221IL series, Pass & Seymour's PS20AC1CSL series, or Eaton/Arrow Hart's AH1221LT series.
   6. Pilot Light Switches: Clear polycarbonate toggle lighted in ON position, 20 ampere, 120 VAC, single pole or three way: Hubbell's HBL1221PLC series, Pass & Seymour's PS20AC1CPL series, or Eaton/Arrow Hart's AH1221PL series.

C. Lighting Control Wall Stations for LED Luminaires:
   1. Refer to Section 26 09 23 AUTOMATIC LIGHTING CONTROLS for details on digital lighting controls.

D. Dimmer Switches:
   1. LED type, as recommended by the LED source and dimming control manufacturer, NEMA SSL-7A compliant. Provide a phase-control type as recommended by the LED source manufacturer and derate the capacity of the dimmer.

E. Receptacles:
1. General: Provide extra heavy-duty, specification grade devices with nylon face, back and side wired, .036” thick brass, triple-wipe power contacts
2. Specification Grade Duplex Receptacles: Ivory color, duplex receptacle, NEMA 5-20R (20 ampere, 125 VAC, 2P, 3W); Hubbell’s HBL 5352 series, Pass & Seymour's 5362A series, or Eaton/Arrow Hart’s AH5362 series.
3. Specification Grade Single Receptacles: Ivory color, single receptacle, NEMA 5-20R (20 ampere, 125 VAC, 2P, 3W); Hubbell’s HBL5361 series, Pass & Seymour’s 5361 series, Eaton/Arrow Hart’s AH5361 series.
4. Ground Fault Interrupter Receptacles, Self-Testing with Trip Indicator light, UL 943 Compliant: Ivory color, duplex receptacle rated 20 ampere (NEMA 5-20R), circuit-ampacity 20 ampere; Hubbell's GF20 series, Pass & Seymour's 2097 series, or Eaton/Arrow Hart’s SGF20 series.
5. Tamper Resistant, Type “T”: NEMA 5-20R (20 ampere, 125 VAC, 3P, 3W), ivory color, specification grade tamper resistant grounding type; Hubbell’s BR20 series, Pass & Seymour's TR63 series, Eaton/Arrow Hart’s AHTR5362 series.
6. Special purpose receptacles.
a. Tele/Data Twist-lock Outlet, Type "A": Industrial NEMA L14-30R (30 ampere grounding type, 125/250 VAC, 3P, 4W), black color, Hubbell's HBL2710 series, Pass & Seymour's L1430R series, or Eaton/Arrow Hart’s AHL1430R series.
b. Range Outlet, Type "B": NEMA 14-50R (50 ampere grounding type, 125/250 VAC, 3P, 4W), black color, Hubbell’s HBL9450A series, Pass & Seymour's 3894 series, or Eaton/Arrow Hart’s 5754N series.
c. Dryer Outlet, Type "D": NEMA 14-30R (30 ampere grounding type, 125/250 VAC, 3P, 4W), black color, Hubbell's HBL9430A series, Pass & Seymour's 3864 series, or Eaton/Arrow Hart’s 5744N series.
d. TVSS Surge Suppression, Type "SP": NEMA 5-20R (20 ampere, 125 VAC, 3P, 3W), Ivory color, duplex receptacle, surge suppression type with audible alarm and LED indicator, metal oxide varister to dissipate the electrical energy of voltage spikes, minimum 240 joules/15000A per mode, complying with UL 1449 and all ANSI/IEEE 62.41 and CSA standards; Hubbell's HBL5362 series, Pass & Seymour 5362ISP series, Eaton/Arrow Hart’s 5362VS series.
e. As produced by Hubbell, Pass & Seymour or Eaton/Arrow Hart. NEMA configuration and ratings to suit requirements.

2.03 WALL PLATES

A. General: Single and combination, of types, sizes, and with ganging and cutouts as indicated. Provide plates which mate and match with wiring devices to which attached. Provide metal screws for securing plates to devices with screw heads colored to match finish of plates. Provide wall plates with engraved legend where indicated.

B. Public & Maintenance area wall plates: Type 302 stainless steel with satin, smooth finish; Eaton/Arrow Hart’s 93071 Series, Hubbell's S Series, or Pass & Seymour's Sierra Series. Provide a single, multi-gang plate for multiple devices at one location.

C. Office area wall plates: Special high impact resistant, self-extinguishing reinforced nylon Hospital grade plates, fabricated for devices shown. Provide color to match devices. Hubbell’s series, Pass & Seymour’s TP series, Eaton/Arrow Hart’s PJ series.

D. Provide a single, multi-gang plate for multiple devices at one location; no exceptions. If non-standard construction, provide custom order plates as required.

E. Weatherproof Covers: NEMA 3R gasketed gray UV-stabilized polycarbonate hinged device cover, 5" wide x 4-1/4" high x 3-1/2" deep; Intermatic WP1010H series with insert for use with GFI type receptacle, Eaton/Arrow Hart's WIU-1HX series or accepted equal.

F. For surface mounted devices in Mechanical Rooms, Electric Rooms, Boiler Rooms, etc., provide utility covers, unless device is flush mounted.

PART 3 EXECUTION

3.01 GENERAL

A. Install wiring devices and accessories as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC and in accordance with recognized industry practices to fulfill project requirements.

B. Cooperate with other Work, including painting, electrical boxes and wiring installations, as necessary to interface installation of wiring devices with other Work.

C. Install wiring devices only in electrical boxes that are clean; free from building materials, dirt and debris.

D. Install galvanized steel wall plates in unfinished spaces.

E. Install wiring devices after wiring Work is completed.

F. Install wall plates after painting Work is completed.

G. Tighten connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values for wiring devices. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Standard 486A. Use properly scaled torque indicating hand tool.

H. Install a ground fault interrupter (GFI) receptacle at every location shown on the Drawings, feed thru wiring, (series feeding downstream standard receptacles from a GFI receptacle) is not permitted.

I. Switch control shall be provided for each room. Multiple switch controls (minimum of 2) in all rooms larger than 500 square feet shall be provided, whether indicated on the Drawings or not, so that general lighting may be reduced by at least one-half throughout the room.

J. Rooms not intended for 24-hour continuous use shall be provided with automatic controls capable of limiting the hours of lighting use to the occupancy of the room. Refer to Section 26 09 23, Automatic Lighting Controls.

3.02 EXAMINATION

A. Verify outlet boxes are installed at specified heights.

B. Verify wall openings are neatly cut and will be completely covered by wall plates.

C. Verify branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

3.03 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

B. Clean debris from outlet boxes.

3.04 PROTECTION

A. Protect installed components from damage. Replace damaged items prior to date of substantial completion.

3.05 INSTALLATION

A. Install Products in accordance with manufacturer's instructions.

B. Install wiring devices in outlet boxes.

C. Install devices plumb and level.

D. Local Switches:
1. Install local switches rated 20 amperes, 120/277 VAC for switches unless otherwise shown on the Drawings or specified.
2. Where more than one switch occurs at the same location and are connected to same voltage, arrange switches in gangs and cover with one-piece faceplate.
3. Install single pole switches so that switch handle is up when switch is in the "On" position.
4. Locate switch on strike side of doorways.
5. Mount switches with centerline of box at 48" above floor as a basic condition, unless noted otherwise.
6. The location of any switch may be changed a distance not to exceed six (6) feet from Drawing location, before Work is actually in, at no additional cost to the Owner.
7. Use lighted toggle switches in mechanical rooms and crawlspaces.
8. Use pilot light switches where indicated on drawings.

E. Receptacles:
1. Install Specification Grade receptacles, NEMA 5-20R, 20 amperes, 125V, 2P, 3W, for duplex receptacles and single receptacles throughout, unless otherwise shown on the Drawings or specified.
2. Install receptacles with ground pole on top.
3. Connect wiring device grounding terminal to branch circuit equipment grounding conductor.
4. In those areas where vertical space is not available, such as under fin radiation, cabinets, and above back splash, mount horizontally with ground slot to the left.
5. Mount receptacles as indicated in Section 262716, unless noted otherwise.
6. Provide ground fault interrupter receptacles where shown on the Drawings and required by NEC.
7. All special receptacles shall be grounding types, installed with separate green ground wire.

F. Weatherproof Devices (WP):
1. All weatherproof receptacles shall be GFI.
2. Device covers shall permit receptacle to be protected in outdoor or other wet location with the cord set plugged in.
3. Mount receptacles with centerline of box at 18" above grade, unless noted otherwise.
4. Provide necessary gaskets and caulking to make installation suitable for damp and wet locations.

G. Wall Plates:
   1. Install wall plates on all wiring devices in dry locations, with finish as specified.
   2. Install blank wall plates on outlet boxes that are for future equipment.
   3. Coverplates for telephone and communications outlets shall match device plates in each area.
   4. Install special wall plates as needed for telephone and computer outlets, to match finish of other device plates.
   5. For devices on emergency circuits, provide hospital grade nylon faceplates, red color.
   6. Where flush plates are required over outlet boxes that cannot be set deep enough for the plates to fit closely over the finished wall surfaces, provide oak mats to fill the space between the finished wall surface and the plate.

3.07 ADJUSTING

A. Adjust devices and wall plates to be flush and level.

3.08 FIELD QUALITY CONTROL

A. Inspect each wiring device for defects.

B. Operate each wall switch with circuit energized and verify proper operation.

C. Verify that each receptacle device is energized.

D. Testing: Prior to energizing circuits, test wiring for electrical continuity, and for short-circuits. Ensure proper polarity of connections is maintained. Subsequent to energizing, test wiring devices and demonstrate compliance with requirements, operating each operable device at least six times. Use a Hubbell #5200 outlet testing unit.

E. Test ground fault interrupter operation with both local and remote fault simulations in accordance with manufacturer recommendations. Unit shall trip in the range of 4-6 milliamperes as prescribed by Underwriters' Laboratories, Inc., use a Hubbell #GFT-2G GFI testing unit.

F. Replace all devices that fail testing.

G. Submit test report for review, listing testing procedure, equipment and model number used and deficiencies corrected for each test procedure.

END OF SECTION

SECTION 262813
FUSES

PART 1 GENERAL

1.01 SUMMARY

A. Extent of fuse Work required by this Section is indicated by Drawings, and by the requirements of this Section.

1.02 SUBMITTALS

A. Submit manufacturer's technical product data on fuses, including specifications, electrical characteristics, installation instructions, furnished specialties and accessories. Include voltages and current ratings, interrupting ratings, current limitation ratings, time- current trip characteristic curves and mounting requirements.

1.03 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of fuses of types and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Codes and Standards:
   1. UL Compliance and Labeling: Provide overcurrent protective devices which are UL-listed and labeled.
   2. NEC Compliance: Comply with NEC as applicable to construction and installation of fusible devices.
   3. ANSI Compliance: Comply with applicable requirements of ANSI C97.1 "Low-Voltage Cartridge Fuses 600 Volts or Less."

1.04 SPARE MATERIALS

A. For types and ratings required, furnish additional fuses, amounting to one unit for every five installed units, but not less than one set of three of each kind. Obtain signed receipt from Owner.

B. Provide special tools, if required, for installation or removal of fuses.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, provide fuses of one of the following:
   1. Bussman Div.; Cooper Industries Inc.
   2. Ferraz Shawmut Inc.
   3. Littelfuse, Inc.; Tracor, Inc.
   4. Or accepted equal.

2.02 FUSEHOLDERS

A. Equipment provided shall be furnished with fuseholders to accommodate the specified fuses.

2.03 FUSES RATED 600 VOLTS OR LESS

A. Fuses for Safety Switches:
   1. Cartridge type (250 volts): Single element, U.L. Class RK-1, 200,000 amperes R.M.S. Symmetrical interrupting capacity:
      a. Cooper Industries Inc.'s/Bussman Div., Type KTN-R.
      b. Ferraz Shawmut , Type A2K-R.
      c. Littelfuse, Inc.'s, Type KLN-R

2. Cartridge Type (600 volts): Single element, time-delay, U.L. Class RK-1, 200,000 amperes R.M.S. symmetrical interrupting capacity:
   a. Cooper Industries Inc.'s/Bussman Div., Type KTS-R.
   b. Ferraz Shawmut, Type A6K-R.
   c. Littelfuse, Inc.'s, Type KLS-R.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions under which fuses are to be installed, and notify in writing on conditions detrimental to proper completion of the Work.

3.02 INSTALLATION OF FUSES

A. Install fuses as indicated, in accordance with manufacturer's written instructions and with recognized industry practices to ensure that protective devices comply with requirements. Comply with NEC and NEMA standards for installation of fuses.

B. Cooperate with other trades and Work, including electrical wiring, motor controllers, as necessary, to interface installation of fuses.

C. Install fuses in fused switches, respective equipment, etc.

3.03 FIELD QUALITY CONTROL

A. Prior to energization of fusible devices, test devices for continuity of circuitry and for short circuits. Replace malfunctioning units with new units, and then demonstrate compliance with requirements.

END OF SECTION

SECTION 262816
SAFETY SWITCHES

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes general construction criteria required for Safety Switches (under 600 Volts) and Elevator Power Modules. The extent, location and details are indicated on the Drawings and in schedules.

B. Provide all safety switches with trims, back boxes, fusing and grounding as required. Cooperate with the other divisions of Work, such as HVAC and Plumbing.

1.02 REFERENCES

A. National Fire Protection Association (NFPA):

No. 70	National Electrical Code

B. Underwriters Laboratories, Inc. (UL):

UL 198C	High Intensity Capacity Fuses; Current Limiting Types.
UL 198E	Class R Fuses

C. National Electrical Manufacturers Association (NEMA):

NEMA, KS 1	Enclosed Switches

D. Federal Specifications:

FS W-S-865	Switch, Box, (Enclosed), Surface Mounted.
FS W-S-870	Fuseholders (For Plug and Enclosed Cartridge Fuses).

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions on each safety switch.

B. Shop Drawings: Include the following for each:
1. Cabinet size.
2. Voltage and Current Rating.
3. Safety switch short circuit rating.
4. Accessories.

C. Maintenance Data: Submit maintenance data and parts list for each safety switch and accessory; including "trouble-shooting" maintenance guide. Include that data, product data, and shop drawings in a maintenance manual.

1.04 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of equipment of sizes, types and rating required, whose products have been in satisfactory use in similar service for not less than 10 years.

B. Installer's Qualifications: Firms with at least five completed installations of similar scope.

C. Codes and Standards: As indicated in Article 1.02.

D. Minor Changes: Minor changes and modifications of ampere rating, lug sizes, fuse sizes, etc., within the confines of standard catalog ratings, if required by the Engineer before or during the submittal review, shall be provided by Division 26 without any change in Contract sum.

E. Unless otherwise noted, all equipment covered under this Section of the Specifications shall be of the same make.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver equipment in factory-fabricated containers or wrappings, which properly protect equipment from damage.

B. Store equipment in original packaging. Store inside well ventilated area protected from weather, moisture, soiling, extreme temperatures, humidity; laid flat and blocked off ground.

C. Handle equipment carefully to prevent damage, breaking, and scoring of finishes. Do not install damaged units or components; replace with new.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, provide safety switch products of one of the following:
   1. Siemens Energy & Automation, Inc.
   2. General Electric Company
   3. Eaton Corporation Cutler-Hammer
   4. Square D Schneider Electric

2.02 SAFETY SWITCH, SINGLE THROW

A. NEMA 1, 3R, 4 (Stainless Steel), 12:
   1. Quick-make, quick-break mechanism.
   2. Fused unless otherwise indicated on the Drawings.
   3. Fused switches equipped with fuseholders to accept UL Class RK-1 fuses.
   4. Use NEMA 1 enclosure for indoor use, NEMA 3R for damp areas and outdoors, NEMA 4 for spray areas, sump pits, crawl spaces, etc., unless otherwise indicated on the Drawings.
   5. 240 volt rating for 120, 208 or 240 volt applications.
   6. Provide insulated, solid neutral bar when neutral conductor is required in the circuit.
   7. Provide copper ground lugs.
   8. Current rating, number of poles as indicated on the Drawings.
   9. Heavy Duty
   10. Lockable in the "OFF" position.
   11. Provide interlock kit with 1 N.O./1 N.C. contact which operates from the switch mechanism.

B. NEMA 4X:
   1. Quick-make, quick-break mechanism.
   2. Fused unless otherwise indicated on the Drawings.
   3. Fused switches equipped with fuseholders to accept UL Class RK-1 fuses.
   4. Stainless steel NEMA 4X enclosure.
   5. 240 volt rating for 120, 208 or 240 volt applications.
   6. Provide insulated, solid neutral bar when neutral conductor is required in the circuit.
   7. Provide copper ground bus.
   8. Current rating, number of poles as indicated on the Drawings.
   9. Heavy Duty
   10. Lockable in the "OFF" position.

2.03 ELEVATOR POWER MODULE

A. Heavy duty, fusible, 600 volt, 3-phase rated power switch with 120 volt shunt-trip capabilities housed in a NEMA 1 enclosure, with ampere rating as indicated on Drawings. Assembly short circuit current rating of 200 kA RMS. Provide with fuses, sized as indicated on Drawings.

B. Single pole normally closed mechanical interlock auxiliary contacts wired complete to battery lowering system of hydraulic elevator controller to disconnect batteries when power module switch is opened.

C. Equip with key to test switch and green “ON” pilot light.

D. Fire alarm voltage monitoring relay to monitor shunt trip voltage, wired complete to fire alarm system via monitor modules.

E. Control power transformer with fuses and terminal blocks.

F. Provide unit for fire safety interface relay, wired to fire alarm control panel (24 VDC) for operation of shunt trip device.

G. Make: Cooper Bussmann Power Module Switch, Littelfuse LPS Series Power-Switch, Eaton Corporation Elevator Control ES Switch.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions under which safety switches are to be installed and supported. Notify in writing of conditions detrimental to proper completion of the Work. Do not proceed with Work until unsatisfactory conditions have been corrected in manner acceptable to the Owner.

3.02 INSTALLATION

A. Provide safety switch for every motor requiring same, per NEC 430-12. Apply switches in each code required location to meet NEC and as called for.

B. Provide an elevator power module for all elevator disconnect applications; no exceptions.

C. The elevator power module and/or disconnect shall be installed within sight of the corresponding driving machine, control panel and motor generator set per ASME A17.3.

D. Provide all miscellaneous bolts, nuts, washers, etc. made of rust resistant material.

E. Mount safety switches and elevator power modules at a maximum of 6'-6" to the centerline of the operating handle of the device.

F. Touch-up all scratches.

G. Where there is more than one driving machine in a machine room, disconnect switches or circuit breakers shall be numbered to correspond to the number of the driving machine that they control.

H. Provide engraved identification nameplate for all equipment with designation of equipment served, what panel fed from, size of conductors, voltage, etc
   1. For NEMA 1 enclosures, rivet or bolt nameplate to the cover.
   2. For NEMA 12 enclosures, rivet or bolt and gasket nameplate to the cover.

3. For NEMA 3R, 4 and 4X enclosures, attach nameplate to the cover using adhesive specifically designed for the purpose, or mount nameplate on wall or other conspicuous location adjacent to switch. Do not penetrate enclosure with fasteners.

I. Install fuses in fusible type safety switches.

END OF SECTION

SECTION 262913
MOTOR CONTROLLERS

PART 1 GENERAL

1.01 SUMMARY

A. Extent of motor controller work is indicated by Drawings and Schedules.

B. Types of motor controllers specified in this Section include the following:
   1. Non-Magnetic Starters.
   2. Magnetic Starters.
   3. Combination Magnetic Starters.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's data and installation instructions on motor controllers.

B. Shop Drawings: Submit shop drawings of motor controllers, including power and control wiring diagrams which differentiate between portions of wiring which are factory-installed and those which are field-installed.

C. Identify each controller for use with corresponding motor.

D. Describe overload devices being supplied with each motor controller (include equipment manufacturer's recommendations).

1.03 QUALITY ASSURANCE

A. Manufacturers: Firms regularly engaged in manufacture of motor controllers of types, sizes, and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installer's Qualifications: Firms with at least five successfully completed projects of similar scope.

C. Codes and Standards:
   1. Electrical Code Compliance: Comply with applicable local electrical code requirements of the authority having jurisdiction and NEC Articles 220, 250, and 430, as applicable to installation, and construction of motor controllers.
   2. NFPA Compliance: Comply with applicable requirements of NFPA 70E, "Standard for Electrical Safety Requirements for Employee Workplaces."
   3. NEMA Compliance: Comply with applicable requirements of NEMA Standard ICS 2, "Industrial Control Devices, Controllers and Assemblies", and Pub No, 250, "Enclosures for Electrical Equipment (1000 Volts Maximum)", pertaining to motor controllers and enclosures.
   4. UL Compliance: Comply with applicable requirements of UL 486A and B, and UL 508, pertaining to installation of motor controllers. Provide controllers and components which are UL-listed and labeled.
   5. IEEE Compliance: Comply with recommended practices contained in IEEE Standard 241, "Recommended Practice for Electric Power Systems in Commercial Buildings," pertaining to motor controllers.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver motor controllers and components properly packaged in factory-fabricated type containers.

B. Store motor controllers and components in original packaging and in a clean dry space; protect from weather and construction traffic.

C. Handle motor controllers and components carefully to avoid breakages, impacts, denting and scoring finishes. Do not install damaged equipment; replace and return damaged units to equipment manufacturer.

1.05 MAINTENANCE

A. Protect motor controller installation work to minimize possibility of damage and soiling during remainder of construction period.

B. Maintenance Data: Submit maintenance data and parts list for each motor controller and component; including "trouble shooting" maintenance guide. Include that data, product data and shop drawings in a maintenance manual.

C. Maintenance Stock, Fuses: For types and ratings required, furnish additional fuses, amounting to one unit for every five installed units, but not less than 3 units of each.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, provide motor controllers of one of the following (for each type and rating of motor controller):
Siemens Energy and Automation, Inc. (Design Make)
Eaton Corporation Cutler-Hammer
General Electric Company
Square D Schneider Electric

2.02 MOTOR CONTROLLERS

A. General:
1. Except as otherwise indicated, provide motor controllers and ancillary components which comply with manufacturer's standard materials, design and construction in accordance with published product information, and as required for a complete installation.
2. For each controller subject to electrical interlock or automatic control, provide all necessary auxiliary contacts.

B. Minimum Size: The minimum allowable size of single-phase magnetic motor controllers is NEMA size 0.

C. Voltage Rating: To suit system voltage.
1. For single phase motor controllers which are not produced to suit the system voltage, furnish properly rated 3 phase motor controllers and utilize required number of poles for the single-phase circuit.

D. Enclosures:
1. Material: Steel construction unless otherwise indicated.
2. Type A and A1 Controllers shall be flush mounted in finished spaces unless otherwise noted. Furnish stainless steel faceplates and galvanized steel recessed mounting boxes.

E. Control Power: For motors operating at 208 or 480 volts, line-to-line, equip controller with fused secondary control transformer (maximum control voltage 120 volts), mounted within each enclosure.

F. Local Control Devices:
1. Magnetic Motor Controllers: Equip controllers with pushbuttons or 3 position hand-off-auto selector switch mounted in the enclosure cover.
a. For NEMA 1 enclosures furnish standard duty devices.

b. For other NEMA enclosures furnish heavy duty devices to suit the requirements of NEMA enclosure.

G. Pilot Lights:
1. Non-Magnetic Motor Controllers: Where indicated, furnish pilot lights (neon) mounted in the enclosure cover.
2. Magnetic Motor Controllers: Equip controllers with pilot lights of the neon lamp type or transformer type, mounted in the enclosure cover.

H. Space Heaters: Equip magnetic motor controllers which are installed outdoors and indoors in unheated locations, with space heaters and humidistat to prevent condensation within the housing.

I. Overload Devices: Equip motor controllers with manual reset melting type, or manual reset bi-metallic type standard trip (20 seconds or less at 6 times full load current) overload devices. Exceptions:
1. Equip motor controllers with automatic reset overload devices only where indicated.
2. Equip motor controllers with fast trip (10 seconds or less at 6 times full load current) overload devices when recommended by equipment manufacturer.
3. Equip motor controllers with slow trip (30 seconds or less at 6 times full load current) overload devices when recommended by equipment manufacturer.
4. Equip motor controllers with ambient compensated overload protection where motor and relay are not in the same ambient.
5. Equip motor controllers with solid state overload relays where indicated.

J. Auxiliary Devices: Provide pushbutton stations, pilot lights, time delay under voltage relays or sequenced time delay relays, transformers, selector switches, auxiliary starter contacts, auxiliary relays and other devices as required for function called for. Use maintained contact types for applications affecting critical building functions, where service must be restored automatically. All pilot lights, pushbuttons, etc. shall be heavy duty oil tight.

K. Motor Controller Types:
1. Type A (Full Voltage, Non-Magnetic, Single Phase): Flush mount or general purpose (surface) enclosure, toggle switch, stainless steel wall plate; Siemens Class SMF series, or accepted equal.
2. Type A1 (Full Voltage, Non-Magnetic Single Phase): Similar to type A above, except with red pilot light; Siemens Class SMF series, or accepted equal.
3. Type B (Full Voltage Magnetic): NEMA 1 enclosure with pilot light; Siemens Class SXL series with auxiliary contacts, or accepted equal.
4. Type B1 (Full Voltage, Combination Magnetic): Fusible disconnect switch type, NEMA 1 enclosure, pilot light and HOA in cover; Siemens Class SCF series with auxiliary contacts, or accepted equal.

2.03 NAMEPLATES

A. General: Precision engrave letters and numbers with uniform margins, character size minimum 3/16 inch high.
1. Phenolic: Two color laminated engraver's stock, 1/16-inch minimum thickness, machine engraved to expose inner core color (white).
2. Materials for Outdoor Applications: As recommended by nameplate manufacturer to suit environmental conditions.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions under which motor controllers are to be installed, and notify in writing of conditions detrimental to proper completion of the Work.

3.02 INSTALLATION OF MOTOR CONTROLLERS

A. Install motor controllers where indicated, in accordance with equipment manufacturer's written instructions and with recognized industry practices; complying with applicable requirements of NEC, UL and NEMA standards, to ensure that products fulfill requirements.

B. Use manual starters on all single-phase motors that do not require remote control.

C. Use magnetic starters on three phase motors and single-phase motors requiring remote control.

D. Combination starters may be used where both disconnect switch and starter are required in same location.

E. Tighten connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values for equipment connectors.

F. Install fuses, of sizes indicated or required, in each fusible disconnect of combination starter, if any. Fuse size shall be as recommended by supplier of equipment protected by fuse.

G. Size all overload relays to actual motor nameplate data. Confirm all required overload sizes prior to releasing starters for installation.

H. Wire fire alarm fan shutdown contacts and any other safety contacts in series with starter coil so contactor will open with “hand/off/auto” switch in either “hand” or “auto” position.

I. Identify each motor controller with nameplate securely fastened to enclosure.
   1. NEMA 1 Enclosures: Rivet or bolt nameplate to the cover.
   2. NEMA 3R Enclosures: Attach nameplates to the cover using adhesive specifically designed for the purpose, or mount nameplate on wall or other conspicuous location adjacent to switch. Do not penetrate enclosure with fasteners.

J. Install VFD’s and all corresponding line reactors and/or harmonic filters that are furnished by Division 23.

3.03 MOTOR CONTROLLER SCHEDULE

A. Types of Motor Controllers Required for Single Speed Motors, Unless Indicated Otherwise on Drawings (Systems Under 600 Volts):
   1. Single Phase (115 or 200 VAC, single phase) Applications:
      a. Single Phase Motors Less than 3 HP - Manually Operated: Type A or Type A1.
      b. Single Phase Motors Less Than 3 HP - Automatically Operated: Type B. Exception: Type A or Type A1 may be used for motors less than 1/2 HP when the automatic auxiliary controlling device (thermostat, pressure switch, etc.) is rated for the voltage and current requirements of the motor.
      c. Provide Type B1 controller where energy management system automatic control is a requirement.

2. Three Phase (200 VAC, 3 phase) Applications:
   a. Three Phase Squirrel Cage Motors Less Than 7-1/2 HP - Manually or Automatically Operated: Type B1 (or B when indicated on Drawings).
3. Three Phase (460 VAC, 3 phase) Applications:
   a. Three Phase Squirrel Cage Motors Less Than 15 HP - Manually or Automatically Operated: Type B1 (or B when indicated on Drawings).
   b. Three Phase Hermetically Sealed Compressor Motors Less Than 15 HP - Automatically Operated: Type B.

3.04 REMOTE CONTROL STATION SCHEDULE

A. Use normal duty remote control stations in dry non-hazardous locations. Use heavy-duty remote-control stations in all other locations.

3.05 ENCLOSURE SCHEDULE

A. Unless otherwise indicated on the Drawings and Schedules, provide as follows:
   1. Dry, Indoors — NEMA 1
   2. Damp locations, Outdoors — NEMA 3R (rainproof)

3.06 FIELD QUALITY CONTROL

A. Prior to energization of motor controller equipment, check with ground resistance tester, phase-to-phase and phase-to ground insulation resistance levels to ensure requirements are fulfilled.

B. Prior to energization, check circuitry for electrical continuity, and for short circuits.

C. Ensure that direction of rotation of each motor fulfills requirements.

3.07 GROUNDING

A. Provide equipment grounding connections for motor controller equipment as indicated. Tighten connections to comply with tightening torques specified in UL Standard 486A to assure permanent and effective grounding.

3.08 ADJUSTING AND CLEANING

A. Adjust operating mechanisms, where necessary, for free mechanical movement.

B. Touch up scratched or marred enclosure surfaces to match original finishes.

3.09 DEMONSTRATION

A. Upon completion of installation of motor controller equipment and electrical circuitry, energize controller circuitry and demonstrate functioning of equipment in accordance with requirements. Where possible, correct malfunctioning units at site, then retest to demonstrate compliance; otherwise, remove and replace with new units, and retest to demonstrate compliance.

END OF SECTION

SECTION 265113
LIGHTING

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes general construction criteria required for luminaires, exit lights and associated lamps and ballasts. The extent, location and details of luminaires are indicated on the Drawings and in schedules.

B. Types of luminaires in this Section include the following.
   1. Light Emitting Diode (LED)

1.02 REFERENCES

A. Electrical Code Compliance: Comply with applicable local code requirements of the authority having jurisdiction and NEC Articles 220, 410, and 510 as applicable to installation, and construction of building luminaires.

B. Energy Conservation Construction Code of New York State.

C. National Fire Protection Association (NFPA):
   No. 70 National Electrical Code
   No. 101 Life Safety Code

D. NEMA Compliance: Comply with applicable requirements of NEMA Stds Pub/No.'s LE 1 and LE 2 pertaining to lighting equipment.

E. IES Compliance: Comply with IES pertaining to general lighting practices.

F. UL Compliance: Comply with UL standards, pertaining to luminaires. Provide luminaires and components that are UL-listed and labeled.

1.03 SYSTEM DESCRIPTION

A. Provide all luminaires, lamps, drivers and accessory equipment as shown on the Drawings and specified herein.

1.04 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions on each type of lamp, building luminaires and related components.

B. Listed manufacturers and their series and/or model numbers do not imply unconditional specification approval. The series and/or model numbers listed may not be current, but are included as an acceptable series of products that must still comply with the written description and specification. Custom modifications may be required to make the series and/or model numbers listed comply with these written descriptions and specifications.

C. Shop Drawings: Submit luminaire shop drawings in booklet form with a separate sheet for each luminaire assembled in alphabetical or numerical order, with proposed luminaire and accessories clearly indicated on each sheet. Include a typed index, listing luminaire type designations, luminaire manufacturer, complete catalog number and ballast type. At bottom of page, indicate complete listing of lamps that are to be used; include manufacturer name and complete catalog numbers.

D. Point-By-Point Footcandle Calculations: Submit point-by-point footcandle calculations where specifically called for as part of submittal package, for approval.

E. Samples: Submit one workable sample of each product if different from manufacturer specified herein, to aid in analyzing the submittal. Finish samples, factory drawings, special test data, etc., may also be requested by the Engineer.

F. Maintenance Data: Submit maintenance data and parts list for each luminaire and accessory; including "trouble-shooting" maintenance guide. Include that data, product data, and shop drawings in a maintenance manual.

1.05 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of luminaires of sizes, types and rating required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installer's Qualifications: Firms with at least five successfully completed projects of similar scope.

C. Codes and Standards: As indicated in Article 1.02.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver luminaires in factory- fabricated containers or wrappings, which properly protect luminaires from damage.

B. Store luminaires in original packaging. Store inside well-ventilated area protected from weather, moisture, soiling, extreme temperatures, humidity, laid flat and blocked off ground.

C. Handle luminaires carefully to prevent damage, breaking, and scoring of finishes. Do not install damaged units or components; replace with new.

1.07 SEQUENCING AND SCHEDULING

A. Properly interface installation of luminaires with other Work.

B. Protect lighting installation to minimize possibility of damage and soiling during remainder of construction.

1.08 SPARE MATERIALS

A. Provide two of each plastic type lens.

B. Provide two (2) of each LED array boards for each different type of interior LED luminaire installed.

C. Provide two (2) of each LED driver type.

D. Provide one of each type of tamperproof screwdriver for equipment furnished with tamperproof hardware.

E. Obtain signed receipts from Owner for extra materials.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Available manufacturers are subject to compliance with the requirements set forth herein.

B. Listed manufacturers and their series and/or model numbers do not imply unconditional specification approval. The series and/or model numbers listed, are included as acceptable series of products that must still comply with the written description and specification. Custom modifications may be required to make the series and/or model numbers listed comply with these written descriptions and specifications.

2.02 LAMPS

A. Light Emitting Diode (LED) Type: Electrical and photometric performance of LED lamps and LED luminaires shall be both IES LM-79 and LM-80 tested and compliant. As a general rule, provide 3500 degree Kelvin temperature for indoor applications and 4000 degree Kelvin temperature for outdoor applications, unless otherwise noted. Provide of U.S. manufacture and company in business for a minimum of 10 years.

1. For color consistency, provide 3-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

2.03 INTERIOR LUMINAIRE TYPES

A. General Requirements:

1. Various luminaires required are indicated in Article 3.06, SCHEDULE. Luminaires must comply with minimum requirements as stated herein. Review architectural drawings and specifications to verify ceiling types, modules and suspension systems appropriate to installation.
2. Use minimum 22 gauge metal and shape sufficient to form rigid parts. Provide smooth surfaces free from undressed welds, burrs and sharp edges. Light reflecting painted surfaces shall be minimum 85% reflectance baked white enamel, unless otherwise specified.
3. Use captive drivers and mounting bolts of proper type so component may be replaced without removing luminaire.
4. The electrical and photometric performance of LED lamps and LED luminaires shall be both IES LM-79 and LM-80 tested and compliant.
5. Luminaire lens panels shall have a burning rate of less than 1.5 per ASTM test D-635 and shall have a smoke developed factor of less than 450 per ASTM test standard E-84.
6. All luminaires, including custom and modified types, shall carry the UL label.

B. Exit Lights (Edgelit Type):

1. Type: Architectural LED edgelit type constructed of diecast aluminum housing with crystal clear, laser-formed, thin injection-molded acrylic with red letters and Chevron directional indicators.
2. Construction: High-polish, injection-molded virgin acrylic panel, ultrasonically welded to eliminate visible hardware. Recessed housing constructed of 20 gauge die-formed galvanized steel and exterior housing finish shall be brushed aluminum. Overall dimensions of ceiling unit at 8½" high x 14" wide x maximum 1¾" deep. Letters shall be red in color 6" high x ¾" stroke in compliance with UL 921 Standard.
3. Lamps: Low energy (less than 2 input watts) LED type dual rated 120/277 volts in conformance with UL 921, NFPA 101 Life Safety, NEC and OSHA illumination requirements.
4. Schedule:

Type	Mounting	Face
X1	Wall Back Surface	Single
X2	Ceiling	Single
X3	Ceiling	Double

5. Warranty: 5 year limited warranty, including lamps.
6. Make: Lithonia "LRP Precise" Series, Evenlite "SOV Sovereign" Series, or accepted equal. Submit operational sample of proposed equals.

2.04 EXTERIOR LUMINAIRE TYPES

A. General Requirements:

1. Various outdoor luminaires required are indicated below and must comply with the minimum requirements stated herein.
2. Use heavy duty die cast aluminum construction with stainless steel hardware for maximum corrosion resistance.
3. All luminaires, including custom and modified types, shall carry the UL label.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions under which luminaires are to be installed, and substrate for supporting luminaires. Notify in writing of conditions detrimental to proper completion of the Work.

B. Examine each luminaire to determine suitability for lamps specified.

3.02 INSTALLATION OF LUMINAIRES

A. Install luminaires at locations and heights as indicated, in accordance with luminaire manufacturer's written instructions, applicable requirements of NEC, NECA'S "Standard of Installation", NEMA standards, and with recognized industry practices to ensure that luminaires fulfill requirements.

B. Provide luminaires and/or luminaire outlet boxes with hangers to properly support luminaire weight. Submit design of hangers, method of fastening, other than indicated or specified herein for review.

C. Ceiling Surface and Suspended Luminaires: Fasten luminaires securely to structural supports. Luminaires that cover less than 225 sq. in. and are less than 25" long shall be supported from stud in outlet box that is rigidly supported from building structure. Larger surface mounted luminaires shall be independently supported from building structure using 1/4" threaded steel rods as follows:

1. Surface mounted, up to 24" W x 6' L: two supports.
2. Suspended, up to 18" W x 12' L: two supports.
3. Suspended, 18" sq. thru 24" sq.: two supports.
   If conditions are not clean during installation, wrap luminaire with protective plastic.

D. Wall mounted luminaires that weigh less than 5 lbs may be supported from fixture stud in outlet box that shall be rigidly supported by steel bars that span 2 studs. Provide additional screws or toggle bolts at ends of luminaires if necessary to prevent any movement or turning. Exterior luminaires that extend out less than 12" and weigh less than 30 lbs shall have two supports (toggle or expansion bolts, impact screws, or other accepted method) in addition to outlet box support.

E. Ceiling recessed luminaires that weigh less than 50 lbs. shall be supported from ceiling support channels plus each luminaire shall have two safety chains that are secured to building structure. Chain shall be bow-tie type made of No. 12 AWG steel wire with cadmium finish, Yorkville No. 2750 or accepted equal. In grid type ceilings each luminaire shall also be fastened to ceiling framing members at four (4) locations using method acceptable to NEC Article 410. Luminaires that weigh more than 50 lbs. shall be independently supported from building structure using four 1/4" steel rods. For plaster ceilings, provide plaster frame; install in cooperation with ceiling contractor. Provide proper mounting equipment and trim for recessed luminaires to adapt them to the ceiling or wall construction and to prevent light leaks around trim.

F. Cooperate with all other trades and refer to Architect's reflected ceiling plan and obtain acceptance before proceeding with ceiling work. Verify ceiling construction and report in writing any discrepancies between the ceiling type and the luminaire type before releasing luminaires for manufacture.

G. In mechanical and electrical equipment rooms, cooperate with other trades for all luminaires, supports, and outlet box locations with completed ductwork, piping, etc. Unless otherwise indicated, suspend luminaires below or between ducts with bottom of luminaires at 9'- 0" above floor; layout shown on Drawings is approximate only.

H. Tighten connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values for equipment connectors. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Stds 486A and B, and The National Electrical Code.

I. Locations of luminaires shall be evenly proportioned in room unless otherwise indicated.

J. Support stems and/or cables for suspended luminaire shall be carefully aligned and each shall hang true all directions.

K. Install recessed luminaires to permit removal from below.

L. Install clips to secure recessed grid-supported luminaires in place.

M. Equip all recessed downlights with support rails and t-bar clips to secure bar hangers in suspended grid ceiling systems.

N. Install all luminaires in same room or adjacent rooms without doors between such that LED arrays inside the luminaires are all oriented in the same direction. This applies to situations where both 2’ x 4’ and 2’ x 2’ luminaires are installed in the same room.

O. All exit lights shall be rigidly secured to structure with 1/4" threaded steel rod so as to prevent rotating sign. Verify direction of all arrows. Exit lights shall not be mounted in positions where they are blocked from view by ducts, pipes, furred beams, luminaires, etc.

P. On exterior luminaires, all fastening devices shall be stainless steel or other acceptable non-rusting material. Outlet boxes shall be cast types that are rigidly anchored.

Q. All exterior luminaires shall be provided with internal fusing, whether specified or not.

R. Use clean, white cotton gloves when handling parabolic and paracube wedge louvers, anodized reflectors, glass lenses, or other parts subject to fingerprints.

S. Immediately prior to substantial completion, replace lamps in luminaires that are observed to be broken, damaged or noticeably dimmed after Contractor's use and testing and at no additional expense to the Owner.

T. Furnish stock or replacement lamps as stated in Article 1.8. Deliver replacement stock as directed to Owner's storage space.

3.03 FIELD QUALITY CONTROL

A. Operate each luminaire after installation and connection. Inspect for proper connection and operation.

B. Verify exterior luminaire line fusing is sized specifically for the lamp installed.

3.04 ADJUSTING AND CLEANING

A. Clean luminaires of dirt and construction debris upon completion of installation. Clean fingerprints and smudges from lenses and photometric control surfaces.

B. Protect installed luminaires from damage during remainder of construction period.

C. Aim and adjust luminaires as directed.

D. Relamp luminaires that have failed lamps. Replace fuses that may have failed.

3.05 WIRING

A. Do not use luminaire as a raceway except as allowed in NEC article 410-31. Wiring to luminaire shall be 90 degrees C wire minimum.

B. Switching control groups shall be exactly as indicated on Drawings. In areas that have multi-level control, switch positions shall be carefully maintained.

C. Provide equipment grounding connections for luminaires as indicated. Tighten connections to comply with tightening torques specified in UL Std 486A to assure permanent and effective grounds.

3.06 SCHEDULE

A. Light Emitting Diode (LED) Luminaire Types:
   1. Refer to drawings for luminaire schedule.

END OF SECTION

SECTION 265200
EMERGENCY LIGHTING

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes general construction criteria required for both self-contained emergency battery lights and integral self-testing battery packs. The extent, location and details of the units are as indicated on the Drawings.

1.02 REFERENCES

A. Standards referenced in the text of this Section are listed below according to source, designation, and title.

1. National Fire Protection Association (NFPA):

No. 70	National Electrical Code
No. 101	Life Safety Code

2. Underwriters Laboratories, Inc. (UL):

UL 57	Electric Lighting Fixtures
UL 924	Emergency Lighting and Power Equipment

3. Federal Specification:

FS W-L-305	Light Set, General Illumination (Emergency or Auxiliary)

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's product data for each type of emergency lighting mini-inverter and self-contained emergency battery light specified.

B. Shop Drawings: Submit shop drawings in booklet form with separate sheet for each type, assembled in alphabetical or numerical order, with proposed unit and accessories clearly indicated on each sheet. Include a typed index, with manufacturer's name and complete catalog number.

C. Samples: Submit one of each product if different from manufacturers specified herein, to aid in analyzing the submittal. Finish samples, factory drawings, special test data, etc. may also be requested by the Engineer.

D. Maintenance Data: Submit maintenance data and parts list for each unit and accessory; including "trouble- shooting" maintenance guide. Include that data, product data, and shop drawings in a maintenance manual.

1.04 QUALITY ASSURANCE

A. Electrical Component Standard: Components and installation shall comply with NFPA 70 "National Electrical Code".

B. UL Compliance: All emergency battery packs shall be UL listed and labeled.

C. Local Code Compliance: Comply with applicable local codes and regulations for emergency lighting.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in factory containers. Store in clean, dry space in original container. Protect products from fumes and construction traffic.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include but are not limited to the following:

1. Self-Contained Emergency Battery Lights:
   a. Dual-Lite, Inc. (design make).
   b. Lithonia Lighting.
   c. Chloride Systems.

2.02 INTEGRAL EMERGENCY SELF-TESTING LED BATTERY PACKS

A. Type EM-1 (Integral, Self-Testing Battery Pack):

1. Solid state, completely self-contained single package unit.
2. High temperature nickel-cadmium battery and encapsulated inverter/charger and electronic control circuitry which is self-testing/self-diagnostic and housed in a single case.
3. Minimum 22 gauge braced and welded steel housing, mounted inside of luminaire or on top of the luminaire. Unit shall be UL 924 approved for all mounting arrangements.
4. Electronic circuitry shall automatically test emergency lighting for a minimum of 30 seconds every 30 days and 90 minutes once a year.
5. Provide solid state status indicating lamp to monitor the charger, fault condition and battery with a single-pole test switch.
6. Rated 120 volts, for illumination of an LED array load at 10 watts with constant power at a rated output voltage of 10V-60V.
7. Shall be UL listed and comply with current OSHA regulations for emergency lighting.
8. Unit shall be compatible with all LED luminaires and meet CEC efficiency standards.

B. Operation:

1. Emergency battery pack shall not affect luminaire’s normal switching functions; and shall operate during a power failure, even if luminaire is switched off.
2. Provide 90 minutes of illumination with no light degradation.

C. Provide minimum five year warranty.

D. Design Equipment: Iota ILB-CP10-HE-SD series or accepted equal.

PART 3 EXECUTION

3.01 GENERAL

A. Securing: Secure in accordance with manufacturer's written instructions and accepted shop drawings. Conform to the requirements of NFPA 70.

B. Connection: Make external wiring connections required for proper functioning.

C. Coordinate with other electrical installations as appropriate for proper installation of integral emergency battery packs.

3.02 INTEGRAL EMERGENCY LED BATTERY PACKS

A. Provide battery pack integral to LED luminaire, either within channel or mounted to top of fixture housing.

B. Provide all necessary wiring as required to circuit emergency battery pack ahead of all switching devices on lighting circuit.

C. In general, one emergency pack is required per emergency luminaire.

D. Installation shall be per battery pack manufacturer's written specifications.

E. Provide "EM" identification nameplate or sticker on corner to the luminaire or ceiling adjacent to the luminaire to identify those luminaires equipped with emergency battery packs.

F. Mount test/monitor plate with a test switch in an accessible and visible location 12" below ceiling in wall adjacent to the luminaire.

3.03 WIRING

A. Provide normal 120 volt AC supply, obtained from the same branch circuit as that serving the normal lighting in the area and connected ahead of local switches. Provide circuit breaker handle lock at panelboard of these circuits.

3.04 ADJUSTING AND CLEANING

A. Aim directional lampheads as directed by Owner.

B. Clean emergency battery lights upon completion of installation.

3.05 FIELD QUALITY CONTROL

A. Tests: After integral emergency battery packs have been installed and building circuits have been energized with normal power source, apply and interrupt electrical energy to demonstrate proper operation. Remove and replace malfunctioning units with new units and proceed with retesting. Give advance notice of dates and times for all field tests.

END OF SECTION

SECTION 283100
FIRE ALARM AND CO DETECTION SYSTEM

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes general criteria required for furnishing, installing, connecting and testing of a microprocessor controlled, intelligent reporting fire alarm and carbon monoxide (CO) detection system to form a complete, operative, coordinated system. The Contract shall include associated fire alarm and CO detection initiating devices, alarm notification devices, auxiliary control devices, components, accessories and complete wiring back to the fire alarm control panel. The extent, location and details of the fire alarm and CO detection system is as indicated on the Drawings.

B. All new equipment shall be JCI, Simplex. No substitutions per Broome County Resolution 2023-172.

1.02 REFERENCES

A. National Electrical Code (NEC) Compliance: Comply with applicable requirements of NEC standards pertaining to fire alarm systems.

B. UL Compliance and Labeling: Comply with provisions of UL safety standards pertaining to fire alarm systems; and provide products and components which are UL listed and labeled. Reference latest Fire Protection Equipment Directory with supplement.

C. UL listed as Control Units System (UOJZ), including existing devices remaining in place.

D. Factory Mutual Engineering Corporation (FM) Compliance: Provide fire alarm systems and accessories which are FM-approved. Equipment devices and components shall be UL listed or FM approved individually and as a system (including existing devices) for its intended use of fire protection service labeled by the respective agency. Compatibility listing requirements for smoke detectors, thermal detectors and fire alarm system shall be met and certified by Division 26.

E. National Fire Protection Association (NFPA) Compliance:
1. NFPA 13: Sprinkler Systems.
2. NFPA 70: National Electrical Code.
3. NFPA 72: National Fire Alarm Code.
4. NFPA 90A: Installation of Air Conditioning and Ventilating Systems.
5. NFPA 101: Life Safety Code.
6. NFPA 720: Installation of Carbon Monoxide (CO) Detection and Warning.

F. Building Code of New York State.

G. Part 1228.4 of Title 19 NYCRR Commercial Buildings.

H. Fire Code of New York State.

I. Fire alarm system shall be manufactured by an ISO 9001 certified company and meet the requirements of BS EN9001: ANSI/ASQC Q9001-1994.

J. All requirements of Insurance and the Authority Having Jurisdiction.

1.03 SYSTEM OPERATION

A. Immediately upon receipt of ALARM condition thru activation of fire alarm or CO detection signal initiating devices:
   1. The fire alarm and CO detection control panel sounds its audible alarm and displays the location of the devices and type of alarm condition on an alpha-numeric display. It shall also illuminate a flashing system alarm.
   2. Fire alarm and CO detection control panel automatically performs life safety functions:
      a. Audible alarm signals sound.
      b. Visual alarm indicating appliances shall illuminate and flash a fire or CO detection warning signal.
      c. Transmits signal to the central station.
      d. Transmits signal to mechanical system to initiate shutdown of rooftop units, energy recovery units and fan systems identified on the Drawings.

B. In addition to the operation listed above:
   1. Alarm activation of a duct-type smoke detector located adjacent to a smoke damper shall cause the respective fan system(s) to shut down and to then to close the damper and initiate an alarm at the main control panel.

C. The system is manually reset at conclusion of alarm condition.

D. The system monitors the condition of standby battery power supply and ground fault conditions.

E. Immediately upon receipt of trouble condition, including occurrence of system trouble, single ground or open condition on alarm initiating circuit, or power or system failure causes system to enter TROUBLE mode, the following operations happen:
   1. Visual and audible trouble alarm at the control panel.
   2. Visual and audible trouble alarm at annunciator panel.
   3. Manual ACKNOWLEDGE function at control panel silences audible trouble alarm; visual alarm is displayed until initiating trouble is cleared.

F. All system events are logged into the system history. The system shall also have the capability of providing a hard copy written record of all alarms, troubles, and system activity and print out the assigned message with date and time on for the device in alarm or trouble.

G. New unacknowledged alarms and trouble shall be distinctly displayed on the fire alarm control panel and remote annunciator visual displays and the printer and be differentiated from previous alarms and troubles. If multiple alarm conditions are present, they shall scroll and continue to flash and pulse the system audible until all alarms are acknowledged. There shall be no limit as to the number of devices which may be in alarm simultaneously.

H System shall have built-in Walk-Test program to allow one person to check all devices with the capability of also receiving a printed record of all activities. If no test activity occurs for a period of six minutes, the system shall automatically return to the normal operating mode.

I. If the microprocessor fails, the system shall exercise a default signaling program which will enable the main control panel to sound audible signals, and alarm the remote annunciator.

1.04 SUBMITTALS

A. Provide submittals for the entire system including complete equipment list, catalog descriptive literature for all equipment and wiring. Include composite wiring and/or schematic diagrams of the complete system as proposed to be installed, showing method of connection to the existing zones and equipment; standard diagrams will not be acceptable. Provide typical terminal wiring diagram for each type of device and for the fire alarm control panel. Include calculations, including actual equipment loads used to derive battery back-up ampere hour rating.

B. Provide detailed description of system operation in format similar to Article 1.3, SYSTEM OPERATION.

C. Maintenance Data: Submit maintenance data and parts list for each type of fire alarm equipment installed, including furnished specialties and accessories. Include this data, product data and shop drawings in Maintenance Manual.

D. Software Modifications: Provide the services of a qualified technician to perform all system software modifications, upgrades or changes. Response time of the technician to the site shall not exceed four (4) hours. Provide all hardware, software, programming tools and documentation necessary to modify the fire alarm system on site. Modification includes addition and deletion of devices, circuits, zones and changes to system operation and custom label changes for devices or zones. The system structure and software shall place no limit on the type or extent of software modifications on-site. Modification of software shall not require power-down.

E. Test Reports for Maintenance Inspections: Submit test and maintenance report for items required to be tested weekly, monthly or annually as required by NFPA 72. Provide written report including the following:
   1. Owner, Owner's address, date of Work.
   2. List of inspected items, broken down by type, i.e. weekly, monthly, quarterly and annual tests.
   3. List of tested items.
   4. List of noted Deficiencies.

F. Submittals that fail to comply with the requirements listed above shall be rejected.

1.05 QUALITY ASSURANCE

A. Include name, business address and telephone number of nearest fully equipped service organization.

B. Manufacturer's Qualifications: Firms regularly engaged in manufacture of fire alarm systems of types, sizes, and electrical characteristics required, and whose products have been in satisfactory use in similar service for not less than five (5) years. Additionally, the fire alarm control panel and peripheral devices shall be manufactured 100% by a single U.S. manufacturer (or division thereof).

C. Installer's Qualifications: Firm with at least five (5) years of successful installation experience on projects with fire alarm systems work similar to that required for this project. Manufacturer's Representative shall be authorized distributor of manufacturer's system. Use adequate numbers of skilled workman who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

D. Equipment, Programming and Installation Supervision:
   1. Manufacturer's representative shall be proposed manufacturer's distributor for equipment, programming and installation supervision.
   2. Provide proof of factory training within 14 calendar days of award of the Contract.
   3. The Contractor and manufacturer's representative of the system shall carry a current N.Y.S. License for Installation of Fire and Burglary Systems.
   4. The vendor must carry on staff a minimum of either NICET Level IV or be UL Listed category UUJS.
   5. The Contractor shall employ NICET Level II technicians on site to guide the final check-out and to ensure the system's integrity.
   6. Copies of these certificates shall be submitted along with product shop drawings required by Article 1.4.

E. All references to manufacturer's model numbers and other pertinent information herein are intended to establish minimum standards of performance, function and quality. Equivalent compatible UL-listed equipment from other manufacturers may be substituted for the specified equipment as long as the minimum standards are met. For equipment other than that specified, the contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment.

1.06 DELIVERY, STORAGE AND HANDLING

A. Handle fire alarm equipment carefully to prevent damage, breaking and scoring. Do not install damaged equipment or components; replace with new.

B. Store fire alarm equipment in clean, dry place. Protect from weather, dirt, fumes, water, construction debris, and physical damage.

1.07 MAINTENANCE

A. A fully equipped service organization capable of guaranteeing response time within eight (8) hours to service calls shall be available 24 hours a day, seven (7) days a week to service the completed Work.

B. Provide the following spare parts: Two of each type of area smoke detector and one of each thermal detector and CO detector.

C. Provide three (3) sets of keys of all panels, manual stations, etc. to the Owner; obtain signed receipt for same.

PART 2 PRODUCTS

2.01 GENERAL

A. Provide complete fire alarm and CO detection system products of types, sizes and capacities indicated, which comply with manufacturer's standard design, materials, and components. Construct in accordance with published product information, as required for complete installation.

B. Provide electrically supervised system, with supervised alarm initiating and alarm signaling circuits.

C. All system components shall be the products of one manufacturer, as stated below.

2.02 MAIN FIRE ALARM CONTROL PANEL

A. The Fire Alarm Control Panel (FACP) shall contain a microprocessor-based Central Processing Unit (CPU). The CPU shall communicate with and control intelligent addressable smoke and thermal (heat) detectors, addressable modules, printer, and other system controlled devices.

B. Operator Control:
   1. Acknowledge Switch:
      a. Activation of the control panel Acknowledge switch in response to new alarms and/or troubles shall silence the local panel piezo electric signal and change the alarm and trouble LEDs from flashing mode to steady-ON mode. If multiple alarm or trouble conditions exist, depression of this switch shall advance the 80-character LCD display to the next alarm or trouble condition.
      b. Depression of the Acknowledge switch shall also silence all remote annunciator piezo sounders.
   2. Alarm Silence Switch: Activation of the alarm silence switch shall cause all programmed alarm notification appliances and relays to return to the normal condition after an alarm condition. The selection of notification circuits and relays that are silence able by this switch shall be fully field programmable within the confines of all applicable standards. The FACP software shall include silence inhibit and auto-silence timers.
   3. Alarm Activate (Drill) Switch: The Alarm Activate switch shall activate all notification appliance circuits. The drill function shall latch until the panel is silenced or reset.
   4. System Reset Switch: Activation of the System Reset switch shall cause all electronically-latched initiating devices, appliances or software zones, as well as all associated output devices and circuits, to return to their normal condition.
   5. Lamp Test: The Lamp Test switch shall activate all system LEDs and light each segment of the liquid crystal display.

C. System Capacity and General Operation:
   1. The control panel shall provide up to 159 detectors and 159 modules per signaling line circuit (SLC); 318 devices maximum.
   2. The control panel shall include Form-C Alarm, Trouble and Supervisory relays rated at a minimum of 2.0 amps @ 30 VDC. It shall also include programmable Notification Appliance Circuits (NACs) capable of being wired as Class B (NFPA Style Y) or Class A (NFPA Style Z).
   3. The fire alarm control panel shall include an operator interface control and annunciation panel that shall include a standard 80-character backlit Liquid Crystal Display (LCD), individual color-coded system status LEDs, and an alphanumeric keypad for the field programming and control of the fire alarm system.
   4. All programming or editing of the existing program in the system shall be achieved without special equipment and without interrupting the alarm monitoring functions of the fire alarm control panel. The system shall be fully programmable, configurable, and expandable in the field without the need for special tools, PROM PC based programmers. It shall not require replacement of memory ICs to facilitate programming changes. The control unit will support the ability to upgrade its operating program using FLASH memory technology. The unit shall provide the user with the ability to program from either the included keypad, a standard PS2-style PC keyboard or from a computer running upload/download software.

5. The system shall allow the programming of any input to activate any output or group of outputs. Systems which have limited programming (such as general alarm), have complicated programming (such as diode matrix), or REQUIRE a laptop personal computer is not considered suitable substitutes.
6. The FACP shall provide the following features:
    a. Drift compensation to extend detector accuracy during the accumulation of dust and foreign material.
    b. Detector sensitivity test, meeting requirements of NFPA 72, Maintenance alert, with two levels (maintenance alert/maintenance urgent), to warn of excessive smoke detector dirt or dust accumulation.
    c. The ability to display or print system reports.
    d. Alarm verification.
    e. Positive Alarm Sequence (PAS presignal), meeting NFPA 72 requirements.
    f. Rapid manual station reporting.
    g. Non-alarm points for general (non-fire) control.
    h. Periodic detector test, conducted automatically by the software.
    i. Walk test, with a check for two detectors set to same address.
    j. The FACP shall be capable of coding Notification Appliance Circuits. Main panel notification circuits (NACs 1 & 2) shall also automatically synchronize the following manufacturer's notification appliances connected to them: System Sensor, Wheelock, or Gentex with no need for additional synchronization modules.

D. Central Microprocessor:
1. The microprocessor shall be a state-of-the-art, high speed, 16-bit RISC device and it shall communicate with, monitor and control all external interfaces. It shall include an EPROM for system program storage, non-volatile memory for building-specific program storage, and a "watch dog" timer circuit to detect and report microprocessor failure.
2. The microprocessor shall contain and execute all specific actions to be taken in the condition of an alarm. Control programming shall be held in non-volatile programmable memory, and shall not be lost even if system primary and secondary power failure occurs.
3. The microprocessor shall also provide a real-time clock for time annotation of system displays, printer, and history file.
4. A special program check function shall be provided to detect common operator errors.
5. An auto-programming capability (self-learn) shall be provided to quickly identify devices connected on the SLC and make the system operational.
6. For flexibility and to ensure program validity, an optional Windows ™ based program utility shall be available. This program shall be used to off-line program the system with batch upload/download. This program shall also have a verification utility which scans the program files, identifying possible errors. It shall also have the ability to compare old program files to new ones, identifying differences in the two files to allow complete testing of any system operating changes. This shall be in compliance with the NFPA 72 requirements for testing after system modification.

E. Local Keyboard Interface: In addition to an integral keypad, the fire alarm control panel will accept a standard PS2-style keyboard for programming, testing, and control of the system. The keyboard will be able to execute the system functions ACKNOWLEDGE, SIGNALS SILENCED, DRILL and RESET.

F. Display:
   1. The display shall provide all the controls and indicators used by the system operator and may also be used to program all system operational parameters.
   2. The display shall include status information and custom alphanumeric labels for all intelligent detectors, addressable modules, internal panel circuits, and software zones.
   3. The display shall contain an alphanumeric, text-type display and dedicated LEDs for the annunciation of AC POWER, FIRE ALARM, SUPERVISORY, TROUBLE, MAINTENANCE, ALARM SILENCED, DISABLED, BATTERY, and GROUND conditions.
   4. The display keypad shall be part of the standard system and have the capability to command all system functions, entry of any alphabetic or numeric information, and field programming. Two different password levels shall be provided to prevent unauthorized system control or programming.
   5. The display shall include the following operator control switches: ACKNOWLEDGE, ALARM SILENCE, DRILL (alarm activate), and SYSTEM RESET.

G. Signaling Line Circuit (SLC):
   1. The SLC interface shall provide power to and communicate with up to 99 intelligent detectors (ionization, photoelectric or thermal) and 99 intelligent modules (monitor or control) for a system capacity of 198 devices. Each SLC shall be capable of NFPA 72 Style 4, Style 6, or Style 7 (Class A or B) wiring.
   2. The CPU shall receive information from all intelligent detectors to be processed to determine whether normal, alarm, or trouble conditions exist for each detector. The software shall automatically compensate for the accumulation of dust in each detector up to allowable limits. The information shall also be used for automatic detector testing and for the determination of detector maintenance conditions.
   3. The detector software shall meet NFPA 72, Chapter 7 requirements and be certified by UL as a calibrated sensitivity test instrument.

H. The control panel will have the capability of Reverse Polarity Transmission or connection to a Municipal Box for compliance with applicable NFPA standards.

I. Digital Alarm Communicator Transmitter (DACT). The DACT is an interface for communicating digital information between a fire alarm control panel and a UL-listed central station.
   1. The DACT shall be an integral component of the fire alarm control panel requiring no interconnecting wiring, plug-in module or supervisory circuitry.
   2. The DACT shall include connections for dual telephone lines (with voltage detect), per UL/NFPA/FCC requirements. It shall include the ability for split reporting of panel events up to two different telephone numbers.
   3. The DACT shall be completely field programmable locally from the control panel keypad or via PC software connected to the panel serial port. The DACT shall support upload/download of programming parameters from a remote location over a phone line using upload/download PC software.
   4. The DACT shall be capable of transmitting events in at least 15 different formats. This ensures compatibility with existing and future transmission formats.
   5. Communication shall include vital system status such as:
      a. Independent Zone (Alarm, trouble, non-alarm, supervisory)
      b. Independent Addressable Device Status
      c. AC (Mains) Power Loss
      d. Low Battery and Earth Fault
      e. System Off Normal

f. 12 and 24-Hour Test Signal
g. Abnormal Test Signal (per UL requirements)
h. EIA-485 Communications Failure
i. Phone Line Failure

6. The DACT shall support independent zone/point reporting when used in the Contact ID format. In this format, the DACT shall support the transmission of addressable points with the system. This format shall enable the central station to have exact details concerning the location of the fire for emergency response.

J. Enclosures:
1. The control panel shall be housed in a UL-listed cabinet suitable for semi-flush mounting. The cabinet and front shall be corrosion protected, given a rust-resistant prime coat, and manufacturer's standard finish.
2. The back box and door shall be constructed of steel with provisions for electrical conduit connections into the sides and top.
3. The door shall provide a key lock and shall provide for the viewing of all indicators.
4. The cabinet shall accept a chassis containing the PCB and to assist in quick replacement of all the electronics including power supply shall require no more than two bolts to secure the panel to the enclosure back box.

2.03 SIGNAL INITIATING DEVICES

A. General: Fire detection devices shall all be intelligent addressable type that receive their power from the initiating circuit of a fire alarm control panel shall be listed for use with the control panel.

B. Ceiling Mounted Detectors:
1. General: Thermal and smoke detectors shall have common mounting base which accommodates interchanging of the different type detectors.
2. Thermal Detectors:
a. 135 degrees, combination rate-of-rise/fixed temperature, self-restoring rate-of-rise element, low profile clay-color type.
b. 190 or 135 degrees, fixed temperature, low profile clay-colored type.
3. Smoke Detectors: Photoelectric type with built-in test switch and LED.
4. Air Duct Type Smoke Detectors: Photoelectric type with remote indicator light/test switch. Provide complete with sampling tubes. Size sampling tubes for 80% of the width of the duct.
5. Standard Low Profile Mounting Bases: UL listed,
6. Carbon Monoxide (CO) Detectors: Carbon monoxide detection, addressable device with a separate signal for life safety CO detection. Adjacent to CO detector, provide two color laminated engraver's stock, 1/16" minimum thickness, machine engrave sign, nominally 4" high x 14" long with red 1½" high letters on white background "CO DETECTED" sign. For ceiling applications, sign shall be two-sided. UL 2075compliant.
7. Hanger Bay Carbon Monoxide (CO) Detectors: Extended coverage (up to 7500 sq. ft.) carbon monoxide detection addressable device with a separate signal for life safety CO detection. Macurco CX-6-CO, standard grey housing.
Adjacent to CO detector, provide two color laminated engraver's stock, 1/16" minimum thickness, machine engrave sign, nominally 4" high x 14" long with red 1½" high letters on white background "CO DETECTED" sign. For ceiling applications, sign shall be two-sided. UL 2075compliant.

8. Beam Type Smoke Detectors: Infrared, addressable, reflector-type. Long range coverage of 26.25 to 330 feet. Provide with addressable beam control station capable of simulating a smoke test from floor level. Minimum 14 VDC, maximum 36 VDC operating voltage. UL listed 32 deg. F to 100 deg. F operating temperature, 0 to 93% relative humidity range.

C. Manual Pull Stations: Semi-flush or surface, as required, dual action, addressable, non-break glass type, indoor construction, with bright red finish. Equip with key lock for test and retest. Unit shall match existing pullstations in use.

D. Addressable Dry Contact Monitor Modules:
1. Addressable monitor modules shall be provided to connect one supervised zone of conventional alarm initiating devices (any N.O. dry contact device) to the fire alarm control panel.
2. Provide LEDs that flash under normal conditions, indicating that monitor module is operational and in regular communication with the control panel.
3. Monitor module shall be available in a miniature package and shall be no larger than 2¾" x 1¼" x ½".

E. Addressable Relay Modules: Addressable relay modules shall be available for HVAC control and other building functions. The relay shall be form C and rated for a minimum of 2.0 Amps resistive or 1.0 Amps indicative. Relay coil shall be magnetically latched to reduce wiring connection requirements, and to insure that 100% of all auxiliary relay may be energized at the same time on the same pair of wires.

F. Control Relay Modules:
1. Control relay module shall provide four Form-C auxiliary relay circuits rated at 5 amperes, 28 VDC. An expansion circuit board shall allow expansion to eight Form-C relays per module.
2. Relay circuit shall be capable of being activated (change instate) by any initiating device or from any combination of initiating devices.
3. Provide a momentary switch per relay circuit that may be used to manually turn the relay on/off or to disable the relay.
4. Relay circuit shall include a custom label inserted to identify its location.
5. Provide control relay module with removable wiring terminal blocks. Terminal blocks shall be UL listed for use with up to 12 AWG wire.

2.04 ALARM INDICATING DEVICES

A. Audible/Visual Alarms:
1. Horn/Strobes: Semi-flush mounted in all walls, (compact design for surface box mounting, red color. Provide combination unit with built-in, ADA compliant xenon flasher consisting of protruding pyramid shaped clear lens with white "FIRE" lettering. Provide adjustable multi-candela rated strobes.
2. Strobes: Surface mounted or semi-flush wall and ceiling mounted as required, 24 volts DC, red color, with built-in ADA compliant xenon flasher consisting of protruding pyramid shaped clear lens with white "FIRE lettering;
3. Strobe Candela Types: In hallways and large rooms where more than one strobe or horn is visible from any location, provide synchronized type strobes.
4. CO Horn/Strobe: Semi-flush mounted in walls (compact design for surface box mounting), white color. Provide combination unit with built-in, ADA compliant Xenon flasher consisting of protruding pyramid shaped amber lens with red "ALERT" lettering. Provide adjustable multi-candela rated strobes

B. Remote Indicating Lights with Keyed Test Switch: Wall mounted connection to concealed initiating devices; complete with remote power/alarm indicator/key switch. Provide 24 VDC power from fire alarm control panel,

2.05 BATTERY AND CHARGER

A. Provide standby power with 24-volt DC battery and automatic charger which will allow the system to operate 24 hours under supervisory conditions with the ability to sustain five minutes in alarm at the end of the backup period. The module shall contain a relay which can be programmed to operate from the control panel.

B. The batteries are to be completely maintenance free. No liquids are required. Fluid level checks for refilling, spills, and leakage shall not be required.

C. Charger shall be self-regulating, solid-state type, automatic with capability to fully charge the completely discharged battery within five hours. Locate within fire alarm panel.

2.06 VENTILATION FAN SHUTDOWN CONTROL

A. Provide complete control package inside of fire alarm control panel for fan shutdown. Provide normally closed relays for connection into the fan motor control circuits ahead of automatic devices.

B. Provide addressable relay modules as required.

C. Mechanical equipment to be shut down include fans, air conditioning units and other equipment as shown on the plans and on the Electrical Equipment Wiring Schedule. Provide wiring and conduit necessary to accomplish same.

2.07 MUNICIPAL TIE EQUIPMENT

A. Provide complete system consisting of panel mounted digital alarm communicator transmitter module. Do not provide a separately mounted unit mounted adjacent to the fire alarm control panel.

B. The digital alarm communicator transmitter shall be as follows:
   1. Dual line dual digital dialer microcomputer-controlled interface capable to transmitting fire alarm condition, supervisory alarm condition, and trouble alarm condition, in the event of multiple conditions, signals shall be prioritized as follows:
      a. Fire Alarm
      b. Supervisory Alarm
      c. Trouble Alarm
   2. Both off-normal conditions and their respective message shall be transmitted at the time of occurrence.
   3. Automatic telephone line seizure shall unjam the premises telephone lines if they are in use with incoming calls and immediately transmit alarm condition. The redundant telephone lines shall be continually supervised and shall be common to both digital dialers. Upon failure of either line the unit shall automatically switch to an unfaulted line and display a trouble condition.
   4. The digital alarm communicator transmitter shall be provided with a self-diagnostic electronic system. If a trouble condition occurs, the micro-computer shall attempt to clear the fault. Failure to clear the fault shall cause a trouble alarm to be transmitted to the designated receiving station.
   5. The digital alarm communicator transmitter shall send an automatic dialer test message every 24 hours to ensure connection with the receiving station. The time of day shall be programmable.

C. The building premises unit shall be compatible and interface with the digital alarm communicator receiver at the receiving station.

D. The building premises unit shall be compatible and interface with the building fire alarm system. Provide all modules, accessories, telephone jacks, power circuits, required for a complete operating system, etc.

2.08 WIRING

A. SLC addressable loop shall utilize #14 AWG type XHHW-2.

B. NAC notification appliance circuits shall utilize #12 AWG XHHW-2.

C. Power circuits, 24 VAC shall utilize #12 AWG XHHW-2.

D. Install all wiring in a separate and segregated red raceway system.

E. Number of conductors and conductor sizes shall be verified with company producing system, except that conductor size shall not be less than #16 AWG.

F. Use shielded; twisted pairs as recommended by the company producing the system.

2.09 MECHANICAL ENERGY MANAGEMENT SYSTEM (EMS) INTERFACE

A. Provide a status only interface from the fire alarm control panel to the building energy management system (EMS). Whenever the fire alarm system shuts down an RTU or ERU, a shutdown alarm signal shall be issued to the EMS.

B. When the fire alarm system is reset, the shutdown alarm signal should be cleared. Key-starting of an RTU or ERU shall either be done manually or by command from the EMS.

PART 3 EXECUTION

3.01 INSTALLATION OF BASIC WIRING SYSTEM MATERIALS:

A. Install all wiring in accordance with manufacturer's printed instructions and recommendations. Run all fire alarm circuits in a separate and segregated raceway system. All fire alarm raceway systems, whether exposed or concealed, shall be painted red or be pre-manufactured safety red.

B. Install wires and cables without splices. Make connections at terminal strips in cabinets or at equipment terminals. Make soldered splices in electronic circuits in control cabinets.

C. Do not run nonpower-limited and power-limited circuits in the same raceway or cable. Do not run nonpower-limited and power-limited circuits in same junction box or cabinets without appropriate barriers between the two types of circuits.

D. Mount end-of-line device in box with last device or separate box adjacent to last device in circuit and label.

E. All wiring shall conform to NEC Articles 725 and 760, and to NFPA.

F. Power supply shall be dedicated #12 AWG, 20 ampere, 120-volt circuit from the emergency power system, life safety branch.

3.02 INSTALLATION OF FIRE ALARM SYSTEMS

A. Install fire alarm system as indicated, in accordance with equipment manufacturer's written instructions and complying with applicable portions of NEC and NECA's “Standard of Installation”.

B. Wiring: Wiring of fire alarm system is Work of this Section, but is not specifically detailed on Drawings.

C. Where there are a number of power requiring devices such as smoke detectors, door holders, etc. installed in a circuit, group in numbers so power required does not exceed 80% of manufacturer's power supply rating. Provide extra wiring, or extra power supplies required to fulfill that requirement. In addition, provide extra or larger size wiring to alleviate voltage drops which makes device operate beyond voltage limits for which it was designed. Determine above with manufacturer's representative while equipment is being installed.

D. Provide all wiring required for fan shutdown. Provide all new fans shown to be shutdown with normally closed fan relay contacts ahead of all automatic devices, Install relay contacts within 3'-0" of fan controller. Connect existing fan shutdown circuits to fire alarm control panel; provide all required components and wiring.

E. Fan shutdown reset feature shall be accomplished from main control panel. Provide all required hardware, wiring, etc. to perform same.

F. Alarm indicating/test stations shall be connected to indicate initiation of concealed device as required. Provide engraved nameplate on each to identify equipment connected.

G. For duct-type smoke detectors, provide all equipment, including sampling tubes with end caps, wiring, mounting arrangements, holes cut into ductwork, and sealing of openings. Provide all wiring to remote indicating lights/keyed test switches located as shown on Drawings.

H. All remote alarm indicating/test stations shall be provided with engraved lamacoid nameplates to indicate location of activated remote detectors. Engraved message shall be per Owner’s direction, but shall minimally include a generic description of the concealed device, ie “RTU-1 return air duct detector”, etc.

I. For duct-type detectors connected to Division 23 smoke dampers, equip each detector with a relay module so it closes its respective smoke damper, which is normally powered open at 24 VDC.

J. For CO detectors with sounder bases, provide “CO DETECTED” signage adjacent to detector, two-sided and hung from ceiling tile and detailed on drawings.

K. Strobes shall be synchronized as required by NFPA and ADA requirements.

3.03 FIELD QUALITY CONTROL

A. Preliminary System Test:
   1. Preparation: Have the completed system adjusted and then operate long enough to assure that it is performing properly.
   2. Run a preliminary test for the purpose of:
      a. Determining whether the system is in a suitable condition to conduct an acceptance test.
      b. Checking and adjusting equipment.
      c. Training facility personnel.
   3. Contractor shall complete and submit the “System Record of Completion” form as identified in NFPA 72 and attached at the end of this Section as Attachment “A” prior to acceptance test.

B. System Test:
   1. Preparation: Provide notification of at least three (3) working days prior to the test so arrangements can be made to have the Owner, Architect and Engineer and representative of the manufacturer to witness the test. It is the responsibility of Division 16-E to notify and make arrangement with the manufacturer's representative to witness the test.
   2. Make the following tests:
      a. Test system operational functions step by step as summarized in Article 1.03 SYSTEM OPERATION.
      b. Test system initiating, control, indicating, and transmission functions in accordance with NFPA 72.
   3. Supply all equipment necessary for system adjustment and testing. Correct any deficiency found and have the system retested at no cost to the Owner.
   4. Submit written report of test results from an authorized representative of the equipment manufacturer that all equipment and devices have been 100% tested and approved. Mount a copy of the written report in a plexiglass enclosed frame assembly adjacent to the fire alarm control panel.

C. Inspection, Testing and Maintenance per NFPA.
   1. Items shall include, but not limited to:
      a. Control Equipment (Monitored): Visual inspection.
      b. Control Equipment (Monitored): Testing.
      c. Batteries (Sealed Lead-Acid): Visual inspection.
      d. Batteries (Sealed Lead-Acid): Load testing.
      e. Transient Suppressors: Visual inspection.
      f. Control Unit Trouble Signals: Visual inspection.
      g. Control Unit Trouble Signals: Testing.
      h. Initiating Devices: Visual inspection.
      i. Initiating Devices: Testing
      j. Interface Equipment: Visual inspection.
      k. Interface Equipment: Testing.
      l. Alarm Notification Appliances – Supervised: Visual inspection.
      m. Alarm Notification Appliances: Testing.
      n. Off-Premises Transmission Equipment: Testing.

D. The entire system shall be covered by a one-year guarantee after commencing at the date of substantial completion. Any replacement of parts and/or equipment shall be made by the manufacturer at no cost.

3.04 OPERATION AND MAINTENANCE MANUALS

A. Operating and maintenance instruction manuals shall include the following:
   1. Step-by-step procedures for system start-up and operation.
   2. Manufacturer's name, model number, service manual parts list and brief description of all equipment and its basic operating features.
   3. Trouble shooting guide listing possible breakdowns and repair.
   4. Complete Record Drawings for fire alarm wiring diagrams showing typical connection diagrams for each type of device and a complete riser diagram showing all devices, zones, and wiring requirements. Record drawings for fire alarm wiring diagram shall show all terminal connections at the fire alarm control panel.
   5. Instruction report stating when instruction was given and who was in attendance, signed by the Owner.

END OF SECTION

ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All provisions, terms, and conditions of the Contract including all specifications, drawings, addenda, and other contract documents.

1.2 DEFINITIONS

A. Many key words appear throughout the design documents and New York State Department of Labor (NYSDOL) Industrial Code Rule 56 (ICR 56).

1.3 PRE-BID CONFERENCE

A. A pre-bid conference and walk-through will be conducted at the project site. The Contractor shall address any questions about the work during the pre-bid conference.

1.4 SCOPE OF WORK

A. The following table summarizes the asbestos abatement scope of work:

SCOPE OF WORK	QUANTITY/LOCATION
AAR-1 REMOVE ASBESTOS-CONTAINING FLOOR TILE AND ASSOCIATED MASTIC IN LOCATIONS AS NOTED ON HM-101 & HM-102.	**1st Floor** 1-3-185 SF 1-10-225 SF **2ND Floor** 2-11-100 SF 2ND Floor Mechanical Room-220 SF
AAR-2 REMOVE ASBESTOS-CONTAINING FLOOR TILE AND MASTIC IN LOCATIONS AS NOTED ON HM-101 & HM-102.	**1st Floor** 1-2&1-8-468 SF 1-3-1,135 SF 1-4-275 SF 1-9-110 SF 1-10-650 SF 1-11-110 SF 1-12-210 SF 1-15-725 SF 1-18-120 SF 1-19-240 SF 1-20-1,560 SF **2ND Floor** 2-2-150 SF 2-3-370 SF 2-4-330 SF 2-5-250 SF 2-6-360 SF 2-7-210 SF 2-8-160 SF 2-9-700 SF 2-11-100 SF

SCOPE OF WORK	QUANTITY/LOCATION
AAR-3 REMOVE ASBESTOS-CONTAINING STAIR TREAD MASTIC AS NOTED ON HM-102	Stairwell-100 SF
AAR-4 REMOVEASBESTOS-CONTAINING THERMAL SYSTEM INSULATION (TSI) IN LOCATIONS AS NOTED ON DRAWING HM-101	**1st Floor** 1-22-15 LF
AAR-5 REMOVE ASBESTOS-CONTAINING THRESHOLD MASTIC	**1st Floor** 1-2&1-8-3 SF 1-3-3 SF 1-4-4 SF 1-9-2 SF 1-10-3 SF 1-11-3 SF 1-12-3 SF 1-14-3 SF 1-15-5 SF 1-18-3 SF 1-19-3 SF 1-20-5 SF **2ND Floor** 2-1-3 SF 2-2-3 SF 2-3-3 SF 2-4-3 SF 2-5-3 SF 2-6-3 SF 2-7-3 SF 2-8-3 SF 2-10-3 SF 2-11-3 SF 2-12-3 SF 2-13-3 SF 2-14-3 SF 2-15-3 SF 2-16-3 SF 2ND Floor Mech Room-5 SF

1.5 GENERAL CONDITIONS

A. The Contractor acknowledges that other portions of the building will remain active and occupied (in areas not scheduled for work) for the duration of the abatement project. Due to the location and nature of the project, the Contractor shall be responsible to controlling any leakage from the RWA to avoid damage to the spaces below. Any damages resulting from leakage shall be the Contractor's responsibility.

B. The Contractor acknowledges that due to the nature of the area, access to site requires advance notification with all parties.

C. The Contractor acknowledges that the quantities of ACM are approximate and shall be field verified. Variations of ±20% in the quantities indicated shall be acknowledged by the Contractor and shall be reflected in their price.

D. The Contractor's pricing shall include costs for all labor, materials, equipment, asbestos project notifications and fees, building permits and fees, insurance, bonding (if required), waste transportation and disposal, overhead and profit, and all other costs necessary to complete the work as specified.

E. The Contractor shall submit any questions about the work of this project during the pre-bid phase in writing to the designated Owner's representative. By submitting a proposal, the Contractor acknowledges that he/she has reviewed, understands and can execute the scope of work described within.

F. By accepting the contract for this work, the Contractor agrees that all work shall be conducted in accordance with all applicable state and federal regulations including ICR 56 and any NYSDOL-approved asbestos project variance.

G. All work shall be performed in accordance with the project design specifications and all applicable federal, state, and local regulations. When conflicts occur between the project design documents and federal, state, and/or local regulations, the most stringent requirement shall apply. The Contractor shall comply with the following, except where more stringent requirements are shown or specified:

1. Federal Regulations:

    a. OSHA 29 CFR Part 1910.1001 - Asbestos
    b. OSHA 29 CFR Part 1910.1200 - Hazard Communication
    c. OSHA 29 CFR Part 1910.134 - Respiratory Protection
    d. OSHA 29 CFR Part 1910.145 - Specification for Accident Prevention Signs and Tags
    e. OSHA 29 CFR Part 1926 - Construction Industry
    f. OSHA 29 CFR Part 1926.1101 - Asbestos, Tremolite, Anthophyllite, and Actinolite
    g. OSHA 29 CFR Part 1926.500 - Guardrails, Handrails, and Covers
    h. USEPA 40 CFR Part 61, Subpart A - General Provisions
    i. USEPA 40 CFR Part 61, Subpart M - Asbestos NESHAP
    j. USEPA 40 CFR Part 763, Subpart E, Asbestos Hazard Emergency Response Act (AHERA)

2. New York State Regulations:

    a. NYSDOL 12 NYCRR Part 56 - "Asbestos" as amended 3/21/2007.
    b. NYSDEC 6 NYCRR Parts 360 and 364 - Waste Disposal & Transportation
    c. NYSDOH 10 NYCRR Part 73 - Asbestos Safety Program Requirements

3. All Local Regulations
4. Standards and Guidance Documents:

    a. American National Standard Institute (ANSI) Z88.2-80, Practices for Respiratory Protection
    b. ANSI Z9.2-79, Fundamentals Governing the Design and Operation of Local Exhaust Systems
    c. USEPA 560/585-024, Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book)
    d. USEPA 530-SW-85-007, Asbestos Waste Management Guidance

5. All applicable federal, state, and local building and fire codes.

H. The Contractor accepts that multiple means of clearance criteria will be utilized for final clearance criteria based on the applicable regulatory requirements. At a minimum Project Monitor Visual inspections and Clearance Air Sampling will be utilized to determine satisfactory completion of the asbestos abatement work of this project. If ACM debris falls within the building, then air sampling will be required in accordance with ICR 56 and NYSDOL SSV.

1.6 OWNER RESPONSIBILITIES

A. The Owner shall be responsible for:

1. Moving items out of areas affected by the work.
2. Providing electric and water sources, (but no equipment to access) at the project site.
3. Providing identification of existing utilities, de-energizing existing systems
4. Hiring an independent, third-party asbestos project monitoring/air sampling firm.

1.7 CONTRACTOR RESPONSIBILITIES

A. The Contractor shall be responsible for:

1. Performing the asbestos abatement work in accordance with all applicable federal, state, and local regulations including, but not limited to, all New York State, United States Environmental Protection Agency (USEPA), and Occupational Safety and Health Administration (OSHA) codes, rules, regulations, and standards. Where conflicts occur between federal, state, and local regulations, the most stringent shall apply. As such, the Contractor shall include all necessary costs in their price to complete the work in a legal and safe manner.
2. Providing supervisors and workers who are competent, trained, and medically fit to conduct the asbestos abatement work as well as all materials and equipment necessary to satisfactorily complete the work.
3. Collection and analysis of personal air samples of their employees as required by the applicable OSHA standards. The third-party asbestos project monitoring/air sampling firm shall not be responsible for the collection, shipping/delivery, or analysis of the Contractor's personal air samples on this project.
4. Completing the project as specified by the design documents. The Contractor accepts that the asbestos abatement work is not complete until satisfactory final visual inspections are conducted, and clearance air testing results are deemed to be acceptable, as applicable.
5. Packaging, transporting, and disposing of all asbestos waste generated by the work in accordance with all applicable federal, state, and local regulations.
6. Ensuring regulated work area security during the project, so that unauthorized personnel do not enter regulated work areas.
7. Providing emergency plans and emergency telephone numbers to on-site abatement personnel. The emergency plans and telephone numbers shall be kept on site at all times during the project.
8. Obeying the Owner's policies and procedures pertaining to work on-site.
9. Ensuring that no employee of his company speaks to the media without written permission from the Owner.
10. Complying with the contractual requirements set forth by the Owner.
11. Posting a notice at all building entrances notifying all persons of the Contractor's intent to conduct asbestos abatement work 10 days prior to starting the work following approval of the content by the Owner & Owner's Representative.
12. Notifying the NYSDOL about the asbestos abatement work and paying the applicable fees.

13. Contractor shall follow the direction of the Owner/Owner's Representative pertaining to schedule, health/safety issues, and other site activities. The Contractor shall be responsible for the legal means and methods of performing the work in accordance with the contract.
14. The Contractor shall not interrupt power to any other area of the building because of his/her activities. Under no circumstances shall equipment be utilized that may impact/overload existing power. The Contractor shall coordinate all equipment usage with the Owner to avoid damage.

1.8 PERSONAL PROTECTIVE EQUIPMENT

A. The Contractor shall be responsible for providing his personnel with adequate personal protective equipment to perform the work on this project as per the applicable federal and state regulations.

B. The Contractor will be responsible for collecting OSHA personal asbestos samples for their workers on this project. Representative samples shall be taken daily, and sample results shall be posted at the personal decontamination unit within 48 hours of collection. The Contractor is responsible for providing their employees with adequate respiratory protection based upon the sample results received.

C. Street clothing is not permitted inside regulated work areas during abatement activities.

D. The Contractor is responsible for providing the Project Designer, the Project Monitor, and state and federal inspectors with personal protective equipment (PPE). This may include some or all of the following: protective clothing, respirators, high efficiency particulate air (HEPA) cartridges, hard hats, gloves, eye protection, and rubber disposable boots.

1.9 SUBMITTALS

A. Qualification Submittals - The Owner/Owner's Representative may undertake investigations as necessary to select the most qualified contractor for this project. The following information shall be submitted electronically to the Owner prior to contract award:

1. Contractor's Asbestos Handling License issued by the NYSDOL.
2. A notarized statement, signed by an officer of the company, containing the following information:
    a. Any federal, state, or local regulatory agency citations, violations, notices, orders to comply, or penalties recorded against the asbestos abatement contractor in the last three years.
    b. Any claims or legal proceedings in which the Contractor has been involved in the past three years.
    c. Any Occupational Safety and Health Administration (OSHA) fines and/or citations, and a list of OSHA recordable accidents per year for the last three years.
    d. Any asbestos related projects where a contract has been terminated, including project name, client, dates, and reasons for termination.
3. A minimum of five (5) project references for projects similar in nature to this project that have been self-performed and completed in the past three (3) years including the project name and location, scope of work, client, and contact person's name, telephone number, and e-mail address.

B. Pre-Abatement Submittals - The Contractor shall submit the following information electronically (in PDF format) to the Owner at least 10 days prior to starting the work:

1. Contractor's Asbestos Handling License issued by the NYSDOL.

2. NYSDOL Asbestos Project Notification.
3. Asbestos Project Notice to be posted at the building prior to the start of the work as required by ICR 56-3.6.
4. New York State Department of Environmental Conservation (NYSDEC) Waste Transporter Permit.
5. NYSDEC landfill permit where asbestos waste from the site will be disposed.
6. Project schedule showing phases of work for each regulated work area including, but not limited to, mobilization, work area preparation, abatement/removal, cleanings, work area dismantlement, and demobilization.
7. NYSDOL-approved asbestos project variance to be used on the project, if applicable.
8. Wastewater discharge permit required by state, county, or local municipality. If a permit is not required or will not be obtained, submit a written statement describing how wastewater from this project will be collected and disposed.
9. Safety Data Sheets (SDS) for all chemicals, solvents, products, and materials utilized.
10. Manufacturer's specifications/certifications for all materials and equipment utilized on the project.
11. Written notifications to local fire, rescue, and emergency agencies informing them of the nature and schedule of the work at the site.
12. Emergency Egress Routes shall be posted at centralized locations on each floor of the building.
13. List of contact persons and emergency phone numbers for Contractor personnel to be posted at the project site.
14. Asbestos abatement personnel/worker documentation, including valid:
    a. NYSDOL Asbestos Handling Certificates.
    b. NYSDOH 2832 Asbestos Training Certificates.
    c. Medical examinations/evaluations.
    d. Respirator fit test certifications.
    e. OSHA 10-Hour Construction Safety Training certificates, if applicable.
15. The Contractor shall not proceed with any work until the pre-abatement submittals have been received in full and approved by the Owner & Owner's representative(s). The Owner bears no responsibility for schedule delays associated with incomplete submissions.

C. Abatement Submittals - The Contractor shall submit the following information electronically (in PDF format) to the Owner during the project:

1. OSHA personal air sampling data. Neither the Owner nor the Consultant is responsible for the interpretation of these results. The intent is only to show that the Contractor is collecting these samples as required by OSHA.
2. A daily list of the personnel on-site accompanied by their NYSDOL Asbestos Handling Certificate number.

D. Post-Abatement/Closeout Submittals - Before final payment is made, the Contractor shall submit the following information electronically to the Owner within 30 days after completion of the project:

1. Copies of all waste disposal manifests, disposal logs, and weight tickets. All <u>original</u> waste disposal records shall be submitted directly to the Owner/Owner's Representative by the Contractor.
2. Copy of supervisor's daily project log as required by ICR 56-7.3 documenting all pertinent events that occur throughout the project and including the following:

a. Elevated air sampling results shall be noted along with the time of the work cessation, results of barrier and negative air system inspection, and a summary of any necessary repairs and the required cleaning(s).
b. Manometer readings to be documented twice per work shift, if applicable.
c. Daily (including days without work shifts) inspection results of negative-air ventilation system and any necessary repairs, if applicable.
d. Daily (including days without work shifts) inspections of HVAC system positive pressurization and any necessary repairs, if applicable.
e. Daily (including days without work shifts) inspection results of barriers and any necessary repairs, if applicable. Inspections shall be twice per work shift on days with scheduled work.
f. Daily testing of barriers and enclosures as per ICR 56-8.2(f) and any necessary repairs, if applicable.
g. Daily cleaning of enclosures to be documented at the end of each work shift, if applicable.
h. Results of each visual inspection and time of each intermediate completion, if applicable.
i. Results of visual inspection by Supervisor and Project Monitor for each asbestos abatement work area prior to clearance air sampling.

3. Entry/exit logs for each asbestos abatement work area.
4. Final NYSDOL and USEPA project notifications, and any asbestos project variances, if applicable.
5. Any other submittal requested by Arctic Enterprises or the Owner/Owner's Representative.

E. The Owner/Owner's Representative shall ensure that the Contractor has met all the contractual obligations to close out this project. Failure to provide all the requested project closeout documentation may result in the delay of payment by the Owner to the Contractor. The Contractor shall not be entitled to any additional compensation or finance charges caused by their failure to submit the requested closeout information in a timely manner.

PART 2 - PRODUCTS

2.1 MATERIALS & EQUIPMENT

A. The Contractor shall be responsible for:

1. Providing all materials and equipment necessary to complete the work.
2. Providing safe and reliable materials and equipment.
3. Providing personal protective equipment for all abatement personnel.
4. Providing HEPA-filtered air filtration devices and HEPA vacuums.
5. Providing continuous negative air pressure within regulated work areas for the duration of the project, as applicable.
6. Utilizing barrier tape and danger signs to keep unauthorized personnel away from the work area. Danger signs shall contain the following language:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

7. Utilizing airless sprayers to limit airborne dust in regulated work areas.

8. Utilizing flame-retardant 6-mil polyethylene sheeting for the construction of abatement work areas, decontamination units, and the lining of waste containers.
9. Utilizing 6-mil polyethylene bags for the containerization of all asbestos wastes.
10. Utilizing duct tape or approved equivalent to seal polyethylene sheeting and waste disposal bags.
11. Utilizing electrical equipment and power cords in compliance with all applicable OSHA standards.
12. Utilizing Ground Fault Interrupters (GFIs) or Ground Fault Circuit Interrupters (GFCIs) on all power sources.

B. Any miscellaneous products not covered in this specification must have written approval from the Owner/Owner's Representative or ARCTIC ENTERPRISES, prior to use on-site.

C. Any miscellaneous products used at the site must be accompanied by manufacturer's product information and a (material) safety data sheet (SDS). This information must be submitted to the Owner/Owner's Representative prior to the products arriving on site. The Contractor may not proceed until the products have been approved for use by the Owner/Owner's Representative or Arctic Enterprises.

PART 3 - EXECUTION

3.1 UTILITIES

A. All water and electrical service connections/installations shall be installed in accordance with all applicable federal, state, and local codes, rules, and regulations.

B. The Contractor shall coordinate with the Owner be responsible for the maintenance of all electrical cords and water hoses and keeping them in a secure location to prevent unnecessary tripping and/or slipping hazards.

C. The Contractor shall temporarily shut down/de-energize, isolate/seal, modify, and/or alter existing mechanical/HVAC, electrical, plumbing, and any other related systems, services, and utilities at the site as required by the applicable regulations prior to the start of the asbestos abatement work. All such work shall be carefully coordinated with the Owner/Owner's Representative.

D. Existing mechanical/HVAC, electrical, plumbing, and all other building systems, services, and utilities within regulated work areas that are to remain in operation shall be adequately protected by the Contractor during the work.

E. The Contractor's activities shall not interrupt power supply to other areas of the building. Use of any equipment for abatement activities must be coordinated with the Owner to avoid any damage to existing systems.

3.2 DECONTAMINATION FACILITIES

A. All personal and waste decontamination facilities shall be constructed, installed, or otherwise provided by the Contractor to meet the requirements of ICR 56 and shall be deemed adequate by the Project Monitor prior to the commencement of any asbestos abatement preparation work.

B. The personal decontamination unit shall be equipped with one shower per six (6) full-shift abatement workers.

C. Decontamination units shall be cleaned/sanitized at the beginning, during, and end of each work shift. Accumulations of dirt/debris in decontamination units shall not be permitted.

3.3 PRE-CLEANING

A. The Contractor shall request a visual inspection by the Project Monitor to ensure that all locations scheduled to receive critical barriers are clean and free of debris prior to the installation of critical barriers.

3.4 CRITICAL & ISOLATION BARRIERS

A. The Contractor shall install critical barriers and isolation barriers in accordance with ICR 56.

B. Temporary hard-wall barriers to complete containments/enclosures and establish regulated work areas shall be constructed using the following framing, sheathing, sealing, and plasticizing criteria:

1. Isolation barrier partitions shall be constructed of wood or metal framing in all openings greater than 32 square feet except, where any one dimension is one foot or less, framing is not required. Existing walls or framing may be used to support isolation barrier partition framing and sheathing.
2. Plywood or oriented strand board (OSB) sheathing of at least ⅜-inch thickness shall be fastened to the regulated work area side of the barrier partition.
3. Edges of the isolation barrier partition at the floor, ceiling, walls, and fixtures and seams within the partition sheathing shall be sealed to form an airtight seal.
4. The regulated work area side of isolation barrier partitions shall be covered with two (2) layers of 6-mil fire-retardant plastic sheeting with staggered joints and sealed airtight.

C. Smoke testing shall be conducted by the Contractor prior to the start of abatement activities and at least once a day thereafter until satisfactory clearance air sampling results have been obtained to ensure the effectiveness of all critical barriers, isolation barriers, personal and waste decontamination system enclosures, and regulated work area enclosures. Negative air pressure ventilation units shall be in operation during this testing. Testing of barriers and enclosures is not required on days when there are no Phase IIB, or cleaning activities scheduled. Test results, observations and any modifications shall be documented in the daily project log by the asbestos abatement supervisor.

D. The Contractor shall inspect all barriers at least twice daily - before the start of and following the completion of each day’s abatement activities. Inspections are also required on days when there is no Phase II work or support activities scheduled. Inspections and observations shall be documented in the daily project log by the asbestos abatement supervisor.

3.5 ASBESTOS HANDLING & CLEANING

A. The Contractor shall conduct all asbestos abatement activities in accordance with ICR 56 or an approved asbestos project variance.

B. All asbestos materials shall be removed using wet methods. Dry removal, sweeping, wire brushing, use of pressurized water/pressurized air, or other inappropriate techniques will not be permitted.

C. Airless sprayers shall be utilized to control airborne asbestos fiber concentrations.

D. The Contractor is responsible for taking appropriate measures to reduce nuisance noise from migrating to other areas of site.

E. Regulated Asbestos-Containing Material (RACM) Waste shall be immediately bagged and be transported to the waste decontamination enclosure. Waste bags shall then be cleaned in the waste decontamination enclosure, double-bagged, labeled, and transported to the waste dumpster, trailer, etc.

F. Waste bag transfer shall take place inside a cart that has been lined with two (2) layers of 6-mil polyethylene. This cart shall be covered by polyethylene during any waste transfer activities and be labeled with appropriate asbestos signage.

G. Waste generated as part of this project that will be disposed of as "Construction & Demolition" Debris shall be handled in accordance with all applicable requirements. All waste exiting the RWA is subject to Project Monitor visual inspection regarding cleanliness, regardless of its intended method of waste shipment (RACM or C & D Debris).

H. The Contractor shall be responsible for providing the Project Monitor / Air Sampling Technician with access to the regulated work area in accordance with all applicable safety regulations including ladders, lifts, etc. The Contractor shall also provide the Project Monitor / Air Sampling Technician with access to the decontamination unit and hot water on as requested.

3.6 WASTE DISPOSAL

A. The Contractor shall ensure that all asbestos waste/debris is sufficiently wet prior to being bagged/containerized for disposal.

B. Bags, drums, or other acceptable packages/containers used for Regulated asbestos waste shall be labeled with appropriate asbestos waste generator tags/labels.

C. Two 6-mil polyethylene bags or two (2) layers of 6-mil plastic sheeting shall be utilized for the disposal of all asbestos waste.

D. A daily count of asbestos waste bags, drums, containers, etc. shall be recorded by the asbestos abatement supervisor. This count shall be provided to the Project Monitor each day.

E. All asbestos waste generated by the work shall be sent to a properly permitted landfill or disposal facility as either Regulated Asbestos Waste or Construction Demolition Debris. Appropriate Waste manifests shall accompany all asbestos-containing material waste that is removed from the site. Original waste manifests shall be submitted directly to the Owner/Owner's Representative.

F. Vehicles used for the transport of all asbestos waste shall bear all appropriate permit tags, markings, and placards.

3.7 INSPECTIONS

A. The Contractor shall not interfere, impede, or delay any inspections by the Owner/Owner's Representative, Project Designer, Project Monitor, or any federal, state, or local inspectors.

B. The Contractor shall request inspections from the Project Monitor at the following intervals, as applicable to the project:

1. Upon completion of the decontamination system enclosure(s).
2. Upon completion of the preparation of the work area.
3. Upon completion of the abatement process.
4. Upon completion of teardown/dismantling activities.

C. The asbestos abatement supervisor shall be responsible for adequately documenting inspections in the daily project log.

3.8 ASBESTOS PROJECT MONITORING/AIR SAMPLING

A. The Contractor shall not include any costs in their price for project monitoring or air sampling. The Contractor will not be responsible for the selection or payment of the Project Monitoring/Air Sampling firm.

B. The Project Monitor/Air Sampling Technician will be responsible for the following:

1. Conducting air sampling during the asbestos abatement phase of the project (as applicable).
2. Conducting a visual inspection for completeness of abatement and completeness of cleanup as per the provisions of the current ASTM Standard E1368 - "Standard Practice for Visual Inspection of Asbestos Abatement Projects." An entry shall be made into the daily project log by both the asbestos abatement supervisor and the individual performing the inspection, detailing the findings of the visual inspection. The full name and NYSDOL asbestos handling certificate number of the certified individual performing the inspection shall also be documented in the supervisor's daily project log.

C. Project Monitor Qualifications

1. The Project Monitor shall have valid certification and associated documentation. The Contractor understands that a Project Monitor has been retained by the Owner to oversee the asbestos abatement project and that the Owner has authorized the Project Monitor to stop the Contractor's work if the Contractor is not following the contract documents, design documents, applicable codes, rules, and regulations, and/or a NYSDOL-approved asbestos project variance. Work shall only be permitted to commence if allowed by the Owner/Owner's Representative and the Project Designer after corrective actions have been made. The Contractor acknowledges that it is their responsibility to follow all applicable rules and regulations pertaining to asbestos abatement and failure to do so may result in lost time and/or dismissal from site at no cost to the Owner, Project Designer, or Project Monitor. The Contractor shall not be compensated for any lost time, labor, materials, etc., due to inappropriate action.

END OF SECTION

Appendix:

Appendix A: Definitions

Appendix B: Arctic Company and Personnel Licensure

APPENDIX A

DEFINITIONS

SUBPART 56-2

DEFINITIONS

56-2.1 Terms. As used in or in connection with this Part, the following terms mean:

(a) **Abatement.** Any portion of an asbestos project that includes procedures to control fiber release from asbestos containing material. This includes removal, encapsulation, enclosure, repair, or handling of asbestos material that may result in the release of asbestos fiber.

(b) **Accepted Methods/Methodologies.** Procedures, regulations, or standards, which are published by recognized standards organizations (e.g. NIOSH, ASTM, ANSI), or are included within federal, state or local governmental regulations (e.g. OSHA, USEPA).

(c) **Active Project.** A project becomes active when construction of the personal decontamination unit is required to be commenced, or when ACM, PACM or asbestos material is disturbed, whichever comes first, and is considered active until completion of Phase IID, unless, in response to a written request, permission is granted by the Department of Labor Engineering Services Unit to suspend the work on the project for a specified time period.

(d) **Additional Contractual Work**. Additional asbestos abatement work not originally included within the NYS DOL asbestos project notification.

(e) **Adequately Wet.** Sufficiently mix or penetrate a material with amended water to prevent the release of visible emissions. If visible emissions are observed coming from asbestos-containing material, then the material has not been adequately wetted.

(f) **Aggressive Air Sampling.** An accepted method of sampling in which mechanical equipment is used before and during the sampling period to stir up settled dust/asbestos fibers.

(g) **Agricultural Building/Structure.** A building/structure which is or was used exclusively for agricultural or horticultural activity. This definition does not include converted structures or buildings currently used for residential purposes or the processing or retail merchandising of agricultural or horticultural commodities.

(h) **Airlock.** A system for permitting entrance and exit, while restricting air movement, between a contaminated area and an uncontaminated area.

(i) **Air Sampling.** The process of measuring the fiber content of a known volume of air collected during a specific period of time, using accepted methodologies.

(j) **Ambient Air Sampling.** A method of sampling by which an air sample is collected outside the regulated abatement work area, and is collected without the use of aggressive air sampling techniques.

(k) **Amended Water.** Water to which a surfactant has been added.

(l) **Approved Asbestos Safety Training Program.** A program, approved by the New York State Commissioner of Health, providing training in the various disciplines that may be involved in an asbestos project.

(m) **Asbestos.** Any naturally occurring hydrated mineral silicate separable into commercially usable fibers, including chrysotile (serpentine), amosite (cumingtonite-grunerite), crocidolite (riebeckite), tremolite, anthophyllite and actinolite.

(n) **Asbestos Abatement Contractor.** An asbestos contractor who performs abatement during an asbestos project or employs persons performing such abatement.

(o) **Asbestos Abatement Contractor Daily Project Log.** A bound daily narrative journal maintained by the asbestos abatement contractor, which contains a synopsis of all pertinent events that occur throughout Phase II of the asbestos project.

(p) **Asbestos Containing Material (ACM).** Any material containing greater than one percent (1%) of asbestos, also known as **Asbestos Material**.

(q) **Asbestos Contractor.** The State, any political subdivision of the State, a public authority or any other governmental agency or instrumentality thereof, self-employed person, company, unincorporated association, firm, partnership or corporation and any owner or operator thereof, which engages in any portion of an asbestos project, or employs persons engaged in any portion of an asbestos project.

(1) **Exception:** Property owners or prime contractors who hire asbestos contractors, but do not, themselves, direct or control the work.

(r) **Asbestos Control Bureau.** Asbestos Control Bureau, Division of Safety and Health, New York State Department of Labor.

(s) **Asbestos Handler (Worker).** Any person who performs the duties described in Section 56.3.2(d)(1) of this Part.

(t) **Asbestos Handling Certificate.** A certificate issued by the Commissioner in any of the categories set forth in Section 56-3.2(d) of this Part.

(u) **Asbestos Handling License.** A license issued by the Commissioner pursuant to Section 56-3.1 of this Part.

(v) **Asbestos Material.** Any material containing greater than one percent (1%) of asbestos, also known as **Asbestos Containing Material (ACM)**.

(w) **Asbestos Project.** Work that involves the removal, encapsulation, enclosure, repair or disturbance of friable or non-friable asbestos, or any handling of asbestos material that may result in the release of asbestos fibers. For the purpose of compliance with this Part, an asbestos project shall include any disturbance of asbestos fibers, and the planning, asbestos survey (as per Subpart 56-5.1), design, background air sampling, inspection, air sampling and oversight of abatement work, cleanup, and the handling of all asbestos material subject to abatement, as well as the supervising of such activities. Installation of friable ACM shall also be considered an asbestos project. An asbestos project starts with Phase I when the planning, asbestos survey, and design work begins or is required to begin. The project shall not be considered completed until Phase II D is complete. (See Table 1 Below).

Table 1

ASBESTOS PROJECT PHASES OF WORK

Phase I (Prior to Asbestos Abatement Contractor Mobilization) Pre-Abatement		**Phase II** ⇦ Start----------Abatement----------End ⇨			
A	**B**	**A**	**B**	**C**	**D**
Asbestos Survey, Planning & Design	Background Air Sampling	Regulated Abatement Work Area(s) Preparation & Enclosure Construction	Asbestos Handling including,Gross Removal or Abatement, Initial Cleans and Waste Removal	Final Cleaning & Clearance Air Samples	Final Waste Removal From Site
⇦ Start----------Asbestos Project----------End ⇨					

(1) Where any work is subcontracted, only that part of the work involving asbestos shall be deemed to be an asbestos project.

(2) Asbestos projects include Large asbestos projects, Small asbestos projects, Minor asbestos projects, incidental disturbance asbestos projects and emergency projects as defined elsewhere in this Part. For purposes of licensing, certification, notification, air sampling and asbestos survey requirements, asbestos projects shall include in-plant operations.

(i) Large asbestos project. An asbestos project involving the removal, disturbance, enclosure, encapsulation, repair or handling of 160 square feet or more of ACM, PACM or asbestos material or 260 linear feet or more of ACM, PACM or asbestos material.

(ii) Small asbestos project. An asbestos project involving the removal, encapsulation, enclosure, repair, disturbance or any handling of more then 10 and less than 160 square feet of ACM, PACM or asbestos material or more than 25 and less than 260 linear feet of ACM, PACM or asbestos material.

(iii) Minor asbestos project. An asbestos project involving the removal, disturbance, repair, encapsulation, enclosure or handling of 10 square feet or less of ACM, PACM or asbestos material, or 25 linear feet or less of ACM, PACM or asbestos material.

(x) **Asbestos Project Air Sampling Technician.** An individual who performs the duties described in Section 56-3.2(d)(3) of this Part.

(y) **Asbestos Survey.** A thorough inspection for and identification of all PACM, suspect ACM, or asbestos material throughout the building/structure or portion thereof to be demolished, renovated, remodeled, or repaired. (See Subpart 56-5)

(z) **Asbestos Waste.** ACM, PACM, asbestos material or asbestos contaminated objects requiring disposal pursuant to applicable laws or regulations. This includes RACM as well as Category I and II Non-Friable ACM.

(aa) **Authorized Visitor.** Any party on an asbestos project, who has to enter the asbestos project restricted area or regulated abatement work area for emergency purposes or regulatory compliance inspections. Examples include the building/structure owner, his or her agent or representative, utility company representatives, the Commissioner or his or her agents, and personnel of any regulatory agency having jurisdiction over the project. Visitors shall comply with all applicable requirements of OSHA 29 CFR 1926.

(ab) **Background Air Sampling.** A method used to determine airborne fiber concentrations in the area where abatement work is to be conducted, prior to starting Phase II A of the asbestos project.

(ac) **Barriers.** Critical Barriers and Isolation Barriers.

(ad) **Building/Structure.** A structure wholly or partially enclosed within exterior walls and a roof, intended to afford shelter to persons, animals or property; or a structure used as a conveyance for utilities, vehicular traffic or pedestrians (e.g. bridge, tunnel, manhole, subsurface conduits).

(ae) **Building/Structure Owner.** The State, any political subdivision of the State, a public authority or any other governmental agency or instrumentality thereof,

person, company, unincorporated association, firm, partnership or corporation in whom legal title to the premises is vested unless the premises are held in land trust, in which instance building/structure owner means the person in whom beneficial title is vested.

(af) **Building/Structure Owner's Authorized Representative.** A licensed asbestos contractor firm contractually responsible for execution of any building owner's responsibility, as required by this Part, during any phase of an asbestos project at the building owner's building/structure.

(ag) **Bulk Sampling.** Accepted methods for collecting samples of suspect materials for appropriate analyses by NYS ELAP approved laboratories, to determine asbestos content.

(ah) **Category I Non-Friable ACM.** NESHAP classification - Asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products, containing more than one percent (1%) asbestos, that when dry, can not be crumbled, pulverized, or reduced to powder by hand pressure.

(ai) **Category II Non-Friable ACM.** NESHAP classification - Any material, excluding Category I Non-Friable ACM, containing more than one percent (1%) asbestos, that when dry, can not be crumbled, pulverized, or reduced to powder by hand pressure.

(aj) **Class I Asbestos Work.** OSHA term meaning activities involving the abatement of Thermal Systems Insulation (TSI), and surfacing ACM and PACM.

(ak) **Class II Asbestos Work.** OSHA term meaning activities involving the abatement of ACM which is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

(al) **Class III Asbestos Work.** OSHA term meaning Repair and Maintenance operations, where no more than a minor quantity of ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed.

(am) **Class IV Asbestos Work.** OSHA term meaning Maintenance and Custodial Activities during which employees contact but do not disturb ACM or PACM and activities to clean up non-ACM dust, waste and debris resulting from Class I, II and III activities.

(an) **Clean Room.** An uncontaminated area or room, which is a part of the personal decontamination enclosure, with provisions for storage and changing of persons' street clothes and protective equipment.

(ao) **Cleanup.** The utilization of HEPA-vacuuming or wet cleaning or both to control and eliminate accumulations of asbestos material and asbestos waste material.

(ap) **Clearance Air Sampling.** An accepted method of air sampling used upon completion of final cleaning, during Phase IIC of an asbestos project. This method consists of using aggressive air sampling techniques to dislodge and stir up remaining asbestos fibers, then air samples are collected for appropriate analysis to determine representative airborne fiber concentrations.

(aq) **Commissioner.** The Commissioner of the New York State Department of Labor.

(ar) **Containment.** The negative-pressurized enclosure within the restricted area, which establishes the regulated abatement work area and surrounds the location where the asbestos abatement is actually taking place.

(as) **Critical Barrier.** Barriers that seal off all openings to or within the defined regulated abatement work area, including but not limited to operable windows and skylights, doorways, ducts, grills, diffusers and any other penetrations to surfaces adjacent to or within the regulated abatement work area.

(at) **Curtained Doorway.** An assembly which consists of at least three (3) overlapping sheets of 6-mil fire retardant plastic over an existing or temporarily framed doorway, used to separate the chambers within the decontamination system enclosures and to inhibit airflow if the negative air ventilation system shuts down.

(au) **Decontamination System Enclosure.** A series of connected rooms, usually attached to the regulated abatement work area, for the decontamination of persons, materials and equipment.

(av) **Demolition.** The wrecking or removal of any load-supporting structural member of a building or structure.

(aw) **Department.** The New York State Department of Labor.

(ax) **Disturbance.** Any activities that disrupt the matrix of ACM or PACM, or generate debris, visible emissions or airborne asbestos fibers from ACM or PACM. This includes moving of friable asbestos containing material from one place to another.

(ay) **Emergency.** An unexpected, unanticipated or unforeseen occurrence, including but not limited to, a steam, chemical, gas or water line rupture, a boiler failure, a building/structure collapse, or act of nature which may pose:

(1) an imminent danger to the health and safety of the public; or

(2) an asbestos-related risk to the health and safety of the public from release of asbestos fibers.

(az) **Emergency Asbestos Project.** An asbestos project which is necessary to respond to an emergency.

(ba) **Encapsulant (Sealant) or Encapsulating Agent.** A liquid material, which can be applied to asbestos material and which prevents the release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together and to the substrate (penetrating encapsulant). See **Sealant**.

(bb) **Encapsulation.** Abatement consisting of the coating or spraying of asbestos material with an encapsulant (sealant) or encapsulating agent.

(bc) **Enclosure.** Abatement consisting of the construction of airtight walls, ceilings and floors between the asbestos material and the building/structure environment, or around surfaces coated with asbestos material, or any other appropriate procedure as determined by the Department, which prevents the release of asbestos fibers.

(bd) **EPA.** The United States Environmental Protection Agency.

(be) **Equipment Room.** A contained area or room which is part of the personal decontamination system enclosure with provisions for the storage of contaminated clothing and equipment.

(bf) **Fiber (Asbestos Fiber).** Generally, a slender or elongated structure, which results from the break up of ACM, PACM or asbestos material. However, the definition of an asbestos fiber is also dependent upon the approved accepted method of air sampling and analysis utilized for the specific phase of the asbestos project.

(bg) **Fixed Object.** Equipment, furniture or other item that is affixed, as a whole, to a floor, ceiling, wall or other building structure or system.

(bh) **Friable.** Any material that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure, or is capable of being released into the air by hand pressure.

(bi) **Glovebag.** A manufactured impervious bag-like enclosure constructed of at least six (6) mil transparent plastic, seamless at the bottom, with inward-projecting long sleeve glove(s), which may also contain an inward-projecting water-wand sleeve, an internal tool pouch, and an attached, labeled receptacle or portion for asbestos waste. The glovebag is constructed and installed to surround the object or area to be decontaminated and contain all asbestos fibers released during the abatement process.

(bj) **Glovebag Technique.** A method for removing asbestos material from heating, ventilating, and air conditioning (HVAC) ducts, piping runs, valves, joints and elbows, and other non-planar surfaces, by use of a glovebag.

(bk) **Glue.** A material used as an adhesive, such as the material used to hold tiles to a surface. See **Mastic**.

(bl) **HEPA-Filter.** A high efficiency particulate air filter capable of trapping and retaining 99.97 percent of all mono-dispersed particles of 0.3 microns in diameter or larger.

(bm) **HEPA-Vacuum Equipment.** Vacuuming equipment designed for abatement, with a high efficiency particulate air filtration system.

(bn) **Holding Area.** A chamber in the waste decontamination enclosure utilized for temporary storage of containerized ACM waste, prior to transfer to waste transport vehicle.

(bo) **Incidental Disturbance.** The unintentional disturbance of, ACM, PACM, or asbestos material.

(bp) **Incidental Disturbance Asbestos Project.** The cleanup, repair or encapsulation of less than 10 square feet or less than 25 linear feet of incidentally disturbed ACM, PACM or asbestos material.

(bq) **Inspector.** Any person who performs the duties described at Section 56-3.2(d)(4) of this Part.

(br) **Intact.** Asbestos material that has not crumbled, been pulverized, or otherwise been damaged or disturbed, and the material's matrix has not noticeably deteriorated.

(bs) **Intermediate Portions of a Project**. The discrete abatement segments that will take place where non-continuous interim notifications are required, as per Section 56-3.4(b)(4)(v), for large asbestos projects

(bt) **Isolation Barriers.** Installed temporary hardwall barriers that complete the containment enclosure and establish the regulated abatement work area.

(bu) **Lockdown Encapsulant.** A thinned out bridging encapsulant used for lockdown purposes to assist with cleanup as per this Part.

(bv) **Management Planner.** Any person who performs the duties described at Section 56-3.2 (d) (9) of this Part.

(bw) **Mastic.** A pasty material used as an adhesive.

(bx) **Mounted Object**. Equipment, furniture, or other item that is attached, in whole or in part, to a floor, ceiling, wall or other building structure or system or to a fixed object.

(by) **Movable Object.** Equipment, furniture or other item that is not attached or affixed, in whole or in part, to a floor, ceiling, wall or other building structure or system or to a fixed object.

(bz) **Multi-employer Work Sites.** Any demolition, renovation, remodeling or repair project work site, which includes work covered by this part, where more than one employer is reasonably expected to be on-site during the project.

(ca) **Multiple Abatement.** The abatement of more than one type of ACM within the same containment.

(cb) **Negative Air Pressure Equipment.** A local exhaust system, capable of maintaining air pressure within a containment at a lower pressure than the air pressure outside of such containment, and which provides for HEPA filtration of all air exhausted from the containment.

(cc) **NESHAP.** National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).

(cd) **NIOSH.** The National Institute for Occupational Safety and Health.

(ce) **Non-Asbestos Material.** Any material documented to contain one percent (1%) or less of asbestos.

(cf) **Non-Friable.** Any material that when dry, can not be crumbled, pulverized, or reduced to powder by hand pressure, and is not capable of being released into the air by hand pressure.

(cg) **Non-Friable Organically Bound (NOB) Asbestos Material.** Non-friable asbestos materials embedded in flexible-to-rigid asphalt or vinyl matrices, including but not limited to flooring materials, adhesives, mastics, asphalt shingles, roofing materials and caulks.

(ch) **Occupied Area.** Any frequented portion of the work site where abatement is not taking place.

(ci) **Operations and Maintenance Worker.** Any person who performs the duties described at Section 56-3.2 (d) (5) of this Part.

(cj) **OSHA.** The Occupational Safety and Health Administration.

(ck) **Outside Air.** The air immediately outside the building or structure in which an asbestos project is performed.

(cl) **Person.** Any natural person.

(cm) **Personal Air Sampling.** Air sampling located in a worker's breathing zone.

(cn) **Personal Decontamination System Enclosure.** An area designated for controlled passage of all persons to and from the regulated abatement work area.

(co) **Personal Protective Equipment (PPE).** Disposable work suits or coveralls, head covering, eye protection, footwear, gloves and appropriate NIOSH-approved respirators with appropriate NIOSH-approved filters.

(cp) **Plasticize.** To cover floors, walls, ceilings or other surfaces with 6-mil fire-retardant plastic sheeting.

(cq) **Presumed Asbestos Containing Material (PACM).** All Thermal System Insulations and Surfacing Materials found in buildings constructed no later than 1980. PACM is considered to be ACM unless proven otherwise by appropriate bulk sampling and laboratory analyses.

(cr) **Project Air Sampling.** Area air sampling conducted in accordance with Subpart 56-4 of this Part during the course of the asbestos project.

(cs) **Project Designer.** Any person who performs the duties described at Section 56-3.2(d)(7) of this Part.

(ct) **Project Monitor.** Any person who performs the duties described at Section 56-3.2(d)(8).

(cu) **Public.** Any natural person except:

(1) A person engaged in an asbestos project;

(2) An authorized visitor;

(3) Police, fire, or other public safety personnel.

(cv) **Receptor.** Any opening, which could admit asbestos fibers into a structure if not properly protected. Examples include but are not limited to operable windows, doors, vents, air intakes or exhausts of any mechanical device within a building or structure.

(cw) **Regulated Abatement Work Area.** The portion of the restricted area where abatement work actually occurs. For tent work areas, the interior of each tent is a regulated abatement work area. For OSHA Class I and Class II asbestos abatement, the interior of the restricted area containment enclosure is the regulated abatement work area. For exterior non-friable asbestos abatement conducted without the establishment of negative air ventilation systems or containment enclosures, the entire restricted area surrounding the abatement location is considered to be the regulated abatement work area.

(cx) **Regulated Asbestos-Containing Material (RACM).** Friable ACM or PACM, Category I Non-friable ACM that has become friable or has been or will be subjected to sanding, grinding, cutting or abrading, or Category II Non-friable ACM that has a high probability of becoming or has become crumbled,

pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

(cy) **Remodel.** For purposes of this code, remodel shall mean the same as renovation.

(cz) **Remote Decontamination System Enclosure.** Decontamination systems that are not attached to the regulated abatement work area but are within the work site.

(da) **Removal.** Abatement, consisting of operations where ACM, PACM or asbestos material is removed or stripped from structures or substrates. This includes demolition operations.

(db) **Renovation.** The altering of an existing building/structure, or a portion of building/structure components or systems, including the stripping, removal or abatement of ACM from a building or structure. Operations in which load-supporting structural members are wrecked or taken out are demolitions.

(dc) **Repair (Asbestos).** Abatement, consisting of corrective action for a Minor Asbestos Project using required work practices to control fiber release from damaged ACM, PACM or asbestos material.

(dd) **Repair.** The replacement, overhaul, rebuilding, reconstructing or reconditioning of any part of a building/structure component or system with like or similar material or parts, due to damage or excessive wear.

(de) **Respiratory Protection.** NIOSH-approved respirators with appropriate NIOSH-approved filters.

(df) **Restricted Area.** A restricted area established and marked for the abatement portion of an asbestos project. This area shall include, but not be limited to asbestos project regulated abatement work areas and any contiguous decontamination facilities, adjoining staging areas where work materials, debris or waste from such work may accumulate, remote decontamination areas, and waste storage areas (dumpsters, trailers, etc.).

(dg) **Restricted Asbestos Handler (Allied Trades).** Any person who performs the duties described at Section 56-3.2 (d) (2) of this Part.

(dh) **Satisfactory Clearance Air Sampling Results.** See Subpart 56-4.

(di) **Sealant.** An encapsulating agent. A material which can be applied to asbestos containing material which prevents the release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together and to the substrate (penetrating encapsulant).

(dj) **Sequential Abatement.** The abatement of different types of asbestos containing material within a common regulated abatement work area in a priority order. (See Section 56-8.6)

(dk) **Shower Room.** A room between the clean room and the equipment room in the personal decontamination enclosure with hot and cold running water controllable at the tap and arranged for complete showering during decontamination.

(dl) **Supervisor.** Any person who performs the duties described at Section 56-3.2 (d) (6) of this Part.

(dm) **Suspect Miscellaneous ACM.** Any suspect asbestos-containing material that is not PACM, such as floor tiles, ceiling tiles, mastics/adhesives, sealants, roofing materials, cementitous materials, etc. A listing of typical suspect miscellaneous ACM can be found in Subpart 56-5. All suspect miscellaneous ACM must be assumed to be ACM, unless proven otherwise by appropriate bulk sampling and laboratory analyses.

(dn) **Surfacing Material.** Material that is sprayed-on, troweled-on, or otherwise applied to surfaces (such as acoustical or finish plaster on ceilings and walls, and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes).

(do) **Surfactant.** A chemical wetting agent added to water to reduce the surface tension of the water and improve its penetration for added mitigation of airborne fiber release.

(dp) **Tent.** A fire retardant polyethylene enclosure that includes walls, ceiling and a floor as required to remove ACM, PACM or asbestos material.

(dq) **Thermal System Insulation**. Insulation material applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat gain or loss.

(dr) **Variance (Site-specific).** Relief in accordance with Section 30 of the Labor Law from specific sections of Industrial Code Rule 56 for a specific project.

(ds) **Variance (Applicable) (AV).** Blanket relief in accordance with Section 30 of the Labor Law from specific sections of Industrial Code Rule 56 for a particular type of project.

(dt) **Visible Emission.** Any emission of particulate material that can be seen without the aid of instruments.

(du) **Washroom.** A room between the regulated abatement work area and the holding area in the waste decontamination system enclosure, where equipment and waste containers are wet cleaned or HEPA-vacuumed.

(dv) **Waste Decontamination System Enclosure.** An area, consisting of a washroom and a holding area separated from each other by airlocks, designated for the controlled transfer of materials and equipment from the regulated abatement work area.

(dw) **Waste Staging Area.** The area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the regulated abatement work area.

(dx) **Wet Cleaning.** The process of eliminating asbestos contamination from surfaces, equipment or other objects by using cloths, mops, or other cleaning tools that have been saturated with amended water.

(dy) **Work Site.** Building, structure, parcel of land or premises where an asbestos project takes place.

APPENDIX B

ARCTIC COMPANY & PERSONNEL LICENSURE

NEW YORK STATE | Department of Labor

WORKING FOR YOU

DIVISION OF SAFETY & HEALTH LICENSE AND CERTIFICATE UNIT, STATE OFFICE CAMPUS, BLDG. 12, ALBANY, NY 12226

ASBESTOS HANDLING LICENSE

Arctic Enterprises, Inc.
7010 Fly Road, Suite 1, East Syracuse, NY 13057

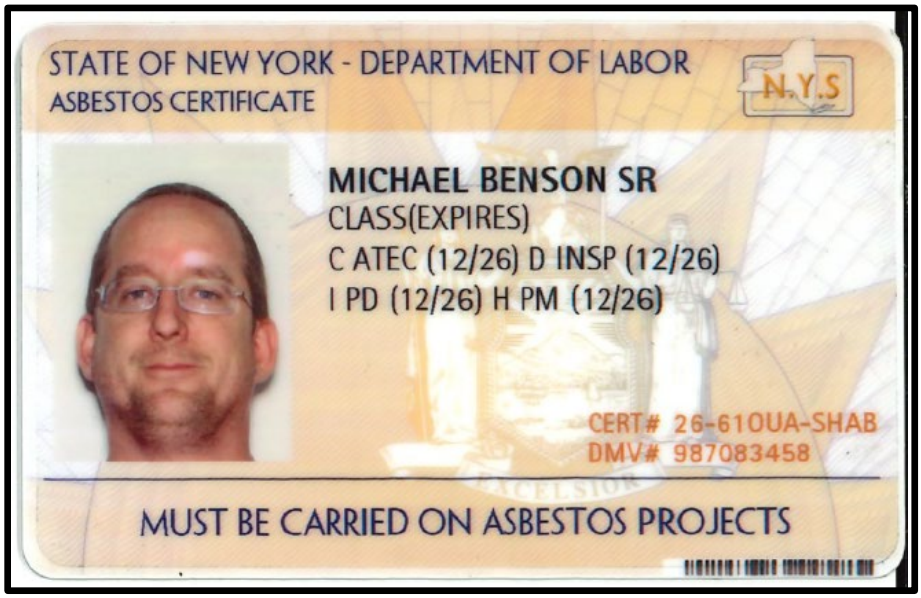
License Number: 75469
License Class: FULL
Date of Issue: 06/11/2026
Expiration Date: 06/30/2027
Duly Authorized Representative: Janette Van Wie

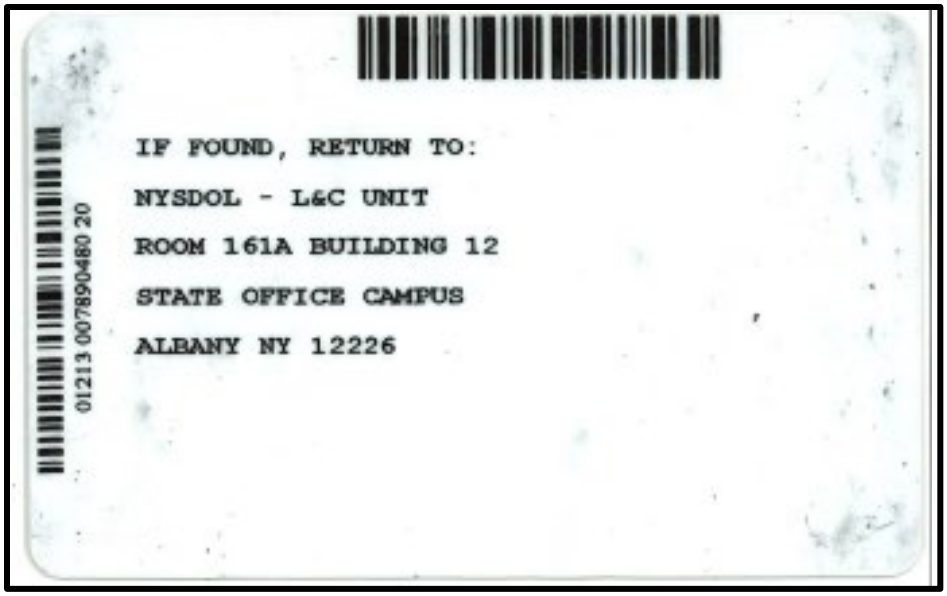
This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Vicki Mockler, Director
For the Commissioner of Labor

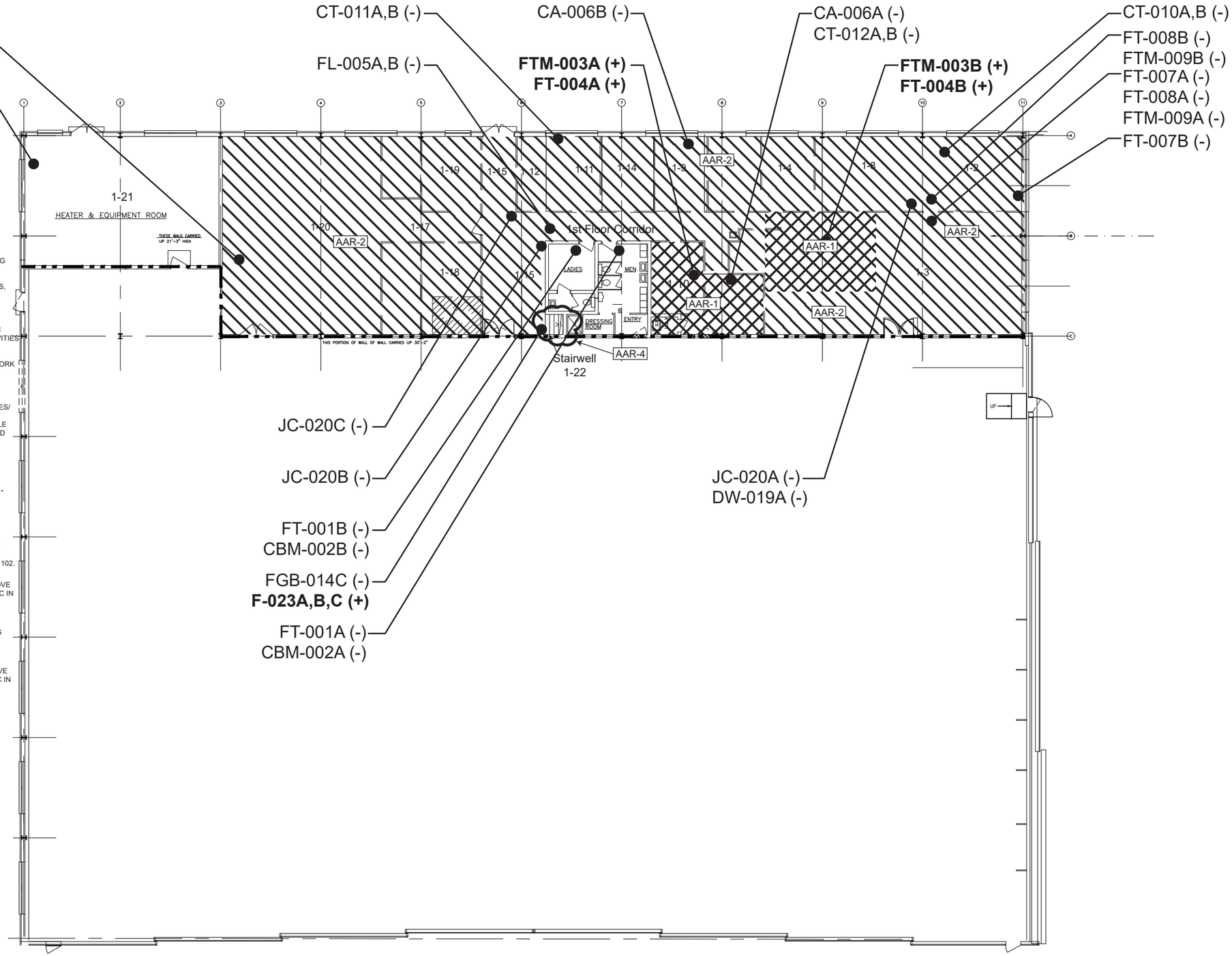
ASBESTOS CERTIFICATION





The following letter codes (as shown on the handling certificate) represent the corresponding asbestos classifications.		
A - Asbestos Handler	D - Asbestos Inspector	G - Asbestos Supervisor
B - Allied Trades	E - Management Planner	H - Asbestos Project Monitor
C - Air Sampling Technician	F - Operations & Maintenance	I - Asbestos Project Designer

Arctic Enterprises, Inc.
7010 Fly Road, Suite 1, East Syracuse, New York 13057
315-476-1757 (p)



GENERAL NOTES:

1. CONTRACTOR TO PROTECT THEIR EMPLOYEES WITH ADEQUATE PERSONAL PROTECTIVE EQUIPMENT AT ALL TIMES (REGARDLESS OF NEGATIVE EXPOSURE ASSESSMENT DATA) WHEN PERFORMING WORK ON THIS PROJECT.
2. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL INTERCONNECTS FOR WATER & POWER IN SAFE MANNER.
3. CONTRACTOR ACKNOWLEDGES WORK AREA ACCESS, STAGING AREAS, ETC. WILL BE IDENTIFIED AND APPROVED BY THE OWNER PRIOR TO COMMENCEMENT OF THE PROJECT. NO WORK SHALL IMPACT HIGH TRAFFIC/HIGH VISIBILITY AREAS.
4. CONTRACTOR SHALL NOT DISTURB OCCUPANTS OR GENERAL PUBLIC WITH NOISE/DUST/LIGHTING OR ANY OTHER PROJECT RELATED ACTIVITIES CONDUCTED ON SITE.
5. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING ALL WORK WITH BUILDING OWNER, INCLUDING BUT NOT LIMITED TO ISOLATION, DE-ENERGIZING MECHANICAL/ELECTRICAL/PLUMBING SYSTEMS IN PREPARATION FOR ABATEMENT.
6. THE ABATEMENT CONTRACTOR ACKNOWLEDGES THAT ANY QUANTITIES/ MEASUREMENTS, ETC. PROVIDED ON THIS DRAWING ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING SITE CONDITIONS AND ALL MEASUREMENTS FOR BID PREPARATION PURPOSES.

ASBESTOS ABATEMENT NOTES:

AAR-1 **9" x 9" BROWN FLOOR TILE AND ASSOCIATED BLACK MASTIC** - CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF ASBESTOS-CONTAINING 9" x 9' BROWN FLOOR TILE AND ASSOCIATED BLACK MASTIC IN LOCATIONS NOTED ON HM 101 AND HM 102.

AAR-2 **BLACK FLOOR TILE MASTIC** - CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF ASBESTOS-CONTAINING BLACK FLOOR TILE MASTIC IN LOCATIONS NOTED ON HM 101 AND HM 102.

AAR-3 **STAIR TREAD MASTIC** - CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF ASBESTOS-CONTAINING STAIR TREAD MASTIC IN LOCATIONS NOTED ON HM 102.

AAR-4 **THERMAL SYSTEM INSULATION (TSI)** - CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF ASBESOTS-CONTAINING THERMAL SYSTEM INSULATION IN LOCATIONS NOTED ON HM 101.

AAR-5 **THRESHOLD MASTIC** - CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF ASBESTOS-CONTAINING THRESHOLD MASTIC IN LOCATIONS NOTED IN ASBESTOS SPECIFICAN DOCUMENT.

Arctic Enterprises, Inc.
7010 Fly Road, Suite 1
East Syracuse, New York 13057

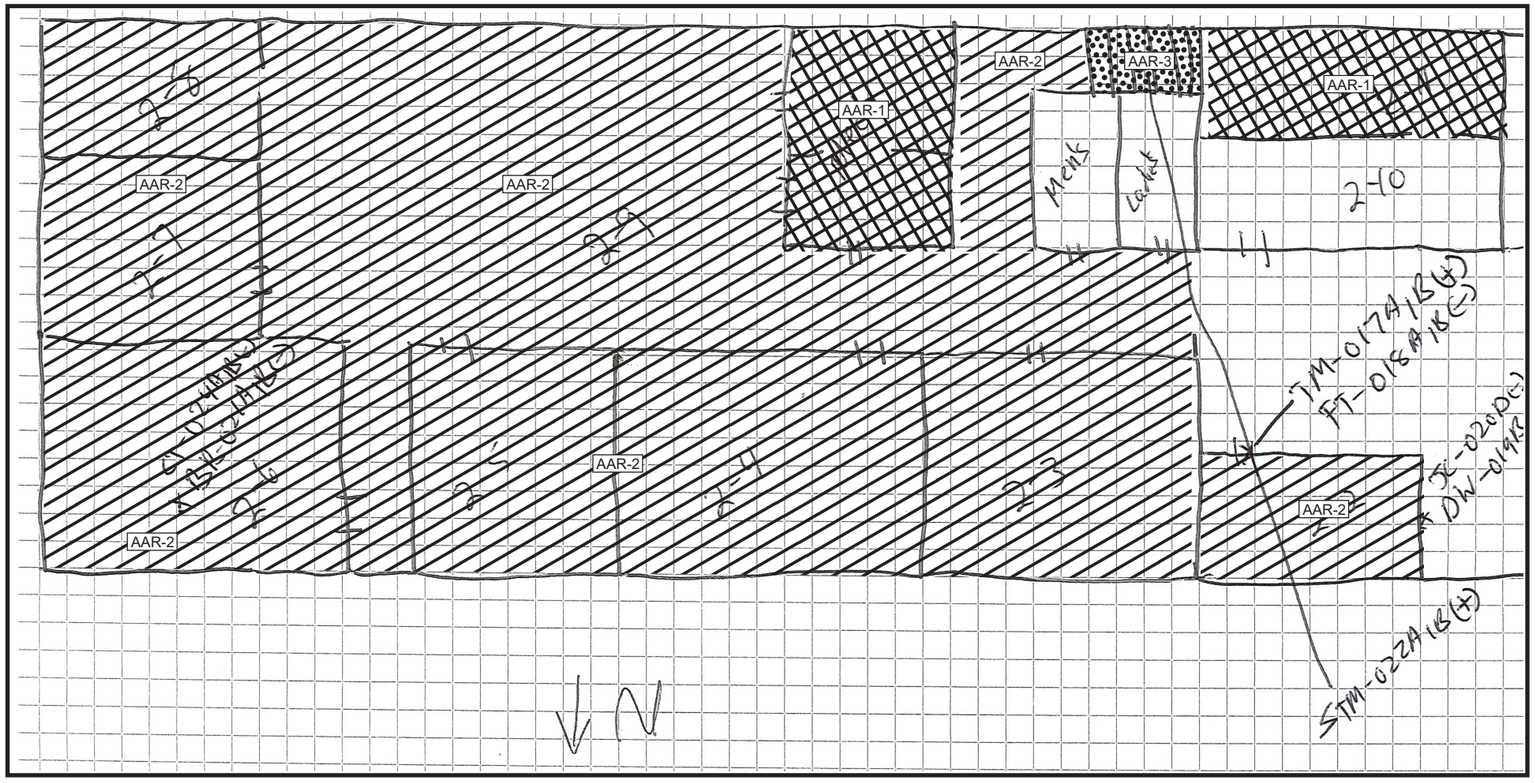
HANGAR 2
Greater Binghamton Airport
2534 Airport Road
Johnson City, New York 13790

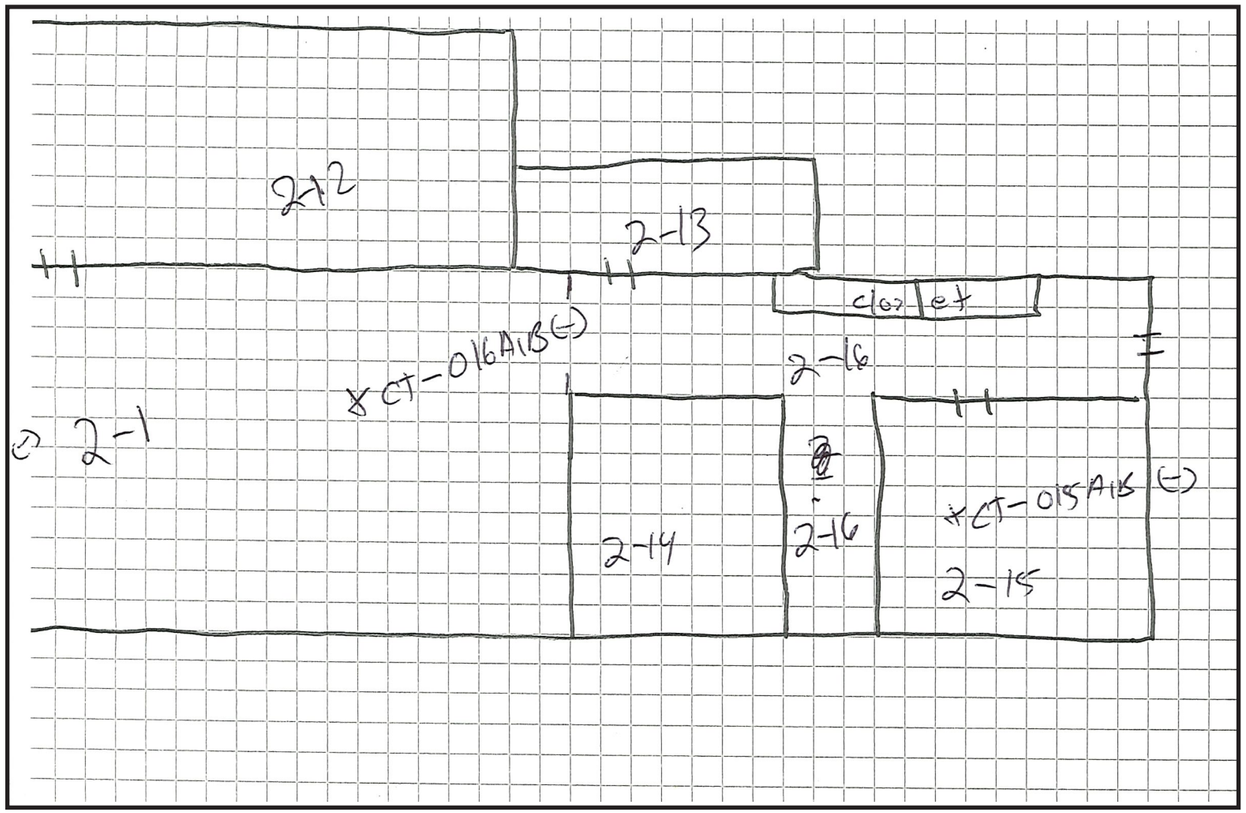
Arctic Project No.: 2026.056
Date: July 2026
By: JVW
Scale: None

FIRST FLOOR

FIRST FLOOR HAZARDOUS MATERIALS REMOVAL PLAN

HM 101





GENERAL NOTES:

1. CONTRACTOR TO PROTECT THEIR EMPLOYEES WITH ADEQUATE PERSONAL PROTECTIVE EQUIPMENT AT ALL TIMES (REGARDLESS OF NEGATIVE EXPOSURE ASSESSMENT DATA) WHEN PERFORMING WORK ON THIS PROJECT.
2. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL INTERCONNECTS FOR WATER & POWER IN SAFE MANNER.
3. CONTRACTOR ACKNOWLEDGES WORK AREA ACCESS, STAGING AREAS, ETC. WILL BE IDENTIFIED AND APPROVED BY THE OWNER PRIOR TO COMMENCEMENT OF THE PROJECT. NO WORK SHALL IMPACT HIGH TRAFFIC/HIGH VISIBILITY AREAS.
4. CONTRACTOR SHALL NOT DISTURB OCCUPANTS OR GENERAL PUBLIC WITH NOISE/DUST/LIGHTING OR ANY OTHER PROJECT RELATED ACTIVITIES CONDUCTED ON SITE.
5. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING ALL WORK WITH BUILDING OWNER, INCLUDING BUT NOT LIMITED TO ISOLATION, DE-ENERGIZING MECHANICAL/ELECTRICAL/PLUMBING SYSTEMS IN PREPARATION FOR ABATEMENT.
6. THE ABATEMENT CONTRACTOR ACKNOWLEDGES THAT ANY QUANTITIES/ MEASUREMENTS, ETC. PROVIDED ON THIS DRAWING ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING SITE CONDITIONS AND ALL MEASUREMENTS FOR BID PREPARATION PURPOSES.

ASBESTOS ABATEMENT NOTES:

AAR-1 **9" x 9" BROWN FLOOR TILE AND ASSOCIATED BLACK MASTIC -** CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF ASBESTOS-CONTAINING 9" x 9' BROWN FLOOR TILE AND ASSOCIATED BLACK MASTIC IN LOCATIONS NOTED ON HM 101 AND HM 102.

AAR-2 **BLACK FLOOR TILE MASTIC** - CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF ASBESTOS-CONTAINING BLACK FLOOR TILE MASTIC IN LOCATIONS NOTED ON HM 101 AND HM 102.

AAR-3 **STAIR TREAD MASTIC** - CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF ASBESTOS-CONTAINING STAIR TREAD MASTIC IN LOCATIONS NOTED ON HM 102.

AAR-4 **THERMAL SYSTEM INSULATION (TSI)** - CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF ASBESOTS-CONTAINING THERMAL SYSTEM INSULATION IN LOCATIONS NOTED ON HM 101 AND HM 102.

AAR-5 **THRESHOLD MASTIC** - CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF ASBESTOS-CONTAINING THRESHOLD MASTIC IN LOCATIONS NOTED IN ASBESTOS SPECIFICATION DOCUMENT.

Arctic ENTERPRISES, INC.

Arctic Enterprises, Inc.
7010 Fly Road, Suite 1
East Syracuse, New York 13057

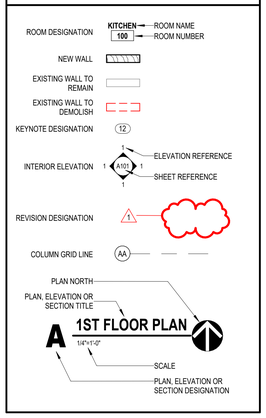
HANGAR 2
Greater Binghamton Airport
2534 Airport Road
Johnson City, New York 13790

Arctic Project No.: 2026.056
Date: July 2026
By: JVW
Scale: None

SECOND FLOOR HAZARDOUS MATERIALS REMOVAL PLAN

HM 102

GRAPHIC SYMBOLS LEGEND



HAZARDOUS MATERIALS NOTE

A LIMITED HAZARDOUS MATERIALS PRE-RENOVATION SURVEY DATED APRIL 29, 2026. WAS PREPARED BY ARCTIC ENTERPRISES. MATERIALS ANTICIPATED TO BE DISTURBED BY THE WORK WERE SAMPLED AND ANALYZED FOR ASBESTOS CONTENT. THE SURVEY IDENTIFIED EIGHT (8) ASBESTOS-CONTAINING MATERIALS (ACM). REFER TO THE HAZARDOUS MATERIALS REPORT INCLUDED IN THE PROJECT MANUAL FOR LOCATIONS AND ADDITIONAL INFORMATION REGARDING IDENTIFIED ACM.

ALL ASBESTOS ABATEMENT, HANDLING, REMOVAL, TRANSPORT, AND DISPOSAL SHALL BE PERFORMED BY A LICENSED AND PROPERLY CERTIFIED ABATEMENT CONTRACTOR IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.

IF SUSPECT HAZARDOUS MATERIALS NOT IDENTIFIED IN THE HAZARDOUS MATERIALS SURVEY ARE ENCOUNTERED DURING CONSTRUCTION, IMMEDIATELY CEASE WORK IN THE AFFECTED AREA AND NOTIFY THE OWNER AND ARCHITECT. DO NOT DISTURB THE MATERIAL OR RESUME WORK IN THE AFFECTED AREA UNTIL THE MATERIAL HAS BEEN EVALUATED AND WRITTEN DIRECTION HAS BEEN PROVIDED BY THE OWNER.

LEAD PAINT NOTE

NO LEAD-BASED PAINT SURVEY OR TESTING HAS BEEN PERFORMED AS PART OF THIS PROJECT. THE PRESENCE OR ABSENCE OF LEAD-BASED PAINT OR OTHER LEAD-CONTAINING COATINGS HAS NOT BEEN VERIFIED.

IF PAINTED OR COATED SURFACES SUSPECTED OF CONTAINING LEAD ARE ENCOUNTERED AND WILL BE DISTURBED BY THE WORK, THE CONTRACTOR SHALL IMMEDIATELY CEASE WORK IN THE AFFECTED AREA AND NOTIFY THE OWNER AND ARCHITECT. DO NOT DISTURB, REMOVE, SAND, GRIND, CUT, OR OTHERWISE IMPACT THE SUSPECT MATERIAL UNTIL IT HAS BEEN EVALUATED AND WRITTEN DIRECTION HAS BEEN PROVIDED BY THE OWNER.

ANY REQUIRED TESTING, ABATEMENT, HANDLING, REMOVAL, TRANSPORT, OR DISPOSAL OF LEAD-CONTAINING MATERIALS SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS BY PROPERLY LICENSED AND CERTIFIED PERSONNEL.

ASBESTOS REMOVAL

QUANTITY OF FLOOR TILE MASTIC REMOVAL IS SHOWN IN THE ASBESTOS ABATEMENT SPECIFICATIONS DRAWINGS HM101 AND HM102 AFTER APPENDIX B.

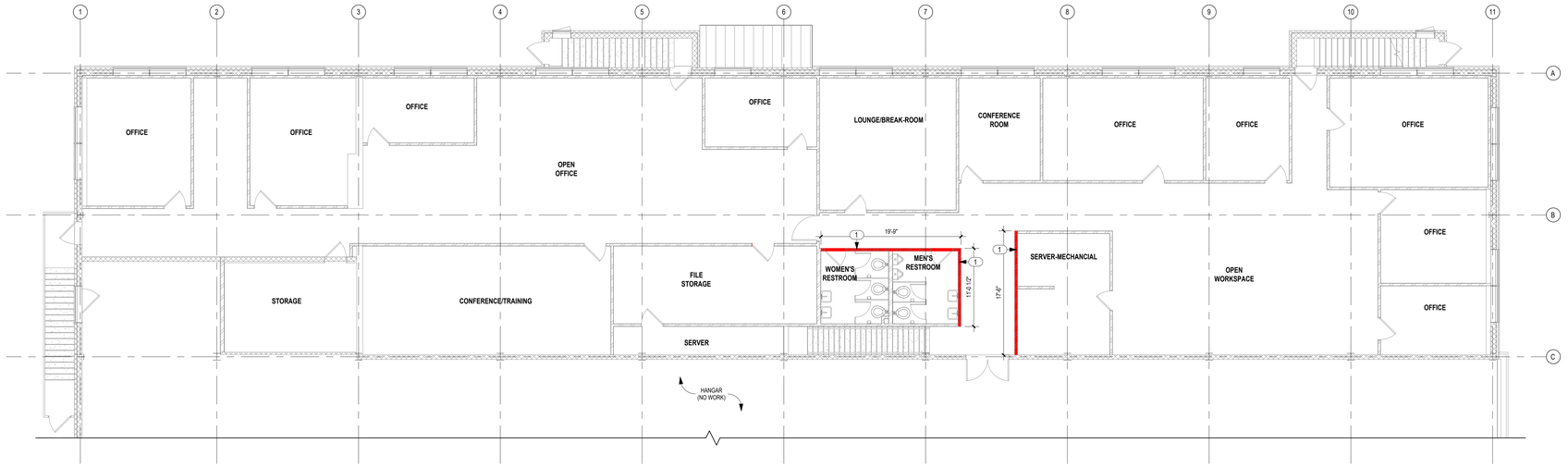
FOR ROOM NUMBERS, REFER TO THE ASBESTOS ABATEMENT SPECIFICATIONS DRAWINGS HM101 AND HM102 AFTER APPENDIX B.

GENERAL NOTES

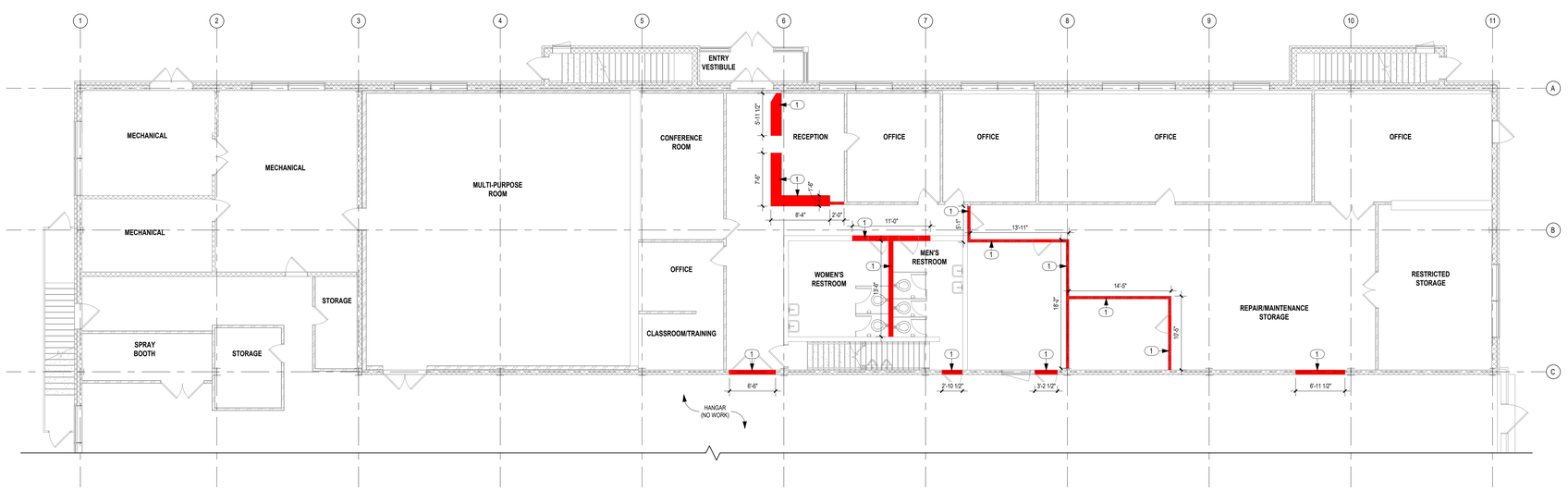
1. THIS PROJECT HAS BEEN DESIGNED BY THE OFFICE OF AUBERTINE AND CURRIER ARCHITECTS, ENGINEERS & LAND SURVEYORS, PLLC IN ACCORDANCE WITH THE LATEST (2025) NEW YORK STATE BUILDING CODE, (2025) NEW YORK STATE FIRE CODE, (2025) NEW YORK STATE MECHANICAL CODE, (2025) NEW YORK STATE PLUMBING CODE, (2025) NEW YORK STATE FUEL GAS CODE, (2025) NEW YORK STATE ENERGY CODE (2025). TO THE BEST OF OUR KNOWLEDGE AND BELIEF, THE CONSTRUCTION DOCUMENTS ARE IN CONFORMANCE THEREWITH. THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL MEANS AND METHODS OF THE BUILDING CODE AND ALL REFERENCED STANDARDS FOR CONSTRUCTION.
2. THESE DRAWINGS ARE IN PART DIAGRAMMATIC. THE DRAWINGS ARE INTENDED TO CONVEY THE GENERAL INTENT OF THE PROJECT IN ORDER TO BID THE PROJECT OUT TO CONTRACTORS AND OBTAIN BUILDING PERMIT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR SHALL INDEMNIFY THE OWNER AND HIS AGENTS THROUGH ADEQUATE INSURANCE COVERAGE AGAINST ANY CLAIMS ARISING FROM CONSTRUCTION RELATED INJURIES OR FAILURE TO MAINTAIN SAFE WORK CONDITIONS ON SITE.
4. THE CONTRACTOR & OWNER SHALL REVIEW AND BECOME FAMILIAR WITH ALL DRAWINGS PRIOR TO COMMENCEMENT OF WORK. **ANY INCONSISTENCIES FOUND BETWEEN THE DRAWINGS SHALL BE REPORTED TO THE ARCHITECT BY THE CONTRACTORS. DO NOT PERFORM ANY WORK AFFECTED IN ANY MANNER BY THE INCONSISTENCIES UNTIL THE ARCHITECT HAS CLARIFIED THE INFORMATION.**
5. THE CONTRACTOR SHALL MAINTAIN CLEAN AND SAFE WORKING CONDITIONS ON SITE.
6. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS INCLUDING BUT NOT LIMITED TO DIMENSIONS, ELEVATIONS, AND MATERIALS PRIOR TO COMMENCEMENT OF WORK. NOTIFY THE ARCHITECT IMMEDIATELY WITH ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN ACCURATE BENCHMARKS FOR LAYOUT OF ALL WORK.
7. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND INSPECTIONS.
8. OWNER SHALL BE RESPONSIBLE FOR SPECIAL INSPECTIONS. WHERE SPECIFICATIONS OR NOTES STATE OTHERWISE, THESE SHALL BE REVISED FOR OWNER TO PROVIDE SPECIAL INSPECTIONS OR THIRD PARTY INSPECTIONS.

(#) DEMOLITION KEY NOTES

(1) POSSIBLE ASBESTOS CONTAINING MATERIAL (IN FLOOR TILE AND/OR MASTIC) MAY BE EXPOSED DURING DEMOLITION OF WALL, DOORS AND MILLWORK IN PREPARATION FOR PHASE 2 WORK.



B SECOND FLOOR - ASBESTOS CONTAINING MATERIAL LOCATION PLAN
1/8" = 1'-0"



A FIRST FLOOR - ASBESTOS CONTAINING MATERIAL LOCATION PLAN
1/8" = 1'-0"

McFARLAND JOHNSON
49 COURT STREET; SUITE 240
BINGHAMTON, NY 13901

AUBERTINE and CURRIER
ARCHITECTS, ENGINEERS & LAND SURVEYORS, PLLC

CLIENT: GREATER BINGHAMTON AIRPORT
JOHNSON CITY, NEW YORK

PROJECT: REHABILITATION OF HANGAR 2 & 3 - PHASE 2

REVISIONS

NO.	DATE	DESCRIPTION

STAMP



EXPIRATION DATE: NOV. 30, 2028

PROJECT MILESTONE
BID PLANS

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECT DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

DRAWN	GNC
DESIGNED	BAJ
CHECKED	BAJ
SCALE	AS INDICATED
DATE	09/17/2026
PROJECT	19090.06

DRAWING TITLE
HANGAR 2
HAZARDOUS MATERIALS

DRAWING NUMBER
01 OF 01

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