C&S COMPANIES®

CONTRACT DOCUMENTS
FOR THE CONSTRUCTION OF

AIRPORT SUPPORT BUILDINGS

HUDSON VALLEY REGIONAL AIRPORT
DUTCHESS COUNTY
WAPPINGERS FALLS, NEW YORK

NYS COMPTROLLER'S CONTRACT NO: K007478
NYSDOT PROJECT NO. 8902.43
DUTCHESS COUNTY PROJECT NO. RFB-DCB-14-26

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NO ALTERATION PERMITTED HEREIN EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

PROJECT NO. 128.065.001

TABLE OF CONTENTS

NOTICE TO BIDDERS

PROPOSAL

ATTACHMENTS TO PROPOSAL

Non-Collusive Bidding Certificate
Resolution for Corporate Bidders
Buy American Certification
Certifications:
- Certification of Non-Segregated Facilities
- Debarment & Suspension Certification

Provisions to the General Provision, Section SP 70-23, Subsection A-16
Certification for Receipt of Addenda
Statement of Surety's Intent
Iranian Energy Sector Divestment Statement
Certification of Compliance with the Iran Divestment Act
Bidder's List Collection Form (Bidder's Information)
Bidder's List Collection Form (Subcontractor's Information)
Safety Plan Compliance Document (SPCD) Certification
Prevention of Sexual Harassment Statement
New York State MWBE Participation, Certification of Bidder

NYSDOT DOT Forms
Form AAP10LL –Solicitation Log
Form AAP19LL – Schedule of Utilization (Part 1 - MBE)
Form AAP19LL – Schedule of Utilization (Part 2- WBE)
Form AAP19LL – Schedule of Utilization (Part 3- SDVOB)
Form AAP23LL – Pre-Award Trucking Commitment Information

CONTRACT FORM

SPECIFICATIONS

PART 1 - GENERAL CONTRACT PROVISIONS

Section 10 Definition of Terms

Section 20 Proposal Requirements and Conditions

20-01 - Advertisement (Notice to Bidders)
20-02 - Qualifications of bidders
20-03 - Contents of proposal forms
20-04 - Issuance of proposal forms
20-05 - Interpretation of estimated proposal quantities
20-06 - Examination of plans, specifications and site
20-07 - Preparation of proposal
20-08 Responsive and responsible bidder
20-09 - Irregular proposals
20-10 - Bid guarantee
20-11 - Delivery of proposal

20-12 - Withdrawal or revision of proposals
20-13 - Public opening of proposals
20-14 - Disqualification of bidders
20-15 - Discrepancies and omissions

Section 30 Award and Execution of Contract
30-01 - Consideration of proposals
30-02 - Award of contract
30-03 - Cancellation of award
30-04 - Return of proposal guarantee
30-05 - Requirements of contract bonds
30-06 - Execution of contract
30-07 - Approval of contract
30-08 - Failure to execute contract

Section 40 Scope of Work
40-01 - Intent of contract
40-02 - Alteration of work and quantities
40-03 - Omitted items
40-04 - Extra work
40-05 - Maintenance of traffic
40-06 - Removal of existing structures
40-07 - Rights in and use of materials found in the work
40-08 - Final cleanup

Section 50 Control of Work
50-01 - Authority of the Resident Project Representative (RPR)
50-02 - Conformity with plans and specifications
50-03 - Coordination of contract, plans and specifications
50-04 - List of Special Provisions
50-05 - Cooperation of Contractor
50-06 - Cooperation between contractors
50-07 - Construction layout and stakes
50-08 - Authority and duties of Quality Assurance (QA) inspectors
50-09 - Inspection of the work
50-10 - Removal of unacceptable and unauthorized work
50-11 - Load restrictions
50-12 - Maintenance during construction
50-13 - Failure to maintain the work
50-14 - Partial acceptance
50-15 - Final acceptance
50-16 - Claims for adjustment and disputes

Section 60 Control of Materials
60-01 - Source of supply and quality requirements
60-02 - Samples, tests and cited specifications
60-03 - Certification of compliance/analysis (COC/COA)
60-04 - Plant inspection
60-05 - Engineer/ Resident Project Representative (RPR) field office
60-06 - Storage of materials
60-07 - Unacceptable materials
60-08 - Owner furnished materials

Section 70 Legal Regulations and Responsibility to Public

70-01 - Laws to be observed
70-02 - Permits, licenses and taxes
70-03 - Patented devices, materials and processes
70-04 - Restoration of surfaces disturbed by others
70-05 - Federal participation
70-06 - Sanitary, health and safety provisions
70-07 - Public convenience and safety
70-08 - Construction Safety and Phasing Plan (CSPP)
70-09 - Use of explosives
70-10 - Protection and restoration of property and landscape
70-11 - Responsibility for damage claims
70-12 - Third party beneficiary clause
70-13 - Opening sections of the work to traffic
70-14 - Contractor's responsibility for work
70-15 - Contractor's responsibility for utility service and facilities of others
70-15.1 - FAA facilities and cable runs
70-16 - Furnishing rights-of-way
70-17 - Personal liability of public officials
70-18 - No waiver of legal rights
70-19 - Environmental protection
70-20 - Archaeological and historical findings

Attachment A to Section 70-08 – Construction Safety and Phasing Plan (CSPP)

Section 80 Execution and Progress

80-01 - Subletting of contract
80-02 - Notice to proceed
80-03 - Execution and progress
80-04 - Limitation of operations
80-04.1 - Operational safety on airport during construction
80-05 - Character of workers, methods and equipment
80-06 - Temporary suspension of the work
80-07 - Determination and extension of contract time
80-07.1 - Contract time based on Calendar Days
80-08 - Failure to complete on time
80-09 - Default and termination of contract
80-10 - Termination for national emergencies
80-11 - Work area, storage area and sequence of operations

Section 90 Measurement and Payment

90-01 - Measurement of quantities
90-02 - Scope of payment
90-03 - Compensation for altered quantities
90-04 - Payment for omitted items
90-05 - Payment for extra work
90-06 - Partial payments
90-07 - Payment for materials on hand
90-08 - Payment of withheld funds
90-09 - Acceptance and final payment

90-10 - Construction warranty
90-11 - Contractor Final Project Documentation

SPECIAL PROVISIONS TO THE GENERAL CONTRACT PROVISIONS

SP 20-16 Addenda and interpretation
SP 20-17 Sales tax exemption
SP 30-09 Conformed Contract Documents
SP 30-10 Issued for Construction Contract Documents
SP 50-17 Additional Survey Requirements
SP 50-18 Removal of water
SP 50-19 Sheeting and bracing
SP 60-09 Shop and setting drawings and catalogue data
SP 60-10 Electrical shop drawings
SP 60-11 Substitute items
SP 60-12 Submittal procedure
SP 70-22 Additional sanitary, health, and safety provisions
SP 70-23 NOT USED
SP 70-24 New York State Department of Transportation (NYSDOT) standard clauses for New York state contracts

1. Executory Clause
2. Non-Assignment Clause
3. Comptroller's Approval
4. Workers' Compensation Benefits
5. Non-Discrimination Requirements
6. Wage and Hours Provisions
7. Non-Collusive Bidding Certification
8. International Boycott Prohibition
9. Set-Off Rights
10. Records
11. Identifying Information and Privacy Notification
12. Equal Employment Opportunities for Minorities and Women
13. Conflicting Terms
14. Governing Law
15. Late Payment
16. No Arbitration
17. Service of Process
18. Prohibition on Purchase of Tropical Hardwoods
19. MacBride Fair Employment Principles
20. Omnibus Procurement Act of 1992
21. Reciprocity and Sanctions Provisions
22. Compliance with New York State Information Security Breach and Notification Act
23. Compliance with Consultant Disclosure Law
24. Procurement Lobbying
25. Certification of Registration to Collect Sales and Compensating Use Tax by Certain Contractors, Affiliates and Subcontractors

SP 70-25 NYSDOT terms and conditions
SP-70-26 Labor affidavits, New York State Laws of 1988
SP 90-12 Security for construction warranty
SP 90-13 Lien law

SUBCONTRACTOR'S PROMPT PAYMENT CERTIFICATION

STATE WAGE RATES

SPECIAL NOTE NEW YORK STATE DEPARTMENT OF LABOR PREVAILING WAGE RATES

PRIME CONTRACTOR'S CERTIFICATION (NEW YORK STATE LABOR LAW SECTION 220-a)

SUBCONTRACTOR'S CERTIFICATION (NEW YORK STATE LABOR LAW SECTION 220-a)

PART 2 – GENERAL CONSTRUCTION ITEMS

Item C-100 (Item not used)
Item C-102 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control
Item C-105 Mobilization
Item C-110 (Item not used)

TECHNICAL SPECIFICATIONS

Item Number	**Description**
Item C-106	Safety, Security and Maintenance of Traffic
Item P-101	Preparation/Removal of Existing Pavements
Item P-152	Excavation, Subgrade, and Embankment
Item P-209	Crushed Aggregate Base Course
Item P-603	Emulsified Asphalt Tack Coat
Item P-605	Joint Sealants for Pavements
Item P-640	Building Construction
Item P-670	Automated Machine Guidance
Item T-905	Topsoil
Item T-906	Hydroseeding
Item L-110	Airport Underground Electrical Duct Banks and Conduits

SECTION 014100 - SPECIAL INSPECTION & TESTING

SECTION 031000 - CONCRETE FORMING AND ACCESSORIES
SECTION 032000 - CONCRETE REINFORCING
SECTION 033000 - CAST-IN-PLACE CONCRETE

SECTION 055000 - METAL FABRICATIONS

SECTION 061000 - ROUGH CARPENTRY
SECTION 061753 - SHOP-FABRICATED WOOD TRUSSES
SECTION 061800 - GLUED-LAMINATED CONSTRUCTION

SECTION 074113.13 – FORMED METAL ROOF PANELS

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES
SECTION 083323 - OVERHEAD COILING DOORS
SECTION 087100 – DOOR HARDWARE

SECTION 104416 – FIRE EXTINGUISHERS

SECTION 133419 - METAL BUILDING SYSTEMS

SECTION 260501 - COMMON WORK RESULTS FOR ELECTRICAL
SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS
SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS
SECTION 262416 - PANELBOARDS
SECTION 262726 - WIRING DEVICES
SECTION 265119 - LED INTERIOR LIGHTING

GEOTECHNICAL INFORMATION

CONTRACT DRAWINGS

	Sheet No.	Ref. No.	Title
GENERAL			
	1	GI-001	COVER SHEET
	2	GI-002	GENERAL NOTES, SURVEY CONTROL, AND LEGEND
	3	GC-101	GENERAL AND CONSTRUCTION SAFETY PHASING PLAN
	4	GC-102	CONSTRUCTION SAFETY AND PHASING PLAN
	5	CG-101	GRADING PLAN
	6	EL-101	ELECTRICAL SITE PLAN
	7	CG-501	DETAILS
	8	CG-502	DETAILS
STRUCTURAL			
	9	S-001	GENERAL NOTES
	10	S-002	LOADING DIAGRAMS
	11	S-101	COLD STORAGE FOUNDATION AND SLAB PLAN
	12	S-102	SALT AND UREA STORAGE FOUNDATION AND SLAB PLAN
	13	S-103	SALT AND UREA STORAGE FRAMING PLAN
	14	S-501	TYPICAL DETAILS
	15	S-502	DETAILS
	16	S-503	DETAILS
	17	S-504	DETAILS
ARCHITECTURAL			
	19	A-002	CODE CONFORMANCE PLAN
	18	A-001	SYMBOLS, ABBREVIATIONS, AND LEGENDS
	20	A-101	FLOOR PLAN - COLD STORAGE BUILDING
	21	A-102	FLOOR PLAN - SALT AND UREA STORAGE BUILDING
	22	A-201	ELEVATIONS - COLD STORAGE BUILDING
	23	A-202	ELEVATIONS - SALT AND UREA STORAGE BUILDING
	24	A-302	WALL SECTIONS
	24	A-303	WALL SECTIONS
	26	A-601	SCHEDULES AND DETAILS

ELECTRICAL

27	E-001	SYMBOLS, GENERAL NOTES, ONE-LINE DIAGRAM
28	E-101	SALT AND UREA STORAGE POWER AND LIGHTING PLAN
29	E-102	COLD STORAGE POWER AND LIGHTING PLAN
30	E-601	SCHEDULES AND DETAILS

END OF TABLE OF CONTENTS

NOTICE TO BIDDERS - RFB-DCB-14-26

NAME OF PROJECT: Airport Support Buildings

Multiple Prime Bids shall be received for the following classes of work: General Construction and Electrical Construction

Project Description: The project involves the construction of new airport equipment storage facilities adjacent to the Airport's operations (ARFF/SRE) building. The new storage facilities will include an airfield maintenance equipment cold storage building (approximately 3,500 SF) and a salt/urea storage facility (approximately 3,200 SF). The project will also include electrical service to the storage facilities, minor access paving, earthwork, minor drainage modifications, and site restoration.

It is anticipated that work for this project will begin Spring 2027.

The County of Dutchess official bid documents for this project are obtained from the Empire State Purchasing Group's Regional Bid Notification System at www.bidnetdirect.com/new-york/county-of-dutchess. Copies of bidding documents obtained from any other source are not considered official copies. It is incumbent upon all potential bidders to view all posted addenda prior to the bid close date. You may obtain an official copy by registering on the Empire State Regional Bid Notification System at www.bidnetdirect.com/new-york/county-of-dutchess or by using the link provided at www.dutchessny.gov, selecting "Government" then selecting "Bidding and RFP Opportunities." For those without Internet access, you may obtain an electronic copy of bidding documents by contacting the Dutchess County Department of Public Works at dpwcontracts@dutchessny.gov, or in person, Monday through Friday, 8 am to 4 pm: Dutchess County DPW, Business Office, 1st Floor, 626 Dutchess Turnpike, Poughkeepsie, NY 12603.

Upon request, all interested parties may review the hard copy of the Bid Specifications and Drawings by visiting the above referenced address.

All Addenda will be posted on BidNet Direct (aka Empire State Purchasing Group) site.

Bids for the above project will be received by:
Diane McKenna, Contract Specialist
Dutchess County Department of Public Works (DPW)
626 Dutchess Turnpike-1st Floor
Poughkeepsie, NY 12603

Bids due on or before 11:00am Thursday, October 15, 2026, and at that time opened and read aloud. Bids received after that time will not be accepted. All interested parties are invited to attend. The bid opening for this solicitation may also be attended through Microsoft Teams Audio Conferencing. Anyone who wishes to hear bids read aloud will need to call into the phone number listed below. We ask that you call in at least three minutes prior to bid due/time to ensure you are connected properly. All call-ins will be asked to identify themselves by name and organization.

Join Microsoft Teams Meeting
+1 516-268-4602 United States, Hempstead (Toll)
Conference ID: 225 125 31#

Each bid shall be submitted as one paper original and one electronic flash drive copy and be accompanied by Bid Security (bid bond, certified check, official bank check) or a Letter of Credit (in a form agreeable to Dutchess County) in the amount of 10% of the bid amount. Bidders' security will be retained until the successful bidder has signed the Owner-Contractor Agreement and the County has finalized the Agreement.

Each bid with Bid Security shall be enclosed in a sealed envelope bearing the name of the Project, Name of the Bidder, Classification of Work and the date and hour of the bid opening, which must be visible upon delivery.

A Walkthrough is scheduled for Friday, September 25, 2026 at 1:00pm, Hudson Valley Regional Airport Operations Building, Wappingers Falls. All parties interested in bidding must apprise themselves of the site conditions immediately prior to bidding.

Questions will be accepted by the close of business October 7, 2026 and emailed to Diane McKenna at dmckenna@dutchessny.gov and cc'd to phludzenski@cscos.com with the County's response published in Addenda prior to 48 hours before the bid opening date.

This project may be subject to NYS Department of Labor Prevailing Wage Rates PRC #: 2026025597

Starting December 30, 2024: NYSDOL Contractor and Subcontractor registry requirements.

View Bid Specifications regarding APPRENTICESHIP PROGRAM, if applicable.

The County reserves the right to waive irregularities in bids and in bidding and to reject any or all proposals.

PROPOSAL

FOR CONSTRUCTION OF THE

AIRPORT SUPPORT BUILDINGS

AT

HUDSON VALLEY REGIONAL AIRPORT
WAPPINGERS FALS, NY

TO: Dutchess County
626 Dutchess Turnpike
Poughkeepsie, NY 12603

The undersigned, as bidder, hereby declares that he/she has examined the site of the work and informed himself/herself fully in regard to all conditions pertaining to the place where the work is to be done; that he/she has examined and read the Contract Documents and Contract Drawings for the work and all addenda relative thereto furnished prior to the opening of bids; that he/she has satisfied himself/herself relative to the work to be performed.

The bidder understands that the advertisement, located in the front of these Contract Documents, contains the location and a description of the proposed construction, as well as indicates the place, date, and time of the proposal opening; information about a Pre-Bid conference, if scheduled, is contained in the advertisement; the time in which the work must be completed shall be in accordance with the subsection titled FAILURE TO COMPLETE ON TIME of Section 80. If the bidder considers that the time to complete the work is inadequate, they should not submit a bid.

The bidder understands the quantities for bid items listed on the proposal sheets are estimated quantities only for the purpose of comparing bids; any difference between these estimated quantities and actual quantities required for construction shall not be taken as a basis for claims by the Contractor for extra compensation; compensation will be based upon the unit prices and actual construction quantities.

The bidder understands that the description under each item, being briefly stated, implies, although it does not mention, all incidentals and that the prices stated are intended to cover all such work, materials and incidentals as constitute bidder's obligations as described in the specifications and any details not specifically mentioned, but evidently included in the Contract shall be compensated for in the item which most logically includes it.

The bidder understands that proposal guaranty shall be in the form of a bid bond or certified check in the amount of ten percent (10%) of this bid in accordance with the subsection titled BID GUARANTEE of Section 20; the proposal guaranty shall become the property of the Owner in the event the Contract and bond(s) are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

The bidder agrees that upon receipt of written notice of the acceptance of this proposal, bidder will execute the Contract attached within 15 days and deliver a Surety Bond or Bonds as required by the subsection titled REQUIREMENTS OF CONTRACT BONDS OF Section 30. The bidder further agrees

to commence construction with an adequate work force, plant and equipment on the date stated in the written notice to proceed and will progress therewith to its completion within the time stated, and in accordance with this Contract and Specification.

NYS M/W/SDVOB REQUIREMENTS

M/W/SDVOB PARTICIPATION.
It is the policy of (Owner/ Sponsor) to comply with laws, rules and regulations governing the New York State M/W/SDVOB Program. M/W/SDVOB is a general term that refers to a Minority Business Enterprise (MBE), a Women's Business Enterprise (WBE), or a Service Disabled Veteran Owned Business (SDVOB). The MBE/WBE/SDVOB (M/W/SDVOB) program applies to Non-Federal-Aid contracts. The (Owner/ Sponsor) seeks to:

- Ensure nondiscrimination in award and administration of contracts;
- Create a level playing field on which M/W/SDVOBs can fairly compete for contracts;
- Ensure that the NYSDOT M/W/SDVOB Program is narrowly tailored in accordance with applicable laws;
- Ensure that only firms that fully meet M/W/SDVOB eligibility standards are permitted to participate as M/W/SDVOBs;
- Help remove barriers to the participation of M/W/SDVOBs in the performance of contracts; and;
- Assist in the development of firms that can compete successfully in the marketplace outside the M/W/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 M/W/SDVOB Program Assurances stated below.

M/W/SDVOB Program Assurances. The Contractor shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of contracts. The Contractor shall carry out the applicable requirements of Article 15A of the New York State Executive Law, and the regulations promulgated thereunder found in 5 NYCRR 140-145, 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) disqualifying the Contractor from future bidding as non-responsible. 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. Minority/Women/Service Disabled Veteran Owned Business Enterprise (M/W/SDVOB) Program. The State statutory authority for the M/W/SDVOB Program is contained in Section 85 of the Highway Law, Section 428 of the Transportation Law, and Executive Law Article 15-A. Regulations have been promulgated under 5 NYCRR 140-145.

B. M/W/SDVOB Goal(s). Non-Federal-Aid contracts have two separate and distinct goals, one for MBEs one for WBEs, and one for SDVOBs which cannot be combined. The (Owner/ Sponsor), with assistance from the NYS Department of Transportation, will monitor the Contractor's commitments towards M/W/SDVOB goals and attainments.

1. Established Goal(s). Contract participation goal(s) for M/W/SDVOBs are expressed as a percentage of the total contract price. The goal(s) are stated in the proposal and remain in effect throughout the life of the contract. In executing the contract or bid documents the Contractor declares that it subscribes to the utilization 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.

C. Eligibility. 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. M/W/SDVOB Eligibility. Only those M/W/SDVOB firms that are certified by the NYS Department of Economic Development are eligible under the M/W/SDVOB Program. Only the work, services or products provided by M/W/SDVOB Firms under code(s) which the M/W/SDVOB is certified for, at the time the M/W/SDVOB enters into a contract with the Contractor, can be credited towards the contract goal. M/W/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 M/W/SDVOB. A directory of certified firms is available on the Empire State Development website at *https://ny.newnycontracts.com*.

D. Counting M/W/SDVOB Participation Towards the M/W/SDVOB Goal(s). The value of the work performed by a M/W/SDVOB, including that of a M/W/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 M/W/SDVOB prime contractor shall still provide opportunities for participation by other M/W/SDVOBs in all types of contracts and procurement activities. Work performed by M/W/SDVOBs on the contract will be counted as set forth below. If the (Owner/ Sponsor), in consultation with the Department, determines that some or all of a M/W/SDVOB's work does not constitute a 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 or SDVOB goal. The participation of a firm that is certified as a WBE cannot be counted toward an MBE or a SDVOB goal. The participation of a firm that is certified as a SDVOB cannot be counted toward an MBE or a WBE goal. The participation of a firm that is certified as more than one of the aforementioned classifications will only be counted toward one goal, and cannot be divided between the three goals.

A joint venture between a M/W/SDVOB and a non-M/W/SDVOB will be counted toward the M/W/SDVOB goal(s) in proportion to the total dollar value of the contract equal to the distinct, clearly defined portion of the work that the M/W/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. The joint venture agreement must include a detailed breakdown of the following:

a. Responsibility of the M/W/SDVOB for specific contract items of work;
b. Capital participation by the M/W/SDVOB;
c. Specific equipment to be provided to the joint venture by the M/W/SDVOB;
d. Specific responsibilities of the M/W/SDVOB in the control of the joint venture;
e. Specific staffing and skills to be provided to the joint venture by the M/W/SDVOB; and
f. Percentage distribution to the M/W/SDVOB of the projected profit or loss by the joint venture.

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 M/W/SDVOB Subcontractor will be counted toward the M/W/SDVOB goal(s), including the cost of materials and supplies purchased by the M/W/SDVOB, except the cost of supplies or equipment rented or leased from the Contractor or its affiliates will not be counted.

If a M/W/SDVOB subcontractor is part of a joint venture, their participation will be counted as indicated above in §102-12D.

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.

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 M/W/SDVOB Manufacturer or Fabricator will be counted toward the M/W/SDVOB goal(s). Manufacturers or Fabricators may provide materials to the Contractor or a Subcontractor working on the contract for installation.

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.

60% of the cost of the materials or supplies from a M/W/SDVOB Material Supplier will be counted toward the M/W/SDVOB goal(s). Equipment rental or leasing is considered to be a type of material supply activity and is credited at 60%. 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 of 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 need not own, operate nor maintain a store, warehouse, or other establishment, if it owns and operates distribution equipment for the products. While some items may be drop-shipped due to the specific needs in a contract, the supplier must take legal responsibility for the items at all times. This can be accomplished through delivery with their own trucks, long-term trucking contracts with third party vendors, and/or an insurance policy that covers the items. 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.

4. 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 M/W/SDVOB Broker/Manufacturer's Representative will be counted toward the M/W/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.

5. 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 M/W/SDVOB Service will be counted toward the M/W/SDVOB goal(s), provided the fee is reasonable and not excessive as compared with fees customarily allowed for similar services.

6. Trucking Firms. A M/W/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 for which it is responsible, and the arrangement cannot be contrived solely for the purpose of meeting the M/W/SDVOB goal(s). The M/W/SDVOB trucking firm shall control the day-to-day M/W/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. \

a. *M/W/SDVOB Owned/Leased Trucks.* 100% of the value of the trucking operations the M/W/SDVOB provides on the contract using trucks it owns or leases on a long-term basis that are registered, insured, and operated by the M/W/SDVOB using drivers it employs, will be counted toward the M/W/SDVOB goal(s). A lease shall indicate that the M/W/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 M/W/SDVOB, so long as the lease gives the M/W/SDVOB absolute priority for use of the leased truck. Leased trucks shall display the name and identification number of the M/W/SDVOB.

b. *Other M/W/SDVOB Trucks.* The M/W/SDVOB may obtain trucks from another M/W/SDVOB, including an owner/operator. 100% of the value of the trucking operations that the other M/W/SDVOB provides will also be counted toward the M/W/SDVOB goal(s).

c. *Non-M/W/SDVOB Trucks.* The M/W/SDVOB may obtain trucks from a non-M/W/SDVOB, including an owner-operator. Only the value of the fee or commission that the M/W/SDVOB receives as a result of the arrangement with the non-M/W/SDVOB will be counted toward the M/W/SDVOB goal(s).

E. Commercially Useful Function. A M/W/SDVOB's participation will only be counted toward meeting the M/W/SDVOB contract goal(s), when it performs a commercially useful function. In order to be considered as performing a commercially useful function, a M/W/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 M/W/SDVOB including Subcontractors, Manufacturers/Fabricators, Material Suppliers, Brokers/Manufacturer's Representatives, Services and Trucking Firms.

Regardless of whether an arrangement between the Contractor and the M/W/SDVOB represent standard industry practice, if the arrangement erodes the ownership, control or independence of the M/W/SDVOB or in any other way does not meet the commercially useful function requirement, the Contractor will receive no credit toward the goal(s). A M/W/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 M/W/SDVOB participation. The arrangement cannot be contrived solely for the purpose of meeting the M/W/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 M/W/SDVOB is not performing a commercially useful function.

1. Work Force. The M/W/SDVOB shall employ a work force, (including administrative and clerical) separate and apart from that employed by the Contractor, other Subcontractors on the

contract, or their affiliates. This does not preclude the employment by the M/W/SDVOB of an individual that has been previously employed by another firm involved in the contract, provided that the individual was independently recruited by the M/W/SDVOB in accordance with customary industry practice. The routine transfer of work crews from another employer to the M/W/SDVOB will not be allowed.

2. ***Supervision.*** All work performed by the M/W/SDVOB shall be controlled and supervised by the M/W/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 M/W/SDVOB and other supervisors necessary to coordinate the contract work.

3. ***Materials.*** M/W/SDVOB Subcontractors 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.*** M/W/SDVOB Subcontractors may supplement their equipment by renting or leasing additional equipment in accordance with customary industry practice. A M/W/SDVOB Subcontractor shall obtain approval of the Department prior to renting equipment from the Contractor or its affiliates, and shall provide documentation demonstrating that similar equipment and terms could not be obtained at a lower cost from other customary sources of equipment. The required documentation shall include, but not be limited to, copies of the rental or leasing agreements, and the names, addresses, and terms quoted by other sources of equipment. Equipment a M/W/SDVOB Subcontractor purchases or leases from the Contractor or its affiliate will not be counted toward meeting the M/W/SDVOB contract goal(s). Should back charges result in M/W/SDVOB participation falling below the goal(s), the Contractor shall be required to backfill. Y

F. M/W/SDVOB Pre-Award Participation Package.

Within 10 calendar days after letting, the Low Bidder shall submit a complete M/W/SDVOB Pre-Award Participation Package, as outlined below, to the Office of Construction using the Department approved civil rights reporting software, *Equitable Business Opportunity Solution (EBO)*. The M/W/SDVOB Pre-Award Participation Package shall include all commitments identified in their proposal at the time of letting. The time period is measured starting the day after the Letting, and 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 a M/W/SDVOB is expressed as a dollar amount agreed to by both the Bidder and the M/W/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.
For each M/W/SDVOB Subcontractor, the Apparent 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 M/W/SDVOB Subcontractor is performing less than 100% of a contract pay item, the Apparent Low Bidder shall explain, in writing, the scope of work to be performed by the M/W/SDVOB.

For each M/W/SDVOB Manufacturer, Fabricator, Material Supplier, or Broker, the Apparent Low Bidder shall indicate the 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 Apparent Low Bidder shall use a contract pay item(s) to which the activity relates.

For each M/W/SDVOB Service, the Apparent Low Bidder shall indicate the contract pay item number(s) of the service to be provided. If the equipment or service does not correspond to a specific Department contract pay item, the Apparent Low Bidder shall use a contract pay item(s) to which the activity relates. For each M/W/SDVOB Trucking Firm, the Apparent Low Bidder shall indicate 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 Apparent Low Bidder shall use a contract pay item(s) to which the activity relates. The Apparent Low 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 M/W/SDVOB commitment. The Apparent Low Bidder shall provide copies of all lease agreements utilized by the M/W/SDVOB Trucking Firm.

If the Low Bidder meets or exceeds the established M/W/SDVOB goal(s) for the contract with commitments to certified M/W/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 that demonstrate that the Bidder attempted, but could not meet the goal(s).

After contract award, the Contractor shall promptly execute subcontracts, agreements, or purchase orders, as appropriate, with each M/W/SDVOB for the type and amount of work identified in EBO.

After the Low Bidder has identified pre-award commitments to M/W/SDVOBs in EBO, each M/W/SDVOB shall acknowledge the commitment in EBO within 10 calendar days after letting.

For additional information and instructions for obtaining a login credentials visit https://www.dot.ny.gov/dotapp/ebo .

G. Good Faith Efforts. If the Apparent Low Bidder fails to meet the M/W/SDVOB contract goal(s), the (Owner), in consultation with the Department, will evaluate the good faith efforts the Bidder made to obtain M/W/SDVOB participation to determine if the efforts are sufficient enough to recommend award of the contract. Efforts to obtain M/W/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 M/W/SDVOB participation sufficient to meet the goal(s).

If the Low Bidder has not met the M/W/SDVOB goal(s), it shall submit the AAP10 *M/W/SDVOB Solicitation Log*, together with other documentation that substantiates good faith efforts. Such documentation shall include, at a minimum, all forms of solicitation inquiries that were returned as undeliverable, quotations submitted by M/W/SDVOBs that were not selected for participation, quotations submitted by non-M/W/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 (Owner/ Sponsor)will consider as part of the Bidder's good faith efforts to obtain M/W/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 M/W/SDVOB firms for work that they are listed to perform that is in the contract. Only M/W/SDVOBs certified by the NYS Department of Economic Development shall be used to fulfill the established goal(s) on Non-Federal-Aid contracts.

2. Soliciting, at a minimum, certified M/W/SDVOBs in the appropriate geographic area:

- For all work, soliciting certified M/W/SDVOBs within 75 miles of the contract location.
- For trucking operations and equipment rental, soliciting certified M/W/SDVOBs within 75 miles of the contract location.
- For work such as guide rail, fencing, landscaping, work zone traffic control, survey, signs, permanent highway lighting, traffic signals, and intelligent transportation systems (ITS); soliciting certified M/W/SDVOBs within 150 miles of the contract location.
- For work such as pavement markings, manufacturers, fabricators, material suppliers, brokers, and services; soliciting certified M/W/SDVOBs within 300 miles of the contract location, or on an upstate or downstate basis.

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 M/W/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 M/W/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 M/W/SDVOBs to respond to the solicitation and submit a timely offer. The Bidder shall determine with certainty if the M/W/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 M/W/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 M/W/SDVOBs in order to increase the likelihood that the M/W/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 M/W/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 M/W/SDVOB participation.

5. Providing interested M/W/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 M/W/SDVOBs.* It is the Bidder's responsibility to make a portion of the work available to M/W/SDVOB Subcontractors and material suppliers and to select those portions of the work or material needs consistent with the available M/W/SDVOB Subcontractors and material suppliers, so as to facilitate M/W/SDVOB participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of M/W/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 M/W/SDVOBs to perform the work.
b. Additional Costs. The fact that there may be some additional costs involved in finding and using M/W/SDVOBs is not in itself sufficient reason for a bidder's failure to meet the contract M/W/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 M/W/SDVOBs if the Department determines the price difference to be excessive or unreasonable.

7. *a. Not rejecting M/W/SDVOBs as unqualified.* The Bidder shall not reject M/W/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 M/W/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 M/W/SDVOB at the original price is not alone sufficient to support a finding that good faith efforts have been made to replace the original M/W/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 M/W/SDVOB, and it is not a sound basis for rejecting a prospective replacement M/W/SDVOB's reasonable quote.

8. Making efforts to assist interested M/W/SDVOBs in obtaining bonding, lines of credit or insurance as required by the (Owner) or the Bidder.

9. Making efforts to assist interested M/W/SDVOBs in obtaining necessary equipment, supplies, materials, or related assistance.

10. Where available, effectively using the services of available minority/women focused media, trade associations, and contractor groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of M/W/SDVOBs.

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

H. Pre-Award Approval. In order to award a contract to a bidder that has failed to meet the M/W/SDVOB contract goal(s), the (Owner/ Sponsor), in consultation with 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 (Owner/ Sponsor) determines that the original Low Bidder has failed to meet the good faith effort requirements, before awarding the contract to a subsequent bidder, the (Owner/ Sponsor) will provide the original Low Bidder an opportunity for administrative reconsideration by an official who did not take part in the original determination.

I. Administrative Reconsideration. The Apparent Low Bidder will have the opportunity to provide written documentation of Good Faith Efforts, or argument and to meet in person with the Owner/Sponsor's reconsideration official upon notification concerning the issue of whether it met the goal or made adequate good faith efforts to do so. The (Owner/Sponsor)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.

J. Bidder's Compliance with M/W/SDVOB Program Requirements. (Applicable only to Non-Federal-Aid contracts.) The Owner/Sponsor's acceptance of the Low Bidder's proposal is conditioned upon the Low Bidder's fulfillment of the M/W/SDVOB participation requirements. Failure by the Low Bidder to submit a complete M/W/SDVOB participation package and 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.*

The following NYSDOT forms shall be used to demonstrate compliance with M/W/SDVOB Program Requirements:

AAP 7LL NYS:	NYS - Summary of Consultant Payments to Subconsultants
AAP 10LL NYS:	NYS - M/WBE Solicitation Log
AAP 15LL NYS:	NYS - Designation of AA Representatives (one for the Prime Contractor, as well as each Subcontractor
AAP 19LL NYS:	NYS - M/WBE Schedule of Utilization
AAP 21LL NYS:	NYS - Contractor Report of Contract Payments
AAPHC 20LL NYS:	NYS - M/WBE Utilization Worksheet
AAP 22LL NYS:	NYS - M/WBE Material Supplier Commitment Information
AAP 23LL NYS:	NYS - M/WBE Trucking Commitment Information
AAP 26LL NYS:	NYS - Monthly Training Progress Report
AAP 33LL NYS:	NYS - Employment Utilization Report
AAP 35LL NYS:	NYS - Workforce Participation Plan

The above forms may be found at the following online location:

https://www.dot.ny.gov/divisions/operating/opdm/local-programs-bureau/multi-modal/forms

Contract goals for this project are as follows:

MBE	WBE	SDVOB
9.00%	13.00%	6.00%

HUDSON VALLEY REGIONAL AIRPORT

AIRPORT SUPPORT BUILDINGS

GENERAL CONTRACTOR - BASE BID

UNIT PRICE SCHEDULE

ITEM NO.	FAA SPEC NO.	ITEM AND DESCRIPTION AND UNIT PRICE IN WORDS	PRICE IN FIGURES UNIT PRICE $.	PRICE IN FIGURES TOTAL AMOUNT $.
1	C-105	MOBILIZATION (4% MAX.) 1 LS FOR _____ PER LS	$.	$.
2	C-105	FIELD OFFICE 1 LS FOR _____ PER LS	$.	$.
3	C-105	FIELD OFFICE EQUIPMENT 1 LS FOR _____ PER LS	$.	$.
4	C-106	SAFETY, SECURITY AND MAINTENANCE OF TRAFFIC 1 LS FOR _____ PER LS	$.	$.

HUDSON VALLEY REGIONAL AIRPORT

AIRPORT SUPPORT BUILDINGS

GENERAL CONTRACTOR - BASE BID

UNIT PRICE SCHEDULE

ITEM NO.	FAA SPEC NO.	ITEM AND DESCRIPTION AND UNIT PRICE IN WORDS	PRICE IN FIGURES UNIT PRICE $.	PRICE IN FIGURES TOTAL AMOUNT $.
5	P-640	COLD STORAGE BUILDING (GENERAL CONTRACTOR))		
		1 LS		
		FOR _____		
		PER LS	$.	$.

HUDSON VALLEY REGIONAL AIRPORT
AIRPORT SUPPORT BUILDINGS
GENERAL CONTRACTOR - BASE BID

	TOTAL PRICE IN WORDS	TOTAL PRICE IN FIGURES
TOTAL CONTRACT GENERAL CONTRACTOR - BASE BID	_____ _____ _____	$ _____ . ____

HUDSON VALLEY REGIONAL AIRPORT

AIRPORT SUPPORT BUILDINGS

GENERAL CONTRACTOR - ALTERNATE BID

UNIT PRICE SCHEDULE

ITEM NO.	FAA SPEC NO.	ITEM AND DESCRIPTION AND UNIT PRICE IN WORDS	PRICE IN FIGURES UNIT PRICE $.	PRICE IN FIGURES TOTAL AMOUNT $.
1	C-105	MOBILIZATION (4% MAX.) 1 LS FOR _____ PER LS	$.	$.
2	C-105	FIELD OFFICE 1 LS FOR _____ PER LS	$.	$.
3	C-105	FIELD OFFICE EQUIPMENT 1 LS FOR _____ PER LS	$.	$.
4	C-106	SAFETY, SECURITY AND MAINTENANCE OF TRAFFIC 1 LS FOR _____ PER LS	$.	$.

HUDSON VALLEY REGIONAL AIRPORT

AIRPORT SUPPORT BUILDINGS

GENERAL CONTRACTOR - ALTERNATE BID

UNIT PRICE SCHEDULE

ITEM NO.	FAA SPEC NO.	ITEM AND DESCRIPTION AND UNIT PRICE IN WORDS	PRICE IN FIGURES UNIT PRICE $.	TOTAL AMOUNT $.
5	P-640	COLD STORAGE BUILDING (GENERAL CONTRACTOR)) 1 LS FOR _____ PER LS	$.	$.
6	P-640	SALT / UREA STORAGE BUILDING (GENERAL CONTRACTOR) 1 LS FOR _____ PER LS	$.	$.

HUDSON VALLEY REGIONAL AIRPORT
AIRPORT SUPPORT BUILDINGS
GENERAL CONTRACTOR - ALTERNATE BID

	TOTAL PRICE IN WORDS	TOTAL PRICE IN FIGURES
TOTAL CONTRACT GENERAL CONTRACTOR - ALTERNATE BID	_____ _____ _____	$ _____ . ____

HUDSON VALLEY REGIONAL AIRPORT

AIRPORT SUPPORT BUILDINGS

ELECTRICAL CONTRACTOR - BASE BID

UNIT PRICE SCHEDULE

ITEM NO.	FAA SPEC NO.	ITEM AND DESCRIPTION AND UNIT PRICE IN WORDS	PRICE IN FIGURES UNIT PRICE $.	TOTAL AMOUNT $.
1	C-105	MOBILIZATION (4% MAX.) 1 LS FOR _____ PER LS	$.	$.
2	P-640	COLD STORAGE BUILDING (ELECTRICAL CONTRACTOR)) 1 LS FOR _____ PER LS	$.	$.

HUDSON VALLEY REGIONAL AIRPORT
AIRPORT SUPPORT BUILDINGS
ELECTRICAL CONTRACTOR - BASE BID

	TOTAL PRICE IN WORDS	TOTAL PRICE IN FIGURES
TOTAL CONTRACT ELECTRICAL CONTRACTOR - BASE BID	_____ _____ _____	$ _____ . _____

HUDSON VALLEY REGIONAL AIRPORT

AIRPORT SUPPORT BUILDINGS

ELECTRICAL CONTRACTOR - ALTERNATE BID

UNIT PRICE SCHEDULE

ITEM NO.	FAA SPEC NO.	ITEM AND DESCRIPTION AND UNIT PRICE IN WORDS	PRICE IN FIGURES UNIT PRICE $.	TOTAL AMOUNT $.
1	C-105	MOBILIZATION (4% MAX.) 1 LS FOR _____ PER LS	$.	$.
2	P-640	COLD STORAGE BUILDING (ELECTRICAL CONTRACTOR)) 1 LS FOR _____ PER LS	$.	$.
3	P-640	SALT / UREA STORAGE BUILDING (ELECTRICAL CONTRACTOR) 1 LS FOR _____ PER LS	$.	$.

HUDSON VALLEY REGIONAL AIRPORT
AIRPORT SUPPORT BUILDINGS
ELECTRICAL CONTRACTOR - ALTERNATE BID

	TOTAL PRICE IN WORDS	TOTAL PRICE IN FIGURES
TOTAL CONTRACT ELECTRICAL CONTRACTOR - ALTERNATE BID	_____ _____ _____	$ _____ . ____

The bidder states that this proposal is based upon prevailing wages in Dutchess County, New York and in no case are wages considered less than those predetermined by the State Department of Labor, schedules of which are contained in the Contract Documents.

The bidder proposes and agrees, if this Proposal is accepted, to contract in the form of contract specified with Dutchess County (Owner), to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the construction of the project in full and complete accordance with the shown, noted, described and reasonably intended requirements of the Airport Support Buildings Contract Documents and Contract Drawings, to the full and entire satisfaction of the above said Owner, with a definite understanding that no money will be allowed for extra work except as set forth in the attached Contract Documents, for the unit prices listed for each item.

BIDDER, IF AN INDIVIDUAL:

BY: _____
(Printed Name)

_____
(Signature)

COMPANY NAME: _____

ADDRESS: _____

_____

PHONE NO: _____

DATE: _____

BIDDER, IF A PARTNERSHIP (GIVE NAMES AND ADDRESSES OF EACH PARTNER):

BY: _____
(Printed Name)

_____
(Signature)

COMPANY NAME: _____

ADDRESS: _____

_____

PHONE NO: _____

DATE: _____

PARTNER'S NAME: _____

BUSINESS ADDRESS: _____

_____

PARTNER'S NAME: _____

BUSINESS ADDRESS: _____

_____

PARTNER'S NAME: _____

BUSINESS ADDRESS: _____

_____

PARTNER'S NAME: _____

BUSINESS ADDRESS: _____

_____

BIDDER, IF A CORPORATION OR LLC:

BY: _____
(Printed Name & Title)

_____
(Signature)

CORPORATION
OR LLC NAME: _____

ADDRESS: _____ **(SEAL)**

_____

STATE OF CORPORATION
OR LLC CHARTER: _____

PHONE NO: _____

DATE: _____

PRESIDENT'S
NAME: _____

BUSINESS
ADDRESS: _____

_____

SECRETARY'S
NAME: _____

BUSINESS
ADDRESS: _____

_____

TREASURER'S
NAME: _____

BUSINESS
ADDRESS: _____

_____

ATTACHMENTS TO PROPOSAL

BIDDER and his/her surety, where appropriate, have completed and executed the attached documents which are identified below.

- Non-Collusive Bidding Certificate
- Resolution for Corporate Bidders
- Buy American Certification
- Certifications:

  - Certification of Non-Segregated Facilities
  - Debarment & Suspension Certification
  - Certification of Offerer/Bidder Regarding Tax Delinquency and Felony Convictions
  - Trade Restriction

- Bidder's Statement of Previous Contracts Subject to EEO Clause as Described in Special Provisions to the General Provisions, Section SP 70-23, subsection A-12
- Certification for Receipt of Addenda
- Statement of Surety's Intent
- Contractor's Storm Water Pollution Prevention Plan Certification
- Iranian Energy Sector Divestment Statement
- Certification of Compliance with the Iran Divestment Act
- Bidder's List Collection Form (Bidder's Information)
- Bidder's List Collection Form (Subcontractor's Information)
- Safety Plan Compliance Document (SPCD) Certification
- Prevention of Sexual Harassment Statement
- New York State MWBE Participation, Certification of Bidder

NYSDOT DOT Forms

Form AAP10LL –Solicitation Log
Form AAP19LL – Schedule of Utilization (Part 1 - MBE)
Form AAP19LL – Schedule of Utilization (Part 2- WBE)
Form AAP19LL – Schedule of Utilization (Part 3- SDVOB)
Form AAP23LL – Pre-Award Trucking Commitment Information

NON-COLLUSIVE BIDDING CERTIFICATE

The Signer of this Bid declares:

A. That he/she has carefully examined the annexed form of the Agreement and Contract.

B. Pursuant to Section 103-d of the General Municipal Law, 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.

I hereby affirm under the penalties of perjury that the foregoing statement is true.

Affix Seal
if Principal
is Corporation

BIDDER: _____

BY: _____

TITLE: _____

STATE OF NEW YORK)
SS:
COUNTY OF _____)

On the _____ day of _____, 20___, before me personally came _____

_____

to me known, who, being by me duly sworn, did swear and affirm that he/she resides at _____

_____; that he/she is the _____
of the Bidder herein and signs the foregoing Non-Collusive Certification on behalf of such Bidder; that he/she executed the foregoing Non-Collusive Certification; and that, to the best of his knowledge and belief, the statement made in the foregoing Non- Collusive Certification is true.

_____
NOTARY PUBLIC

MY COMMISSION EXPIRES: _____

(This form must be completed and submitted with the Proposal.)

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RESOLUTION FOR CORPORATE BIDDERS

RESOLVED, that _____ be authorized
(Name of Officer)
to sign and submit the bid or proposal of this corporation for the following project:

Airport Support Buildings

and to include in such bid or proposal the certificate as to non-collusion required by section one hundred three-d of the General Municipal Law as the act and deed of such corporation, and for any inaccuracies or misstatements in such certificate this corporate bidder shall be liable under penalties of perjury.

The foregoing is a true and correct copy of the resolution adopted by _____

_____ Corporation at a meeting of its Board of

Directors held on the_____day of _, 20___.

_____
(Secretary)

(Seal)

(This form must be completed and submitted with the Proposal.)

BUY AMERICAN CERTIFICATION

The Contractor certifies that its bid/offer is in compliance with 49 USC § 50101, BABA and other related Made in America Laws (Per Executive Order 14005 "Made in America Laws" means all statutes, regulations, rules, and Executive Orders relating to federal financial assistance awards or federal procurement, including those that refer to "Buy America" or "Buy American," that require, or provide a preference for, the purchase or acquisition of goods, products, or materials produced in the United States, including iron, steel, and manufactured products offered in the United States.), U.S. statutes, guidance, and FAA policies, which provide that Federal funds may not be obligated unless all iron, steel and manufactured goods used in AIP funded projects are produced in the United States, unless the Federal Aviation Administration has issued a waiver for the product; the product is listed as an Excepted Article, Material Or Supply in Federal Acquisition Regulation subpart 25.108; or is included in the FAA Nationwide Buy American Waivers Issued list.

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

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

Date	Signature
Company Name	Title

(Buy American form(s) must be completed and submitted with the Proposal.)

CERTIFICATION FOR RECEIPT OF ADDENDA

Receipt of the following Addenda is acknowledged:

ADDENDUM NO.: _____ DATED: _____

ADDENDUM NO.: _____ DATED: _____

ADDENDUM NO.: _____ DATED: _____

_____
(Firm or Corporation Making Bid)

_____
(Signature of Authorized Person)

P.O. Address: _____

Dated: _____

(This form must be completed and submitted with the Proposal.)

STATEMENT OF SURETY'S INTENT

TO: Dutchess County

We have reviewed the bid of _____
(Contractor)
of _____
(Address)
for the Airport Support Buildings,

project for which bids will be received on: _____
(Bid Opening Date)

and wish to advise that should this Bid of the Contractor be accepted and the Contract awarded to him, it is our present intention to become surety on the performance bond and labor and material bond required by the Contract.

Any arrangement for the bonds required by the Contract is a matter between the Contractor and ourselves and we assure no liability to you or third parties if for any reason we do not execute the requisite bonds.

We are duly authorized to do business in the State of New York.

ATTEST: _____ _____

_____
Surety's Authorized Signature(s)

(Corporate seal, if any. If no seal, write "No Seal" across this place and sign.)

ATTACH PROPOSAL GUARANTEE

ATTACH POWER OF ATTORNEY

**(This form must be complete and submitted with the Proposal.
Copies of this form may be filled out and attached to this page.)**

IRANIAN ENERGY SECTOR DIVESTMENT STATEMENT

1. Contractor/Proposer hereby represents that said Contractor/Proposer is in compliance with New York State General Municipal Law Section 103-g entitled "Iranian Energy Sector Divestment", in that said Contractor/Proposer has not:
   (a) Provided goods or services of $20 Million or more in the energy sector of Iran including but not limited to the provision of oil or liquefied natural gas tankers or products used to construct or maintain pipelines used to transport oil or liquefied natural gas for the energy sector of Iran; or

   (b) Acted as a financial institution and extended $20 Million or more in credit to another person for forty-five days or more, if that person's intent was to use the credit to provide goods or services in the energy sector in Iran.

2. Any Contractor/Proposer who has undertaken any of the above and is identified on a list created pursuant to Section 165-a (3)(b) of the New York State Finance Law as a person engaging in investment activities in Iran, shall not be deemed a responsible bidder pursuant to Section 103 of the New York State General Municipal Law.

3. Except as otherwise specifically provided herein, every Contractor/Proposer submitting a bid/proposal in response to this Request for Bids/Request for Proposals must certify and affirm the following under penalties of perjury:
   (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 its knowledge and belief, that each bidder is not on the list created pursuant to NYS Finance Law Section 165-a (3)(b)."

4. Except as otherwise specifically provided herein, any Bid/Proposal that is submitted without having complied with subdivision (a) above, shall not be considered for award. In any case where the Bidder/Proposer cannot make the certification as set forth in subdivision (a) above, the Bidder/Proposer shall so state and shall furnish with the bid a signed statement setting forth in detail the reasons therefore. The Owner reserves its rights, in accordance with General Municipal Law Section 103-g to award the Bid/Proposal to any Bidder/Proposer who cannot make the certification, on a case-by-case basis 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 Owner has made a determination that the goods or services are necessary for the Owner to perform its functions and that, absent such an exemption, the Owner would be unable to obtain the goods or services for which the Bid/Proposal is offered. Such determination shall be made by the Owner in writing and shall be a public document.

5. **Bidder or Proposer shall sign and notarize the attached "Certification of Compliance with the Iran Divestment Act" form with your proposal.**

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the Owner receive information that a Bidder/Contractor is in violation of the above-referenced certification, the Owner will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the Owner shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default.

The Owner reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, _____, being duly sworn, deposes and says

that he/she is the _____ of the _____ Corporation and that neither the Bidder/Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

_____
SIGNED

SWORN to before me this

_____ day of _____, 20___

Notary Public: _____

(This form must be completed and submitted with the Proposal.)

SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) CERTIFICATION

Project Location: _____

Project Name: _____

Contractor's Official Name: _____

Contact Person: _____ Telephone: _____

Street Address: _____

City:_____State:_____Zip: _____

Certification Statement:

I certify that I have read the Construction Safety and Phasing Plan (CSPP) included in the Contract Documents and if awarded this Contract, I will abide by its requirements as written.

I certify that I have read the Safety Plan Compliance Document (SPCD) included in the Contract Documents and if awarded this Contract, I will abide by its requirements as written;

I certify that I will provide the information required in the SPCD prior to the start of construction work, if awarded this Contract, and that I will provide any additional information requested by the Owner.

_____ _____

Printed Name of Signer Signature

_____ _____

Title Date

PREVENTION OF SEXUAL HARASSMENT

Section 201-g of the New York State Labor Law requires employers to adopt a sexual harassment prevention policy, make such policy available to its employees, and provide sexual harassment training to its employees, consistent with model policies, guidance, and regulations developed by the New York State Department of Labor. (https://www.ny.gov/combating-sexual-harassment-workplace/employers)

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.

Such certification is consistent with the requirements of New York State Finance Law Section 139-L, which provides that **a bid shall not be considered for award nor shall any award be made to a bidder who has not completed this certification**; provided, however, that if the bidder cannot make the foregoing certification, such bidder shall so state at the time of bid submission and shall furnish with the bid a signed statement which sets forth in detail the reasons therefor.

By signing below, this bid shall be deemed to have been authorized by the board of directors of such bidder, and such authorization shall be deemed to include the signing and submission of such bid and the inclusion therein of such statement as the act and deed of the corporation.

****

Under penalty of perjury, by signing below, I submit this bid on behalf of the firm, and certify that the firm 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.

Firm Name: _____ Date: _____

Signature of Authorized Person: _____

Printed Name and Title
of Authorized Person: _____

(This form must be completed and submitted with the Proposal.)

NEW YORK STATE MWBE PARTICIPATION
CERTIFICATION OF BIDDER

The New York State Department of Transportation and Yates County have determined that the Minority and Women- Owned Business Enterprise goal, and Service Disable Veteran Owned Business Goal for this project is as follow:

- 25% Minority and Women's Business Enterprise Participation, consisting of:
  - 10% Minority Business Enterprise Participation
  - 15% Women's Business Enterprise Participation
- 6% Service Disable Veteran Owned Business Participation

The Contractor assures that it will use good faith efforts to subcontract with M/WBE/SDVOB's. All firms qualifying under this solicitation are encouraged to submit proposals. Award of this contract will be conditioned upon satisfying the M/WBE/SDVOB requirements of this contract. These requirements apply to all bidders, including those who qualify as a M/WBE/SDVOB.

Within 7 days after the opening of bids and before award of the contract, the apparent low bidder/offeror wishing to remain in competition for award of this contract shall submit "The M/WBE/SDVOB Pre-Award Package" consisting of all additional forms contained in this Proposal section.

The directory of certified minority and women-owned business enterprises is available on the Empire State Development website at https://ny.newnycontracts.com/.

The directory of certified Service Disabled Veteran Owned Business enterprises is available on the New York State Office of General Services website at https://sdves.ogs.ny.gov/business-search.

CERTIFICATION OF BIDDER: The undersigned bidder will satisfy the M/WBE requirements of these specifications in the following manner (please check the appropriate space):

_____ The bidder is committed to meeting or exceeding the M/WBE utilization goal stated above on this contract.

_____ The bidder, if unable to meet the M/WBE/SDVOB utilization goal stated above, is committed to a minimum of _____% MBE, _____% WBE, and _____% SDVOB utilization on this contract, and will submit documentation demonstrating good faith efforts.

Name of Bidder's Firm:
Street Address:
City, State & Zip:
Bidder's Status (Circle One): MBE WBE SDVOB Not Certified
Age of Firm: Annual Gross Receipts of Firm:
IRS Number:
Signature and Title

(This form must be completed and submitted with the Proposal.)

END OF PROPOSAL

AAP10LL NYS (8/11)

MWBE SOLICITATION LOG

Page _____ of _____

Contract No.	County	Letting Date	Project Sponsor	PIN

Contractor Name	Contact Name	E-Mail	Telephone No.

Firm Name & Contact	Telephone No. & E-Mail	NYSDOT Work Code(s)	Date(s) of Contact	Method(s) of Contact	MWBE Response Code(s)	Bidder Action Code(s)

MWBE Response Codes	
Submitted Written Quote	11
Submitted Verbal Quote	12
Negotiating with Prime	13
Developing Quote	14
Not Certified for Items(s)	21
Location Unacceptable	22
No Price Agreement	23
No Time for Bid	24
Schedule Unacceptable	25
Other*	26

Bidder Action Codes	
Other*	26
Selected	31
Unavailable	32
No Longer in Business	33
Undeliverable	34
Unreachable	35
Unresponsive	36
Not Selected	37

*Provide written explanation

MWBE 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	

MWBE 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	

MWBE 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:	$0.00
		Contract SDVOB Goal:	$0.00
		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**	

PRE-AWARD MWBE TRUCKING COMMITMENT INFORMATION

Contract No.	PIN

Project Sponsor	County

Supervisor of the day-to-day MWBE trucking operation is:

MWBE Trucking Firm:			
	Owned	Leased	Total
No. of Trucks			0

Number of Trucks Performing Work	Rate ($)	Per	Duration/No.	Commitment ($)
On-Site				
Off-Site				
TOTAL				

MWBE Trucking Firm:			
	Owned	Leased	Total
No. of Trucks			0

Number of Trucks Performing Work	Rate ($)	Per	Duration/No.	Commitment ($)
On-Site				
Off-Site				
TOTAL				

MWBE Trucking Firm:			
	Owned	Leased	Total
No. of Trucks			

Number of Trucks Performing Work	Rate ($)	Per	Duration/No.	Commitment ($)
On-Site				
Off-Site				
TOTAL				

NOTE: A Low Bidder that submits a MWBE Utilization Pre-Award Package that includes amount(s) for trucking, must complete this form to show how the commitment amount was estimated. For any long-term leased truck, submit a copy of the lease agreement. Rate should be stated as $/day, $/hour, $/load, etc. and estimated duration/number of loads. (i.e., 1 truck @ $400/day for 3 weeks = $6,000)

D/M/BE UTILIZATION WORKSHEET

Contract No.	County(ies)	PIN	Project Sponsor	Date Submitted

CONTRACTOR INFORMATION							
Name						Federal ID No.	
Address 1						Address 2	
City		State		Zip		Telephone No.	

SUBCONTRACTOR INFORMATION							
Name						Federal ID No.	
Address 1						Address 2	
City		State		Zip		Telephone No.	

Estimated Beginning Date		Estimated Completion Date	

The Prime Contractor shall inform the Sponsor's Engineer-in-Charge (EIC) of the dates when the Subcontractor starts and completes all work under the subcontract. When the work performed by the Subcontractor is included in an estimate for payment, labor affidavits, copies of payrolls, etc., are to be submitted in the same manner and numbers as required of the Prime Contractor. This approval may be rescinded at any time in the progress of the work if work of the Subcontractor is determined unsatisfactory.

No work may be assigned by the Subcontractor to a second tier Subcontractor. No work may be performed by a Subcontractor other than that specifically approved by the Sponsor. The signators below agree that violations of the foregoing may result in no payment by the Sponsor for the related work.

No work shall be started by the Subcontractor prior to filing the required insurances. The Contractor and Subcontractor hereby certify that the subcontract is in writing, and contains all the pertinent provisions of the prime contract in regard to Federal and State Laws and Regulations.

Contractor Signature	Date	Subcontractor Signature	Date

Item No.	Description	< Less Than 100%	$ Specialty	$ Non-Specialty	Agreed Amount $	% to Count
		Totals	$0.00	$0.00	$0.00	

The Subcontractor named above is approved for utilization under the provisions of the Sponsor's contract specifications. Approval of this worksheet conveys only the Sponsor's concurrence in the use of the named subcontractor for the items specified, and application of the DBE Agreed Amount to the participation goal of the contract. Sponsor approval of form AAPHC 20LL Part 2 is required prior to subletting or otherwise assigning any part of the contract.

Approved For Sponsor By (Name)		Date Approved	

CONTRACT FORM

THIS AGREEMENT is dated as of the _____ day of _____ in the year 20___ by and between Dutchess County, a New York Municipal Corporation, having an address at 626 Dutchess Turnpike, Poughkeepsie, New York 12603 (hereinafter called Owner) and _____ having an address at _____ _____ (hereinafter called Contractor).

Owner and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 - WORK

Contractor shall perform, construct and complete all Work as specified and indicated in the Airport Support Building Contract.

ARTICLE 2 - CONTRACT TIMES

2.1 **Contract Time.** The Work shall be substantially complete within the Contract Time as stated in General Provisions Section 80-08 "Failure to Complete on Time", and accepted in accordance with General Provisions Section 50-15 "Final Acceptance". In addition, intermediate stages or sequences of the Work shall be substantially completed and accepted as in accordance with General Provisions Section 80-08.

2.2 **Damages for Delay in Completion.** If the Work is uncompleted after the Contract Time, including all extensions and adjustments in accordance with General Provisions Section 80-07 "Determination and Extension of Contract Time", the sum stipulated in General Provisions Section 80-08 "Failure to Complete on Time" will be deducted from any money due or to become due the Contractor or their surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional engineering services that will be incurred by the Owner should the Contractor fail to complete the work in the Contract Time provided in this Contract.

2.3 **Contract Term.** The term of this Contract shall be from _____ to _____.

ARTICLE 3 - CONTRACT PRICE

3.1 The Owner will pay Contractor for completion of the Work in accordance with the Contract for the Total _____ in the amount of $_____, hereby identified as the Contract Price, as shown in the Contractor's Proposal, with discrepancies corrected in accordance with General Provisions Section 30-01 "Consideration of Proposals" if applicable.

3.2 When unit bid price items are included in the Contract Price, the quantities of various units contained in the Proposal are estimated and payment to the Contractor will be made only for the actual quantities of units that are incorporated in the Work or materials furnished in accordance with the plans and specifications, as determined by the Engineer in accordance with General Provisions Section 90, "Measurement and Payment".

ARTICLE 4 - PAYMENT PROCEDURES

4.1 **Partial Payments.** Partial payments will be made at least once per month based on the Engineer's

estimate in accordance with General Provisions Section 90, “Measurement and Payment”. Progress payments will be made in accordance with General Provision Section 90-06, “Partial Payments”.

4.2 **Retainage.** From the total of the amount determined to be payable on a partial payment, the amount specified in General Provisions Section 90-06, “Partial Payments”, will be deducted and retained by the Owner until the final payment is made.

4.3 **Final Payment:** Final payment will be made in accordance with General Provisions Section 90-09, “Acceptance and Final Payment”.

4.4 **Withholding of Payments:** Payment, or partial payment, will be withheld by the Owner because of claims made or liens filed in connection with the Contract in accordance with General Provisions Section 90-13, “Lien Law”.

ARTICLE 5 - CONTRACTOR'S REPRESENTATIONS

In executing this Agreement, Contractor makes the following representations:

5.1 Contractor has examined and carefully studied the Contract including Addenda.

5.2 Contractor has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work.

5.3 Contractor is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.

5.4 Contractor has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) which have been identified in the Contract. Contractor acknowledges that such reports and drawings are not part of the Contract and may not be complete for Contractor's purposes. Contractor acknowledges that Owner and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Contract with respect to Underground Facilities at or contiguous to the site. Contractor does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract.

5.5 Contractor is aware of the general nature of work to be performed by Owner and others at the site that relates to the Work as indicated in the Contract.

5.6 Contractor has correlated the information known to Contractor, information and observations obtained from visits to the site, reports and drawings identified in the Contract and all additional examinations, investigations, explorations, tests, studies and data with the Contract.

5.7 Contractor has given Design Engineer written notice of all conflicts, errors, ambiguities or discrepancies that Contractor has discovered in the Contract and the written resolution thereof by the Design Engineer is acceptable to Contractor, and the Contract is generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

5.8 If this Project utilizes multiple prime contracts, the Contractor has examined the Contract for all

prime contracts and has acquired sufficient knowledge of the required work of the other prime contractors to the extent that Contractor clearly understands his own obligations and responsibilities relative to the other prime contracts.

ARTICLE 6 - CONTRACT

The Contract which comprises the entire Agreement between Owner and Contractor concerning the Work consists of the following:

6.1 The Proposal with discrepancies corrected.

6.2 This Contract Form.

6.3 The Contractor's Performance Bond and Payment Bond.

6.4 The Contractor's Certificates of Insurance.

6.5 The Notice of Award and Notice to Proceed.

6.6 The General Provisions and the Technical Specifications, which are a part of the Contract.

6.7 The Contract Drawings as listed in the Table of Contents.

6.8 Addenda listed below:

Addendum No.	Date
___	_____
___	_____
___	_____

6.9 There are no documents other than those listed above in this Article 6. The Contract may only be modified by Supplement Agreement.

ARTICLE 7 - MISCELLANEOUS

7.1 Terms used in this Agreement shall have the meanings in the General Provision Section 10, "Definition of Terms".

7.2 No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

7.3 Owner and Contractor each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract.

7.4 Any provision or part of the Contract held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon

Owner or Contractor, who agree that the Contract shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, Owner and Contractor have signed copies of this Agreement. This Agreement will be effective on the day and year first above written.

By:_____ **(SEAL)**
County Attorney's Office

APPROVED AS TO CONTENT

By:_____ **(SEAL)**
Commissioner of Public Works

ACCEPTED: DUTCHESS COUNTY, NEW YORK

By:_____ **(SEAL)**
Susan Serino
County Executive

CONTRACTOR:

_____ **(SEAL)**
(Company Name)

_____
(Signature)

_____
(Printed Name)

_____
(Printed Title)

(ACKNOWLEDGMENT OF OFFICER OF OWNER)

STATE OF NEW YORK

COUNTY OF DUTCHESS } **SS:**

On the _____ day of _____ in the year 20____, before me, the undersigned, a Notary Public in and for said State, personally appeared Susan Serino, 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

(ACKNOWLEDGMENT OF CONTRACTOR, IF A CORPORATION)

STATE OF _____

COUNTY OF _____ } **SS:**

On the _____ day of _____ in the year 20__, before me, the undersigned, a Notary Public in and for said State, personally appeared _____
to me known, who, being by me duly sworn, did depose and say that he/she/they reside(s) at ___
_____,
that he/she/they is(are) the _____ of _____,
the corporation described in and which executed the above instrument; and that he/she/they know(s) the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by authority of the board of directors of said corporation, and that he/she/they signed his/her/their name(s) thereto by like authority.

_____

Notary Public

(ACKNOWLEDGMENT OF CONTRACTOR, IF OTHER THAN A CORPORATION)

STATE OF _____ } **SS:**

COUNTY OF _____

On the _____ 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

(CERTIFICATE OF OWNER'S ATTORNEY)

I, the undersigned, _____, the duly authorized and acting legal representative of the Owner, do hereby certify as follows:

> I have examined the foregoing Contract and surety bond and the manner of execution thereof, and I am of the opinion that each of the aforesaid Agreements has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said Agreements on behalf of the respective parties named therein; and that the foregoing Agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

_____

Owner's Attorney

_____

Date

END OF CONTRACT FORM

Part 1 – General Contract Provisions

Section 10 Definition of Terms

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

Paragraph Number	Term	Definition
10-01	**AASHTO**	The American Association of State Highway and Transportation Officials.
10-02	**Access Road**	The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public roadway.
10-03	**Advertisement**	A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.
10-04	**Airport**	Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; airport buildings and facilities located in any of these areas, and a heliport.
10-05	**NOT USED**	NOT USED.
10-06	**Air Operations Area (AOA)**	The term air operations area (AOA) shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.
10-07	**Apron**	Area where aircraft are parked, unloaded or loaded, fueled and/or serviced.
10-08	**ASTM International (ASTM)**	Formerly known as the American Society for Testing and Materials (ASTM).
10-09	**Award**	The Owner's notice to the successful bidder of the acceptance of the submitted bid.
10-10	**Bidder**	Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.

Paragraph Number	Term	Definition
10-11	**Building Area**	An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.
10-12	**Calendar Day**	Every day shown on the calendar.
10-13	**Certificate of Analysis (COA)**	The COA is the manufacturer's Certificate of Compliance (COC) including all applicable test results required by the specifications.
10-14	**Certificate of Compliance (COC)**	The manufacturer's certification stating that materials or assemblies furnished fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer's authorized representative.
10-15	**Change Order**	A written order to the Contractor covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for work within the scope of the contract and necessary to complete the project.
10-16	**Contract**	A written agreement between the Owner and the Contractor that establishes the obligations of the parties including but not limited to performance of work, furnishing of labor, equipment and materials and the basis of payment. The awarded contract includes but may not be limited to: Advertisement, Contract form, Proposal, Performance bond, payment bond, General provisions, certifications and representations, Technical Specifications, Plans, Supplemental Provisions, standards incorporated by reference and issued addenda.
10-17	**Contract Item (Pay Item)**	A specific unit of work for which a price is provided in the contract.
10-18	**Contract Time**	The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, in lieu of a number of calendar or working days, the contract shall be completed by that date.
10-19	**Contractor**	The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.
10-20	**Contractors Quality Control (QC) Facilities**	The Contractor's QC facilities in accordance with the Contractor Quality Control Program (CQCP).

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

Paragraph Number	Term	Definition
10-30	**Force Account**	**a.** Contract Force Account - A method of payment that addresses extra work performed by the Contractor on a time and material basis. **b.** Owner Force Account - Work performed for the project by the Owner's employees.
10-31	**Intention of Terms**	Whenever, in these specifications or on the plans, the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer and/or Resident Project Representative (RPR) is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer and/or RPR, subject in each case to the final determination of the Owner. Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.
10-32	**Lighting**	A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.
10-33	**Major and Minor Contract Items**	A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 20% of the total amount of the award contract. All other items shall be considered minor contract items.
10-34	**Materials**	Any substance specified for use in the construction of the contract work.
10-35	**Modification of Standards (MOS)**	Any deviation from standard specifications applicable to material and construction methods in accordance with FAA Order 5300.1.
10-36	**Notice to Proceed (NTP)**	A written notice to the Contractor to begin the actual contract work on a previously agreed to date. If applicable, the Notice to Proceed shall state the date on which the contract time begins.
10-37	**Owner**	The term "Owner" shall mean the party of the first part or the contracting agency signatory to the contract. Where the term "Owner" is capitalized in this document, it shall mean airport Sponsor only. The Owner for this project is Dutchess County.

Paragraph Number	Term	Definition
10-38	**Passenger Facility Charge (PFC)**	Per 14 Code of Federal Regulations (CFR) Part 158 and 49 United States Code (USC) § 40117, a PFC is a charge imposed by a public agency on passengers enplaned at a commercial service airport it controls.
10-39	**Pavement Structure**	The combined surface course, base course(s), and subbase course(s), if any, considere4d as a single unit.
10-40	**Payment bond**	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will pay in full all bills and accounts for materials and labor used in the construction of the work.
10-41	**Performance bond**	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.
10-42	**Plans**	The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications. Plans may also be referred to as 'contract drawings.'
10-43	**Project**	The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
10-44	**Proposal**	The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.
10-45	**Proposal guaranty**	The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Owner.
10-46	**Quality Assurance (QA)**	Owner's responsibility to assure that construction work completed complies with specifications for payment.
10-47	**Quality Control (QC)**	Contractor's responsibility to control material(s) and construction processes to complete construction in accordance with project specifications.
10-48	**Quality Assurance (QA) Inspector**	An authorized representative of the Engineer and/or Resident Project Representative (RPR) assigned to make all necessary inspections, observations, tests, and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.

Paragraph Number	Term	Definition
10-49	**Quality Assurance (QA) Laboratory**	The official quality assurance testing laboratories of the Owner or such other laboratories as may be designated by the Engineer or RPR. May also be referred to as Engineer's, Owner's, or QA Laboratory.
10-50	**Resident Project Representative (RPR)**	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for all necessary inspections, observations, tests, and/or observations of tests of the contract work performed or being performed, or of the materials furnished or being furnished by the Contractor, and acting directly or through an authorized representative.
10-51	**Runway**	The area on the airport prepared for the landing and takeoff of aircraft.
10-52	**Runway Safety Area (RSA)**	A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to aircraft. See the construction safety and phasing plan (CSPP) for limits of the RSA.
10-53	**Safety Plan Compliance Document (SPCD)**	Details how the Contractor will comply with the CSPP.
10-54	**Specifications**	A part of the contract containing the written directions and requirements for completing the contract work. Standards for specifying materials or testing which are cited in the contract specifications by reference shall have the same force and effect as if included in the contract physically.
10-55	**Sponsor**	A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.
10-56	**Structures**	Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, handholes, lighting fixtures and bases; transformers; navigational aids; buildings; vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.
10-57	**Subgrade**	The soil that forms the pavement foundation.
10-58	**Superintendent**	The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the RPR, and who shall supervise and direct the construction.

Paragraph Number	Term	Definition
10-59	**Supplemental Agreement**	A written agreement between the Contractor and the Owner that establishes the basis of payment and contract time adjustment, if any, for the work affected by the supplemental agreement. A supplemental agreement is required if: (1) in scope work would increase or decrease the total amount of the awarded contract by more than 25%: (2) in scope work would increase or decrease the total of any major contract item by more than 25%; (3) work that is not within the scope of the originally awarded contract; or (4) adding or deleting of a major contract item.
10-60	**Surety**	The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.
10-61	**Taxilane**	A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
10-62	**Taxiway**	The portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.
10-63	**Taxiway/Taxilane Safety Area (TSA)**	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See the construction safety and phasing plan (CSPP) for limits of the TSA.
10-64	**Work**	The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.
10-65	**Working day**	A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work will be considered as working days.
10-66	**Owner Defined terms**	The following terms are included in this contract:
	Contract Drawings	Plans.
	Subcontractor	The subcontractor refers any individual, firm, or corporation to whom the contractor, with approval of the Owner, sublets any part of work.

Paragraph Number	Term	Definition
	Time and Materials Work	An item or items of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the Engineer to be necessary to complete the work within the intended scope of the contract as previously modified and an agreed price cannot be agreed upon. The Contractor shall perform this work and the Owner agrees to pay the Contractor based upon the work performed by the Contractor's employees and subcontractors, and for materials and equipment used in the construction (along with the Contractor's allowed overhead and profit).

END OF SECTION 10

Section 20 Proposal Requirements and Conditions

20-01 Advertisement (Notice to Bidders). See the Advertisement located in the front of these Contract Documents.

20-02 Qualification of bidders..Within one week of receiving a written request, the bidder shall submit the requirements of this section to the Owner.

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

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

In addition, each bidder who receives a written request shall furnish the following to the Owner:

a. A list of the categories of work to be performed by the bidder's work force and a list of work to be subcontracted out (See Section 80-01).

b. A list of construction projects completed in the past five years. The list shall include the project name, completion date, total contract value, value of bidder's portion of the work, engineer and owner contact information (names and phone numbers).

c. A list of construction projects in progress and under contract including the project name, percent complete, estimated completion date, total contract value, value of bidder's portion of the work, engineer and owner contact information (names and phone numbers).

d. A Schedule of Values showing the following information:

    1. For each lump sum bid item: Provide a breakdown of values for major products, assemblies or operations, indicating separate amounts for (a) purchased materials, (b) labor, and (c) construction equipment, which total to the lump sum price bid for each item.

    2. For each unit price bid item: Provide a breakdown of values for the unit price allocated to (a) purchased materials, (b) labor, and (c) construction equipment which total to the unit price bid for each item.

    The Schedule of Values will be reviewed by the Engineer. Any additional detail or justification for cost distribution shall be provided by the apparent low bidder upon request. The Schedule of Values shall serve as a basis for computing progress payments

during construction for installed portions of lump sum items, and to assist the Engineer in determining if change order costs are reasonable.

e. A New York State Vendor Responsibility Questionnaire. The questionnaire can be obtained from the New York State Office of the State Comptroller. (Download at: http://www.osc.state.ny.us/vendrep) Business Entities must answer every question contained in the selected questionnaire. Most questions require "Yes" or "No" answers and request additional information based on the Business Entity's response. The completed questionnaire and attached responses will become part of the procurement record. It is imperative that the person completing the vendor responsibility questionnaire be knowledgeable about the vendor's business and operations. The certification at the end of each questionnaire must be completed by an owner or officer of the Business Entity.

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

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

Mobilization, if included in this proposal, is specified in Item C-105.

A prebid conference is required on this project to discuss as a minimum, the following items: material requirements; submittals; Quality Control/Quality Assurance requirements; the construction safety and phasing plan including airport access and staging areas; and unique airfield paving construction requirements. The location, date and time are stated in the Advertisement.

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

a. Failure to comply with any prequalification regulations of the Owner, if such regulations are cited, or otherwise included, in the proposal as a requirement for bidding.

b. Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts in force with the Owner at the time the Owner issues the proposal to a prospective bidder.

c. Documented record of Contractor default under previous contracts with the Owner.

d. Documented record of unsatisfactory work on previous contracts with the Owner.

20-05 Interpretation of estimated proposal quantities. An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct. It is given only as a basis for comparison of proposals and the award of the contract. The Owner does not expressly, or by implication, agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or

materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as provided in the Section 40, paragraph 40-02, Alteration of Work and Quantities, without in any way invalidating the unit bid prices.

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

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

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

Prices should be written in whole dollars and cents. The extended total amount of each item should not be rounded.

The bidder shall correctly sign the proposal in ink. If the proposal is made by an individual, their name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the proposal shall give the name of the state where the corporation was chartered and the name, titles, and business address of the president, secretary, and the treasurer. Anyone signing a proposal as an agent shall file evidence of their authority to do so and that the signature is binding upon the firm or corporation.

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

20-09 Irregular proposals. Proposals shall be considered irregular for the following reasons:

a. If the proposal is on a form other than that furnished by the Owner, or if the Owner's form is altered, or if any part of the proposal form is detached.

b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the proposal incomplete, indefinite, or otherwise ambiguous.

c. If the proposal does not contain a unit price for each pay item listed in the proposal, except in the case of authorized alternate pay items, for which the bidder is not required to furnish a unit price.

d. If the proposal contains unit prices that are obviously unbalanced.

e. If the proposal is not accompanied by the proposal guaranty specified by the Owner.

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

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

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

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

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

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

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

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

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

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

20-15 Discrepancies and Omissions. A Bidder who discovers discrepancies or omissions with the project bid documents shall immediately notify the Owner's Engineer of the matter. A bidder that has doubt as to the true meaning of a project requirement may submit to the Owner's Engineer a written request for interpretation no later than 7 calendar days prior to bid opening.

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

END OF SECTION 20

Section 30 Award and Execution of Contract

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

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

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

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

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

30-02 Award of contract. The award of a contract, if it is to be awarded, shall be made within forty-five (45) calendar days of the date specified for publicly opening proposals, unless otherwise specified herein.

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

The Owner reserves the right to award only the Base Bid, to award any Alternate Bid (if Alternates are an option), or to award either the Base Bid or the Alternate Bid plus Add-On Bids (if Add-On bids are an option).Where discrepancies occur that affect the bid total(s) as described in the subsection titled CONSIDERATION OF PROPOSALS, the contract amount awarded will reflect the corrected values.

Where alternate bids and/or add-on bids are included in the proposal, the lowest qualified bidder will be determined by comparison of the combination of Base Bid, or Alternate Bid, plus Add-On bids which are chosen by the Owner.

The Owner, based on their operational needs, has established the following order for evaluation of bids to determine the apparent low bidder:

Base Bid

Alternate Bid

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

30-04 Return of proposal guaranty. All proposal guaranties, except those of the two lowest bidders, will be returned immediately after the Owner has made a comparison of bids as specified in the paragraph 30-01, *Consideration of Proposals.* Proposal guaranties of the two lowest bidders will be retained by the

Owner until such time as an award is made, at which time, the unsuccessful bidder's proposal guaranty will be returned. The successful bidder's proposal guaranty will be returned as soon as the Owner receives the contract bonds as specified in paragraph 30-05, *Requirements of Contract Bonds.*

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

The successful bidder shall submit in triplicate, a "Performance Bond" guaranteeing the performance of the work equal to one hundred percent (100%) of the amount of the Contract awarded, and a "Labor and Material Payment Bond" guaranteeing the payment of all legal debts that may be incurred by reason of the Contractor's performance of the work equal to one hundred percent (100%) of the amount of the Contract awarded.

30-06 Execution of contract. The successful bidder shall sign (execute) the necessary agreements for entering into the contract and return the signed contract to the Owner, along with the fully executed surety bond or bonds specified in paragraph 30-05, *Requirements of Contract Bonds,* of this section, within 15 calendar days from the date mailed or otherwise delivered to the successful bidder.

The Contractor shall also furnish the required insurance certificates in accordance with the subsection titled RESPONSIBILITY FOR DAMAGE CLAIMS of Sections 70 and 200. The successful bidder shall recognize that the proposal included in the contract for execution may differ from the proposal which was submitted with their bid. The proposal included in the contract for execution will include corrections to discrepancies which were discovered during the Owners consideration of proposals, and will contain only the pages from the successful bidder's proposal which cover the bids which were awarded. As a result, the proposal pages in the contract to be executed may contain pages which are not consecutively numbered due to the intentional omission of those proposal pages which cover bids that were not awarded.

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

30-08 Failure to execute contract. Failure of the successful bidder to execute the contract and furnish an acceptable surety bond or bonds within the period specified in paragraph 30-06, *Execution of Contract,* of this section shall be just cause for cancellation of the award and forfeiture of the proposal guaranty, not as a penalty, but as liquidated damages to the Owner.

END OF SECTION 30

Section 40 Scope of Work

40-01 Intent of contract. The intent of the contract is to provide for construction and completion, in every detail, of the work described. It is further intended that the Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the plans, specifications, and terms of the contract.

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

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

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

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

However, if the Contractor elects to waive the limitations on work that increase or decrease the originally awarded contract or any major contract item by more than 25 percent, the supplemental agreement shall be subject to the same wage determination as was included in the originally awarded contract.

All supplemental agreements shall require consent of the Contractor's surety and separate performance and payment bonds.

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

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

40-04 Extra work. Should acceptable completion of the contract require the Contractor to perform an item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, Owner may issue a Change Order to cover the necessary extra work. Change orders for extra work shall contain agreed unit prices for performing the change order work in accordance

with the requirements specified in the order, and shall contain any adjustment to the contract time that, in the RPR's opinion, is necessary for completion of the extra work.

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

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

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

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

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

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

c. When the contract requires the maintenance of an existing road, street, or highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep the road, street, or highway open to all traffic and shall provide maintenance as may be required to accommodate traffic. The Contractor, at their expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel. The Contractor shall furnish, erect, and maintain barricades, warning signs, flag person, and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices (MUTCD) (http://mutcd.fhwa.dot.gov/), unless otherwise specified. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways. Unless otherwise specified herein, the Contractor will not be required to furnish snow removal for such existing road, street, or highway.

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

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

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

40-07 Rights in and use of materials found in the work. Should the Contractor encounter any material such as (but not restricted to) sand, stone, gravel, slag, or concrete slabs within the established lines, grades, or grading sections, the use of which is intended by the terms of the contract to be embankment, the Contractor may at their own option either:

a. Use such material in another contract item, providing such use is approved by the RPR and is in conformance with the contract specifications applicable to such use; or,

b. Remove such material from the site, upon written approval of the RPR; or

c. Use such material for the Contractor's own temporary construction on site; or,

d. Use such material as intended by the terms of the contract.

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

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

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

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

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

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

Contractor shall leave the premises broom-clean and everything in perfect order and repair. Upon neglect or refusal of Contractor to keep the premises clean, the RPR shall have the authority to have such work performed, and the cost of the same shall be charged to the Contractor in default and collected from any monies which have or may become due on this Contract. The RPR shall issue no certificates of payment on the Contract until premises are clean, in good order, and all claims properly resolved.

END OF SECTION 40

Section 50 Control of Work

50-01 Authority of the Resident Project Representative (RPR). The RPR has final authority regarding the interpretation of project specification requirements. The RPR shall determine acceptability of the quality of materials furnished, method of performance of work performed, and the manner and rate of performance of the work. The RPR does not have the authority to accept work that does not conform to specification requirements.

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

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

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

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

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

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

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

any paragraphs contained in the Special Provisions conflict with General Provisions or Technical Specifications, the Special Provisions shall govern.

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

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

50-04 List of Special Provisions. See Special Provisions section to the General Provisions.

50-05 Cooperation of Contractor. The Contractor shall be supplied with five hard copies or an electronic PDF of the plans and specifications. The Contractor shall have available on the construction site at all times one hardcopy each of the plans and specifications. Additional hard copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

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

50-06 Cooperation between Contractors. The Owner reserves the right to contract for and perform other or additional work on or near the work covered by this contract.

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

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

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

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

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

Copies of survey notes will be provided to the RPR for each area of construction and for each placement of material as specified to allow the RPR to make periodic checks for conformance with plan grades, alignments and grade tolerances required by the applicable material specifications. Surveys will be provided to the RPR prior to commencing work items that cover or disturb the survey staking. Survey(s) and notes shall be provided in the following format(s): five (5) full size copies of signed and sealed surveys, five (5) copies of the notes as well as pdf copies of both.

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

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

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

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

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

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

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

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

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

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed

immediately and replaced in an acceptable manner in accordance with the provisions of Section 70, paragraph 70-14, *Contractor's Responsibility for Work*.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

END OF SECTION 50

Section 60 Control of Materials

60-01 Source of supply and quality requirements. The materials used in the work shall conform to the requirements of the contract, plans, and specifications. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).

In order to expedite the inspection and testing of materials, the Contractor shall furnish documentation to the RPR as to the origin, composition, and manufacture of all materials to be used in the work. Documentation shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the RPR's option, materials may be approved at the source of supply before delivery. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

The Contractor shall furnish airport lighting equipment that meets the requirements of the specifications; and is listed in AC 150/5345-53, *Airport Lighting Equipment Certification Program* and *Addendum*, that is in effect on the date of advertisement.

All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification.

60-02 Samples, tests, and cited specifications. All materials used in the work shall be inspected, tested, and approved by the RPR before incorporation in the work unless otherwise designated. Any work in which untested materials are used without approval or written permission of the RPR shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the RPR, shall be removed at the Contractor's expense.

Unless otherwise designated, quality assurance tests will be made by and at the expense of the Owner in accordance with the cited standard methods of ASTM, American Association of State Highway and Transportation Officials (AASHTO), federal specifications, Commercial Item Descriptions, and all other cited methods, which are current on the date of advertisement for bids.

The testing organizations performing on-site quality assurance field tests shall have copies of all referenced standards on the construction site for use by all technicians and other personnel. Unless otherwise designated, samples for quality assurance will be taken by a qualified representative of the RPR. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work. Copies of all tests will be furnished to the Contractor's representative at their request after review and approval of the RPR.

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

60-03 Certification of compliance/analysis (COC/COA). The RPR may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's COC

stating that such materials or assemblies fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the work must be accompanied by a certificate of compliance in which the lot is clearly identified. The COA is the manufacturer's COC and includes all applicable test results.

Manufacturer's certificates of compliance shall not relieve the Contractor of their responsibility to provide materials in accordance with these specifications and acceptable to the RPR. Materials supplied and/or installed that do not materially comply with these specifications shall be removed, when directed by the RPR, and replaced with materials, which do comply with these specifications, at the sole cost of the Contractor.

Materials or assemblies used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with contract requirements will be subject to rejection whether in place or not.

The form and distribution of certificates of compliance shall be as approved by the RPR.

When a material or assembly is specified by "brand name or equal" and the Contractor elects to furnish the specified "or equal," the Contractor shall be required to furnish the manufacturer's certificate of compliance for each lot of such material or assembly delivered to the work. Such certificate of compliance shall clearly identify each lot delivered and shall certify as to:

a. Conformance to the specified performance, testing, quality or dimensional requirements; and,

b. Suitability of the material or assembly for the use intended in the contract work.

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

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

60-04 Plant inspection. The RPR or their authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for acceptance of the material or assembly.

Should the RPR conduct plant inspections, the following conditions shall exist:

a. The RPR shall have the cooperation and assistance of the Contractor and the producer with whom the Contractor has contracted for materials.

b. The RPR shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.

c. If required by the RPR, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Place office or working space in a convenient location with respect to the plant.

It is understood and agreed that the Owner shall have the right to retest any material that has been tested and approved at the source of supply after it has been delivered to the site. The RPR shall have the right to reject only material which, when retested, does not meet the requirements of the contract, plans, or specifications.

60-05 Engineer/ Resident Project Representative (RPR) field office. The Engineer/RPR field office, if required, shall be as indicated in C-105, Mobilization.

60-06 Storage of materials. Materials shall be stored to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the RPR. Materials to be stored on airport property shall not create an obstruction to air navigation nor shall they interfere with the free and unobstructed movement of aircraft. Unless otherwise shown on the plans and/or CSPP, the storage of materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the RPR. Private property shall not be used for storage purposes without written permission of the Owner or lessee of such property. The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the RPR a copy of the property Owner's permission.

All storage sites on private or airport property shall be restored to their original condition by the Contractor at their expense, except as otherwise agreed to (in writing) by the Owner or lessee of the property.

60-07 Unacceptable materials. Any material or assembly that does not conform to the requirements of the contract, plans, or specifications shall be considered unacceptable and shall be rejected. The Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by the RPR.

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

60-08 Owner furnished materials. The Contractor shall furnish all materials required to complete the work, except those specified, if any, to be furnished by the Owner. Owner-furnished materials shall be made available to the Contractor at the location specified.

All costs of handling, transportation from the specified location to the site of work, storage, and installing Owner-furnished materials shall be included in the unit price bid for the contract item in which such Owner-furnished material is used.

After any Owner-furnished material has been delivered to the location specified, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies that may occur during the Contractor's handling, storage, or use of such Owner-furnished material. The Owner will deduct from any monies due or to become due the Contractor any cost incurred by the Owner in making good such loss due to the Contractor's handling, storage, or use of Owner-furnished materials.

END OF SECTION 60

Section 70 Legal Regulations and Responsibility to Public

70-01 Laws to be observed. The Contractor shall keep fully informed of all federal and state laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the Owner, the Engineer, the RPR and all their officers, agents, or servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor or the Contractor's employees.

70-02 Permits, licenses, and taxes. The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful execution of the work.

70-03 Patented devices, materials, and processes. If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the Patentee or Owner. The Contractor and the surety shall indemnify and hold harmless the Owner, the Engineer, the RPR, any third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the Owner for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the execution or after the completion of the work.

70-04 Restoration of surfaces disturbed by others. The Owner reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, FAA or National Oceanic and Atmospheric Administration (NOAA) facility, or a utility service of another government agency at any time during the progress of the work. To the extent that such construction, reconstruction, or maintenance has been coordinated with the Owner, such authorized work (by others) must be shown on the plans and is indicated as follows:

Utility	Location (Sheet No.)	Person to Contact	Phone No.

"Not Applicable"

Except as listed above, the Contractor shall not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the work without the written permission of the RPR.

Should the Owner of public or private utility service, FAA, or NOAA facility, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the work, the Contractor shall cooperate with such Owners by arranging and performing the work in this contract to facilitate such construction, reconstruction or maintenance by others whether or not such work by others is listed above. When ordered as extra work by the RPR, the Contractor shall make all necessary repairs to the work which are due to such authorized work by others,

unless otherwise provided for in the contract, plans, or specifications. It is understood and agreed that the Contractor shall not be entitled to make any claim for damages due to such authorized work by others or for any delay to the work resulting from such authorized work.

70-05 Federal Participation. Section not used.

70-06 Sanitary, health, and safety provisions. The Contractor's worksite and facilities shall comply with applicable federal, state, and local requirements for health, safety and sanitary provisions.

70-07 Public convenience and safety. The Contractor shall control their operations and those of their subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall maintain the free and unobstructed movement of aircraft and vehicular traffic with respect to their own operations and those of their own subcontractors and all suppliers in accordance with Section 40, paragraph 40-05, *Maintenance of Traffic,* and shall limit such operations for the convenience and safety of the traveling public as specified in Section 80, paragraph 80-04, *Limitation of Operations*.

The Contractor shall remove or control debris and rubbish resulting from its work operations at frequent intervals, and upon the order of the RPR. If the RPR determines the existence of Contractor debris in the work site represents a hazard to airport operations and the Contractor is unable to respond in a prompt and reasonable manner, the RPR reserves the right to assign the task of debris removal to a third party and recover the resulting costs as a liquidated damage against the Contractor.

70-08 Construction Safety and Phasing Plan (CSPP). The Contractor shall complete the work in accordance with the approved Construction Safety and Phasing Plan (CSPP) developed in accordance with AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP is described in the Construction Safety and Phasing Plan, Appendix A to Section 70.

During the work of this Contract, the Owner will make such arrangements to coordinate aircraft movements and Airport operations as necessary to conform to the construction procedures outlined in the Construction Safety and Phasing Plan, and as shown on the Contract Drawings. The Contractor shall give adequate notice to the RPR, so as to afford time to coordinate construction with the Owner.

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

70-10 Protection and restoration of property and landscape. The Contractor shall be responsible for the preservation of all public and private property, and shall protect carefully from disturbance or damage all land monuments and property markers until the Engineer/RPR has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the execution of the work, resulting from any act, omission, neglect, or misconduct in manner or method of executing the work, or at any time due to defective work or materials, and said responsibility shall not be released until the project has been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, the Contractor shall restore, at their expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, or

otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in an acceptable manner.

The Contractor shall indemnify the Owner for any and all costs for the repair or replacement of the Owner's property including, but not limited to, buildings and roads, which arise from or in any manner grow out of any act or neglect on or about the Project site by the Contractor and anyone for whom the Contractor is legally liable.

70-11 Responsibility for damage claims. The Contractor shall indemnify, defend and hold harmless the Engineer/RPR and the Owner and their respective representatives, directors, officers, agents, and employees from all suits, actions, damages, costs, expenses or claims, of any character, (including attorney's fees), and liability (including statutory liability) brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct or arising out of or related to any negligence of the Contractor or anyone for whom the Contractor is legally liable in performing or safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any and all environmental impairment; or because of any act or omission, neglect, or misconduct of said Contractor or anyone for whom the Contractor is legally liable of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act," or any other law, ordinance, order, or decree. Money due the Contractor under and by virtue of their own contract considered necessary by the Owner for such purpose may be retained for the use of the Owner or, in case no money is due, their own surety may be held until such suits, actions, or claims for injuries or damages shall have been settled and suitable evidence to that effect furnished to the Owner, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he or she is adequately protected by public liability and property damage insurance.

As a material part of the consideration to be rendered by the Owner, the Contractor hereby waives all claims against the Owner for damages to the goods, wares, and merchandise in, upon, or about the Project, and the Contractor will hold the Owner exempt and harmless from any damage and injury to any such person or to the goods, wares, or merchandise of any such person, arising from the use of the Project site by the Contractor or from failure of the Contractor to keep the Project site in good condition and repair as provided in this Section.

70-12 Third party beneficiary clause. It is specifically agreed between the parties executing the contract that it is not intended by any of the provisions of any part of the contract to create for the public or any member thereof, a third-party beneficiary or to authorize anyone not a party to the contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the contract.

70-13 Opening sections of the work to traffic. If it is necessary for the Contractor to complete portions of the contract work for the beneficial occupancy of the Owner prior to completion of the entire contract, such "phasing" of the work must be specified below and indicated on the approved Construction Safety and Phasing Plan (CSPP) and the project plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified.

Opening sections of work to traffic shall be as described in the CSPP.

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

No portion of the work may be opened by the Contractor until directed by the Owner in writing. Should it become necessary to open a portion of the work to traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the RPR, such portion of the work is in an acceptable condition to support the intended traffic. Temporary or intermittent openings are considered to be inherent in the work and shall not constitute either acceptance of the portion of the work so opened or a waiver of any provision of the contract. Any damage to the portion of the work so opened that is not attributable to traffic which is permitted by the Owner shall be repaired by the Contractor at their expense.

The Contractor shall make their own estimate of the inherent difficulties involved in completing the work under the conditions herein described and shall not claim any added compensation by reason of delay or increased cost due to opening a portion of the contract work.

The Contractor must conform to safety standards contained AC 150/5370-2 and the approved CSPP.

Contractor shall refer to the plans, specifications, and the approved CSPP to identify barricade requirements, temporary and/or permanent markings, airfield lighting, guidance signs and other safety requirements prior to opening up sections of work to traffic.

70-14 Contractor's responsibility for work. Until the RPR's final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with Section 50, paragraph 50-14, *Partial Acceptance*, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane or other cataclysmic phenomenon of nature, or acts of the public enemy or of government authorities.

If the work is suspended for any cause whatever, the Contractor shall be responsible for the work and shall take such precautions necessary to prevent damage to the work. The Contractor shall provide for normal drainage and shall erect necessary temporary structures, signs, or other facilities at their own expense. During such period of suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established planting, seeding, and sodding furnished under the contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

70-15 Contractor's responsibility for utility service and facilities of others. As provided in paragraph 70-04, *Restoration of Surfaces Disturbed by Others*, the Contractor shall cooperate with the owner of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the Owner to construct, reconstruct or maintain such utility services or facilities during the progress of the work. In addition, the Contractor shall control their operations to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services, FAA, or NOAA facilities, or utility services of another governmental agency are known to exist within the limits of the contract work, the approximate locations have been indicated on the plans and/or in the contract documents.

Utility Service or Facility	Person to Contract	Telephone No.
FAA Airway Facilities	John Kouloumbis	(347) 834-6090

It is understood and agreed that the Owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, facilities, or structures that may be shown on the plans or encountered in the work. Any inaccuracy or omission in such information shall not relieve the Contractor of the responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that the Contractor shall, upon execution of the contract, notify the Owners of all utility services or other facilities of their plan of operations. Such notification shall be in writing addressed to "The Person to Contact" as provided in this paragraph and paragraph 70-04, *Restoration of Surfaces Disturbed By Others*. A copy of each notification shall be given to the RPR.

In addition to the general written notification provided, it shall be the responsibility of the Contractor to keep such individual Owners advised of changes in their plan of operations that would affect such Owners.

Prior to beginning the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such Owner of their plan of operation. If, in the Contractor's opinion, the Owner's assistance is needed to locate the utility service or facility or the presence of a representative of the Owner is desirable to observe the work, such advice should be included in the notification. Such notification shall be given by the most expeditious means to reach the utility owner's "Person to Contact" no later than two normal business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor shall furnish a written summary of the notification to the RPR.

The Contractor's failure to give the two days' notice shall be cause for the Owner to suspend the Contractor's operations in the general vicinity of a utility service or facility.

Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use hand excavation methods within 3 feet (1 m) of such outside limits at such points as may be required to ensure protection from damage due to the Contractor's operations.

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

The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to their operations whether due to negligence or accident. The Owner reserves the right to deduct such costs from any monies due or which may become due the Contractor, or their own surety.

70-15.1 FAA facilities and cable runs. The Contractor is hereby advised that the construction limits of the project include existing facilities and buried cable runs that are owned, operated and maintained by the FAA. The Contractor, during the execution of the project work, shall comply with the following:

a. The Contractor shall permit FAA maintenance personnel the right of access to the project work site for purposes of inspecting and maintaining all existing FAA owned facilities.

b. The Contractor shall provide notice to the FAA Air Traffic Organization (ATO)/Technical Operations/System Support Center (SSC) Point-of-Contact through the airport Owner and RPR a minimum of seven (7) calendar days prior to commencement of construction activities in order to permit sufficient time to locate and mark existing buried cables and to schedule any required facility outages.

c. If execution of the project work requires a facility outage, the Contractor shall contact the FAA Point-of-Contact a minimum of 72 hours prior to the time of the required outage.

d. Any damage to FAA cables, access roads, or FAA facilities during construction caused by the Contractor's equipment or personnel whether by negligence or accident will require the Contractor to repair or replace the damaged cables, access road, or FAA facilities to FAA requirements. The Contractor shall not bear the cost to repair damage to underground facilities or utilities improperly located by the FAA.

e. If the project work requires the cutting or splicing of FAA owned cables, the FAA Point-of-Contact shall be contacted a minimum of 72 hours prior to the time the cable work commences. The FAA reserves the right to have a FAA representative on site to observe the splicing of the cables as a condition of acceptance. All cable splices are to be accomplished in accordance with FAA specifications and require approval by the FAA Point-of-Contact as a condition of acceptance by the Owner. The Contractor is hereby advised that FAA restricts the location of where splices may be installed. If a cable splice is required in a location that is not permitted by FAA, the Contractor shall furnish and install a sufficient length of new cable that eliminates the need for any splice.

70-16 Furnishing rights-of-way. The Owner will be responsible for furnishing all rights-of-way upon which the work is to be constructed in advance of the Contractor's operations.

70-17 Personal liability of public officials. In carrying out any of the contract provisions or in exercising any power or authority granted by this contract, there shall be no liability upon the Engineer, RPR, their authorized representatives, or any officials of the Owner either personally or as an official of the Owner. It is understood that in such matters they act solely as agents and representatives of the Owner.

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

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

70-19 Environmental protection. The Contractor shall comply with all federal, state, and local laws and regulations controlling pollution of the environment. The Contractor shall take necessary precautions to

prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, asphalts, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

The Contractor shall perform all testing, removal of contaminated material, transportation, treatment, remediation, and disposal of contaminated materials which are the result of a spill or release caused by the Contractor, and he shall provide and properly place materials to restore the property to its original condition, all to the Owner's satisfaction and at the Contractor's expense. Refer to the subsection 70-10 titled PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE of this section.

A. Air Pollution

1. No burning of combustible waste shall be permitted.
2. Alternatives to Burning Land Cleared Material.
    a. All spoil material from clearing and grubbing operations shall be disposed of in accordance with the Technical Specifications, unless otherwise directed.
    b. Wood may be salvaged for firewood or commercial use or it may be chipped and disposed of for use as mulch.
    c. Logs, brush, etc. may be removed to an authorized disposal area or disposed of to the general public without charge.
3. Dust Control.
    a. Common construction operations which may cause excessive dust include:
        1) Quarry, drilling and rock crushing.
        2) Clearing, grubbing and stripping.
        3) Excavation and placement of embankment.
        4) Cement and aggregate handling.
        5) Cement or lime stabilization.
        6) Blasting.
        7) Use of haul roads.
        8) Sandblasting or grinding.
    b. Other construction operations which may cause air pollution are:
        1) Volatiles escaping from asphalt and cut back materials.
        2) Use of herbicides or fertilizers.
        3) Smoke from asphalt plants or heater/planers.
    c. Control of Dust and Other Air Pollutants shall be the responsibility of the Contractor and may include the following control methods:
        1) Drilling apparatus equipped with water or chemical dust controlling systems.
        2) Exposing the minimum area of land.
        3) Applying temporary mulch with or without seeding.
        4) Use of water sprinkling trucks.

5) Use of covered haul trucks.

6) Use of stabilizing agents in solution.

7) Use of dust palliative and penetration asphalt on temporary roads.

8) Use of wood chips in traffic or work areas.

9) Use of vacuum equipped sandblasting systems.

10) Use of plastic sheet coverings.

11) Restricting the application rate of herbicides to recommended dosage. Materials should be covered and protected from the elements. Application, equipment and empty containers shall not be rinsed and discharged to a stream, etc. or allowed to enter the groundwater.

12) Use dust control measures at bituminous mixing plants, and quarry operations.

13) Delay operations until climate or wind conditions dissipate or inhibit the potential pollutants in a manner satisfactory to the RPR.

B. Water Pollution

1. The Contractor shall use suitable precautions to minimize water pollution during the progress of the work. Erosion control devices or methods may consist of berms, dikes, dams, drains, sediment basins, fiber mats, woven plastic filter cloths, gravel, mulches, quick growing grasses, sod, bituminous spray or other control devices.

2. The amount of surface area of erodible earth at any one time shall not exceed the area allowed by permit.

3. Pollutants such as fuels, lubricants, bitumens, raw sewage and other harmful materials shall not be discharged into or near rivers, streams, and impoundments or into natural or man-made channels leading thereto. Wash water or waste from concrete mixing and curing operations should not be allowed to enter streams, etc.

In the event of conflict between these requirements and pollution control laws, rules or regulations or other Federal, State or local agencies, the more restrictive laws, rules, or regulations shall apply.

70-20 Archaeological and historical findings. Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during their operations, any building, part of a building, structure, or object that is incongruous with its surroundings, the Contractor shall immediately cease operations in that location and notify the RPR. The RPR will immediately investigate the Contractor's finding and the Owner will direct the Contractor to either resume operations or to suspend operations as directed.

Should the Owner order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract change order or supplemental agreement as provided in Section 40, paragraph 40-04, *Extra Work,* and Section 90, paragraph 90-05, *Payment for Extra Work*. If appropriate, the contract change order or supplemental agreement shall include an extension of contract time in accordance with Section 80, paragraph 80-07, *Determination and Extension of Contract Time*.

70-21 Insurance Requirements.

INDEMNIFICATION. The Contractor agrees to the fullest extent permitted by law to defend, indemnify and hold the County and its employees harmless from any and all such losses, claims, liens, demands and causes for action, including but not limited to, judgments, penalties, interest, court costs, and legal fees incurred by the County on behalf of any party, in connection with or arising from the Contractor's work. The Contractor shall investigate, handle, respond to and defend any such claims, demands or suits at its sole expense, and shall bear all other related costs and expenses even if such claims, demands, or suits are groundless, false or fraudulent. This indemnification section shall survive the expiration or termination of this Agreement.

In any matter in which indemnification hereunder would violate Section 5-322.1 of the New York General Obligations Law or any other applicable legal prohibition, the foregoing provision shall not be construed to indemnify the County for damage arising out of bodily injury to persons or to property caused by or resulting from the sole negligence of Dutchess County employees. The term "employee" shall include all officers, advisory board members and/or volunteers serving the County.

INSURANCE. The Contractor, at his own expense, shall procure and maintain, until final acceptance by the Owner of the work covered by the Contract, comprehensive liability insurance for damages imposed by law of the kinds and in the amounts hereinafter provided, written by a financially solvent insurance company authorized to do such business and write such coverage in the place where the Project is located, covering all operations under the Contract, whether performed by the Contractor or by its Subcontractor(s). Before commencing the work, the Contractor shall furnish to the Owner three (3) certificates of insurance, in satisfactory form to the Owner, showing that the Contractor has complied with the requirements of this Section. The policies and certificates shall provide that the policies shall not be changed or canceled until thirty (30) days after written notice thereof has been given to each of the Additional Insureds listed below. Property damage insurance shall include coverage for explosion, collapse, and underground operations (X C U hazards).

A. The kinds and amounts of insurance are as follows:

1. General Liability insurance policies shall be Commercial General Liability Insurance (including premises operations, independent contractors, products/completed operations, explosion, collapse and underground hazard, broad form property damage, and blanket contractual liability coverages) and shall be written on an Occurrence basis with the following minimum limits:

   Each Occurrence $1,000,000

   General Aggregate $3,000,000

   As an alternative to the above limits for General Aggregate and Each Occurrence, Contractor may elect to provide Excess Liability Insurance. Excess Liability coverage shall likewise be written on an Occurrence basis. If the Contractor so elects, then the sum of the General Liability Each Occurrence limit and the Excess Liability Each Occurrence limit shall total at least $1,000,000. The sum of the General Liability General Aggregate limit and the Excess Liability Aggregate limit shall total at least $3,000,000.

2. Automobile Liability policies shall cover "All Owned", "Scheduled", "Hired" and "Non-Owned" autos. The minimum Combined Single Limit shall be $1,000,000.

   As an alternative to the above limit for Automobile Liability, Contractor may elect to provide Excess Liability Insurance. Excess Liability coverage shall be written on an Occurrence

basis. If the Contractor so elects, then the sum of the Combined Single Limit and the Excess Liability Each Occurrence limit shall total at least $1,000,000.

3. Policy or policies covering the obligations of the Contractor in accordance with the provisions of any applicable Worker's Compensation or Disability Benefits Law.

4. If applicable, the Contractor and its Subcontractor(s) engaged in work involving "hazardous substances," as defined in Section 3 of PL 1993, c. 139 (C.13:1K-8), or "hazardous waste," as defined in Section 1 of PL 1976, c. 99 (C.13:1E-38), shall procure and maintain pollution liability insurance, also known as "environmental impairment liability insurance."

Dutchess County Insurance Requirements:

A. At all times during the term of this Agreement, the Contractor and his sub contractors, if any, shall maintain at his own cost the following insurance and shall provide proof thereof to the Owner, in the form of a Certificate of Insurance, prior to commencing work under this Agreement:

Worker's Compensation Employer's Liability (statutory limits). In compliance with the Workers' Compensation Law of the State of New York, each contractor shall provide:

a. a certificate of insurance on an Acord form indicating proof of coverage for Worker's Compensation, Employer's Liability, **OR**

b. a New York State Workers Compensation Notice of Compliance (Form C-105, Form U-26.3, Form SI-12 or Form SI-105.2P).

c. In the event that the Contractor is exempt from providing coverage, he must provide a properly executed copy of the Certificate of Attestation of Exemption from NYS Workers' Compensation Board, Form CE-200.

Commercial General Liability Insurance coverage including blanket contractual coverage for the operation of the program under this Agreement with limits not less than $1,000,000 per occurrence and $2,000,000 in the aggregate. This insurance shall be written on an occurrence coverage form and include bodily injury and property damage liability. The Owner, Engineer (and C&S Engineers, Inc., 499 Col. Eileen Collins Blvd., Syracuse, NY 13212)., and New York State Department of Transportation must be listed as additional insureds. The additional insured endorsement for the Commercial General Liability insurance required above shall not contain any exclusion for bodily injury or property damage arising from completed operations.

Automobile Liability Insurance coverage for all owned, scheduled, hired, and non-owned vehicles with a combined single limit of liability of not less than $1,000,000. This insurance shall include coverage for bodily injury and property damage. The Owner, Engineer, and New York State Department of Transportation must be listed as additional insured.

Excess/Umbrella Liability, with limits not less than $5,000,000 per occurrence with a $5,000,000 aggregate. The Owner, Engineer, and the New York State Department of Transportation must be included as additional insureds.

The Acord form certificate of insurance must contain the following provisions:

(A) The Owner (County of Dutchess), and Engineer must be listed as certificate holder and additional insured on the commercial general, umbrella/excess, and automobile liability policies. In addition, the commercial general liability policy must include the additional insured endorsement forms cg 2037 July 2004 edition and the cg 2010 April 2013 edition or their equivalent.

(B) The commercial general and automobile policies are primary and noncontributory.

(C) The commercial general liability, auto liability and workers compensation policies must contain a waiver of subrogation in favor of the Owner.

(D) The umbrella/excess policy is primary and noncontributory and must contain a waiver of subrogation in favor of the Owner.

(E) If the workers compensation Notice of Compliance is used instead of the Acord certificate of insurance, the Notice of Compliance must indicate that a waiver of subrogation in favor of the Owner is provided.

All policies of insurance referred to above shall be underwritten by companies authorized to do business in the State of New York with an A.M. Best financial strength rating of A- or better. In the alternative, the policies of insurance referred to above may be underwritten by Non-Admitted companies with an A.M. Best financial strength rating of A+ or higher. In addition, every policy required above shall be primary and noncontributory. Any insurance carried by the Owner, its officers, or its employees shall be excess and noncontributory insurance to that provided by the Contractor. The Contractor and his sub-contractor(s), if any, shall be solely responsible for any deductible losses under each of the policies required above.

Payment(s) to the Contractor may be suspended in the event the Contractor and his sub-contractor(s), if any, fails to provide the required insurance documentation in a timely manner.

Prior to cancellation or material change in any policy, a thirty (30) day notice shall be given to the County Attorney at the address listed below:

Dutchess County Attorney
County Office Building
22 Market Street
Poughkeepsie, New York 12601

On receipt of such notice, the Owner shall have the option to cancel this Agreement without further expense or liability to the Owner, require the Contractor to replace the cancelled insurance policy, or rectify any material change in the policy, so that the

insurance coverage required by this paragraph is maintained continuously throughout the term of this Agreement in form and substance acceptable to the Owner or have the right but not the obligation to procure the required insurance on behalf of the Contractor and his Subcontractors, if any, and to deduct the cost thereof either from the Contract Sum, retainage or next due payments.

Failure of the Contractor to take out or to maintain, or the taking out or the maintenance of any required insurance, shall not relieve the Contractor from any liability under this Agreement nor shall the insurance requirements be construed to conflict with or to limit the obligations of the Contractor concerning indemnification.

All losses of Owner property shall be adjusted with and made payable directly to the Owner.

All Certificates of Insurance shall be approved by the Owner's Director of Risk Management or designee prior to commencement of any work under this Agreement.

In the event that claims in excess of these amounts are filed in connection with this Agreement, the excess amount or any portion thereof may be withheld from payment due or to become due the Contractor until the Contractor furnishes such additional security as is determined necessary by the County.

Within fourteen (14) days from Notification of Award, the Contractor and his Subcontractors, if any, shall each submit the Certificate (s) of Insurance described in Section 11 above to the Owner. If the Certificate (s) of Insurance are not produced when required, within three (3) days after demand, the Owner shall have the right, but not the obligation to procure the required insurance on behalf of the Contractor and Subcontractors, if any, and deduct the cost thereof either from the Contract sum, retainage or the next payment.

No work shall commence or proceed at the project without such insurance.

B. Contractor's insurance shall be primary over all other collectible insurance.

C. Anti-subrogation applies to General Liability and to Automobile Liability insurance coverages.

D. The Certificate Holder shall be County of Dutchess, 626 Dutchess Turnpike, Poughkeepsie, New York 12603, and C&S Engineers, Inc., 499 Col. Eileen Collins Blvd., Syracuse, NY 13212.

E. The following shall be named as Additional Insureds: County of Dutchess, 626 Dutchess Turnpike, Poughkeepsie, New York 12603 ; C&S Engineers, Inc., 499 Col. Eileen Collins Blvd., Syracuse, NY 13212.; the New York State Department of Transportation..

F. The General Liability policies shall provide coverage for liability for damages imposed by law upon the Contractor and its Subcontractor(s) with respect to all work performed by any of them under the Contract. The insurance company providing General Liability insurance coverage acknowledges that the Contractor has agreed in this Contract to defend, hold harmless, and indemnify the Owner, the Engineer, the RPR, and their respective directors, officers, representatives and employees as set forth in this Section.

G. The Contractor's policies shall provide coverage for contractual liability imposed by contract, including this Contract, and completed operations liability for damages imposed by law arising between the date of the certification of completion of the work and the date of the expiration of the Contractor’s guarantee.

H. Contractor's policy shall provide coverage for liability arising out of the acts or omissions of its Subcontractors.

I. Each Subcontractor employed on the Project site by the Contractor shall provide comprehensive liability insurance in accordance with the above-described requirements of the Contractor. Such insurance requirements shall be submitted to the RPR as part of the Subcontractor approval process.

END OF SECTION 70

ATTACHMENT "A"

TO

SECTION 70-08

CONSTRUCTION SAFETY AND PHASING PLAN (CSPP)

FOR THE CONSTRUCTION OF

AIRPORT SUPPORT BUILDINGS

AT

HUDSON VALLEY REGIONAL AIRPORT

Wappingers Fall, New York

NYSDOT NO.: 8902.43

NYS Comptroller's Contract No.: K007478

SEPTEMBER 2026

TABLE OF CONTENTS

1.0 PURPOSE

2.0 SCOPE OF PROJECT AND CSPP

3.0 PLAN REQUIREMENTS

- 3.1 Coordination
  - a. Pre-construction Meeting
  - b. Contractor Progress Meetings
  - c. Scope or Schedule Changes
  - d. FAA ATO Coordination
  - e. Pre-paving Meeting
- 3.2 Phasing
  - a. Phase Elements (Work Areas)
  - b. Construction Safety Drawings
- 3.3 Areas and Operations Affected by the Construction Activity
  - a. Identification of Affected Areas
  - b. Mitigation of Effects
- 3.4 Navigational Aid (NAVAID) Protection
- 3.5 Contractor Access
  - a. Location of Stockpiled Construction Materials
  - b. Vehicle and Pedestrian Operations
- 3.6 Wildlife Management
  - a. Trash
  - b. Standing Water
  - c. Tall Grass and Seeds
  - d. Poorly Maintained Fencing and Gates
  - e. Disruption of Existing Wildlife Habitat
- 3.7 Foreign Object Debris (FOD) Management
- 3.8 Hazardous Materials (HAZMAT) Management
- 3.9 Notification of Construction Activities
  - a. Maintenance of a List of Responsible Representatives/Point of Contact
  - b. Notices to Airman (NOTAM)
  - c. Emergency Notification Procedures
  - d. Coordination with ARFF Personnel
  - e. Notification to the FAA
  - f. Accidents
- 3.10 Inspection Requirements
  - a. Daily (or more frequent) Inspections
  - b. Final Inspections
- 3.11 Underground Utilities
- 3.12 Penalties
- 3.13 Special Conditions
- 3.14 Runway and Taxiway Visual Aids
  - a. General
  - b. Markings

c. Lighting and Visual NAVAIDS
d. Signs
e. Testing of Airport Lighting Circuits
3.15 Marking and Signs for Access Routes
3.16 Hazard Marking, Lighting and Signing
a. Purpose
b. Equipment
3.17 Work Zone Lighting for Nighttime Construction
3.18 Protection of Airfield Areas
a. Runway Safety Area (RSA)
b. Runway Object Free Area (ROFA)
c. Taxiway Safety Area (TSA)
d. Taxiway Object Free Area (TOFA)
e. Obstacle Free Zone (OFZ)
f. Runway Approach/Departure Surfaces
3.19 Other Limitations on Construction
a. Prohibitions
b. Restrictions

APPENDICES:

APPENDIX 1 – General Plan and Construction Safety and Phasing Plans

APPENDIX 2 – Construction Project Daily Safety Inspection Checklist

APPENDIX 3 – Contractor's Safety Plan Compliance Document (SPCD)

APPENDIX 4 – Spoil Deposition Release Form

CONSTRUCTION SAFETY AND PHASING PLAN (CSPP)

1.0 PURPOSE.

Aviation safety is the primary consideration at airports, especially during construction. The Airport Owner's Construction Safety and Phasing Plan (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.

The CSPP sets forth benchmarks and requirements for the project to help ensure the highest levels of safety, security and efficiency at the airport at the time of construction. Requirements for this CSPP were developed from FAA Advisory Circular (AC) 150/5370-2 Operational Safety on Airports During Construction, latest edition.

The CSPP is a standalone document, written to correspond with the safety and security requirements set forth in the AC, the airport safety and security requirements, and local codes and requirements. The CSPP is to be used by all personnel involved in the project. The CSPP covers the actions of not only the construction personnel and equipment, but also the action of inspection personnel and airport staff.

This document has been developed in order to minimize interruptions to airport operations, reduce construction costs, and maximize the performance and safety of construction activity. Strict adherence to the provisions of the CSPP by all personnel assigned to or visiting the construction site is mandatory.

The Contractor shall submit a Safety Plan Compliance Document (SPCD) to the Airport Owner describing how the Contractor will comply with the requirements set forth in this CSPP. The SPCD must be submitted to the Airport Owner prior to issuance of Notice to Proceed.

In the event the Contractor's activities are found in non-compliance with the provisions of the CSPP or the SPCD, the Airport Owner's Representative will direct the Contractor, in writing, to immediately cease those operations in violation. In addition, a safety meeting will be conducted for the purpose of reviewing those provisions in the CSPP/SPCD which were violated. The Contractor will not be allowed to resume any construction operations until conclusion of the safety meeting and all corrective actions have been implemented.

2.0 SCOPE OF PROJECT AND CSPP.

The proposed project generally includes the construction of a 3,000 SF cold storage building and a 2,500 SF salt/urea storage building. The project will include foundation excavation, minor pavement restoration and site grading, and installation of electrical power to both buildings.

Safety, maintaining aircraft operations, and construction costs are all interrelated. Since safety must not be compromised, the Airport Owner 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. As they are identified,

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 in order to maintain operational safety. This planning effort will ultimately result in a project CSPP. The development of the CSPP takes place through the following five steps:

a. Identify Affected Areas
b. Describe Current Operations
c. Allow for Temporary Changes to Operations
d. Take Required Measures to Revise Operations
e. Manage Safety Risk

3.0 PLAN REQUIREMENTS.

3.1 COORDINATION.

The following items shall be coordinated as required:

a. Preconstruction Meeting. A preconstruction meeting will be conducted to discuss operational safety, testing, quality control, quality acceptance, security, safety, labor requirements, environmental factors, and other issues. All parties affected by the construction will be asked to attend including, but not limited to, the Airport Owner, tenants, contractor, subcontractors and RPR.

At the preconstruction meeting, the Contractor shall submit a plan of operation and schedule of work to the RPR for approval. The Contractor's plan of operation shall indicate, in detail, the amount of construction planned and the number of shifts and/or overtime operations proposed for the project. The schedule of work shall clearly indicate the sequence of work to be performed. The Contractor shall conform, at all times, to the requirements of these provisions and with current safety practices, rules, regulations and security requirements of Airport Owner. The preconstruction meeting will be held prior to issuance of a Notice to Proceed.

b. Contractor Progress Meetings. A minimum of one progress meeting to discuss scheduling and coordination shall be held each week unless otherwise directed by the Airport Owner, throughout the duration of the Contract, between the Airport Owner, Contractor, RPR and any other interested parties at a time and place to be designated by the RPR. These meetings shall include a detailed discussion of construction phasing and safety with regard to the Contractor's compliance with the requirements stipulated in the Contract Documents.

In attendance at these meetings shall be a Contractor's representative with the authority to make decisions concerning the scheduling and coordination of work. Progress meetings shall be facilitated by the RPR. Operational safety shall be a standing agenda item during progress meetings throughout the construction project.

c. Scope or Schedule Changes. Changes in the Scope of Work or Project Schedule shall be governed by Section 40 and Section 80 of the Contract Documents. Any proposed change that results in a deviation from the established CSPP as expressed by the Contract Documents must

be submitted to the FAA and Airport Owner for review and approval. FAA review and approval can be expected to take sixty business days.

d. FAA ATO Coordination. Early coordination with Federal Aviation Administration (FAA) Air Traffic Organization (ATO) 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. 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.

No adjustments to NAVAID, encroachment on facility critical areas, or facility shutdowns are anticipated during construction, so ATO coordination will not be necessary.

3.2 PHASING.

a. Phase Elements (Work Areas)

The sequence of construction and phasing, for this project, was developed in order to maintain the maximum efficiency of aircraft operations while maintaining safety and allowing for the required construction activities for this project. The project phasing and detailed work areas are depicted on the drawings included in Appendix 1.

1. Overall Project Phasing Elements

(a) Areas Closed to Aircraft Operations: The drawings included in Appendix 1 indicate which runways, taxiways and taxilanes are closed for each work area to aircraft operations.

(b) Durations of Closures: The drawings included in Appendix 1 indicate the duration of closures allowed for each work area if applicable.

(c) Taxi Routes: The drawings included in Appendix 1 indicate all active taxiways and taxi routes to runways and aprons to be used by aircraft for each work area.

(d) ARFF Access Routes: The Contractor shall be required to maintain emergency ARFF access into, out of, and around the construction site for the duration of the contract. The Contractor shall prominently light and mark open trenches and excavations at all times. Prior to beginning of construction in each work area and/or on a timely manner, the Contractor shall request the ARFF personnel to tour the site so ARFF personnel are aware of the access routes into, out of, and around the work areas and the on-going construction activities of the project.

(e) Construction Staging Areas: The drawings included in Appendix 1 indicate the approximate location of the Contractor's Staging and Storage Area. The actual size and exact location of the staging area shall be established prior to construction activities during mobilization and shall be approved by the Airport Owner.

(f) Construction Access and Haul Routes: The drawings included in Appendix 1 indicate the proposed locations of the Contractor's Construction Access and Haul Routes for

this project. Any changes to access and haul routes require approval by the Airport Owner.

(g) Impacts to NAVAIDs: The NAVAIDs will not be impacted for this project.

(h) Lighting and Marking Changes: All changes associated to the lighting and markings due to construction activities of this project are depicted on the contract drawings. These changes incorporate the design criteria as mandated by the FAA.

(i) Available Runway Length: The available runway length for the runways will not be altered for this project.

(j) Declared Distances: The takeoff run available (TORA), takeoff distance available (TODA), accelerate-stop distance available (ASDA), and landing distance available (LDA) for the runways will not be altered for this project.

(k) Required Hazard Marking and Lighting: This project utilizes the following to delineate work areas, hazards, and closed portions of the AOA on the airfield:

(1) Traffic rubber/plastic construction cones to mark construction set-back lines.

(l) Work Hours: The drawings included in Appendix 1 indicate the work hours for each work area.

(m) Concurrent Work Areas: Work areas that can be completed concurrently are identified on the drawings included in Appendix 1.

2. Construction Safety Requirements

The Contractor shall obtain approval from the RPR prior to beginning any work in all areas of the airport. No work is expected on runways or taxiways during this project. No active runway or taxiway shall be crossed, entered, or obstructed at any time. The Contractor shall plan and coordinate his/her work in such a manner as to ensure safety and a minimum of hindrance to airport operations. All Contractor equipment and material stockpiles shall be stored at locations determined during construction or as shown on the Construction Safety and Phasing Plans (Appendix 1). No equipment will be allowed to park within the approach area of an active runway at any time.

During the work under this Contract, the Airport Owner will make such arrangements to coordinate aircraft movements and Airport operations as necessary to conform to the construction procedures as outlined below and as shown on the Contract Drawings. The Contractor shall give adequate notice to the RPR, so as to afford time to coordinate construction with the Airport Owner. No work shall proceed in any area without prior approval.

The Contractor shall always confine construction operations to the Contractor work area and designated haul routes. Contractor personnel, equipment, stored materials, subcontractors and suppliers will not be allowed on any other area within the Air Operations Area and within the Airport boundaries without prior approval of the Airport Owner or RPR.

The RPR will perform a visual site assessment before the Contractor occupies the Contractor work area. The Contractor shall be held responsible for all repairs and cleanup costs incurred as a result of the Contractor's construction operations. Restoration shall be the complete return of all work areas to the original conditions.

Temporary cables in grass areas shall be marked with stakes and flagging. Temporary cables in paved areas shall be marked with barricades.

Prior to the start of construction operations, the Contractor shall perform the following:

- Install barricades, and other measures as indicated on the Construction Safety and Phasing Plans (Appendix 1).
- Coordinate issuing Notices to Airmen (NOTAM) with the Airport Owner and RPR for the construction activities involved at least 48 hours in advance of the work.
- Install necessary measures for soil erosion and sediment control.

At the conclusion of construction operations, the Contractor shall perform the following:

- Remove barricades.
- Clean all paved surfaces in accordance with Item C-106, Safety, Security and Maintenance of Traffic.
- Coordinate cancellation of the NOTAMs with the Airport Owner and RPR.

b. Construction Safety and Phasing Plans. Drawings specifically indicating operational safety procedures and methods in affected areas have been developed for each construction phase. Such drawings are included in Appendix 1 and are included in the contract drawing package.

3.3 AREAS AND OPERATIONS AFFECTED BY THE CONSTRUCTION ACTIVITY.

Contractor, subcontractor, and supplier employees or any other unauthorized persons shall be restricted from entering an active airport operating area without previous permission from the Airport Owner and the Aircraft Control Tower.

In an emergency situation, the Airport Owner or other designated airport representative may order the Contractor to suspend operations; move personnel, equipment, and materials to a safe location; and stand by until aircraft use is completed.

The Contractor shall cooperate with the airport users through the RPR, in coordination with airport operations, in scheduling the operations to provide adequate clearance for safe aircraft parking, fueling, maintenance, loading or unloading, maneuvering, taxing operations, or other aircraft operations.

a. Identification of Affected Areas

The impacts to Airport Operations Areas are identified in the drawings referenced in Appendix 1.

a. Mitigation of effects.

This CSPP has established specific requirements and operational procedures necessary to maintain the safety and efficiency of airport operations during the construction of this project.

All coordination pertaining to airport operations during construction will go through the Airport Owner's Representative and the Airport Operations Manager. Any required NOTAM's to be issued will be sent through the Airport Owner's Representative and issued by Airport Operations.

1. **Temporary Changes to runway and/or taxiway operations:** Any affected Airport Operations Areas identified in the previous section for reduced access or identified as being closed entirely to aircraft traffic, will be barricaded by the use of low profile, lighted barricades placed as shown in the drawings provided in Appendix 1. In addition, required NOTAM's shall be issued on the various temporary changes to aircraft access through the affected areas.

2. **Detours for ARFF and other airport vehicles:** The project work site shall remain open to all ARFF vehicles in emergency situations. The Contractor is required to maintain access in and around the project work area for all ARFF vehicles. Proper routing of this traffic will be effectively communicated to all supervisory personnel involved in the construction project.

3. **Maintenance of essential utilities:** Special attention shall be given to preventing unscheduled interruption of utility services and facilities. Where required due to construction purposes, the Airport Owner and FAA shall locate all of their underground utilities. It is the Contractor's responsibility to have the locations of cabling and other underground utilities marked prior to beginning excavation. Any locations provided by the Airport Owner or FAA are approximate locations and the Contractor shall verify all locations prior to beginning excavations. When an underground cable or utility is damaged due to the Contractor's negligence the Contractor shall immediately repair the affected cable or utility at his/her own expense. Full coordination between airport staff, field inspectors, and construction personnel will be exercised to ensure that all airport power and control cables are fully protected prior to any excavation.

4. **Temporary Changes to air traffic control procedures:** Changes to air traffic control procedures have been coordinated with airport ATO. Any additional requests for changes must be made to the Airport Owner, through the RPR, in writing. These requested changes will be reviewed by the RPR, Airport Owner and ATO. If these changes are acceptable to all the aforementioned parties, the RPR will request a modification to the CSPP previously turned into the FAA. The Contractor shall plan on a minimum 90 days for this process to be completed. No deviation to the original CSPP shall be made without final FAA approval.

3.4 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. Construction activities, materials/equipment storage, and vehicle parking near electronic NAVAIDs require special consideration since they may interfere with signals essential to air navigation. Construction activities, materials/equipment storage, and vehicle parking near electronic NAVAIDs are not anticipated in this project.

3.5 CONTRACTOR ACCESS.

This section of the CSPP details the areas to which the Contractor must have access, and how Contractor personnel will access those project work areas.

a. Location of stockpiled construction materials.

The Contractor shall store material and equipment and schedule his operations for work to be done so that no unauthorized interference to normal Airport operations will result there from. Construction operations shall not be conducted in a manner to cause interference with Airport Operations. Stockpiled materials and equipment storage are not permitted within the Runway Safety Area/ Taxiway Safety Area (RSA/TSA), Obstacle Free Zone (OFZ) or Object Free Area (OFA) of an operational runway or taxiway. Stockpiled construction materials must be located inside the Contractor staging area as shown on the Construction Safety and Phasing Plans (Appendix 1) unless otherwise approved by the RPR.

Stockpiled material shall be constrained in a manner to prevent movement resulting from either aircraft jet blast or wind conditions in excess of ten miles per hour. In addition, stockpiled material shall have silt fence located around the material to prevent Foreign Object Debris (FOD) from moving onto the airfield pavements or polluting watercourses.

Open trenches exceeding 3 inches in depth and 5 inches in width or stockpiled material are not permitted within the limits of safety areas of operational runways or taxiways. Stockpiled material shall not be permitted within the protected areas of the runways or allowed to penetrate into any of the protected airspace.

Spoil and Disposal Areas: Shall be in accordance with the Contract Specifications and the Contract Drawings.

b. Vehicle and pedestrian operations. 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 Air Operations Area (AOA).

The Airport Owner will coordinate requirements for vehicle operations with the affected airport tenants. Specific vehicle and pedestrian requirements for this project are as follows:

All construction vehicles and personnel shall be restricted to the immediate work areas specified by the contract for this project. These areas include the haul routes into the work area, the designated Contractor staging area and the apron area under construction. Use of alternate haul routes or staging areas by the Contractor shall not be permitted without prior notification and approval by the Airport Owner's Representative.

1. Construction Site Parking:

The Contractor's personal vehicle parking area shall be in the Contractor's staging area, as shown on the Construction Safety and Phasing Plans (Appendix 1). Contractor personal vehicles will not be allowed inside the airport fence Air Operations Area (AOA) or secured area.

A staging area, as indicated on the Contract Drawings, will be provided where the Contractor may set up a field office and store equipment and materials. The Contractor shall make his own arrangements for and bear all costs of required utilities. The Contractor shall use and maintain the site in accordance with requirements of the Airport Owner. Upon completion of work, the Contractor's staging area shall be removed and the area cleaned and restored to original or better condition.

2. Construction Equipment Parking:

The Contractor's equipment storage area shall be in the Contractor staging area as shown on the Construction Safety and Phasing Plans (Appendix 1). The Contractor's equipment and construction vehicles shall be restricted to the construction site or storage areas during construction and parked in the equipment storage area during non-working periods. Maximum allowable equipment height in the staging area shall be 20 feet. Maximum allowable equipment height in the work areas shall be 20 feet. The Contractor shall coordinate crane height with Owner and Engineer.

Contractor must service all construction vehicles within the limits of the project work area or the Contractor's Staging Area. Parked construction vehicles must be outside the OFA and never in the safety area of an active runway or taxiway. Inactive equipment must not be parked on closed taxiways or runways. If it is necessary to leave specialized equipment on a closed taxiway or runway at night, the equipment must be well lighted. Employees shall 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, as applicable, to any taxiways or runways under air traffic control nor obstruct any runway visual aids, signs, or navigation aids.

3. Access and Haul Roads:

The Contractor shall clear, construct and maintain haul routes as required for the prosecution of the work. The haul routes and access points shall only be in the locations approved by the RPR and the Airport Owner or as shown on the Construction Safety and Phasing Plans (Appendix 1).

Access or haul routes used by Contractor vehicles must be clearly marked to prevent inadvertent entry to areas open to airport operations. Construction traffic must remain on the designated haul routes, never straying from the approved paths. Signage and marking placement shall be reviewed and approved by the RPR and Airport Owner prior to being

put into service. The Contractor shall fully describe the appropriate access routes to all his/her employees, subcontractors and material delivery personnel.

The Contractor shall be responsible for maintaining existing haul routes. At the completion of the project, these areas shall be returned to their original lines and grades and shall be restored to a condition equal to or better than original. All non-paved areas that are disturbed by Contractor's haul roads, staging area, etc., located outside of the seeding limits shown on the plans shall be re-seeded and restored to their original or better condition by the Contractor at no additional cost to the Airport Owner.

The Contractor shall coordinate haul routes, closures and schedules with other projects which may be underway during the same time period as this contract.

The Contractor shall control and coordinate the material (supplies) that are hauled to and from work area. Delivery of equipment and materials to the area of work shall be by way of the access route shown on the Construction Safety and Phasing Plans (Appendix 1) or designated by the Airport Owner or RPR.

The Contractor shall maintain all haul routes and work areas in a dust free condition at all times. The Contractor shall control dust from the construction operations by vacuum type sweeping, watering or other methods as approved by the RPR. Contractor shall have equipment (in operating condition) on site, at all times, to control dust. If the Contractor fails to comply with this requirement, construction will be suspended until a plan for controlling the dust is approved by the RPR. Landside haul routes, boulevards and drives shall be kept clean by use of a vacuum sweeper on a daily basis as required. Application of water on dirt or gravel haul routes must be provided as often as necessary. Haul roads in any airport traffic areas must be especially monitored for dust and debris to prevent any potential Foreign Object Debris (FOD) situations.

Portions of the project area(s) shall be bounded by the low profile barricades identifying Contractor personnel and vehicle area operation limits. The locations of any barricaded project limits, haul routes, Contractor Staging Areas, and associated safety and security details are also provided graphically in the attached exhibits.

4. Marking and Lighting of Vehicles:

When any vehicle or piece of equipment, other than one that has prior approval from the Airport Owner, must operate on an airport, it shall be escorted and properly identified.

The Contractor shall limit access within the airport security fence to authorized vehicles. All authorized vehicles shall have a vehicle dash board placard permit issued by the Airport Owner or an identification sign on both sides of the vehicle containing the Contractor's company name. Private vehicles of the Contractor's personnel must be parked outside the airport security fence and will not be allowed within the airport security fence at any time.

All vehicles operating on the airport and in the general vicinity of the safety area or in aircraft movement areas must be marked with flashing yellow/amber beacons or orange

and white flags during daylight hours. During hours of darkness or low visibility they shall be marked with at least flashing yellow/amber beacons.

Beacons and flags must be maintained to standards and in good working and operational condition. Beacons must be located on the uppermost part of the vehicle structure, visible from any direction, and flash 75 +/- 15 flashes per minute. Flags shall be 3′ by 3′ with alternating 1′ by 1′ international orange and white squares and shall be replaced by the Contractor if they become faded, discolored, or ragged as determined by Airport Operations or the Airport Owner's Representative.

5. Description of Proper Vehicle Operations:

The Contractor shall be required to follow guidance on the additional identification and control of construction equipment per the Airport's Security Plan. No Contractor's vehicle or pedestrian crossing of active runways or taxiways will be allowed at any time during the work of this Contract, unless otherwise specified. No deviation from the pedestrian and vehicle routes to and from the Project Areas will be allowed unless specific permission has been granted by the Airport Owner.

The ground movement of aircraft shall have the right-of-way at all times, and the Contractor's vehicles and equipment shall yield to aircraft at all times.

6. Required Escorts:

Anyone not in possession of a current airport badge shall be escorted by an appropriately badged person. At no time will vehicles or personnel enter portions of the secure AOA outside the contract area unless permitted and accompanied by an airport approved escort.

All construction-related activity taking place within any airport defined movement area requires the presence of an authorized Airport escort having radio communication with the FAA control tower or UNICOM unless prior approval is obtained from Airport Operations. Spotters and/or flaggers having radio or telephone contact with the Airport may be used with the approval of the on shift Airport Operations Manager.

At no time shall active taxiways or taxilanes be crossed by construction equipment without notification and proper approval/clearance from radio-trained gate guards or Airport Operations.

7. Training Requirements for Vehicle Drivers:

Any employees the Contractor would request to be given permission by Airport Operations to drive on the AOA shall complete airport badging and driver training per the Airport's requirements. These employees then must have an airfield driving experience with Airport Operations and if Airport Operations is satisfied of the employee's competency, that employee may be granted permission from Airport Operations to drive on the AOA. Passing the AOA driver training does not give the Contractor's employees the ability to drive on the AOA.

8. Situational Awareness:

Aircraft traffic will continue to use existing runways, aprons, and taxiways of the Airport during the time that work under a contract is being performed. The Contractor shall, at all time, conduct the work as to create no hindrance, hazard, or obstacle to aircraft using the Airport.

Vehicle drivers must confirm by personnel 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.

9. Two-way Radio Communication Procedures:

Vehicular traffic shall not be allowed in or on an active movement area.

The Contractor shall comply with proper radio usage, including read back requirements and proper phraseology including the International Phonetic Alphabet.

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.

10. Maintenance of the Secured Area of the Airport.

The Contractor shall be required to maintain security and comply with the [Airport Security Plan and the] Transportation Security Administration Security Rules and Regulations throughout the duration of the project. The Contractor and the Surety shall indemnify and save harmless the Airport Owner, RPR and third party or political subdivision from any and all breaches of security and shall indemnify the Airport Owner for any fines, expenses and damages which it may be obliged to pay by reason of any breach of security resulting from the Contractor's actions at any time during the prosecution of the work. Such breaches of security are subject to fines by the Transportation Security Administration of up to ten thousand dollars ($10,000) per incident.

The Contractor shall be responsible for maintaining security at all access gates used during the project and will be held liable by the Airport Owner for any breach of security. No gate shall be left open. [The Contractor shall be required to post a guard at the gate to open and close the gate for personnel and equipment. No gate shall be left open. Guard shall be responsible for ensuring that no unauthorized persons or vehicles enter the secure area.] Airport Owner 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 shall 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.

(a) Fencing and Gates. Airport Owner and contractors must also maintain a high level of security during construction when access points are created in the security fencing to permit construction vehicle access. Temporary gates shall be equipped and/or manned by construction personnel to prevent unauthorized access by vehicles, animals or people. Procedures conforming to Airport security protocols 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. Access shall be made available at all times to all airport emergency vehicles traveling to operations areas within the proximity of the construction work zone.

(b) Badging Requirements. Each Contractor's employee, subcontractors and their employees will be issued an identification card by the Airport Owner to permit access to secured area. Contractors will be charged two dollars ($2.00) for each card and they shall include the price of this in their bid. Cards shall be returned at the end of the project] In general, security in the construction area is the responsibility of the Contractor.

3.6 WILDLIFE MANAGEMENT.

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.

a. Trash. Food scraps from construction personnel activity must be collected and disposed of at a proper facility.

b. Standing water. Water shall not be allowed to collect and pool for more than any single 24-hour period. Temporary grading may be required to promote drainage during daily operations as well as between work phases.

c. Tall grass and seeds. The use of millet seed in turfing and seeding operations shall not be permitted. The Contractor is also responsible for mowing and maintaining the grass areas within the project work areas, while those areas are under the Contractor's control. Mowing shall be performed when the grass height reaches the maximum allowable height per the Owner's requirements.

d. Poorly maintained fencing and gates. The Contractor shall maintain a constant secure perimeter to the airfield, including continuous security perimeter fencing and gates (if applicable).

e. Disruption of existing wildlife habitat. Not applicable to this project.

Contractor shall take immediate remedial action to remove wildlife attractants should any occurrence be noted. Contractor shall immediately report to the RPR and Airport Owner should any wildlife congregation be noted, and in particular if mammals enter the airport through the construction gate.

3.7 FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT.

Special care and measures shall be taken to prevent Foreign Object Debris (FOD) damage when working in an airport environment. Waste and loose materials, commonly referred to as FOD, are capable of causing damage to aircraft landing gears, propellers, and jet engines. The Contractor shall be responsible for implementing an approved FOD Management Plan prior to the start of construction activities. The FOD Management Plan will have procedures for prevention, regular cleanup, and containment of construction material and debris. The Contractor will ensure all vehicles related to the construction project using paved surfaces in the AOA shall be free of any debris that could create a FOD hazard. Special attention will be given to the cleaning of cracks and pavement joints. All taxiways, aprons, and runways must remain clean. Waste containers with attached lids shall be required on construction sites.

Special attention should be given to securing lightweight construction material (concrete insulating blankets, tarps, insulation, etc.). Specific securing procedures and/or chainlink enclosures may be required.

Contractors will provide their own equipment for vehicle and equipment washing and clean up.

Immediate access to a power sweeper is required when construction occurs on any pavement area inside the AOA, unless an appropriate alternative has been approved by the Airport Owner's Representative and Airport Operations Manager.

3.8 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, hydraulic fluid, or other chemical fluid leaks. Transport and handling of other hazardous materials on an airport also requires special procedures. To that end, the Contractor is required to develop a spill prevention plan and response procedures for vehicle operations prior to the start of construction activities. This includes maintenance of appropriate MSDS data and appropriate prevention and response equipment on-site.

Fueling Procedures and Spill Recovery Procedures shall be in accordance with New York State Fire Code, latest edition, and the National Fire Protection Association standard procedures for spill response, latest edition. If fueling is to take place in the staging area, it must be away from catch basins. Contractor must have spill containment kits on site.

In the event of a fuel spill or the spill of other hazardous materials, the Contractor shall immediately notify the Airport Owner and the RPR, the New York State Department of Environmental Conservation, the Environmental Protection Agency, the Airport Owner and the RPR.

Contractor shall abide by the specific requirements contained in the Technical Specifications of this contract.

3.9 NOTIFICATION OF CONSTRUCTION ACTIVITY.

The following is information and procedures for immediate notification of airport users and the FAA of any conditions adversely affecting the operational safety of the airport.

a. Maintenance of a list of Responsible Representatives/ Point of contact. A list of responsible representatives and points of contact shall be created by the RPR, the Airport and the Contractor prior to the start of construction. This list shall be compiled as part of the project pre-construction meeting agenda. Procedures will be established to contact all parties, including after regular work hours. Updates will be made to the list throughout the project duration by the RPR. Contractor points of contact shall be incorporated into the contractor's SPCD.

b. Notices to Airman (NOTAM). Only the Airport Owner may initiate or cancel NOTAMs on airport conditions, and is the only entity that can close or open a runway or taxiway. The Airport Owner 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 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 Owner must file and maintain a list of authorized representatives with the FSS. 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 Owner. See Section 3.14 regarding issuing NOTAMs for partially closed runways versus runways with displaced thresholds.

Any NOTAMs for planned airfield closures for this project must be coordinated through the airport manager and the airports duly appointed construction management representative. Reference Section 3.2 for planned closures for this project, which require issuance of a NOTAM.

c. Emergency Notification Procedures. In the event of an aircraft emergency, severe weather conditions, or any issue as determined by the Airport that may affect aircraft operations, the Contractor's personnel and/or equipment may be required to immediately vacate the area(s) affected. Points of contact for the various parties involved with the project shall be identified and shared at the pre-construction meeting among the various parties. Emergency points of contact shall be incorporated into the contractor's SPCD.

d. Coordination with ARFF Personnel. The Contractor shall coordinate, through the duly appointed airport representative, with ARFF personnel, mutual aid providers and other emergency services if construction requires the following:

- The deactivation and subsequent reactivation of water lines or fire hydrants, or
- The re-routing, blocking and restoration of emergency access routes, or
- The use of hazardous materials on the airfield.

Procedures and methods for addressing any planned or emergency response actions on the airfield concerning this project shall be established and implemented prior to the start of construction.

e. Notification to the FAA.

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, is used for this purpose and submitted to the appropriated FAA Airports Regional or District Office. A 7460-1 form for this project has been prepared by the Engineer and submitted to the FAA for using equipment with a maximum height of 20 feet. A new 7460-1 form must be submitted to the FAA for review and comment for any equipment that the Contractor will use which is taller than the equipment used in the above 7460-1 submission. The Airport Owner will be responsible for submitting the new 7460-1 form to the FAA. To that end, the Contractor shall identify the equipment in his SPCD ,including the maximum height it will extended to during construction, the area(s) in which the equipment will be used, and the duration the equipment will be used.

2. **Part 157.** It is not anticipated that Part 157 notifications will be required for this project.

3. **NAVAIDS.** For emergency (short-notice) notification about impacts to both airport owned and FAA owned NAVAIDs, contact: 866-432-2622.

   (a) Airport owned/FAA Maintained. If construction operations require a shutdown of more than 24 hours, 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.

   (b) FAA owned. The Airport Owner 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. (Impacts to FAA equipment covered by a Reimbursable Agreement (RA) do not have to be reported by the Airport Owner). Coordinate work for an FAA owned NAVAID shutdown with the local FAA ATO/Technical Operations office, through the RPR, including any necessary reimbursable agreements and flight checks. Detail procedures that address unanticipated utility outages and cable cuts that could impact FAA NAVAIDs. In addition, provide seven days' notice to schedule the actual shutdown.

f. Accidents. The Contractor shall provide at the site such equipment and medical facilities as are necessary to supply first aid service to anyone who may be injured in connection with the work. The Contractor must promptly report in writing to the RPR all accidents whatsoever arising out of, or in connection with, the performance for the work, whether on or adjacent to the site which caused death, personal injury or property damages, giving full details and statements of witnesses. In addition, if death or serious injuries or serious damages are caused, the accident

shall be reported immediately by telephone or messenger to both the RPR and the Airport Owner.

If any claim is made by anyone against the Contractor or any Subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the RPR giving full details of the claims.

3.10 INSPECTION REQUIREMENTS.

a. Daily (or more frequent) inspections. Inspections shall be conducted by the Contractor at least daily, but more frequently if necessary, to ensure conformance with the CSPP. A sample checklist is provided in Appendix 2 of this document. In addition to Contractor's required inspections, airport operations will inspect the construction site to ensure compliance with the CSPP and the SPCD. The Airport Owner's Representative will have full-time inspectors monitoring activity throughout construction. Promptly take all actions necessary to prevent or remedy any unsafe or potentially unsafe conditions as soon as they are discovered.

b. Final inspections. A final inspection with the Airport Owner's Representative, Airport and Contractor will take place prior to allowing airport operations.

3.11 UNDERGROUND UTILITIES.

Special attention shall be given to preventing unscheduled interruption of utility services and facilities. Where required due to construction purposes, the FAA shall locate all of their underground cables. The Contractor shall locate and/or arrange for the location of all the underground cables. When an underground cable is damaged due to the Contractor's negligence the Contractor shall immediately repair the cable affected at his/her own expense. Full coordination between airport staff, field inspectors, and construction personnel will be exercised to ensure that all airport power and control cables are fully protected prior to any excavation. Locations of cabling will be marked prior to beginning excavation.

Prior to opening an excavation, effort shall be made to determine whether underground installation: i.e., sewer, water, fuel, electric lines, etc., will be encountered, and if so, where such underground installations are located. When the excavation approaches the approximate locations of such an installation, the exact locations shall be determined by careful hand probing or hand digging, and/or use of a vacuum truck, and when it is uncovered, adequate protection shall be provided for the existing installation. All known owners of underground facilities in the area concerned shall be advised of proposed work at least 48 hours prior to the start of actual excavation.

The information concerning underground utilities was compiled from information and sketches furnished by or obtained from utility companies and the Airport. The Airport Owner and the RPR do not guarantee their accuracy. The Contractor is advised to determine the exact locations from the available sources of information or provide his own means of detection. The only case in which the RPR will consider redesign or relocation of a proposed facility in the project is when an existing utility is located within the construction limits. In this case, the RPR will work with the Airport Owner

to determine the appropriate action to resolve the conflict. If such relocation is impossible, the RPR will consider re-design or relocation of the proposed facilities. In both cases, Contractor shall be responsible for all underground utilities and shall not be separately compensated for delays or extra cost.

Note that most utility location services do not include locating FAA and Airport Owner facilities, and most will not locate services within the AOA.

3.12 PENALTIES.

Failure on the part of the Contractor to adhere to prescribed requirements may have consequences that jeopardize the health, safety or lives of customers and employees at the airport. The Airport may issue warnings on the first offense based upon the circumstances of the incident. Individuals involved in non-compliance violations may be required to surrender their Airport ID badges and/or be prohibited from working at the airport, pending an investigation of the matter.

Penalties for violations related to airport safety and security procedures will be established by the Airport.

Note: project shutdown or misdemeanor citations may be issued on a first offense. When construction operations are suspended, activity shall not resume until all deficiencies are rectified.

3.13 SPECIAL CONDITIONS.

In the event of an aircraft emergency, the Contractor's personnel and/or equipment may be required to immediately vacate the area. The Contractor will receive notification from airport operations when special conditions require the construction site to be vacated. In any event, extreme care should be exercised should construction personnel identify any ARFF (Airport Rescue and Fire-Fighting) or other emergency or rescue vehicle moving toward the Runway with emergency lights displayed. This will generally mean that an emergency situation is imminent.

Special conditions that could require suspension of the construction work include the following: aircraft in distress, aircraft accident, security breach, VIP operation, vehicle/pedestrian deviation, severe weather, or failing to abide by this Construction Safety and Phasing Plan and/or the Safety Plan Compliance Document.

3.14 RUNWAY AND TAXIWAY VISUAL AIDS.

This topic includes marking, lighting, signs, and visual NAVAIDs. Those areas where aircraft will be operating shall be clearly and visibly separated from construction areas, including closed runways. Throughout the duration of the construction project, the Contractor shall inspect and verify that these areas remain clearly marked and visible at all times and that marking, lighting, signs and visual NAVAIDs remain in place and operational.

a. 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, or other wind currents and constructed of materials that would minimize damage to an aircraft in the event of inadvertent contact.

Marking and lighting for a temporary threshold is not required.

Closed runway markings are not required.

b. Markings. Markings must be in compliance with the standards of AC 150/5340-1, Standards for Airport Markings, current edition, and the drawings and technical specifications of this project.

1. Closed Runways and Taxiways.

(a) Permanently Closed Runways. For permanently closed runways, the threshold marking, runway designation marking, and touchdown zone markings will be removed, and flat yellow closed runway markings (X's) will be placed at each end and at 1,000-foot (300 m) intervals.

(b) Temporarily Closed Runways. For temporarily closed runways, a lighted X will be placed 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, the lighted X will be located 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 will be marked with a flat yellow X.

(c) 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 will comply with AC 150/5340-1. An X will not be used on a partially closed runway or a runway with a displaced threshold. Because of the temporary nature of the threshold relocation or displacement due to construction, it will not be necessary to re-adjust the existing runway centerline markings to meet standard spacing for a runway with a visual approach.

(1) Partially Closed Runways. Pavement markings for temporary closed portions of the runway will consist of a runway threshold bar, runway designation, and yellow chevrons to identify pavement areas that are unsuitable for takeoff or landing. Markings prior to the moved threshold will be obliterated or covered. Existing touchdown zone markings beyond the moved threshold may remain in place. Aiming point markings will be obliterated.

(2) Displaced Thresholds. Pavement markings for a displaced threshold will 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. Markings prior to the displaced threshold will be obliterated. Existing touchdown zone markings beyond the displaced threshold may remain in place. Aiming point markings will be obliterated.

(d) Permanently Closed Taxiways. Permanently closed taxiways will be either be removed, or if pavement will remain, an X will be placed at the entrance to both ends of the closed section. Taxiway centerline markings, including runway leadoff lines, leading to the closed taxiway will be obliterated.

(e) Temporarily Closed Taxiways. Barricades will be placed outside the safety area of intersecting taxiways. For runway/taxiway intersections, an X will be placed at the entrance to the closed taxiway from the runway. Taxiway centerline markings, including runway leadoff lines and taxiway to taxiway turns, leading to the closed section, will be obliterated if the taxiway will be closed for an extended period. Runway lead-off lines for high speed exits will always be obliterated, regardless of the duration of the closure.

(f) Temporarily Closed Airport. When the airport is temporarily closed, mark all runways as closed.

c. Lighting and visual NAVAIDs. This paragraph refers to standard runway and taxiway lighting systems. When runway and taxiway lighting fixtures need to be disconnected, disconnect the associated isolation transformers. Alternately, the light fixture may be covered in such a way as to prevent light leakage. Lamp shall not be removed from energized fixtures. Amu above ground temporary wiring shall be secure, identified, and placed in conduit to prevent electrocution and fire ignition sources. At towered airports certificated under Part 139, holding position signs shall 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, a temporary jumper shall be installed to the taxiway circuit to provide power to the holding position sign for nighttime operations.

1. Permanently Closed Runways and Taxiways. For runways and taxiways that have been permanently closed, the associated lighting circuits shall be disconnected.

2. Temporarily Closed Runways and New Runways Not Yet Open to Air Traffic. A lighted X shall be used, 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: the lighted X must be illuminated at all times that it is on a runway.) For runways that have been temporarily closed, but for an extended period, and for those with pilot controlled lighting, the lighting circuits shall be disconnected or switches secured to prevent inadvertent activation. Stop bars shall be activated, if available.

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.

(a) Partially Closed Runways. Runway edge and threshold lights shall be disconnected on that part of the runway at and behind the threshold (that is, the portion of the runway that is closed).

(b) Temporary Displaced Thresholds. Edge lighting in the area of the displacement shall emit 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, centerline lights shall be blanked out in the direction of approach or the centerline lights shall be placed out of service. If the displacement is over 700 feet, the centerline lights shall be placed out of service.

(c) 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.

(d) A temporary threshold on an unlighted runway will be marked by retroreflective, elevated markers. 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.

(e) Temporary threshold lights and runway end lights and related visual NAVAIDs will be 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.

(f) 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 for visual flight rules (VFR) aircraft operations.

(g) When runway thresholds are temporarily displaced, yellow lenses (caution zone) on runway edge lights shall be reconfigured, as necessary.

(h) 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 will be relocated to identify the temporary threshold. The VGSI or any equipment that would give misleading indications to pilots as to the new threshold location may be disabled. Installation of temporary visual aids may be necessary to provide adequate guidance to pilots on approach to the affected runway.

4. **Temporarily Closed Taxiways.** If possible, the taxiway lighting circuits will be deactivated. When deactivation is not possible (for example other taxiways on the same circuit are to remain open), the closed portion shall be temporarily disconnected, and a temporary jumper will be installed to keep the remaining circuit active. An alternative is to cover the light fixtures in the closed area in a way as to prevent light leakage.

d. Signs. 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, current edition.

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. **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.

3. **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.

e. Testing of Airport Lighting Circuits. See technical specification Item L-108, Underground Power Cable for Airports for testing requirements.

3.15 MARKING AND SIGNS FOR ACCESS ROUTES.

Location of haul routes on the airport site shall be as specified in the project drawing set and as provided graphically in the attached exhibits, reference Appendix 1. It shall be the Contractor's responsibility to coordinate off-site haul routes with the appropriate owner who has jurisdiction over the affected route. The haul routes, to the extent possible, shall be marked and signed in accordance with FAA airfield signage requirements, the Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) and/or state highway specifications, as applicable.

3.16 HAZARD MARKING, LIGHTING AND SIGNING.

a. Purpose. 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 specifies prominent, comprehensible warning indicators for any area affected by construction that is normally accessible to aircraft, personnel, or vehicles. Hazard marking and lighting is also be specified to identify open manholes, small areas under repair, stockpiled material, waste areas, and areas subject to jet blast. Also included are 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.

b. Equipment.

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. 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. Barricades intended to exclude pedestrians must be continuously linked.

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.

3. **Supplement Barricades with Signs (for example) As Necessary.** Examples are "No Entry" and "No Vehicles."

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 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 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.

5. **Air Operations Area – Runway/Taxiway Intersections.** Use highly reflective barricades with lights to close taxiways leading to closed runways. Close all taxiway/runway intersections with barricades. The use of traffic cones is appropriate for short duration closures.

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.

7. **Maintenance.** The contractor is required to maintain the hazard markings, lighting and signing and 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.

3.17 WORK ZONE LIGHTING FOR NIGHTTIME CONSTRUCTION.

Nightime construction is not allowed on this project.

3.18 PROTECTION OF AIRFIELD AREAS.

Safety area encroachments, improper ground vehicle operations and unmarked or uncovered holes and trenches in the vicinity of aircraft operation surfaces and construction areas are the three most recurring threats to safety during construction. Protection of runway and taxiway safety areas, object free areas, obstacle free zones, and approach/departure surfaces shall be a standing requirement for the duration of construction operations.

a. Runway Safety Area (RSA). No runway safety areas will be impacted by this project.

b. Runway Object Free Area (ROFA). No runway object free areas will be impacted by this project.

c. Taxiway Safety Area (TSA). No taxiway safety areas will be impacted by this project.

d. Taxiway Object Free Area (TOFA). No taxiway object free areas will be impacted by this project.

e. Obstacle Free Zone (OFZ). Construction personnel, material, and/or equipment may not penetrate the OFZ while the runway is open for aircraft operations. The OFZ is a defined volume of airspace centered about and above the runway centerline. No obstacle free zone will be impacted by this project.

f. Runway approach/departure surfaces. All personnel, materials, and/or equipment must remain clear of the applicable threshold siting surfaces. Objects that do not penetrate these surfaces may still be obstructions to air navigation and may affect standard instrument approach procedures. Coordinate with the FAA through the appropriate FAA Airports Regional or District Office.

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 Owner with the appropriate FAA air traffic manager (FSS if non-towered) and ATO/Technical Operations (for affected NAVAIDS) and airport users.

No approach or departure surfaces will be impacted by this project.

3.19 OTHER LIMITATIONS ON CONSTRUCTION.

a. Prohibitions. The following prohibitions are in effect for the duration of this project:

1. No use of tall equipment (cranes, concrete pumps, and so on) unless a 7460-1 determination letter is issued for such equipment. A separate airspace analysis request has been filed by the Engineer for the use of crane for this project.

2. No use of open flame welding or torches unless fire safety precautions are provided and the Airport Owner has approved their use.

3. No use of electrical blasting caps or explosives of any kind on or within 1,000 ft (300 m) of the airport property.

b. Restrictions.

1. Construction suspension required during specific airport operations: Not Applicable

2. Areas that cannot be worked on simultaneously: Not Applicable

3. Day or night construction restrictions: No work at night.

4. Seasonal Construction Restrictions: Applicable as described by technical specifications for specific materials.

APPENDIX 1

LOCATION MAP
(Sheet GI-001of the Contract Drawings)

GENERAL PLAN
(Sheet GC-101 of the Contract Drawings)

CONSTRUCTION SAFETY AND PHASING PLANS
(Sheets GC-102 of the Contract Drawings)

CONSTRUCTION SAFETY AND PHASING DETAILS
(Sheet CG-502 of the Contract Drawings)

APPENDIX 2

CONSTRUCTION PROJECT DAILY SAFETY INSPECTION CHECKLIST

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 uncovers 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 Contractor may use to aid in identifying and correcting potentially hazardous conditions.

Potentially Hazardous Conditions

Item	Action Required	or	None
Excavation adjacent to runways, taxiways, and aprons improperly backfilled.	Not Applicable		☐
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 inches from pavement edges and ends.	Not Applicable		☐
Heavy equipment (stationary or mobile) operating or idle near AOA, in runway approaches and departures areas, or in OFZ.			☐
Equipment or material near NAVAIDs that may degrade or impair radiated signals and/or the monitoring of navigation and visual aids. Unauthorized or improper vehicle operations in localizer or glide slope critical areas, resulting in electronic interference and/or facility shutdown.			☐
Tall and especially relatively low visibility units (that is, equipment with slim profiles) –cranes, drills, and similar objects—located in critical areas, such as OFZ and approach zones.			☐

Item	Action Required	or	None
Improperly positioned or malfunctioning lights or unlighted airport hazards, such as holes or excavations, on an apron, open taxiway, or open taxi lane or in 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.	Not Applicable		☐
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.	Not Applicable		☐
Misleading or malfunctioning obstruction lights. Unlighted or unmarked obstructions in the approach to any open runway pose aviation hazards.	Not Applicable		☐

Item	Action Required	or	None
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	or	None
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 3

CONTRACTORS SAFETY PLAN COMPLIANCE DOCUMENT (SPCD)

(The SPCD Certification is located in the Proposal Section)

SAFETY PLAN COMPLIANCE DOCUMENT (SPCD)

Project Location: Hudson Valley Regional Airport

Project Name: Airport Support Buildings

General Statement:

The Construction Safety and Phasing Plan (CSPP), identified as Attachment "A" to Section 70-08, has been prepared in accordance with FAA Advisory Circular 150/5370-2G, *Operational Safety on Airports During Construction and the requirements of the Airport Owner*. The CSPP has been submitted to the FAA for review and comment. Any comments from the FAA which were received prior to bid opening have been incorporated into the CSPP.

In the event that the FAA transmits comments which require that the CSPP be revised after bid opening, I understand that I am obligated to abide by the conditions and statements contained in the revised CSPP. I further understand that I will be given the opportunity to evaluate the revised CSPP as it relates to my contract and request appropriate compensation in accordance with the provisions of the contract.

Supplemental Information:

Where the CSPP covers a subject and no additional information is needed, the statement below reads, "No supplemental information required". Where additional information is required by the Contractor, the information shall be provided in the spaces below.

The section numbers below correspond with the section numbers in the CSPP.

3.1 Coordination

Statement: [Explain how you will distribute information and details of meetings to employees and subcontractors.]

_____

_____

_____

_____

3.2 Phasing

Statement: [List the number of days each Work Area will take. State the time day work will start and finish for each work area.]

_____

_____

_____

_____

3.3 Areas and operations affected by the construction activity

Statement: Information is provided in the CSPP. No supplemental information is required.

3.4 Protection of NAVAIDs

Statement: Information is provided in the CSPP. No supplemental information is required.

3.5 Contractor Access

Security Statement: [Explain how you will maintain integrity of the airport security fence at the access gate, e.g.: Gate guards, closed and locked gates, temporary fencing, etc.]

Training Statement: [List individuals who will receive driver training (for certificated airports and as requested.]

Communication Statement: [Identify types of radios, if any, you will use to communicate with drivers and personnel. Identify who will be monitoring radios. Identify a contact person and phone number if ATCT cannot reach the contractor's designated person by radio.]

Escort Statement: [Identify who will escort material delivery vehicles.]

3.6 Wildlife Management

Statement: [Identify who will be monitoring wildlife in the construction area. Identify who will be monitoring wildlife at the construction gate.]

3.7 Foreign Object Debris (FOD) Management

Statement: [Identify who will be preparing a FOD Management Plan. (Plan must be approved prior to the start of construction activities.)]

3.8 Hazardous material (HAZMAT) management

Statement: [Identify who will be preparing a Spill Prevention Plan. (Plan must be approved prior to the start of construction activities.)]

3.9 Notification of construction activities. Provide the following:

Key Personnel Statement: [Identify your key personnel points of contact with phone numbers.]

Emergency Contacts Statement: [Identify your emergency contacts with 24 hour phone numbers.]

Equipment Statement: [Part 77: Identify equipment you will be using that is taller than 20 feet, including on-site batch plants. Identify the maximum height it will be extended to during construction for each Work Area and the expected duration. Identify when during the day it will be used.]

3.10 Inspection requirements.

Statement: [Identify the person who will be responsible for daily inspections to ensure conformance with the CSPP. Describe additional inspections you will employ, if any, to ensure conformance.]

3.11 Underground utilities.

Statement: [Discuss proposed methods of identifying and protecting underground utilities.]

3.12 Penalties

Statement: Information is provided in the CSPP. No supplemental information is required.

3.13 Special conditions.

Statement: [Identify who will be responsible for moving equipment and personnel from the work area and vacating the area in the event of a special condition listed in the CSPP.]

3.14 Runway and taxiway visual aids. Including marking, lighting, signs, and visual NAVAIDs.

Statement: Information is provided in the CSPP. No supplemental information is required.

3.15 Marking and signs for access routes. Discuss proposed methods of demarcating access routes for vehicle drivers.

Statement: Information is provided in the CSPP. No supplemental information is required.

3.16 Hazard marking and lighting.

Statement: [Identify who will be responsible for maintaining hazard marking and lighting. Include a 24 hour phone number.]

3.17 Protection of taxiway and runway safety areas. Include object free areas, obstacle free zones, approach/departure surfaces and safety areas as required. Discuss proposed methods of identifying, demarcating, and protecting airport surfaces including:

Equipment and methods for maintaining Taxiway/Taxilane Safety Area standards.

Statement: Information is provided in the CSPP. No supplemental information is required.

Equipment and methods for separation of construction operations from aircraft operations, including details of barricades.

Statement: Information is provided in the CSPP. No supplemental information is required.

3.18 Other limitations on construction.

Other limitations are identified in the CSPP and do not require an entry in this document.

APPENDIX 4

SPOIL DEPOSITION RELEASE FORM

SPOILS DEPOSITION RELEASE FORM

To: Dutchess County (AIRPORT OWNER), and

C&S Engineers, Inc., (RPR).

Project: Airport Support Buildings

This SPOILS DEPOSITION RELEASE FORM is being forwarded to the above referenced AIRPORT OWNER and RPR to satisfy the Contract Documents governing the above referenced project. Pursuant to the Contract Documents, LANDOWNER has granted permission to CONTRACTOR to deposit spoils at LANDOWNER'S property located at _____ (give specific location). Further, CONTRACTOR hereby agrees to the greatest extent of the law, to release, indemnify, hold harmless, and defend the AIRPORT OWNER and RPR from any and all damage, liability, or cost (including reasonable attorney's fees and cost of defense) to the extent caused by or arising out of the deposition of the spoils on LANDOWNER'S property.

CONTRACTOR:	**LANDOWNER:**
_____	_____
Signature	Signature
_____	_____
Written Name & Title	Written Name & Title
_____	_____
Company Name	Company Name
_____	_____
Mailing Address (Street Name and Number)	Mailing Address (Street Name and Number)
_____	_____
City, State, Zip Code	City, State, Zip Code
_____	_____
Daytime Phone Number (Include Area Code)	Daytime Phone Number (Include Area Code)
_____	_____
Date	Date

Section 80 Execution and Progress

80-01 Subletting of contract. The Owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Resident Project Representative (RPR).

The Contractor shall perform, with his organization, an amount of work equal to at least 25 percent of the total contract cost.

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

The Contractor shall provide copies of all subcontracts to the RPR 14 **days prior to being utilized on the project. As a minimum, the information shall include the following:**

- Subcontractor's legal company name.
- Subcontractor's legal company address, including County name.
- Principal contact person's name, telephone and fax number.
- Complete narrative description, and dollar value of the work to be performed by the subcontractor.
- Copies of required insurance certificates in accordance with the specifications.
- Minority/ non-minority status.

80-02 Notice to proceed (NTP). The Owners notice to proceed will state the date on which contract time commences. The Contractor is expected to commence project operations within one day of the NTP date. The Contractor shall notify the RPR at least 24 hours in advance of the time contract operations begins. The Contractor shall not commence any actual operations prior to the date on which the notice to proceed is issued by the Owner.

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

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

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

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

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

80-03.1 Requirements.

A. Nomenclature and Definitions

B. Schedule Personnel

C. Software Compatibility Requirements

D. Preconstruction Schedule Meeting

E. Baseline Schedule Development

F. Progress Schedule Update

G. Schedule for Submittals

80-03.1.A Nomenclature and Definitions

Actual Start date- At the task level, the Actual Start date represents the point in time that meaningful work actually started on a task.

Actual Finish date - At the task level, the Actual Finish date represents the point in time that work actually ended on a task.; At the Project level, the Actual Finish date represents the point in time that the Contractor completes all Work in accordance with the time standards described in the CSPP.

Baseline Progress Schedule - The Progress Schedule submitted by the Contractor and accepted by the RPR that shows the plan to complete the construction contract work. The Baseline Schedule represents the Contractor's plan at the time of Contract Award for completing the Project.

Bid Date – The date that bids will be publically opened and read aloud.

Constraint - A schedule restriction imposed on the Start or Finish date(s) of a task that modifies or overrides a task's relationships.

Critical Task – A task on the critical path.

Critical Path – In the Progress Schedule, the critical path shall be those tasks being on the longest path. In a project network diagram, the series of tasks determines the earliest completion of the project.

Critical Delay - An event, action, or other factor that delays the critical path of the Progress Schedule and extends the time needed for completion of the construction project.

Critical Path Method (CPM) – A network analysis technique used to predict Project duration by analyzing which sequence of tasks (which path) has the least amount of scheduling flexibility (the least amount of float or slack). A scheduling technique utilizing tasks, durations, and interrelationships/dependencies (logic), such that all tasks are interrelated with logic ties from the

beginning of the project to the completion of the project. Early dates are calculated by means of a forward pass using a specified start date. Late dates are calculated by means of a backward pass starting from a specified completion date (usually the forward pass's calculated project early finish date).

Duration, Original - The original estimated number of Working Days (not including holidays or other nonworking periods) in which the work task associated with the task is expected to be performed. (The number of calendar days may be different based on the calendar assigned to the task.) For certain tasks such as concrete curing, or others approved by the RPR, the calendar shall reflect no non-working days.

Duration, Remaining - The estimated time, expressed in Working Days (not including holidays or other nonworking periods), needed to complete a task that has started but has not finished

Early Dates – The earliest date a task can start or finish based upon logic and durations. They are calculated by the software application when scheduling the project. Progress Schedules.

Final Baseline Progress Schedule @ Award - The original plan against which the Contractor's progress is measured. The Final Baseline Progress Schedule @ Award represents the original plan at the award of the Contract, of what is expected to happen. Once the Final Baseline Progress Schedule @ Award is accepted by the RPR it is saved and used as a basis to compare against Progress Schedules Updates. (See also Section 80-3 of the General Provisions.)

Fragnet – A subdivision of a project network diagram usually representing some portion of the project.

Late Dates – The latest a task can start or finish without delaying the time standards contained in the CSPP.

Longest Path - The sequence of tasks through the Progress Schedule network that establishes the Milestones contained in the CSPP.

Look-Ahead Schedule – Commonly a one or two week time segment generated from the accepted Progress Schedule that forecasts the work planned for the one or two week period following the Status Date, and includes any major materials to be delivered anticipated shifts in Work Areas.

Milestone – A task with zero duration that typically represents a significant event, usually the beginning and end of the project, milestones set forth in the contract proposal, construction stages, a major work package, or the contract interim time-related clauses.

Notice to Proceed– The actual date the Contractor starts fieldwork of a contract pay item, which is entered as a Start milestone task in the schedule. Contractually no work may start until after the Contract is awarded by the Owner, and the Contractor has received a written Notice to Proceed.

Open End - The condition that exists when a task has either no predecessor or no successor, or when a task's only predecessor relationship is a finish-to-finish relationship or only successor relationship is a start-to-start relationship.

Predecessor – A task that is defined by Schedule logic to precede another task. A predecessor may control the Start Date or Finish Date of its successor.

Progress Schedule –Also referred to as the Project's Schedule.

Progress Schedule Update – Changes to the Progress Schedule that reflect the status of tasks that have commenced or have been completed, including the following items: (a) Actual Start date and or

Actual Finish date as appropriate; (b) Remaining Duration for tasks commenced and not complete; and (c) Suspend or Resume dates for tasks commenced and not complete.

Progress Schedule Revision – Revisions to the Progress Schedule ensures it accurately reflects the current means and methods of how the Project is anticipated to progress, including modifications made to any of the following items: (a) changes in logic connections between tasks; (b) changes in constraints; (c) changes to task descriptions; (d) task additions or deletions; (e) changes in calendar assignments.

Project Scheduler – The person that is responsible for developing and maintaining the Progress Schedule.

Recovery Schedule – A schedule depicting the plan for recovery of significant time lost on the project. This separate CPM schedule submission shall provide the resolution and include appropriate changes in network logic, task and calendar adjustments.

Relationships - The interdependence among tasks relationships link a task to its predecessors and successors. Relationships are defined as:

- **Finish to Start -** The successor task can start only when the current task finishes.
- **Finish to Finish –** The finish of the successor task depends on the finish of the current task.
- **Start to Start –** The start of the successor task depends on the start of the current task.
- **Start to Finish –** The successor task cannot finish until the current task starts.

Slack (Float), Free - The amount a task can slip without delaying the immediate successor task. Free Float is the property of a task and not the network path. The Owner owns the Project's Free Slack (Float).

Slack (Float) Suppression - Utilization of zero free slack (float) constraints which allows a task to start as late as possible by using all of its' available free slack (float). This technique allows tasks to appear more critical than if the task's total float was based on early dates. Assigning zero free float prevents true sharing of total float between the Owner and the Contractor. Utilization of overly generous task durations and overly restrictive calendar non-working periods are also considered to cause slack (float) suppression.

Slack (Float), Total - The amount of time a task (or chain of tasks) can be delayed from its early start without delaying the contract completion date. Float is a mathematical calculation and can change as the project progresses and changes are made to the project plan. Total Slack (Float) is calculated and reported for each task in a network, however, Total Float is an attribute of a network path and not associated with any one specific task along that path. The Owner owns the Project's Total Slack (Float).

Status Date – The date used to update a project. The Status Date is used as the starting point to calculate the schedule.

Task- A discrete, identifiable task or event that usually has an expected duration, has a definable Start Date and/or Finish Date, and can be used to plan, schedule, and monitor a project.

Work Breakdown Structure (WBS) - A deliverable-oriented grouping of project elements, which organizes and defines the total scope of the project. Each descending level represents an increasingly detailed definition of project components or work packages.

Work Package - A deliverable that is a group of related tasks within a project at the lowest level of the work breakdown structure.

Work Day - A calendar day scheduled for active prosecution of contract work by the Contractor or the Contractor's representative. (See Section 10-65 of the General Provisions.)

80-03.1.B Scheduling Personnel. The Contractor shall designate a Project scheduler to have all scheduling responsibilities for the Work. The Project scheduler must have had previous scheduling responsibilities on similar projects of similar size and complexities.

80-03-1.C Software Compatibility Requirements. The Owner uses Microsoft Project to schedule and monitor its construction program. All schedules submitted shall be in a format compatible with this program and version.

80-03.1.D Preconstruction Schedule Coordination. The Contractor shall contact the RPR after notification they are the low bidder, but no later than two (2) Work Days following Contract award to coordinate schedule development. The purpose of this will be to discuss essential matters pertaining to the satisfactory scheduling of project tasks, and to resolve any known questions regarding interpretation of the contract requirements for this work. The Project Scheduler shall be prepared to discuss the following:

- The proposed hierarchal Work Breakdown Structure (WBS) for the Progress Schedules.
- The proposed Project calendars.
- The factors that the Contractor determines to control the completion of the project and any milestone task completion dates contained therein.
- File naming Procedures for submissions.

80-03.1.E Baseline Schedule Development. The Contractor shall prepare, furnish, and maintain a computer-generated Progress Schedule using the Critical Path Method on Microsoft Project scheduling software The Contractor and the Owner shall use the Progress Schedule to manage the Work. No Work other than installation of the Engineer's Field Office, mobilization, procurement and administrative tasks, will be permitted to start until the RPR in writing has approved the Baseline Progress Schedule.

The purpose of the Progress Schedule, and scheduling provisions in the Contract, shall be to:

- Ensure that the Contractor and the Owner have a detailed plan to complete the Project in accordance with time standards contained in the CSPP;
- Provide a means of monitoring the progress of Work;
- Aid in communication and coordination of tasks among all affected parties;
- Analyze the effect of changed conditions on the time standards contained in the CSPP;
- Analyze the impact of proposed Contract Amendments.
- Establish a standard methodology for time adjustment analysis based on the principles of the Critical Path Method of scheduling, to analyze delays and resolve construction disputes concerning time;
- Determine appropriate extensions or reductions of Contract Time.

In scheduling and executing the work, the Contractor shall:

- Sequence the Work to commensurate with the Contractor's abilities, resources and the Contract Documents. The scheduling of tasks is the responsibility of the Contractor.

- Ensure that Progress Schedules prepared by the Project Scheduler for submission to the Owner are in compliance with the Contract. The intent should be that Schedule submissions are timely, complete, accurate, and in compliance with the Contract.
- Communicate all Contract changes, and decisions or actions taken by the Contractor and all subcontractors, fabricators, etc., that effect the Progress Schedule to the Project Scheduler in a timely manner to allow appropriate development, maintenance, and update of the Progress Schedule.
- Include all Work contained in the Contract and all Work directed in writing by the RPR. Work tasks directed by the RPR to be added to the Contract shall be included in the next Monthly Progress Schedule submission.
- Assure that Progress Schedule Updates reflect the actual dates that work tasks started and were completed in the field.
- Break a schedule task into multiple tasks to reflect a discontinuity in the work if a work task is suspended in the field and restarted at a later date, and the break between when the Work was suspended to when it was resumed is significant compared to the original task duration.
- Ensure the Progress Schedule contains all Work constraints and Milestones defined in the Contract including the CSPP.
- Schedule the Work using such procedures and staging or phasing as required by the Contract. Work designated as part of separate stages may be performed concurrently with other stages where allowed by the Contract or where approved by the RPR. Failure by the Contractor to include any element of Work required by the Contract in the accepted Progress Schedule does not relieve the Contractor from its responsibility to perform such Work.

The schedule shall be developed utilizing the following elements:

- **Work Breakdown Structure (WBS)** - A multi-level hierarchal WBS shall be incorporated that provides a deliverable-oriented grouping of tasks and defines the total scope of the project. The Contractor shall develop a detailed project specific WBS for the RPR's review and approval prior to the development of the Baseline Schedule. The RPR shall make the final determination on the number of levels of the WBS, and how the tasks shall be grouped to represent the deliverables of the project. A minimum WBS shall consist of the following Levels (X)
    - PRECONSTRUCTION (1)
        - GENERAL(2)
        - SHOP DRAWING AND SUBMITTALS (2)
        - PROCUREMENT/FABRICATION/DELIVERY(2)
    - CONSTRUCTION (1)
        - WORK PHASE (2)
            - CONSTRUCTION COMPONENT (3) (earthwork, drainage, paving, etc.)
    - POST CONSTRUCTION(1)
        - PUNCHLIST (2)
        - DEMOBILIZATION (2)
        - PROJECT DOCUMENTATION (2)

- **Task ID** - Include a unique identification number for each task. Task ID numbers shall not be changed, or reassigned for the duration of the contract.
- **Task** - Clearly and uniquely define each task with a description of the work that is readily identifiable to inspection staff and the progress of each task can be measured.
- **Milestone Tasks** – To the extent not specifically addressed in the CSPP, this term include tasks for all Contract milestones that define significant contractual events such as Contract Award, Notice to Proceed, Contractor Start Work, Substantial Completion, Contract Completion, and coordination points with outside entities such as utilities, the FAA, Time-Related Contract Provisions, etc.
- **Task Durations** – Define the Original Duration of each task in units of whole work days. With the exception of submittal/procurement tasks, durations shall not exceed 15 work days unless approved by the RPR. Durations for RPR submittal reviews shall meet the requirements set forth in the contract documents. If requested by the RPR, the Contractor shall justify the reasonableness of planned task time durations.
- **Relationships** - Clearly assign predecessors and successors relationships to each task, and assign appropriate logic ties between tasks (Finish to Start, Start to Start, Finish to Finish, etc.). Open-ended tasks are not permitted, with the exception of the first and last tasks in the schedule. Do not include inappropriate logic ties with Milestone Tasks (For a finish milestone task: a predecessor shall only be assigned a Finish to Finish logic tie, a successor shall only be assigned a Finish to Start or Finish to Finish logic tie. For a start milestone: a predecessor shall only be assigned a Finish to Start or Start to Start logic tie, a successor shall only be assigned with a Start to Start logic tie). Lag time may not exceed 10 days. The Contractor shall assign the "Contract Award Date" task as a predecessor to all Review and Approval type tasks to be performed by the RPR.
- **Task Constraint Dates** – The Contractor shall not have any constrained tasks, with the exception of contractual dates, unless the RPR accepts such constraints in writing.
- **Task Dates** – With the exception of contract Milestone dates, "Actual Start" and "Actual Finish" dates and "Start" and "Finish" dates, task dates shall be calculated by the Project scheduler tool within the scheduling software.
- **Calendars** – Notwithstanding the Contractor's assigned risk for delays due to weather (See Section Nos. 80-6 and 80-7 of the General Provisions), use clearly defined calendars that account for expected seasonal weather conditions (including winter shutdown periods) and environmental permit requirements, for the planning and scheduling of tasks. Do not incorporate a task with a description of "Winter Shutdown" that requires constraints rather utilize non-working periods utilizing a Base Calendar.

80-03-1.F Progress Schedule Update

In addition to the detailed schedule requirements for the submission of the Baseline Progress Schedule, the Contractor shall complete the following additional requirements for Monthly Progress Schedule submissions:

Durations – The Original Duration shall not be changed without prior written justification by the Contractor, and written approval by the RPR. The Contractor shall edit the Remaining Duration to reflect progress made on work tasks, and shall not use Duration percentage. If a proposed change to Original Duration is due to additional or changed work to the Contract, the Contractor shall instead add a task to reflect this additional work. The Contractor shall not use zero durations for Task Dependent tasks.

Started and Finished dates – For each task where work was begun during the Monthly reporting period, the Contractor shall check the box adjacent to Started and enter the date the work began. For each task where work was completed during the Monthly reporting period.

If the Contractor fails to submit the required Progress Schedule updates and revisions, the Contractor waives its rights to adjustments of time and related compensation for delays that accrue during the period in which the progress schedule has not been submitted in accordance with the detailed CPM scheduling requirements.

The Owner will have no liability for any subsequent Contractor time related disputes which occurred during the period of time in which the Contractor failed to submit monthly progress schedule updates and revisions in a timely manner.

80-03.1.G Schedule for Submittals.

Progress Schedule submissions will only be considered complete when all documents and data have been provided to the RPR. When preparing a formal submission of the Progress Schedule, the Contractor shall make a pdf of the current Progress Schedule and name it according to the file naming convention determined at the Preconstruction Scheduling Meeting.

A. Submittals shall be uploaded to a designated location on the Project FTP Site as directed by the RPR with sufficient time to allow for review.

B. Allow five (5) calendar days for review and turnaround of Progress Schedule submittals.

C. Monthly submission of updated Progress Schedule shall be completed prior to processing of monthly pay requisition.

D. Immediate Rejection of Progress Schedule submissions**.** The following deficiencies in a Contractor's Progress Schedule submission shall be grounds for the immediate rejection by the RPR, without further review, analysis and/or comments.

- Failure of the Project Scheduler to "schedule" the Project, as of the status date.
- Any tasks without predecessors or tasks without successors, appearing in the Schedule with the exception of the first and last task in the schedule.
- Any task constraints appearing in the Schedule that have not been approved in writing by the RPR, or that are not specifically allowed by this specification.
- Any Tasks with Actual Dates > Status Date
- Any Milestone Tasks with invalid relationships
- Failure to have a clearly defined Critical Path from the Status Date to the last task in the schedule, using the Longest Path method. This would reflect logic errors in the project schedule.
- If any of these deficiencies are found, the Contractor's submission shall be considered deficient, and RPR will notify the Contractor immediately.

No direct payment will be made for the coordinated construction schedule. The cost of creating, revising, maintaining, updating, etc. the coordinated construction schedule shall be included in the price of the bid for the various items of the Contract.

The Contractor shall maintain the work schedule and provide an update and analysis of the progress schedule on a monthly basis, or as otherwise specified in the contract. Submission of the work schedule

shall not relieve the Contractor of overall responsibility for scheduling, sequencing, and coordinating all work to comply with the requirements of the contract.

80-04 Limitation of operations. The Contractor shall control their operations and the operations of their subcontractors and all suppliers to provide for the free and unobstructed movement of aircraft in the air operations areas (AOA) of the airport.

When the work requires the Contractor to conduct their operations within an AOA of the airport, the work shall be coordinated with airport operations (through the RPR) at least 48 hours prior to commencement of such work. The Contractor shall not close an AOA until so authorized by the RPR and until the necessary temporary marking, signage and associated lighting is in place as provided in Section 70, paragraph 70-08, *Construction Safety and Phasing Plan (CSPP)*.

When the contract work requires the Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications as specified; immediately obey all instructions to vacate the AOA; and immediately obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until satisfactory conditions are provided. The areas of the AOA identified in the Construction Safety Phasing Plan (CSPP) and as listed below, cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as follows:

See Attachment "A" to Section 70-08 - Construction Safety and Phasing Plan (CSPP) at the end of Section 70.

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

80-04.1 Operational safety on airport during construction. All Contractors' operations shall be conducted in accordance with the approved project Construction Safety and Phasing Plan (CSPP) and the Safety Plan Compliance Document (SPCD) and the provisions set forth within the current version of AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a SPCD that details how it proposes to comply with the requirements presented within the CSPP.

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

The Contractor is responsible to the Owner for the conduct of all subcontractors it employs on the project. The Contractor shall assure that all subcontractors are made aware of the requirements of the CSPP and SPCD and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved CSPP and SPCD unless approved in writing by the Owner. The necessary coordination actions to review Contractor proposed modifications to an approved CSPP or approved SPCD can require a significant amount of time.

If the Contractor requests changes to the CSPP and the requested changes are acceptable to the Owner, the Engineer, and the RPR, the Engineer will request a modification to the CSPP from the FAA. The Contractor shall plan on a minimum of 90 days for this process to be completed. No deviation to the original CSPP shall be made without FAA approval.

80-05 Character of workers, methods, and equipment. The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

Any person employed by the Contractor or by any subcontractor who violates any operational regulations or operational safety requirements and, in the opinion of the RPR, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the RPR, be removed immediately by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the RPR.

Should the Contractor fail to remove such person or persons, or fail to furnish suitable and sufficient personnel for the proper execution of the work, the RPR may suspend the work by written notice until compliance with such orders.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the work shall not cause injury to previously completed work, adjacent property, or existing airport facilities due to its use.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless otherwise authorized by the RPR. If the Contractor desires to use a method or type of equipment other than specified in the contract, the Contractor may request authority from the RPR to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the RPR determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the RPR may direct. No change will be made in basis of payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this paragraph.

80-06 Temporary suspension of the work. The Owner shall have the authority to suspend the work wholly, or in part, for such period or periods the Owner may deem necessary, due to unsuitable weather, or other conditions considered unfavorable for the execution of the work, or for such time necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the contract.

In the event that the Contractor is ordered by the Owner, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the written order to suspend work to the effective date of the written order to resume the work. Claims for such compensation shall be filed with the RPR within the time period stated in the RPR's order to resume work. The Contractor shall submit with their own claim information substantiating the amount shown on the claim. The RPR will forward the Contractor's claim to the Owner for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather or for any other delay provided for in the contract, plans, or specifications.

If it becomes necessary to suspend work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. The Contractor shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

80-07 Determination and extension of contract time. The number of calendar days shall be as stated in the proposal and contract and shall be known as the Contract Time.

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

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

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

80-08 Failure to complete on time. For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in paragraph 80-07, *Determination and Extension of Contract Time*) the sum specified in the contract and proposal as liquidated damages (LD) will be deducted from any money due or to become due the Contractor or their own surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional engineering services that will be incurred by the Owner should the Contractor fail to complete the work in the time provided in their contract.

Schedule	Liquidated Damages Cost	Allowed Construction Time
Base Bid	$1,500/Day	105 Calendar Days
Alternate Bid	$1,500/Day	115 Calendar Days

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a wavier on the part of the Owner of any of its rights under the contract.

80-09 Default and termination of contract. The Contractor shall be considered in default of their contract and such default will be considered as cause for the Owner to terminate the contract for any of the following reasons, if the Contractor:

a. Fails to begin the work under the contract within the time specified in the Notice to Proceed, or

b. Fails to perform the work or fails to provide sufficient workers, equipment and/or materials to assure completion of work in accordance with the terms of the contract, or

c. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or

d. Discontinues the execution of the work, or

e. Fails to resume work which has been discontinued within a reasonable time after notice to do so, or

f. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or

g. Allows any final judgment to stand against the Contractor unsatisfied for a period of 10 days, or

h. Makes an assignment for the benefit of creditors, or

i. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

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

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

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

80-10 Termination for national emergencies. The Owner shall terminate the contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the execution of war or in the interest of national defense.

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

Reimbursement for organization of the work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

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

Termination of the contract or a portion thereof shall neither relieve the Contractor of their responsibilities for the completed work nor shall it relieve their surety of its obligation for and concerning any just claim arising out of the work performed.

80-11 Work area, storage area and sequence of operations.. The Contractor shall obtain approval from the RPR prior to beginning any work in all areas of the airport. No operating runway, taxiway, or air operations area (AOA) shall be crossed, entered, or obstructed while it is operational. The Contractor shall plan and coordinate work in accordance with the approved CSPP and SPCD.

END OF SECTION 80

Section 90 Measurement and Payment

90-01 Measurement of quantities. All work completed under the contract will be measured by the RPR, or their authorized representatives, using United States Customary Units of Measurement.

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet (0.8 square meters) or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the RPR.

Unless otherwise specified, all contract items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

The term "lump sum" when used as an item of payment will mean complete payment for the work described in the contract. When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

When requested by the Contractor and approved by the RPR in writing, material specified to be measured by the cubic yard (cubic meter) may be weighed, and such weights will be converted to cubic yards (cubic meters) for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the RPR and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

Measurement and Payment Terms

Term	Description
Excavation and Embankment Volume	In computing volumes of excavation, the average end area method will be used unless otherwise specified.
Measurement and Proportion by Weight	The term "ton" will mean the short ton consisting of 2,000 pounds (907 kg) avoirdupois. All materials that are measured or proportioned by weights shall be weighed on accurate, independently certified scales by competent, qualified personnel at locations designated by the RPR. If material is shipped by rail, the car weight may be accepted provided that only the actual weight of material is paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the RPR directs, and each truck shall bear a plainly legible identification mark.
Measurement by Volume	Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable for the materials hauled, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles

Term	Description
	shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.
Asphalt Material	Asphalt materials will be measured by the gallon (liter) or ton (kg). When measured by volume, such volumes will be measured at 60°F (16°C) or will be corrected to the volume at 60°F (16°C) using ASTM D1250 for asphalts. Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when asphalt material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work. When asphalt materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, will be used for computing quantities.
Cement	Cement will be measured by the ton (kg) or hundredweight (km).
Structure	Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.
Timber	Timber will be measured by the thousand feet board measure (MFBM) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.
Plates and Sheets	The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inch.
Miscellaneous Items	When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gauge, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.
Scales	Scales must be tested for accuracy and serviced before use. Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end. Scales shall be accurate within 0.5% of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the RPR before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed 0.1% of the nominal rated capacity of the scale, but not less than one pound (454 grams). The use of spring balances will not be permitted. In the event inspection reveals the scales have been “overweighing” (indicating more than correct weight) they will be immediately adjusted. All materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of 0.5%. In the event inspection reveals the scales have been under-weighing (indicating less than correct weight), they shall be immediately adjusted. No additional payment to the Contractor will be allowed for materials previously weighed and recorded. Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the RPR can safely and conveniently view them.

Term	Description
	Scale installations shall have available ten standard 50-pound (2.3 km) weights for testing the weighing equipment or suitable weights and devices for other approved equipment. All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.
Rental Equipment	Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered in connection with extra work will be measured as agreed in the change order or supplemental agreement authorizing such work as provided in paragraph 90-05 *Payment for Extra Work*.
Pay Quantities	When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the RPR. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

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

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

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

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

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

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

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

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

Payment for extra work for "agreed prices" and for "time and materials" work shall be based on the following:

1. **Agreed Price/Time and Materials Work.** All agreed price and time and materials work shall be approved by the Owner and the NYSDOT prior to proceeding with the work. The Engineer and Contractor shall be responsible for tracking the number of employees, number of hours and classification of each employee, numbers of hours that equipment is utilized and materials utilized for the extra work that is paid utilizing time and materials work.

    a. Miscellaneous. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

    b. Comparison of Record. The Contractor and the Engineer shall compare records of the cost of agreed price/time and materials work at the end of each day. Agreement shall be indicated by signature of the Contractor and the Engineer or their duly authorized representatives.

    c. Statement. No payment will be made for work performed on an agreed price/time and materials basis until the Contractor has furnished the Engineer with duplicate itemized statements of the cost of such agreed price/time and materials work detailed as follows:

        (1) Name, classification, date, daily hours, total hours, rate and extension for each laborer and foreman.

        (2) Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.

            (a) Contractor Owned Equipment Trucks and Plant.- Contractor shall be reimbursed for its ownership costs and for its operating costs for self owned equipment at the rates listed in the Rental Rate Blue Book published by Dataquest, Inc. applied in the following manner as modified by the "Rate Adjustment Table":

                (i) Ownership Costs -- It is mutually understood that the rates for ownership costs reimburse the Contractor for all non-operating costs of owning the equipment, truck or plant including depreciation on the original purchase, insurance, applicable taxes, interest on investment, storage, overhead, repairs, moving the equipment onto and away from the project or work site, and profit. Reimbursement will be made for the hours of actual use as described below.

                (ii) Less than 8 hours of actual use, the product of the actual number of hours used or fraction thereof multiplied by the hourly rate, or the daily rate, whichever is less.

                (iii) Between 8 hours and 40 hours of actual use, the product of the actual number of hours used divided by 8 multiplied by the daily rate, or the weekly rate, whichever is less.

(iv) Between 40 and 176 hours of actual use, the product of the actual number of hours used divided by 40 multiplied by the weekly rate, or the monthly rate, whichever is less.

(v) Over 176 hours of actual use, the product of the actual number of hours used divided by 176 multiplied by the monthly rate.

(vi) Operating Costs -- The rate for operating costs includes fuel, lubricants, other operating expendables, and preventative and field maintenance. Operating cost does not include the operator's wages. The Contractor shall be reimbursed the product of the number of hours of actual use multiplied by the Estimated Operating Cost/Hour.

(vii) The rates used shall be those in effect at the time the agreed price/time and materials work is done as reflected in the then current publication of the Rental Rate Blue Book. When agreed price/time and materials type analysis are used to establish agreed prices in accordance with paragraph A above, the rates used shall be those in effect when the agreed price is developed by the Contractor.

(viii) In the event that a rate is not established in the Rental Rate Blue Book for a particular piece of equipment, truck or plant, the Engineer shall establish rates for ownership costs and operating costs for that piece of equipment, truck or plant that is consistent with its cost and expected life.

(ix) The geographic Regional Adjustment Factor shown in the map at the beginning of each section of the Rental Rate Blue Book shall not be applied to the equipment rates subsequently listed in each section, and shall not be used as a basis for payment.

(b) Rented Equipment, Trucks and Plant –

(i) In the event that the Contractor does not own a specific type of equipment and must obtain it by rental, it shall be paid the actual rental rate for the equipment for the time that the equipment is used to accomplish the work or is required by the Engineer to be present, not to exceed the adjusted rental rate in the Rental Rate Blue Book, plus the reasonable cost of moving the equipment onto and away from the project site.

(ii) The Contractor shall also be reimbursed for the operating cost of the equipment unless reflected in the rental price. Such operating cost shall be determined in the same manner as specified for Contractor Owned Equipment above.

(iii) In the event that area practice dictates the rental of equipment with an operator or fully fueled and maintained equipment, truck or plants, payment will be made on the basis of an invoice for the rental of the equipment with an operator, fully fueled and/or maintained equipment, trucks or plants including all costs incidental to its use, including costs of moving to and from the site, provided the rated is substantiated by area practice.

(c) Maximum Amount Payable -- The maximum amount of reimbursement for the ownership costs of Contractor owned or the rental cost of rented equipment, trucks or plant is limited to the original purchase price of the equipment, truck or plant for any agreed price/time and materials work as listed in the Green Guide for Construction Equipment published by the Dataquest, Inc. In the specific event when the ownership or rental reimbursement is limited by the original purchase price, the Contractor

shall, nevertheless, be reimbursed for the operating Cost/Hour for each hour of actual use.

(3) Quantities of materials, prices, and extensions.

(4) Transportation of materials.

(5) Overhead and Profit. If any of the work is performed by a subcontractor, the Contractor shall be paid the actual and reasonable cost of such subcontracted work computed as outlined in a through d above, or on such other basis as may be approved by the Owner. Subcontractor profit and overhead shall be paid as outlined in this section, plus an additional allowance of five percent (5%) of materials and direct labor to cover the Contractor's profit, superintendence, administration, insurance and other overhead. For the purposes of computing overhead and profit, only one level or tier of subcontractors will be allowed.

Overhead shall be defined to include, but not be limited to:

- premium on bonds;
- premium on insurance required by workman's compensation insurance, public liability and property damage insurance, unemployment insurance, social security tax, and other payroll taxes and such reasonable charges that are paid by the Contractor pursuant to written agreement with his/her employee;
- all salary and expenses of executive officers, supervising officers or supervising employees;
- all clerical or stenographic employees;
- all charges for minor equipment, such as small tools, including shovels, picks, axes, saws, bars, sledges, lanterns, jacks, cables, pails, wrenches, etc. and other miscellaneous supplies and services;
- all drafting room accessories such as paper, tracing cloth, blueprinting, etc.

Overhead and profit cost shall be computed at 15 percent of the following:

- Total Direct Labor Cost (actual hours worked multiplied by the basic hourly wage rate) plus supplemental benefits payments, payroll taxes, insurance payments and other labor related fringe benefit payments as defined in 'a' above, but not including the overtime additive payments. Overhead and profit shall not be paid on the premium portion of overtime.
- Total Cost of Materials as defined in (3) and (4) above.

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

a. From the total of the amount determined to be payable on a partial payment, five percent (5%) of such total amount will be deducted and retained by the Owner for protection of the Owner’s interests. Unless otherwise instructed by the Owner, the amount retained by the Owner will be in effect until the final payment is made except as follows:

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

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

b. The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than seven (7) days after the Contractor has received a partial payment. Contractor must provide the Owner evidence of prompt and full payment of retainage held by the prime Contractor to the subcontractor within seven (7) days after the subcontractor's work is satisfactorily completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the Owner. When the Owner has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

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

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders or supplemental agreements, except when such excess quantities have been determined by the RPR to be a part of the final quantity for the item of work in question.

No partial payment shall bind the Owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in paragraph 90-09, *Acceptance and Final Payment*.

The Contractor shall deliver to the Owner a complete release of all claims for labor and material arising out of this contract before the final payment is made. If any subcontractor or supplier fails to furnish such a release in full, the Contractor may furnish a bond or other collateral satisfactory to the Owner to indemnify the Owner against any potential lien or other such claim. The bond or collateral shall include all costs, expenses, and attorney fees the Owner may be compelled to pay in discharging any such lien or claim.

No partial payments will be made for work items lacking approved submittals, or lacking acceptable manufacturer's material certifications.

Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Airport Sponsor. This clause applies to both DBE and non-DBE subcontractors.

Contractors shall include in their subcontracts language providing that Contractors and subcontractors will use appropriate alternative dispute resolution mechanisms to resolve payment disputes.

The Contractor will not be reimbursed for work performed by subcontractors unless and until the Contractor ensures that the subcontractors are promptly paid for the work they have performed.

The same requirement for prompt payment shall be applied to all tier subcontractors.

90-07 Payment for materials on hand. Partial payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided that such materials meet the requirements of the contract, plans, and specifications and are delivered to acceptable sites on the airport property or at other

sites in the vicinity that are acceptable to the Owner. Such delivered costs of stored or stockpiled materials may be included in the next partial payment after the following conditions are met:

a. The material has been stored or stockpiled in a manner acceptable to the RPR at or on an approved site.

b. The Contractor has furnished the RPR with acceptable evidence of the quantity and quality of such stored or stockpiled materials.

c. The Contractor has furnished the RPR with satisfactory evidence that the material and transportation costs have been paid.

d. The Contractor has furnished the Owner legal title (free of liens or encumbrances of any kind) to the material stored or stockpiled.

e. The Contractor has furnished the Owner evidence that the material stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work.

It is understood and agreed that the transfer of title and the Owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of their responsibility for furnishing and placing such materials in accordance with the requirements of the contract, plans, and specifications.

In no case will the amount of partial payments for materials on hand exceed the contract price for such materials or the contract price for the contract item in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant materials.

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

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

a. The Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to the Owner.

b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the Owner and having a value not less than the retainage that would otherwise be withheld from partial payment.

c. The Contractor shall enter into an escrow agreement satisfactory to the Owner.

d. The Contractor shall obtain the written consent of the surety to such agreement.

e. Deposits in escrow shall be maintained for a period of time described in the subsection titled GUARANTY of this section, or the Contractor shall furnish a bond as described in the subsection titled SECURITY FOR GUARANTEE of this section.

90-09 Acceptance and final payment. When the contract work has been accepted in accordance with the requirements of Section 50, paragraph 50-15, *Final Acceptance*, the RPR will prepare the final estimate of the items of work actually performed. The Contractor shall approve the RPR's final estimate or advise the RPR of the Contractor's objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the contract as amended by change order or supplemental agreement. The Contractor and the RPR shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of the Contractor's receipt of the RPR's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the RPR's estimate under protest of the quantities in dispute, and such disputed quantities shall

be considered by the Owner as a claim in accordance with Section 50, paragraph 50-16, *Claims for Adjustment and Disputes*.

After the Contractor has approved, or approved under protest, the RPR's final estimate, and after the RPR's receipt of the project closeout documentation required in paragraph 90-11, *Contractor Final Project Documentation*, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

If the Contractor has filed a claim for additional compensation under the provisions of Section 50, paragraph 50-16, *Claims for Adjustments and Disputes,* or under the provisions of this paragraph, such claims will be considered by the Owner in accordance with local laws or ordinances. Upon final adjudication of such claims, any additional payment determined to be due the Contractor will be paid pursuant to a supplemental final estimate.

90-09.1 FINAL PAYMENT PROCEDURE FOR DUTCHESS COUNTY

Final interim payment, constituting the entire unpaid balance of the contract sum less retainage, shall be made by the Owner to the Contractor when:

1. The Contractor has fully performed the services outlined in the contract, except for any services which extend beyond final payment and;
2. A final recommendation for payment has been issued by the Engineer to Dutchess County and;
3. The closeout documents outlined in section 90-11 have been submitted to the Engineer

The Owner's final interim payment to the Contractor shall be made no later than thirty (30) days after the issuance of the Engineer's final recommendation for payment. Retainage will be released thirty (30) days after issuance of final payment.

90-10 Construction warranty.

a. In addition to any other warranties in this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, workmanship, or design furnished, or performed by the Contractor or any subcontractor or supplier at any tier.

b. This warranty shall continue for a period of one year from the date of final acceptance of the work, except as noted. If the Owner takes possession of any part of the work before final acceptance, this warranty shall continue for a period of one year from the date the Owner takes possession. However, this will not relieve the Contractor from corrective items required by the final acceptance of the project work. Light Emitting Diode emitting diode (LED) light fixtures with the exception of obstruction lighting, must be warranted by the manufacturer for a minimum of four (4) years after date of installation inclusive of all electronics.

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

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

e. The Owner will notify the Contractor, in writing, within seven (7) days after the discovery of any failure, defect, or damage.

f. If the Contractor fails to remedy any failure, defect, or damage within 14 days after receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

g. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall: (1) Obtain all warranties that would be given in normal commercial practice; (2) Require all warranties to be executed, in writing, for the benefit of the Owner, as directed by the Owner, and (3) Enforce all warranties for the benefit of the Owner.

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

i. The Owner and Engineer will perform a warranty inspection with the Contractor approximately three (3) months before the end of the one year warranty period.

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

a. Provide two (2) copies of all manufacturers warranties specified for materials, equipment, and installations.

b. Provide weekly payroll records (not previously received) from the general Contractor and all subcontractors.

c. Complete final cleanup in accordance with Section 40, paragraph 40-08, *Final Cleanup*.

d. Complete all punch list items identified during the Final Inspection.

e. Provide complete release of all claims for labor and material arising out of the Contract.

f. Provide a certified statement signed by the subcontractors, indicating actual amounts paid to the Disadvantaged Business Enterprise (DBE) subcontractors and/or suppliers associated with the project.

g. When applicable per state requirements, return copies of sales tax completion forms.

h. Manufacturer's certifications for all items incorporated in the work.

i. All required record drawings, as-built drawings or as-constructed drawings.

j. Project Operation and Maintenance (O&M) Manual(s). The Contractor shall prepare a project O&M Manual for the Owner. The O&M Manual shall consist of approved certification submittals, approved shop and setting drawing submittals, approved catalogue data submittals, circuit test results in accordance with Item L-108, and O&M Manuals for equipment installed that have operating procedures and/or maintenance requirements associated with them. The O&M manual shall be neatly bound in a properly sized 3-ring binder and tabbed by specification section. The O&M Manual shall be submitted to the Engineer prior to final payment to facilitate project closeout.

k. Security for Construction Warranty.

l. Equipment commissioning documentation submitted, if required.

m. Contractor’s Affidavit of Payment of Debts and Claims (AIA Document G706) from the Prime Contractor.

n. Contractor’s Affidavit of Release of Liens (AIA Document G706A) from the Prime Contractor.

o. Contractor’s Affidavit of Payment of Debts and Claims (AIA Document G706) from each subcontractor.

p. Contractor’s Affidavit of Release of Liens (AIA Document G706A) from each subcontractor.

q. Consent of Surety to Final Payment (AIA Document G707) from the Prime Contractor.

r. Prime Contractor's Certification (New York State Labor Law Section 220-a). .

s. Subcontractor's Certification (New York State Labor Law Section 220-a).

END OF SECTION 90

Special Provisions to the General Provisions

SP 20-16 Addenda and interpretation. No interpretation of the meaning of the Contract Documents, Contract Drawings or other portions of the Contract will be made orally. Every request for such interpretation must be in writing and addressed to C&S Engineers, Inc., 499 Col. Eileen Collins Blvd., Syracuse, New York 13212, and to be given consideration must be received at the above address at least seven (7) days prior to the date fixed for opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda, which, when issued, will be posted to the website at which the Contract Documents were obtained, not later than twenty-four (24) hours prior to the date fixed for the opening of bids. When addenda are posted to a website, it is the Contractor's responsibility to retrieve the addenda. Failure of any Bidder to receive or retrieve any such addenda or interpretation shall not relieve said Bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract.

SP 20-17 Sales tax exemption. The Owner is exempt from payment of Sales and Compensating Use Taxes of the State of New York and of cities and counties on all materials and supplies sold to the Owner pursuant to the provisions of this Contract. These taxes are not to be included in bids. This exemption does not, however, apply to tools, machinery, equipment or other property leased by or to the Contractor or a SubContractor to materials and supplies of any kind which will not be incorporated into the completed project, and the Contractor and his SubContractors shall be responsible for and pay any and all applicable taxes including Sales and Compensating Use Taxes on such leased tools, machinery, equipment or other property or on such unincorporated materials and supplies, and the provisions set forth below will not be applicable to such tools, machinery, equipment, property and unincorporated materials and supplies.

The Contractor agrees to sell, free of encumbrances, and the Owner agrees to purchase all of the materials and supplies (except as above set forth) required, necessary or proper for or incidental to the construction of the Project covered by this agreement. Title to all materials and supplies to be sold by the Contractor to the Owner, pursuant to the provisions of the Contract, shall immediately vest in and become the sole property of the Owner upon delivery of such materials and supplies to the Project site. The Contractor shall mark or otherwise identify all such materials and supplies as the property of the Owner. The Contractor, at the request of the Owner, shall furnish to the Owner such confirmatory bills of sale and other instruments as may be required by it, properly executed, acknowledged and delivered, confirming to the Owner, title to such materials and supplies free of encumbrances.

In the event that after title has passed to the Owner any of such materials and supplies are rejected as being defective or otherwise unsatisfactory, title to all such materials and supplies shall upon such rejection revest in the Contractor.

The sum paid under this Agreement shall be deemed to be in full consideration for the performance by the Contractor of all his duties and obligations under this Agreement in connection with said sale.

The Contractor agrees to construct the Project and to furnish and perform all work and labor required, necessary or proper for or incidental thereto, except that the materials and supplies sold to the Owner under the preceding paragraph shall be furnished by the Owner to the Contractor for use in the performance of said work and labor, and the sum paid pursuant to this Agreement shall be deemed to be in full consideration for the performances by the Contractor of all his duties and obligations under this Agreement in connection with said work and labor.

The purchase by the Contractor of the materials and supplies sold hereunder will be a purchase or procurement for resale to the Owner (an organization described in subdivision (a) of Sec. 1116 of the Tax Law of the State of New York) and therefore not subject to the New York State Sales or Compensating Use or any such taxes of cities and counties. The sale of such materials and supplies by the Contractor to the Owner will not be subject to the aforesaid Sales and Compensating Use Taxes.

The purchase by SubContractors of materials and supplies to be sold hereunder will also be a purchase or procurement for resale to the Contractor (either directly or through other SubContractors), and ultimately to the Owner, and therefore not subject to the aforesaid Sales and Compensating Use Taxes, provided that the Subcontract Agreements provide for the resale of such materials and supplies prior to and separate and apart from the incorporation of such materials and supplies into the permanent construction and that such Subcontract Agreements are in a form similar to this Contract with respect to the separation of the sale of materials and supplies from the work and labor to be provided.

If as a result of such sale of materials and supplies (l) any claim is made against the Contractor or any SubContractor by the State of New York or any city or county for Sales or Compensating Use Taxes on the aforementioned materials and supplies or (2) any claim is made against the Contractor or any SubContractor by a materialman or a SubContractor on account of a claim against such materialman or SubContractor by the State of New York or any city or county for Sales or Compensation Use Taxes on the aforementioned materials and supplies, then, if the Contractor and SubContractor have complied with the provisions of this Contract relating thereto, the Owner will reimburse the Contractor or any SubContractor, as the case may be, for an amount equal to the amount of such tax required to be paid in accordance with the requirements of law, provided that:

A. 1. The Subcontract Agreements in connection with this Contract, provide for the resale of such materials and supplies, prior to and separate and apart from the incorporation of such materials and supplies into the permanent construction.

2. Such Subcontract Agreements are in a form similar to this Contract with respect to the separation of the sale of materials and supplies from the other work and labor to be provided, and

3. Such separation is actually followed in practice, including the separation of payments for materials and supplies from the payments for other work and labor, and

B. The Contractor and his SubContractors and materialmen complete New York State Sales Tax Form ST120.1. (Contractor Exempt Purchase Certificate), and furnish such certificate to all persons, firms or corporations from which they purchase materials and supplies for the performance of the work covered by this Contract, and

C. The Contractor and all SubContractors maintain and keep, for a period of six (6) years after the date of final payment for the sale, or, if a claim for Sales or Compensating Use Tax is pending or threatened at the end of such six (6) year period, until such claim is finally settled, records, which in the judgment of the Department of Taxation and Finance, adequately show (l) all materials and supplies purchased by them for resale, pursuant to the provisions of this Contract and (2) all materials and supplies sold to the Owner pursuant to the provisions of this Contract, and

D. The Owner is afforded the opportunity, before any payment of tax is made, to contest said claim in the manner and to the extent that the Owner may choose and to settle or satisfy said claims, and such attorney as the Owner may designate is authorized to act for the purpose of contesting, settling and satisfying said claim, and

E. The Contractor and SubContractor give immediate notice to the Owner of any such claim, cooperate with the Owner and its designated attorney in contesting said claim and furnish promptly to the Owner and said attorney all information and documents necessary or convenient for contesting said claim, said information and documents to be preserved for six (6) years after date of final payment for the sale, or if such a claim is pending or threatened at the end of such six (6) years, until such claim is finally settled. If the Owner elects to contest any such claim, it will bear the expense of such contest.

Nothing in this Article is intended or shall be construed as relieving the Contractor from his obligations under this Agreement and the Contractor shall have the full continuing responsibility to install the materials and supplies purchased in accordance with the provisions of this Contract, to protect the same, to maintain them in proper condition and to forthwith repair, replace and make good any damage thereto without cost to the Owner until such time as the work covered by the Contract is fully accepted by the Owner.

SP 30-09 Conformed Contract Documents. Conformed Contract Documents sent to the successful bidder for execution will consist of the original contract documents with a copy of the successful bidder's Proposal section inserted. In addition, the Form of Contract will be edited to include a contract date, the Contractor's name and address, the contract parts that are being awarded: Total Bid; Total Base Bid; Total Base Bid plus Add-On No. 1; Total Alternate No. 1 Bid plus Add-On No. 1; etc., the total contract amount awarded, the list of Addenda and dates, the Contractor's company name on the signature page, a copy of the Contractor's Performance Bond, Labor and Material Payment Bond and Insurance Certificates will be inserted. The original completed and signed Proposal will be kept on file with the Owner or Engineer.

The Conformed Contracts Documents may incorporate changes to the General Provisions and the Technical Specifications which were made by addendum. If changes are so included, the addendum cover sheets will be included in the Conformed Contract Documents before the Table of Contents, otherwise the full addendum will be included before the Table of Contents.

The cover of the Contract Documents will be labeled "Conformed Contract".

SP 30-10 Issued for Construction Contract Documents. Issued for Construction (IFC) Contact Documents will be distributed prior to the start of construction. The IFC contract documents consist of the Conformed Contract Documents and the Contract Drawings. The IFC Contract Documents will include a copy of the executed Form of Contract. The original filled out and signed Form of Contract will be kept on file with the Owner or Engineer. The IFC Construction Drawings will incorporate any changes made by addendum during the bidding process.

The cover of the Contract Documents will be labeled "Conformed Contract" and "Issued for Construction". The title sheet of the Contract Drawings will be labeled "Issued for Construction".

SP 50-17 Additional Survey Requirements.

A. This work shall consist of providing all necessary survey work to establish, spatially position, and verify the locations of existing and proposed features and measure quantities of items in accordance with the contract documents or as directed by the RPR. This work includes but is not limited to the establishment, reestablishment or localization of primary and secondary control, the stakeout or layout of proposed features, the initialization, calibration and navigation of automated equipment operations, the location or verification of existing or of constructed features, the verification of

geospatial data for proposed construction work and the coordination and sharing of survey data with the RPR.

The Contractor shall be responsible for trimming trees, brush and other objects from survey lines in advance of all survey work to permit accurate and unimpeded work by the survey crews.

B. Survey Reference Points.

1. Existing horizontal and vertical control points for the Project are those designated on drawings or as determined from investigation of the existing conditions.
2. Locate and protect control points prior to starting Site Work and preserve permanent reference points during construction.
    a. Make no changes or relocations without prior approval of the RPR.
    b. Report to RPR when reference point is lost, destroyed or requires relocation because of necessary changes in grades or locations.
    c. Replace Project control points, which may be lost or destroyed. Airport control points shall be replaced in accordance with their requirements.
    d. Existing property corners, markers, stakes, iron pins, and survey monuments defining property lines which have a high probability of being disturbed during construction shall be properly tied into fixed reference points before being disturbed. If disturbed, they shall be accurately reset in their proper position upon completion of the work.

C. Project Layout Requirements.

1. Establish a sufficient number of permanent bench marks on Site, as may be required, referenced to data established by survey control points. Record locations of benchmarks with horizontal and vertical data on Project Record Documents.
2. From established control points, layout all Work by establishing all lines and grades at Site necessary to control Work. Contractor shall be responsible for all measurements that may be required for execution of Work to location and limit marks prescribed in appropriate Specification Sections or on Contract Drawings.
3. Furnish, at Contractor expense, all such stakes, steel pins, equipment, tools and material and labor that may be required in laying out Work control points.
4. Establish lines and levels. Locate and layout by instrumentation and similar appropriate means:
    a. Verify property, grades, lines, levels and dimensions indicated.
    b. Site Improvements
        1) Provide stakes for grading, fill and topsoil placement.
        2) Layout utility slopes and invert elevations.
        3) Layout limits of pavement demolition and proposed pavement.
4. Verify and coordinate in field all existing and proposed underground components including civil, structural, utilities and other components prior to initiation of the Work. Advise RPR and/or FAA of any conflicts or discrepancies.

D. Documents.

1. Submit name, address and contact information of Surveyor to RPR.

2. On request of the RPR, submit documentation to certify accuracy of construction survey and stakeout work and compliance with Contract Documents.
3. Submit certificate signed by licensed surveyor certifying that elevations and locations of improvements are in conformance with Contract Documents. Should any work be in non-conformance with Contract Documents, Contractor shall identify all such non-conformance in the certificate.
4. Standards and Availability: Data and other measurements shall be recorded in accordance with standard and approved methods. All field notes, sketches, recordings, and computations in establishing above horizontal and vertical control points shall be available at all times during progress of Work for ready examination by RPR.
5. Maintain complete and accurate record data on underground utilities and obstructions, new and existing, encountered in execution of Work. Record data on Project Record Documents.
6. On completion of major site improvements, prepare certified survey showing dimensions, locations, angles, and elevations of construction.

E. GPS Inspection Unit. Section not used.

F. Computer Aided Drafting & Design (CADD) and 3D Surface files. Section not used.

G. Equipment. Section not used.

H. Verification of Existing Grades. This project was developed using a 3D CADD program. The 3D CADD program created 3D surface files of the existing surfaces, finished surfaces and other various surfaces required to complete the design.

Existing grades on the surface files, where they do not match the locations of actual spot elevations shown on the topographic map, were developed by computer interpolation from those spot elevations. Prior to disturbing original grade, a Licensed Surveyor shall verify the accuracy of the existing ground surface by verifying spot elevations at the same locations where original field survey data was obtained as indicated on the topographic map. For this purpose, the RPR will provide the Contractor with a 3D CADD file of the topographic survey. Surveyor shall recognize that, due to the interpolation process, the actual ground surface at any particular location may differ somewhat from the interpolated surface shown on the design cross sections or obtained from the surface files. Surveyor's verification of original ground surface, however, shall be limited to verification of spot elevations as indicated herein, and no adjustments will be made to the original ground surface unless the Surveyor demonstrates that spot elevations shown are incorrect. For this purpose, spot elevations which are within 0.1 foot of the stated elevations for ground surfaces, or within 0.02 foot for hard surfaces (pavements, buildings, foundations, structures, etc.) shall be considered "no change". Only deviations in excess of these will be considered for adjustment of the original ground surface. If Surveyor's verification identifies discrepancies in the topographic map, Contractor shall notify RPR in writing at least two weeks before disturbance of existing grade to allow sufficient time to verify the submitted information and make adjustments to the design cross sections or surface files. Disturbance of existing grade in any area shall constitute acceptance by the Contractor of the accuracy of the original elevations shown on the topographic map for that area.

The Contractor's survey shall not exceed the following:

- Error of horizontal closure in feet shall not exceed 1 foot/5,000 feet
- Error of vertical closure in feet shall not exceed (0.05 feet)*(bench run length in miles)$^{1/2}$

A point data file of the Contractor's verification of original ground surface shall be provided in electronic format along with a printed hard copy. The point data shall be supplied in one ASCII file

containing point number, northing, easting, elevation and descriptor. The data shall be left justified columns separated by commas with decimal points, but no slashes, colons and/or other separators.

J. Traditional Survey Stakeout. The Contractor shall field locate all features to be constructed from survey control points which are identified on the Plans. Any error, apparent discrepancy or absence in the data shown or required to appropriately accomplish the stakeout survey shall be referred to the RPR immediately for interpretation when such is observed or required.

The Contractor shall place two offset stakes or references points along the center line at maximum intervals of 50 feet and at such intermediate locations as required to determine location and direction. From computations and measurements made by the Contractor, these stakes shall be clearly and legibly marked with the center line station number, offset and cut or fill from which the establishment of the centerline location and elevation can be determined. If markings become illegible for any reason the markings shall be restored by the Contractor. The Contractor shall locate and place all cut, fill, slope, fine grade, or other stakes and points for the proper progress of the work with a maximum station spacing of 50 feet. All control points shall be properly protected and flagged for easy identification.

The Contractor shall be responsible for the accuracy of the work and shall maintain all applicable reference points, stakes, etc. Damaged or destroyed reference points or bench marks made inaccessible by the progress of the construction shall be replaced or transferred by the Contractor. All control points shall be referenced by ties (4 minimum) to specific points on acceptable objects and recorded. Any alterations or revisions in the ties shall be so noted and the information furnished to the RPR. All stakeout survey work related to control shall be referenced to the control line shown in the contract documents. Computations and survey notes necessary to establish the position of the work from control points, shall be made and maintained in a neat, legible and acceptable format by the Contractor. Computations, survey notes and other survey information shall be made available to the RPR within 3 work days from the request. The RPR may check all or any portion of the stakeout survey work or notes made by the Contractor. Such checking by the RPR shall not relieve the Contractor of any responsibilities for the accuracy or completeness of the work.

K. Automated Stakeout and Automated Machine Guidance Operations. Section not used.

L. GPS Inspection Unit. Section not used.

M. GPS Training Provisions. Section not used.

SP 50-18 Removal of water. The Contractor shall at all times during construction, provide and maintain proper and satisfactory means and devices for the removal of all water entering the excavations, and shall remove all such water as fast as it may collect, in such manner as shall not interfere with the prosecution of the work or the proper placing of materials or other work.

Removal of water includes the construction and removal of cofferdams, sheeting and bracing, the furnishing of materials and labor necessary therefore, the excavation and maintenance of ditches and sluiceways and the furnishing and operation of pumps, wellpoints and appliances needed to maintain thorough drainage of the work in a satisfactory manner.

Water shall not be allowed to rise over or come in contact with any masonry, concrete or mortar, until at least twenty-four (24) hours after placement and no stream of water shall be allowed to flow over such work until such time as the RPR may permit.

Unless otherwise specified, all excavations which extend down to or below the static groundwater elevations at the sites of structures shall be dewatered by lowering and maintaining the groundwater

beneath such excavations at an elevation not less than that specified herein at all times when work thereon is in progress, during subgrade preparation and the placing of the structure or other materials thereon.

Where the presence of fine granular subsurface materials and a high groundwater table may cause the upward flow of water into the excavation with a resulting quick condition, the Contractor shall install and operate a suitable dewatering system to prevent the upward flow of water during construction.

When the water table is within the capillary rise of silt/clay subsurface material, the Contractor shall select and operate his equipment in a manner to prevent the deterioration of the working surface due to the upward flow of water during construction.

The effluent pumped from the dewatering system shall be examined periodically by qualified personnel to determine if the system is operating satisfactorily without the removal of fines.

Unless otherwise directed by the RPR or shown on the Contract Documents, the water level shall not be permitted to rise until construction in the immediate area is completed and the excavation backfilled to the original grade or proposed grade.

Where well points are used, the groundwater shall be lowered and maintained continuously (day and night) at a level not less than two (2) feet below the bottom of the excavation. Excavation will not be permitted at a level lower than two (2) feet above the water level as indicated by the observation wells.

The wellpoint system shall be designed or installed by or under the supervision of an organization whose principal business is wellpointing and has at least five (5) consecutive years of similar experience and can furnish a representative list of satisfactory similar operations. Wellpoint headers, points and other pertinent equipment shall not be placed within the limits of the excavation in such a manner or location as to interfere with the laying of pipe or trenching operations or with the excavation for and/or construction of other structures. Standby gasoline or diesel powered equipment shall be provided so that in the event of failure of the operating equipment, the standby equipment can be readily connected to the dewatering system. The standby equipment shall be maintained in good order and actuated regularly not less than twice a week when directed.

Wellpoints shall be installed in the center of a sand wick drain which shall be placed by means of a sanding shell or other approved means to provide a sand core not less than ten (10) inches in diameter.

Detached observation wells of similar construction to the wellpoints shall be installed at intervals of not less than fifty (50) feet along the opposite side of the trench from the header pipe and line of wellpoints, or around the excavation for a structure or as shown on the Contract Drawings, to a depth of at least five (5) feet below the proposed excavation. In addition, one wellpoint in every fifty (50) feet shall be fitted with a tee, plug and valve so that the wellpoint can be converted for use as an observation well. Observation wells shall be not less than one and one-half (12) inch in diameter.

Water pumped or drained from excavations, or any sewers, drains, or water courses encountered in the work, shall be disposed of in a suitable manner without injury to adjacent property, the work under construction, or to pavements, roads and drives. No water shall be discharged to sanitary sewers. Sanitary sewage shall be pumped to sanitary sewers or shall be disposed of by an approved method.

Any damage caused by improper handling of water shall be repaired by the Contractor at his/her own expense.

SP 50-19 Sheeting and bracing. The Contractor shall furnish, place and maintain such sheeting, bracing and shoring as required to support the sides and ends of excavations in such a manner as to prevent any movement which would in any way damage the pipe, sewers, masonry or other work, diminish the width necessary, otherwise damage or delay the work, or endanger existing structures, pipes or pavements, or to occasion a hazard to persons engaged on the project or to the general public.

Sheeting and bracing or other trench protection shall be utilized as required for the safety of employees exposed to the hazard of falling or sliding material from any trench or excavation in conformance with the provisions of Industrial Code Rule 23 as amended, and OSHA. Sheeting and bracing must be designed by, signed and stamped by a Professional Engineer licensed to practice in the State in which the project is located.

The Contractor shall be responsible for the adequacy of all trench support systems used and for all damage to persons or property resulting from improper quality, strength, placing, maintenance and removal.

All material used for sheeting and bracing shall be sound and free from defects which might impair its strength or effectiveness.

All timber sheeting and bracing shall be sound and straight, free from cracks, shakes and large or loose knots.

All steel sheeting and bracing shall be sound and straight, free from bends, twists or splits, having square and undamaged ends.

Sheeting shall be driven vertically from the original ground surface as the excavation progresses. Sufficient toe support shall be sustained so as to maintain pressure against the original ground at all times.

Timber sheeting shall be driven so that edges are tight together and steel sheeting driven with the individual members interlocking. All bracing shall be of such design and strength as to maintain the sheeting in its proper position.

The Contractor shall be solely responsible for the adequacy of all sheeting and bracing.

In general, all sheeting and bracing, whether of steel, timber or other material, used to support the sides of trenches or other open excavations, shall be withdrawn as the trenches or other open excavations are being refilled. That portion of the sheeting extending below the top of a pipe, sewer or structure shall be withdrawn, unless otherwise directed, before more than 6 inches of earth is placed above the top of the pipe, sewer or structure and before any bracing is removed. The voids left by the sheeting shall be carefully refilled with selected material and rammed tight with tools especially adapted for the purpose or otherwise as may be approved.

The Contractor shall be responsible for the adequate shoring and/or bracing of any existing utilities encountered during the excavation. Such utilities shall be braced or shored in a manner acceptable to the local jurisdictional agency having authority over the utility encountered. It shall be the responsibility of the Contractor to prevent damage to or displacement of utilities, and to work with and request the concurrence of the utility's company representative in this matter.

SP 60-09 Shop and setting drawings and catalogue data. All materials and equipment used in the work shall be submitted to the RPR, unless otherwise directed. The RPR will forward the submittals to Engineer for their review and approval prior to ordering the equipment. All information required for the

Engineer's review of each particular pay item shall be sent as one submittal. In addition, if the pay item interfaces with other pay items (as in the case of electrical equipment), then the submittals covering the interfacing pay items shall be sent at the same time. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be boldly and clearly made with arrows or circles (highlighting is not acceptable). Drawings and data shall be submitted sufficiently in advance of the work to permit proper review, including time for necessary revisions and re-submittals. The Contractor is solely responsible for delays in the project accruing directly or indirectly from late submissions or resubmissions of submittals.

Shop and setting drawings shall present complete and accurate information relative to all working dimensions, equipment weight assembly and sectional view, all the necessary details, pertaining to coordinating the work of the Contract, lists of materials and finishes, parts lists and the description thereof, lists of spare parts and tools where such parts or tools are required, no-scale control diagrams for control wiring and control piping, and any other items of information that are required to demonstrate detail compliance with the Plans and Specifications. Each drawing shall be dated and shall show the name of the Project, Contract Number and the name of the manufacturer of the equipment covered by the drawing or drawings. The Engineer will not review any drawings that are not properly identified or that do not contain complete data on the work or that have not been checked, stamped and signed by the Contractor for compliance with the Contract Documents.

The Engineer's review of the Contractor's Shop Drawings signifies only that such drawings appear to be in substantial conformity with the Contract Drawings and Contract Documents. Such review does not indicate approval of every detail of the drawings nor of the work methods of the Contractor which are indicated thereon. Regardless of the corrections made in or made of such drawings by the Engineer, the Contractor will nevertheless be responsible for the accuracy of such drawings, for their conformity to the Plans and Specifications and for the proper fitting and construction of the work.

No work covered by shop and setting drawings shall be done until the drawings have been reviewed and found acceptable by the Engineer. No payment shall be made on any item for which submittals are not received and found acceptable by the Engineer.

SP 60-10 Electrical shop drawings. Drawings for electrical equipment shall show physical dimensions and installation details and shall include elementary and connection diagrams for each control assembly and the interconnection diagrams for all equipment. The drawings shall show clearly the coordination of control work, shall identify the components external to electrical equipment and shall define the contact arrangement and control action of the primary and final control elements.

Where standard electrical control equipment having complex internal wiring is required, such as control panels, generator transfer panels, electric or electronic instruments and similar items, the detail shop wiring diagrams for such equipment will not be required, and, if submitted, will in general not be reviewed. The submittal for each such item of equipment shall, however, include an elementary diagram of the input and output elements which require connections to external equipment, and/or a complete step by step description of the control action of the equipment being submitted. In the event that any questions arise as to the type of information to be presented on the submittal, the supplier shall direct inquiries to the RPR through the Prime Contractor in advance of the preparation of his/her submittal.

SP 60-11 Substitute items. If in the Engineer's sole judgment an item of material or equipment proposed by the Contractor does not qualify as an "or-equal" item, it will be considered a substitute item. The Contractor shall submit sufficient information as provided below to allow the Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefore. The procedure for review by the Engineer will include the following and as the Engineer may decide is appropriate under the circumstances. Requests for review of substitute items of material or equipment will not be accepted by the Engineer from anyone other than the Contractor. If the Contractor wishes to furnish or use a substitute item of material or equipment, the Contractor shall first make a written application through the RPR to the Engineer for acceptance thereof, certifying that the substitute will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified and be suited to the same use as that specified. The application will state the extent, if any, to which the evaluation and acceptance of the substitute will prejudice the Contractor's achievement of completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents or Contract Drawings (or in the provisions of any other direct contract with the Owner for work on the Project) to adapt the design to the substitute and whether or not incorporation or use of the substitute in connection with the work is subject to payment of any license fee or royalty. If the substitute item requires modifications to any existing features or to any proposed work, the application shall also include details of proposed modifications necessary to accommodate the substitute item. Such details shall include scaled layouts, dimensions and other pertinent information to enable the Engineer to accurately assess the entire application. If the substitute item and proposed modifications are approved, the Contractor, at no additional cost to the Owner, shall do all work necessary to make such modifications and absorb all costs of any related changes imposed on other Contractor's. All variations of the substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other Contractors affected by the resulting change, all of which will be considered by the Engineer in evaluating the substitute. The Engineer may require the Contractor to furnish additional data about the substitute.

A. Engineer's Evaluation. The Engineer will be the sole judge of acceptability. No substitute will be ordered, installed or utilized without the Engineer's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. The Engineer will record time required by the Engineer and the Engineer's Consultants in evaluating substitutes proposed or submitted by the Contractor and in making changes in the Contract Documents or Contract Drawings (or in the provisions of any other direct contract with Owner for work on the Project) occasioned thereby. The Engineer's charges shall be at the same rates the Engineer charges for such services to the Owner.

B. Contractor's Expense. All data to be provided by the Contractor in support of any substitute item will be at the Contractor's expense. In order to aid the Engineer in determining the equality of an or substitute item (when compared to the item actually specified), the Contractor shall arrange for the performance of any tests requested by the Engineer. The Engineer shall determine the nature, extent, tester and degree of supervision of such tests. Certified test results shall be mailed directly to the Engineer for all tests requested. All costs of such tests, including engineering costs, shall be borne by the Contractor. The Owner may require the Contractor to furnish at the Contractor's expense a special performance guarantee or other surety with respect to any substitute. Whether or not the Engineer accepts a substitute item so proposed or submitted by the Contractor, the Contractor shall reimburse the Owner for the charges of the Engineer and the Engineer's Consultants for evaluating each such substitute item. The costs for evaluating substitute items shall be deducted from the Owner's payment to the Contractor.

SP 60-12 Submittal procedure. The following procedure has been established for the submittal and processing of shop and setting drawings, working drawings, and catalogue data. Departures from this procedure may result in delay and misunderstandings.

A. All information required for the Engineer's review of each particular pay item shall be sent as one submittal to the RPR with an attached submittal cover sheet. In addition, if the pay item interfaces with other pay items (as in the case of electrical equipment), then the submittals covering the interfacing pay items shall be sent at the same time.

B. In submitting certifications, drawings, catalog data, and similar items for review, one (1) electronic copy shall be submitted to Doc Express. Access to Doc Express will be provided by the RPR upon award of the Contract. The submittal will be reviewed by the Engineer, stamped and signed. The submittal bearing the reviewed stamp and signature will be reloaded back to Doc Express by the Engineer. It will be the Contractor's responsibility to check Doc Express for updated submittals.

The Contractor shall provide one (1) hard copy of each of the stamped and signed submittals for inclusion in the O&M Manual prior to contract closeout.

The RPR shall be responsible for printing sufficient copies of each submittal for their own records. The Contractor shall be responsible for printing sufficient copies of each submittal for their own records and distributing to each of the other prime or subContractors whose work is to be correlated with such submittals.

C. Submittals will be stamped by the Engineer as follows:

1. "Approved", if no change or rejection is made.

2. "Approved as Noted", if minor changes or additions are made, but re-submittal is not considered necessary. All copies will bear the corrective marks.

3. "Revise and Resubmit", if the changes requested are extensive. In this case, re-submittal after correction is necessary and the same number of copies shall be included in the re-submittal as in the first submittal.

4. "Rejected", if it is considered that the data submitted cannot with reasonable revision meet the requirements of the Plans and Specifications.

5. "Submit Specified Item", if the data submitted is not clear, complete, or for other reasons cannot be examined by the Engineer to establish compliance with the Plans and Specifications.

D. Unless otherwise approved in specific cases, all submittals must be transmitted by the Prime Contractor, not by the SubContractors or vendors.

Any changes in re-submittals, other than those indicated as requested, must be specifically brought to the attention of the RPR. Changes or additions shall not be made in, or to, any fabricated item, part or material without having a re-review.

SP 70-22 Additional sanitary, health, and safety provisions.

New York State Labor Law requires for every contract for the construction, reconstruction, maintenance and/or repair of public work to which the State or a municipality is a party, where the total cost of all

work to be performed under the contract is at least $250,000, all laborers, workers and mechanics employed performing work of the contract on the work site be certified as having successfully completed an OSHA 10-hour Construction Safety course. This requirement applies to the Contractor, subContractors and other persons.

SP 70-23 Section not used.

SP 70-24 New York State Department of Transportation (NYSDOT) standard clauses for New York state contracts. The following verbiage is included verbatim from Appendix A, Standard Clauses for New York State Contracts, dated January 2014 as required by New York State Department of Transportation grant assurances:

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 (or, if this contract is with the State University or City University of New York, Section 355 or Section 6218 of the Education Law), if this contract exceeds $50,000 (or the minimum thresholds agreed to by the Office of the State Comptroller for certain S.U.N.Y. and C.U.N.Y. contracts), 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 $10,000, 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 is required when such contracts exceed $85,000 (State Finance Law Section 163.6-a). However, such pre-approval shall not be required for any contract established as a centralized contract through the Office of General Services or for a purchase order or other transaction issued under such centralized contract.

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 because of race, creed, color, sex (including gender identity or expression), national origin, sexual orientation, military status, age, disability, predisposing genetic characteristics, marital status or domestic violence victim status. 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. **SEE "SPECIAL NOTE" REGARDING PREVAILING WAGE RATES FOLLOWING THIS SECTION.**

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 (2NYCRR 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 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 section. 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
    Albany, New York 12245
    Telephone: 518-292-5100
    Fax: 518-292-5884
    email: opa@esd.ny.gov

    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
    New York, NY 10017
    212-803-2414
    email: mwbecertification@esd.ny.gov
    https://ny.newnycontracts.com/FrontEnd/VendorSearchPublic.asp

    The Omnibus Procurement Act of 1992 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) require that they be denied contracts which they would otherwise obtain. NOTE: As of May 15, 2002, the list of discriminatory jurisdictions subject to this provision includes the states of South Carolina, Alaska, West Virginia, Wyoming, Louisiana and Hawaii. Contact NYS Department of Economic Development for a current list of jurisdictions subject to this provision.

22. **COMPLIANCE WITH NEW YORK STATE INFORMATION SECURITY BREACH AND NOTIFICATION ACT.** Contractor shall comply with the provisions of the New York State Information Security Breach and Notification Act (General Business Law Section 899-aa; State Technology Law Section 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 Sections 139-j and 139-k, by signing this agreement the Contractor certifies and affirms that all disclosures made in accordance with State Finance Law Sections 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 Section 5-a, if the Contractor fails to make the certification required by Tax Law Section 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: http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf

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.

SP 70-25 NYSDOT terms and conditions. The following verbiage is included verbatim as required by a New York State Department of Transportation grant assurance:

TERMS AND CONDITIONS (ADDENDUM NO. 1):

1. The Grantee agrees to incorporate or cause to be incorporated into any contract for construction work, or furnishing of any materials, supplies, or equipment or professional consulting services of any kind in connection with the Project, clauses under which the Contractor:

    a. Agrees to procure and maintain insurance of the kinds and in the amounts specified.

    b. Agrees that he will comply with the requirements of the State Labor Law and particularly Sections 220 and 220-4 thereof as amended, and as set forth in Appendix A hereof.

    c. Agrees that during the performance of this contract, the Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color or national origin and will comply with the Non-Discrimination provisions set forth in Appendix A hereof.

    d. Agrees that he will cause all persons employed upon the work including his subContractors, agents, officers and employees, to comply with all applicable laws in the jurisdiction in which the work is performed.

    e. Agrees not to assign, transfer, convey, sublet or otherwise dispose of this agreement or any part thereof, or of its right, title or interest therein or its power to execute such agreement to any person, company or corporation without the previous consent in writing of the Grantee and the Commissioner of Transportation.

f. Agrees that in accordance with its status as an independent Contractor, it will conduct itself with such status that it will neither hold itself out as nor claim to be an officer or employee of the State by reason hereof, and that it will not by reason hereof, make any claim demand of application to or for any right or privilege applicable to an officer or employee of the State, including, but not limited to, Workmen's Compensation coverage, Unemployment Insurance Benefits, Social Security coverage or Retirement membership or Credit.

g. Agrees that this agreement may be canceled or terminated by the Grantee if any work under this agreement is in conflict with the provisions of Section 74 of the Public Officers Law.

h. Agrees that any patentable result arising out of this Agreement, as well as all information, designs, specification, know-how, data, and findings, shall be made available without cost to the State or its licenses for public use.

i. Agrees that for construction work he will furnish a performance bond in an amount at least equal to 100 percent of this contract price as security for the faithful performance of his contract and also a labor and material bond in an amount equal to 100 percent of his contract price as security for the payment of all persons performing labor on the project under his contract and furnishing materials in connection with his contract. The performance bond and the labor and material bond may be in one or in separate instruments in accordance with law.

j. Agrees that the Commissioner and the State Comptroller reserve the right to audit and inspect the work of the Contractor and any and all records thereof through representatives of the State, as well as through officers and employees of the State, as they shall determine.

k. Agrees that the State shall not be obligated or liable hereunder to any party other than the Grantee.

l. Agrees that if any provision of this Agreement is held invalid, the remainder of this Agreement shall not be affected thereby if such remainder would then continue to conform to the terms and requirements of the applicable law.

m. Agrees that by execution of the Agreement the Contractor represents that it has not paid and, also, agrees not to pay, any bonus or commission for the purpose of obtaining an approval of this agreement.

n. Agrees that all project documents requiring formal approval by a Federal Agency will be submitted to the Commissioner for his prior approval and forwarding to the Federal Agency for its formal approval.

2. The Grantee agrees to give full opportunity for free, open and competitive bidding for each contract to be let by it calling for construction or the furnishing of any materials, supplies, or equipment to be paid for with Project funds in accordance with the requirements of Section 103 of the General Municipal Law, the State Finance Law and any other applicable State Laws, Regulations or any requirements or opinions of the State comptroller.

3. The Grantee agrees that contracts for professional or consulting services may be negotiated, but they must be in writing and must state the maximum compensation or reimbursement to be paid. Negotiations must be adequately documented to show consultants considered, proposals received, reasons for selecting the proposed consultant, and the unit basis or other detailed explanation in support of the amount of compensation to be paid.

SP-70-26 Labor affidavits, New York State Laws of 1988. The following outlines the certification and reporting procedures required by the Office of the State Comptroller to implement Chapter 698, Laws of 1988 (Labor Affidavits) for all public improvement contracts let (bid opening date) after March 1, 1989. **COPIES OF AFFIDAVITS FOLLOW THE END OF THIS SECTION.**

A. The prime Contractor must provide each subContractor with a copy of the schedule of wages and supplements specified in the contract before the subContractor's work is started.

B. The prime Contractor must immediately obtain the subContractor's certification. Such certification must be maintained by the prime Contractor until the final payment is requested. The prime Contractor's and subContractor's certification forms are on the following three (3) pages.

C. If revised schedules of wages and supplements are issued, the prime Contractor must provide each subContractor with such revised schedules and obtain a revised subContractor's certification.

D. The prime Contractor must submit a labor affidavit in support of the payment of wages to its own employees.

E. The subContractor's certification (s) and the prime Contractor's affidavit must be submitted to the State Comptroller's Office with the prime Contractor's final payment request. Failure to obtain and provide the required certifications will delay the Contractor's final payment.

NOTE: The term subContractor applies to both subContractors of the Contractor and subContractors of a subContractor.

SP 90-12 Security for construction warranty. The Contractor shall upon final acceptance of the work, furnish a bond to the Owner in a penal sum equal to five percent (5%) of the amount of the Contract price, executed by a surety company authorized by the Department of Insurance of the State of New York to execute such a bond in this State, and which bond shall be approved as to form and manner of execution by the Owner's attorney. This bond shall be conditioned for the faithful performance by the said Contractor of the conditions and stipulations of the subsection titled ACCEPTANCE AND FINAL PAYMENT of this section, thereof relating to maintenance and repair, for a period of one (1) year from the date of the final acceptance of the work. In default of the filing of such bond, a sum of money equal to said five percent (5%) may be retained out of any monies due to the Contractor and be held for one (1) year, or until the bond above described is filed.

For Contractors who have elected to set up an escrow account, they may elect to maintain the escrow account for a period of one (1) year from the date of final acceptance of the work in lieu of providing a bond for security of guarantee as described above.

SP 90-13 Lien law. If, at any time before or within thirty (30) days after the work of this Contract has been completed and accepted by the Owner, any person or persons claiming to have performed any labor or furnished any material toward the performance or completion of this Contract shall file with the RPR and with the financial officer of the Owner, or other officer or person charged with the custody and

disbursement of the Owner's funds applicable to this Contract under which the claim is made, such notice as is prescribed in the Act of Legislature of the State of New York passed February 17, 1909, entitled an "Act in Relation to Liens", and the acts amendatory thereof or supplementary thereto, then and in every such case the party of the first part shall retain (anything herein contained to the contrary thereof notwithstanding) from the monies under its control and due or to grow due under this Agreement, as much of such monies as shall be sufficient to pay, satisfy and discharge the amount in such notice claimed to be due to the person or persons filing such lien, together with the reasonable cost of any actions brought to enforce such claim or the lien creating by the filing of such notice. The monies so retained shall be retained by the party of the first part until the lien thereon created by the said act and filing of said notice shall be discharged pursuant to the provisions of said act or acts.

STATE WAGE RATES

SPECIAL NOTE

NEW YORK STATE DEPARTMENT OF LABOR

PREVAILING WAGE RATES

Wage rate amendments and supplements are available on the NYSDOL web site at:

WWW.LABOR.STATE.NY.US

All changes or clarification of labor classifications and applicability of prevailing wage rates shall be obtained in writing from the Office of the Director, NYSDOL Bureau of Public Work.

The NYSDOL prevailing wage rate schedule for this contract has been determined and is available on the internet. The prevailing wage rate schedule is accessed by visiting the NYSDOL web site, navigating to the appropriate web page, and entering the Prevailing Rate Case No. (PRC#). The PRC# is provided on the following page on NYSDOL Form PW-200.

Kathy Hochul, Governor

Roberta Reardon, Commissioner

Dutchess County

Patrick Hludzenski
499 Col. Eileen Collins Blvd.
Syracuse NY 13212

Schedule Year	2026 through 2027
Date Requested	08/28/2026
PRC#	2026025597

Location	Hudson Valley Regional Airport
Project ID#	8902.43
Project Type	Construction of unheated storage facilities.

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

Dutchess County

Patrick Hludzenski
499 Col. Eileen Collins Blvd.
Syracuse NY 13212

Schedule Year	2026 through 2027
Date Requested	08/28/2026
PRC#	2026025597

Location	Hudson Valley Regional Airport
Project ID#	8902.43
Project Type	Construction of unheated storage facilities.

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:

IA 999 (09/16)

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

Dutchess County General Construction

Boilermaker — 08/01/2026

JOB DESCRIPTION Boilermaker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES

Per Hour:	07/01/2026	01/01/2027
Boilermaker	$ 70.38	$ 71.88
Repairs & Renovations	70.38	71.88

Repairs & Renovation: Includes Repairing, Renovating, and Replacement of parts to an existing unit(s).

SUPPLEMENTAL BENEFITS
Per Hour:

Boilermaker	33.5% of Hourly
Repair & Renovations	Wage Paid + $26.85

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay.

OVERTIME PAY
See (*B, O, **U) on OVERTIME PAGE
Note:* Includes 9th & 10th hours, double for 11th or more.
** Labor Day ONLY, if worked.

Repairs & Renovation see (B,E,Q) on OT Page

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 12, 15, 25, 26, 29) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1/2) Year Terms at the following percentage of Boilermaker's wage per hour:

1st	2nd	3rd	4th	5th	6th	7th
65%	70%	75%	80%	85%	90%	95%

SUPPLEMENTAL BENEFITS:

33.5% of Hourly Wage Paid Plus Amount Below:

1st	2nd	3rd	4th	5th	6th	7th
$20.36	$21.28	$22.22	$23.12	$24.07	$25.00	$25.93

NOTE: "Hourly Wage Paid" shall include any and all premium(s)

4-5

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	$ 52.85	$ 54.44

Install/Repair*

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 **08/01/2026**

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Orange

WAGES
Per hour: 07/01/2026

Building:
Millwright $ 49.03 + 8.44*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker $ 36.19

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (18, 19) on HOLIDAY PAGE
Paid: See (5,6,11,13,16,18,19,25) for 1st & 2nd yr. Apprentices
Overtime: See (5,6,11,13,16,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES
Wages per hour:
One (1) year terms:

1st	2nd	3rd	4th
$ 29.06 + 4.40*	$ 31.79 + 5.19*	$ 36.52 + 5.94*	$ 45.98 + 7.44*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:

1st	2nd	3rd	4th
$ 24.25	$ 26.04	$ 28.15	$ 30.88

8-740.2

Carpenter **08/01/2026**

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Dutchess

PARTIAL COUNTIES
Orange: : The territory west demarcated by a line drawn from the Bear Mountain Bridge continuing east to the Bear Mountain Circle. The territory south demarcated by a line continuing north on 9W to the town of Cornwall where County Road 107 (also known as Quaker Rd) crosses under 9W to the centerline of Route 32, The territories south and east heading 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
Per hour: 07/01/2026

Carpet/Resilient	
Floor Coverer	$ 37.29
	+ 3.48*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

INCLUDES HANDLING & INSTALLATION OF ARTIFICIAL TURF AND SIMILAR TURF INDOORS/OUTDOORS.

SUPPLEMENTAL BENEFITS
Per hour:
$ 30.24

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (18, 19) on HOLIDAY PAGE
Paid for 1st & 2nd yr.
Apprentices: See (5, 6, 11, 13, 16, 18, 19, 25)
Overtime: See (5, 6, 11, 13, 16, 18, 19, 25) on HOLIDAY PAGE.

REGISTERED APPRENTICES
Wage per hour - (1) year terms:

1st	2nd	3rd	4th
$17.48	$20.74	$25.75	$30.79
+ 2.54*	+ 2.54*	+ 2.54*	+ 2.54*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits per hour - (1) year terms:

1st	2nd	3rd	4th
$22.02	$22.12	$22.12	$22.12

8-2287D&O

Carpenter — 08/01/2026

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES
Per Hour: 07/01/2026

Marine Construction:

Marine Diver	$ 77.46
	+ 10.16*
Marine Tender	$ 57.00
	+ 10.16*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime

SUPPLEMENTAL BENEFITS
Per Hour:

Journeyworker $ 47.48

OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (18, 19) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 13, 16, 18, 19, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:
One (1) year terms.

1st year	$ 28.98
	+ 5.66*
2nd year	34.58
	+ 5.66*
3rd year	42.96
	+ 5.66*
4th year	51.35
	+ 5.66*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits
Per Hour:

All terms	$ 34.03

8-1456MC

Carpenter - Building / Heavy&Highway — 08/01/2026

JOB DESCRIPTION Carpenter - Building / Heavy&Highway **DISTRICT** 11

ENTIRE COUNTIES
Columbia, Dutchess, Orange, Sullivan, Ulster

WAGES
WAGES (per hour)

Applies to Carpenter (Building/Heavy & Highway/Tunnel), Dockbuilder, Piledriver, Dive Tender, and Diver (Dry):

	07/01/2026
Base Wage	$ 39.55
	+ 6.47*

Applies to Diver (Wet):

Base Wage	$ 50.00
	+ 6.47*

*For all hours paid straight or premium.

SHIFT WORK
SHIFT DIFFERENTIAL: When mandated by a Government Agency irregular or off shift can be worked. The Carpenter shall receive an additional fifteen percent (15%) of the base wage.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 32.66

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
BUILDING:
Paid: See (1) on HOLIDAY PAGE.
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE.
- Holidays that fall on Sunday will be observed Monday.

HEAVY&HIGHWAY/TUNNEL:
Paid: See (5, 6, 25) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

- Holidays that fall on Sunday will be observed Monday
- Must be employed during the five (5) work days immediately preceding a holiday or during the five (5) work days following the paid holiday to receive holiday pay
- If an employee is entitled to a paid holiday, the employee is paid the Holiday wage and supplemental benefits whether they work or not. If an employee works the Holiday, the employee will receive holiday pay (including supplemental benefits), plus the applicable premium wage for working the Holiday. If an employee works in excess of 8 hours on Holiday, then benefits will be paid for any hours in excess of 8 hours.

REGISTERED APPRENTICES

1 Year terms at the following wage rates.

1st	2nd	3rd	4th
$ 19.78	$ 23.73	$ 27.69	$ 31.64
+3.11*	+3.11*	+3.11*	+3.11*

*For all hours paid straight or premium

SUPPLEMENTAL BENEFITS per hour:

All Terms	$ 17.81

11-279.2B/H&H

Electrician — 08/01/2026

JOB DESCRIPTION Electrician **DISTRICT** 11

ENTIRE COUNTIES

Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster

PARTIAL COUNTIES

Delaware: Those portions of Colchester and Hancock Townships south of the East Branch of the Delaware River and Andes, Harpersfield, Kortright, Stamford, Bovina, Roxbury, Middletown Townships
Greene: That portion south of a line following the south limits of the City of Catskill in a westerly direction from the Hudson River to Highway 23A along 23A to the road following the little West Kill and continuing along this road to Delaware County.

WAGES

Per hour:

	07/01/2026	04/01/2027
Electrician	$ 52.00 + 10.00*	$ 53.00 + 10.00*

*For all hours paid straight or premium, not to be included in 3% calculation for supplemental benefits.

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED BELOW (subject to overtime premiums):
- On jobs where employees are required to work from boatswain chairs, swinging scaffolds, etc., forty (40) feet or more above the ground, or under compressed air, using Scottair packs, or gas masks, they shall receive an additional $5.00 per hour above the regular straight time rate.
- When working in Shafts, Tunnels or on Barges: $5.00 above the Journeyworker rate of pay is to be paid
- When performing welding or cable splicing: $3.00 above the Journeyworker rate of pay is to be paid
- When required to have a NYS Asbestos Certificate: $3.00 above the Journeyworker rate of pay must be paid
- When required to have a CDL: $3.00 above the Journeyworker rate of pay must be paid

SHIFT WORK

SHIFT DIFFERENTIAL: On Public Work in New York State when shift work is mandated either in the job specifications or by the contracting agency, the following rates apply when shift is worked:

Between 4:30pm & 12:30am	$ 61.00 + 10.00*	$ 62.17 + 10.00*
Between 12:30am & 8:30am	$ 68.33 + 10.00*	$ 69.64 + 10.00*

*For all hours paid straight or premium, not to be included in 3% calculation for supplemental benefits.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker	$ 32.71 plus 3% of straight or premium wage	$ 34.46 plus 3% of straight or premium wage

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 13, 15, 16, 25) on HOLIDAY PAGE

When the holiday falls on a Saturday it is observed the Friday before. When the holiday falls on a Sunday it is observed on the Monday after.

REGISTERED APPRENTICES

WAGES:
(1)year terms at the following rates
07/01/2026

	1st	2nd	3rd	4th	5th
1st Shift	$ 17.68	$ 20.80	$ 26.00	$ 31.20	$ 36.40
	+1.00*	+1.00*	+1.50*	+2.00*	+2.50*
2nd Shift	20.74	24.40	30.50	36.60	42.70
	+1.00*	+1.00*	+1.50*	+2.00*	+2.50*
3rd Shift	23.32	27.33	34.16	41.00	47.83
	+1.00*	+1.00*	+1.50*	+2.00*	+2.50*

*For all hours paid straight or premium, not to be included in 3% calculation for supplemental benefits.

09/01/2026

	1st	2nd	3rd	4th	5th
1st Shift	$ 18.20	$ 20.02	$ 22.10	$ 26.26	$ 31.98
	+1.00*	+1.00*	+1.50*	+2.00*	+2.50*
2nd Shift	21.35	23.48	25.92	30.80	37.51
	+1.00*	+1.00*	+1.50*	+2.00*	+2.50*
3rd Shift	23.91	26.31	29.04	34.51	42.02
	+1.00*	+1.00*	+1.50*	+2.00*	+2.50*

*For all hours paid straight or premium, not to be included in 3% calculation for supplemental benefits.

04/01/2027

	1st	2nd	3rd	4th	5th
1st Shift	$ 18.55	$ 20.41	$ 22.53	$ 26.77	$ 32.60
	+1.00*	+1.00*	+1.50*	+2.00*	+2.50*
2nd Shift	21.76	23.94	26.42	31.40	38.23
	+1.00*	+1.00*	+1.50*	+2.00*	+2.50*
3rd Shift	24.37	26.81	29.60	35.17	42.83
	+1.00*	+1.00*	+1.50*	+2.00*	+2.50*

*For all hours paid straight or premium, not to be included in 3% calculation for supplemental benefits.

SUPPLEMENTAL BENEFITS per hour:
07/01/2026

1st term	$ 18.61 plus 3% of straight or premium wage
2nd term	$ 18.61 plus 3% of straight or premium wage
3rd term	$ 21.11 plus 3% of straight or premium wage
4th term	$ 21.61 plus 3% of straight or premium wage
5th term	$ 23.61 plus 3% of straight or premium wage

11-363/1

Elevator Constructor — 08/01/2026

JOB DESCRIPTION Elevator Constructor **DISTRICT** 1

ENTIRE COUNTIES
Columbia, Dutchess, Greene, Orange, Putnam, Sullivan, Ulster

PARTIAL COUNTIES
Delaware: Towns of Andes, Bovina, Colchester, Davenport, Delhi, Harpersfield, Hemdon, Kortright, Meredith, Middletown, Roxbury, Hancock & Stamford
Rockland: Only the Township of Stony Point.
Westchester: Only the Townships of Bedford, Lewisboro, Cortland, Mt. Kisco, North Salem, Pound Ridge, Somers and Yorktown.

WAGES

Per Hour	07/01/2026	01/01/2027
Mechanic	$ 76.12	$ 79.37
Helper	70% of Mechanic Wage Rate	70% of Mechanic Wage Rate

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 paid holiday falls on Saturday, it shall be observed on Friday. When a paid 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

1-138

Glazier — 08/01/2026

JOB DESCRIPTION Glazier **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES
Per hour:

	07/01/2026	11/01/2026
Glazier	$ 66.22	$ 67.20
Scaffolding, including swing scaffold	71.22	72.20
*Mechanical Equipment	67.23	68.20
**Repair & Maintenance	32.82	33.47

*Mechanical equipment, scissor jacks, man lifts, booms & buckets 30' or more, but not pipe scaffolding.
**Repair & Maintenance- All repair & maintenance work on a particular building whenever performed, where the total cumulative Repair & Maintenance contract value is under $202,000.

SUPPLEMENTAL BENEFITS
Per hour:

Glazier, Scaffolding and Mechanical Equipment	$ 44.81	$ 45.74
Repair & Maintenance	$ 26.01	$26.37

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE
For 'Repair & Maintenance' see (B, B2, I, S) on overtime page.

HOLIDAY
Paid: See (5, 6, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE
For 'Repair & Maintenance'
Paid: See(5, 6, 16, 25)
Overtime: See(5, 6, 16, 25)

REGISTERED APPRENTICES
Wage per hour:
(1) year terms at the following wage rates:

	07/01/2026	11/01/2026

1st term	$ 23.68	$ 24.06
2nd term	32.23	32.74
3rd term	42.89	43.55
4th term	52.47	53.23

Supplemental Benefits:
(Per hour)

1st term	$ 20.18	$ 20.56
2nd term	28.85	29.39
3rd term	34.77	35.45
4th term	38.18	38.95

8-1087 (DC9 NYC)

Insulator - Heat & Frost — 08/01/2026

JOB DESCRIPTION Insulator - Heat & Frost **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Rockland, Westchester

WAGES

Per hour:	07/01/2026
Insulator/Fire Stop Work*	$ 64.27
Discomfort & Additional Training**	67.32

*Applies on all exclusive Fire Stop Work (When contract is for Fire Stop work only). No apprentices on these contracts only.

**Applies to work requiring; garb or equipment worn against the body not customarily worn by insulators; psychological evaluation ;special training, including but not limited to "Yellow Badge" radiation training

Note: Additional $10 a day for work 30 feet or more above floor or ground level.

SUPPLEMENTAL BENEFITS

Per hour:	
Insulator/Fire Stop Journeyworker:	$ 39.85
Discomfort & Additional Training:	$ 41.89

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Note: Last working day preceding Christmas and New Years day, workers shall work no later than 12:00 noon and shall receive 8 hrs pay.

Overtime: See (2*, 4, 6, 16, 25) on HOLIDAY PAGE.
*Note: Labor Day triple time if worked.

REGISTERED APPRENTICES
(1) year terms:

Insulator Apprentices:

1st	2nd	3rd	4th
$ 35.09	$ 40.92	$ 46.76	$ 52.60

Discomfort & Additional Training Apprentices:

1st	2nd	3rd	4th
$ 36.61	$ 42.75	$ 48.89	$ 55.04

Supplemental Benefits paid per hour:

Insulator Apprentices:

1st term	$ 20.33
2nd term	24.23
3rd term	28.13
4th term	32.05

Discomfort & Additional Training Apprentices:

1st term	$ 21.34
2nd term	25.46
3rd term	29.56
4th term	33.68

8-91

Ironworker 08/01/2026

JOB DESCRIPTION Ironworker **DISTRICT** 11

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster

WAGES
Per hour:

	07/01/2026
Structural	$ 53.63
Reinforcing	53.63
Ornamental	53.63
Chain Link Fence	53.63

NOTE: For Reinforcing classification ONLY, Ironworker 4-46Reinf rates apply in Rockland County's southern section (south of Convent Road and east of Blue Hills Road).

SHIFT WORK
On Government Mandated Irregular Workdays or Shift Work, the following wage will be paid:

1st Shift	$ 53.63
2nd Shift	58.99
3rd Shift	64.19

Note- Any shift that works past 12:00 midnight shall receive the 3rd shift differential.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 48.58

OVERTIME PAY
See (B1, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE
If a holiday falls on Saturday, it will be observed Friday. If a holiday falls on Sunday, it will be observed Monday.

REGISTERED APPRENTICES
Wages:

(1) year terms at the following wage:

	1st yr	2nd yr	3rd yr	4th yr
1st Shift	$ 26.82	$ 32.18	$ 37.55	$ 42.90
2nd Shift	32.34	37.67	43.00	48.32
3rd Shift	35.89	41.55	47.22	52.87

Supplemental Benefits per hour:

	07/01/2026
1st year	$ 42.33
2nd year	43.58
3rd year	44.83
4th year	46.08

11-417

Laborer - Building 08/01/2026

JOB DESCRIPTION Laborer - Building **DISTRICT** 11

ENTIRE COUNTIES

Dutchess

PARTIAL COUNTIES
Columbia: Only the Townships of Greenport, Claverack, Philmont,Clermont, Germantown, Livingston, Hillsdale, Gallatin, Copake, Ancram, Taghkanic and the City of Hudson.

WAGES
ALL WORK RELATED WITH TOXIC OR ANY ASBESTOS OR HAZARDOUS MATERIAL

WAGES: (per hour)

	07/01/2026
Laborer Building -Toxic	$ 53.35

These rates will cover all work within five feet of the building foundation line.

SHIFT WORK
Shift Differential: On all Governmental mandated irregular or off shift work, an additional 25% of wage is required. The 25% shift differential will be paid on public works contract for shifts or irregular workdays outside the normal working hours for 2nd and 3rd shifts or irregular workday or when mandated or required by state, federal, county, local or other governmental agency contracts.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 35.05
Shift	$ 42.61

OVERTIME PAY
See (B, *E, E5, **Q) on OVERTIME PAGE
*For first 8 hours on Saturday
** When an employee is required to work on a Holiday that falls on a Monday through Friday, the employee shall be paid double the hourly rate and (1) hour benefits for every hour paid. When an employee is required to work on a holiday which falls on a Sunday the employee shall be paid three (3) times the hourly rate and one (1) hour benefits for every hour worked. When an employee is required to work on a holiday which falls on a Saturday the employee shall be paid two and a half (2.5) times the hourly rate and one hour benefits for every hour worked.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE
When a Holiday falls on a Saturday, Holiday shall be observed Friday. When a Holiday falls on a Sunday, Holiday shall be observed Monday.

REGISTERED APPRENTICES
(1000) hour terms at the following wages.

	07/01/2026
1st term	$ 30.60
2nd term	35.35
3rd term	40.05
4th term	44.75

Supplemental Benefits per hour:

All Terms Regular	$ 31.45
All Terms Shift Rate	38.08

11-17tox B

Laborer - Building — 08/01/2026

JOB DESCRIPTION Laborer - Building **DISTRICT** 8

ENTIRE COUNTIES
Dutchess

PARTIAL COUNTIES
Columbia: Only the Townships of Ancram, Claverack, Clermont, Copake, Gallatin, Germantown, Greenport, Hillsdale, Hudson, Livingston, Philmont and Taconic.

WAGES
CLASS # 1:
All Laborers except those listed in Class 2

CLASS # 2:

Concrete laborer (including concrete; placing; stripping of forms, sealing, curling, finishing, power trowel operator, vibrating, tending and setting forms), mason tending, trades tender, scaffolding, all erecting and dismantling of scaffold for masonry regardless of height or type, demolition, wrecking, construction specialist, hod carrier, signal person, vehicle spotter, welding, pressure blasting and washing, fireproofing, carpenter tender, waterproofing, pre-stressed and precast concrete, sandblasting, Styrofoam and similar product installation, operation and use of tools used by laborers to perform covered work (hoists, transport platforms, chipping hammers, chainsaw, demo saw, pavement breakers, jack hammers, hilti guns, compressor, acoustic pump mixers, conveyer belts, saws, core drills, torch welder, pump concrete machine, tow behind concrete or grout pump, hydro scaffold unit, surface planner, grinder, mega mixer, walking and riding buggies, lasers, transit under laborers jurisdiction), gunite or cement sprayer. General laborer. unloading of trucks and carrying of materials and supplies.

WAGES per hour:

	07/01/2026	01/01/2027	06/01/2027
CLASS # 1	$ 42.47*	$ 43.43*	$ 45.76*
CLASS # 2	$ 43.27*	$ 44.03*	$ 46.60*

*Subtract $ 4.50 to calculate overtime premium

Note: Any job requiring Hazwopper Certification will pay $1.00 above job classification wage rate.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 32.25

OVERTIME PAY
See (B, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: Whenever a holidays falls on Sunday, it will be observed on the following Monday.

REGISTERED APPRENTICES
Wages per hour: 07/01/2026

1000 Hour terms

1st term	$ 30.60
2nd term	35.35
3rd term	40.05
4th term	42.05

Note: Any job requiring Hazwopper Certification will pay $1.00 above job classification wage rate.

Supplemental Benefits per hour:

All terms	$ 25.95

8-235

Laborer - Heavy&Highway — 08/01/2026

JOB DESCRIPTION Laborer - Heavy&Highway **DISTRICT** 8

ENTIRE COUNTIES
Dutchess

PARTIAL COUNTIES
Columbia: Only the Townships of Ancram, Claverack, Clermont, Copake,Gallatin, Germantown, Greenport, Hillsdale, Hudson, Livingston, Philmont and Taconic.

WAGES
GROUP I: Blaster, Asphalt Screedman, ACI Certified Flatwork Finisher, Pipe Jacking and Boring Operations, Operator Qualified Dead Condition Pipe Fuser (B Mechanic)

GROUP II: Burner, Drill Operator, Jumbo Driller, Wagon Driller, Air Track Driller, Hydraulic Driller, Self Contained Rotary Drill Operator, Pneumatic Dowel Driller, Concrete Form Aligner, Concrete Form and Curb Form Highway, Concrete Finisher, Asphalt Raker, Pipe Fusion, Wrecking "Bar Person", Operator Qualified Peer Checker.

GROUP III: Asphalt Curb Machine Operator, Jeepers Operator, Pavement Breaker Operator , Power Saw Operator, Jack Hammer Drill, all types Pneumatic Tool and Gasoline Drill, Concrete Saw, Gunning, Railroad, Spike Puller, Sandblasting, Shoring, Pipe Layer, Deck Winches on Scows, Power Buggy and Operator, Power Wheelbarrow Operator, Laser Bean and X-Ray Operator, Pipe Religner, Underpinning, Chain Saw, Tree Cutter, Jack Leg Driller, Hydraulic Rock Splitter, certified, Certified Scaffold Erector, Remote Controlled Demolition Robot, Wrecking "Bar Person" Helper, Utility Per Diem Laborer, Compressed air-lance, Water jet lance

Group IV: General Concrete Laborers - anything pertaining to concrete, aggregate or concrete material handling, Puddlers, Asphalt Worker, Crack Router Operator, Rock Scalers, Vibrator Operator, Bit Grinder, Concrete Grinder, Remote Walk Behind Roller (Wacker, Rammax, etc), Air Tampers and All Tampers not covered by any other classification, Form Pin Pullers, Pumps and their operation, Service of Air Power, Epoxy and Waterproofing Worker, Fine Grade person between forms, Barco Rammer, Guard Rail Installation and Demolition Link Fence, Steel Kings, Wire Mesh, Setting of all Paving Blocks, Brick Paver and Rubber Pavers, Rip Rap and Dry Stone Layer Wall, Stone Work and Pointing, Cement Spray Men, Gabion Basket Assembler, Installation of Noise Barrier, Jersey Barrier and Joints, Pre-Cast Manholes, and Pre -cast and Pre-cast Catch Basins, Crib Retaining Walls

Group V: All Driller Helpers(including Hydraulic Wagon Air Track). Common Laborers, Certified Fire Watch Laborers, All AFL/CIO Trades, Signal Person Truck Spotters, Power Person , Landscaping and Nursery Person, Artificial Turf, Placing Fabric on Landfill, Sign Installer, Temporary and Interim Pavement Line Striping, String Line Automation Grades, Lock Level, Certified Traffic Safety and Control (Pattern)

Group V (A): Flagperson

Group VI: Confined Space Laborer

Group VII: Operator Qualified Gas Mechanic

WAGES per hour	07/01/2026
Group I:	$ 53.45
Group II:	51.98
Group III:	51.55
Group IV:	51.17
Group V:	50.79
Group V(A):	43.93
Group VI:	52.96
Group VII:	64.26

Note: All employees working on a project that requires Hazwopper Certification will receive $1.00 per hour over job classification rate of pay.

SHIFT WORK
Supplemental Benefits: $ 42.45*

*Applies for contracting agency mandated irregular shift work

All employees who work an irregular work day that starts after 9:00 AM on a governmental mandated schedule shall be paid an additional 15% per hour.

SUPPLEMENTAL BENEFITS

Per hour:	07/01/2026
Journeyworker	$ 31.45

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Paid:	See (5, 6, 15, 25) on HOLIDAY PAGE
Overtime:	See (5, 6, 15, 25) on HOLIDAY PAGE

Note: Whenever a holidays falls on Sunday, it will be observed on the following Monday.

REGISTERED APPRENTICES
Wages per hour
1000 hour year terms

1st Term	$ 30.60
2nd Term	35.35
3rd Term	40.05
4th Term	42.05

Note: All employees working on a project that requires Hazwopper Certification will receive $1.00 per hour over job classification rate of pay.

Supplemental Benefits per hour:

All Terms	$ 25.95

Laborer - Heavy&Highway 08/01/2026

JOB DESCRIPTION Laborer - Heavy&Highway **DISTRICT** 11

ENTIRE COUNTIES
Dutchess

PARTIAL COUNTIES
Columbia: Only the Townships of Claverack, Clermont, Greenport, Philmont, Germantown,Livingston, Hillsdale, Taghkanic, Gallatin, Copake, Ancram, City of Hudson.

WAGES
ALL WORK RELATED WITH TOXIC OR ANY ASBESTOS OR HAZARDOUS MATERIAL, BIOREMEDIATION AND PHYTO REMEDIATION(Five feet or more outside of building foundation line)

WAGES:(per hour)	07/01/2026	06/01/2027
Laborer H&H - Toxic	$ 56.05	$ 58.45

SHIFT WORK
SHIFT DIFFERENTIAL: Night work and irregular shift require 20% increase on wages for all Government mandated night and irregular shift work.

SUPPLEMENTAL BENEFITS

Per hour:		
Journeyworker	$ 35.28	$ 36.78
Shift	41.37	43.15

OVERTIME PAY
See (B, E, P, *R, **S, ***T) on OVERTIME PAGE
*For Mon-Fri Holidays, Double Benefits to be paid for all hours worked.
**For Saturday Holidays or Saturday Holidays that are recognized on Friday , Double Benefits for all hours worked.
***For Sunday Holidays or Sunday Holidays that are recognized on Monday , Double Benefits for all hours worked.

HOLIDAY
Paid: See (5, 6, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 25) on HOLIDAY PAGE
To be eligible for a paid holiday, an employee must work at least two (2) days in the calendar week or payroll week in which the holiday falls.

REGISTERED APPRENTICES
(1000) hour terms at the following wages.

	07/01/2026
1st term	$ 30.60
2nd term	35.35
3rd term	40.05
4th term	44.75

Supplemental Benefits per hour:	
All Terms Regular	$ 31.45
All Terms Shift Rate	36.75

11-17tox HH

Laborer - Tunnel 08/01/2026

JOB DESCRIPTION Laborer - Tunnel **DISTRICT** 11

ENTIRE COUNTIES
Columbia, Dutchess, Greene, Orange, Otsego, Putnam, Rockland, Sullivan, Ulster, Westchester

PARTIAL COUNTIES
Chenango: Townships of Columbus, Sherburne and New Berlin.
Delaware: Townships of Andes, Bovina, Middletown, Roxbury, Franklin, Hamden, Stamford, Delhi, Kortright, Harpersfield, Merideth and Davenport.

WAGES
Class 1: All support laborers/sandhogs working above the shaft or tunnel.

Class 2: All laborers/sandhogs working in the shaft or tunnel.

Class 4: Safety Miners

Class 5: Site work related to Shaft/Tunnel

WAGES: (per hour)

	07/01/2026
Class 1	$ 60.30
Class 2	62.45
Class 4	68.85
Class 5	53.15

Toxic and hazardous waste, lead abatement and asbestos abatement work will be paid an additional $ 3.00 an hour.

SUPPLEMENTAL BENEFITS
Per hour:

Benefit 1	$ 39.23
Benefit 2	55.66
Benefit 3	72.08

Benefit 1 applies to straight time hours, paid holidays not worked.
Benefit 2 applies to over 8 hours in a day (M-F) and Saturday hours worked.
Benefit 3 applies to Sunday and Holiday hours worked.

OVERTIME PAY
See (B, E, Q, X) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16, 25) on HOLIDAY PAGE
When a recognized Holidays falls on Saturday or Sunday, holidays falling on Saturday shall be recognized or observed on Friday and holidays falling on Sunday shall be recognized or observed on Monday. Employees ordered to work on the Saturday or Sunday of the holiday or on the recognized or the observed Friday or Monday for those holidays falling on Saturday or Sunday shall receive double time the established rate and benefits for the holiday.

REGISTERED APPRENTICES
FOR APPRENTICE RATES, refer to the appropriate Laborer Heavy & Highway wage rate contained in the wage schedule for the County and location where the work is to be performed.

11-17/60/235/754Tun

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
Columbia, Dutchess, Orange, Putnam, Rockland, Ulster

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	$ 56.70	$ 58.85	$ 61.15
Crane, Crawler Backhoe	56.70	58.85	61.15
Certified Welder	59.54	61.79	64.21
Group B:			
Digging Machine	$ 51.03	$ 52.97	$ 55.04
Group C:			
Tractor Trailer Driver	$ 48.20	$ 50.02	$ 51.98
Groundman, Truck Driver	45.36	47.08	48.92
Equipment Mechanic	45.36	47.08	48.92
Group D:			
Flagger	$ 34.02	$ 35.31	$ 36.69

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.

6-1249aReg8LT

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** 9

ENTIRE COUNTIES

Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES

Per Hour:

	07/01/2026	01/04/2027 Additional
Marble Cutters & Setters	$ 65.61	$ 0.75

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker	$ 41.38

OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage Per Hour:

750 hour terms at the following wage

1st	2nd	3rd	4th	5th	6th	7th	8th
0-3000 07/01/2026	3001-3750	3751-4500	4501-5250	5251-6000	6001-6750	6751-7500	7500+

$28.35	$42.51	$46.05	$49.59	$53.14	$55.76	$65.61	$65.61

Supplemental Benefits per hour:

1st	2nd	3rd	4th	5th	6th	7th	8th
07/01/2026							
$27.95	$30.68	$31.37	$32.05	$32.73	$39.34	$41.38	$41.38

9-7/4

Mason - Building — 08/01/2026

JOB DESCRIPTION Mason - Building **DISTRICT** 11

ENTIRE COUNTIES
Dutchess, Sullivan, Ulster

PARTIAL COUNTIES
Orange: Entire county except the Township of Tuxedo.

WAGES
Per hour:

	07/01/2026
Bricklayer	$ 49.18
Cement Mason	49.18
Plasterer/Stone Mason	49.18
Pointer/Caulker	49.18

Additional $1.00 per hour for power saw work
Additional $0.50 per hour for swing scaffold or staging work

SHIFT WORK
SHIFT WORK: When shift work or an irregular workday is mandated or required by state, federal, county, local or other governmental agency contracts, the following premiums apply:
Irregular workday requires 15% premium
Second shift an additional 15% of wage plus benefits to be paid
Third shift an additional 25% of wage plus benefits to be paid

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 39.56

OVERTIME PAY

Cement Mason	See (B, E, Q, W) on OVERTIME PAGE.
All Others	See (B, E, E2, Q) on OVERTIME PAGE.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 16, 25) on HOLIDAY PAGE

Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

REGISTERED APPRENTICES
Wages per hour:

750 hour terms at the following percentage of Journeyworker's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour

750 hour terms at the following percentage of Journeyworker's supplements

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

11-5du-b

Mason - Building — 08/01/2026

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Sullivan, Ulster

WAGES

Per hour:	07/01/2026	12/07/2026 Additional	06/07/2027 Additional
Tile, Marble,& Terrazzo Mechanic/Setter	$ 59.47	$ 1.13	$ 1.24

SUPPLEMENTAL BENEFITS

Per Hour:	
Journeyworker:	$ 27.21* + 6.18

* This portion of benefits subject to same premium rate as shown for overtime wages.

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE
Double time rate applies after 10 hours

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wage per hour:

750 hour terms at the following wage rate:

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
	1-750	751-1500	1501-2250	2251-3000	3001-3750	3751-4500	4501-5250	5251-6000	6001-6750	6751-7500
07/01/2026	$23.09	$28.32	$35.65	$40.86	$44.67	$48.38	$52.23	$57.45	$59.83	$66.35

Supplemental Benefits per hour:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
$13.05* + 0.77	$13.05* + 0.82	$16.16* + 0.93	$16.16* + 0.98	$17.16* + 1.45	$18.66* + 1.51	$19.66* + 1.94	$19.66* + 1.99	$19.96* + 4.59	$30.56* + 8.56

9-7/52B

Mason - Building — 08/01/2026

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Sullivan, Ulster

WAGES

Per hour:	07/01/2026	12/07/2026 Additional	06/07/2027 Additional
Building Tile, Marble, & Terrazzo Finisher	$ 48.78	$ 0.96*	$ 1.05*

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Journeyworker:	
Per Hour	$ 24.06* + 6.04

*This portion of benefits subject to same premium rate as shown for overtime wages

OVERTIME PAY
See (A, *E, Q) on OVERTIME PAGE
*Double time rate applies after 10 hours on Saturdays.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

9-7/88B-tf

Mason - Heavy&Highway — 08/01/2026

JOB DESCRIPTION Mason - Heavy&Highway **DISTRICT** 11

ENTIRE COUNTIES
Dutchess, Sullivan, Ulster

PARTIAL COUNTIES
Orange: Entire county except the Township of Tuxedo.

WAGES
Per hour:

	07/01/2026
Bricklayer	$ 49.68
Cement Mason	49.68
Marble/Stone Mason	49.68
Plasterer	49.68
Pointer/Caulker	49.68

Additional $1.00 per hour for power saw work
Additional $0.50 per hour for swing scaffold or staging work

SUPPLEMENTAL BENEFITS
Per hour:
Journeyworker $ 39.56

OVERTIME PAY
Cement Mason See (B, E, Q, W)
All Others See (B, E, Q)

HOLIDAY
Paid: See (5, 6, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE
- Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.
- Supplemental Benefits are not paid for paid Holiday
- If Holiday is worked, Supplemental Benefits are paid for hours worked.
- Whenever an Employee works within three (3) calendar days before a holiday, the Employee shall be paid for the Holiday.

REGISTERED APPRENTICES
Wages per hour:

750 hour terms at the following percentage of Journeyworker's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour

750 hour terms at the following percentage of Journeyworker's supplements

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

11-5du-H/H

Operating Engineer - Building — 08/01/2026

JOB DESCRIPTION Operating Engineer - Building **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, New York, Putnam, Queens, Richmond, Westchester

PARTIAL COUNTIES
Dutchess: that part of Dutchess County lying south of the North City Line of the City of Poughkeepsie.

WAGES

NOTE: Construction surveying
Party Chief--One who directs a survey party
Instrument Man--One who runs the instrument and assists Party Chief.
Rodman--One who holds the rod and assists the Survey Crew

Wages:(Per Hour)	07/01/2026
Building Construction:	
Party Chief	$ 81.94
Instrument Man	60.49
Rodman	40.63
Steel Erection:	
Party Chief	$ 84.04
Instrument Man	63.19
Rodman	43.31
Heavy Construction-NYC counties only: (Foundation, Excavation.)	
Party Chief	$ 88.97
Instrument man	66.04
Rodman	55.85

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2026
Building Construction	$ 29.45* + 7.65
Steel Erection	31.25* + 7.65
Heavy Construction	32.06* + 7.64

* This portion subject to SAME premium as wages

Non-Worked Holiday Supplemental Benefit:
$ 22.48

OVERTIME PAY
See (A, B, E, Q) on OVERTIME PAGE
Code "A" applies to Building Construction and is subject to double the rate after 7 hours on Saturdays.
Code "B" applies to Heavy Construction and Steel Erection and is subject to double the rate after 8 hours on Saturdays.

HOLIDAY
Paid: See (5, 6, 9, 11, 15, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 9, 11, 15, 16, 25) on HOLIDAY PAGE

9-15Db

Operating Engineer - Building — 08/01/2026

JOB DESCRIPTION Operating Engineer - Building **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Westchester

PARTIAL COUNTIES
Dutchess: All the counties of Westchester and Putnam and the southern part of Dutchess County defined by the northern boundary line of the City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to Van Wagner Road, then north along Van Wagner Road to Bower Road, then east along Bower Road to Route 44 and along Route 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 the border line of the State of Connecticut and bordered on the west by the middle of the Hudson River.

WAGES
GROUP I:
Cranes (All Types up to 49 tons), Boom Trucks, Cherry Pickers (All Types), Clamshell Crane, Derrick (Stone and Steel), Dragline, Franki Pile Rig or similar, High Lift (Lull or similar) with crane attachment and winch used for hoisting or lifting, Hydraulic Cranes, Pile Drivers, Potain and similar.

Cranes (All types 50-99 tons), Drill Rig Casa Grande (CAT or similar), Franki Pile Rig or similar, Hydraulic Cranes (All types including Crawler Cranes- No specific boom length).

Cranes (All types 100 tons and over), All Tower Cranes, All Climbing Cranes irrespective of manufacturer and regardless of how the same is rigged, Franki Pile Rig or similar, Conventional Cranes (All types including Crawler Cranes-No specific boom length), Hydraulic Cranes.

GROUP I-A: Barber Green Loader-Euclid Loader, Bulldozer, Carrier-Trailer Horse, Concrete Cleaning Decontamination Machine Operator, Concrete-Portable Hoist, Conway or Similar Mucking Machines, Elevator & Cage, Excavators all types, Front End Loaders, Gradall, Shovel, Backhoe, etc.(Crawler or Truck), Heavy Equipment Robotics Operator/Mechanic, Hoist Engineer-Material, Hoist Portable Mobile Unit, Hoist(Single, Double or Triple Drum), Horizontal Directional Drill Locator, Horizontal Directional Drill Operator and Jersey Spreader, Letourneau or Tournapull(Scrapers over 20 yards Struck), Lift Slab Console, etc., Lull HiLift or Similar, Master Environmental Maintenance Mechanics, Mucking Machines Operator/Mechanic or Similar Type, Overhead Crane, Pavement Breaker(Air Ram), Paver(Concrete), Post Hole Digger, Power House Plant, Road Boring Machine, Road Mix Machine, Ross Carrier and Similar Machines, Rubber tire double end backhoes and similar machines, Scoopmobile Tractor-Shovel Over 1.5 yards, Shovel (Tunnels), Spreader (Asphalt) Telephie(Cableway), Tractor Type Demolition Equipment, Trenching Machines-Vermeer Concrete Saw Trencher and Similar, Ultra High Pressure Waterjet Cutting Tool System, Vacuum Blasting Machine operator/mechanic, Winch Truck A Frame.

GROUP I-B: Compressor (Steel Erection), Mechanic (Outside All Types), Negative Air Machine (Asbestos Removal), Push Button (Buzz Box) Elevator.

GROUP II: Compactor Self-Propelled, Concrete Pump, Crane Operator in Training (Over 100 Tons), Grader, Machines Pulling Sheep's Foot Roller, Roller (4 ton and over), Scrapers (20 yards Struck and Under), Vibratory Rollers, Welder.

GROUP III-A: Asphalt Plant, Concrete Mixing Plants, Forklift (All power sources), Joy Drill or similar, Tractor Drilling Machine, Loader (1 1/2 yards and under), Portable Asphalt Plant, Portable Batch Plant, Portable Crusher, Skid Steer (Bobcat or similar), Stone Crusher, Well Drilling Machine, Well Point System.

GROUP III-B: Compressor Over 125 cu. Feet, Conveyor Belt Machine regardless of size, Compressor Plant, Ladder Hoist, Stud Machine.

GROUP IV-A: Batch Plant, Concrete Breaker, Concrete Spreader, Curb Cutter Machine, Finishing Machine-Concrete, Fine Grading Machine, Hepa Vac Clean Air Machine, Material Hopper(sand, stone, cement), Mulching Grass Spreader, Pump Gypsum etc, Pump-Plaster-Grout-Fireproofing. Roller(Under 4 Ton),Spreading and Fine Grading Machine, Steel Cutting Machine, Siphon Pump, Tar Joint Machine, Television Cameras for Water, Sewer, Gas etc. Turbo Jet Burner or Similar Equipment, Vibrator (1 to 5).

GROUP IV-B: Compressor (all types), Heater (All Types), Fire Watchman, Lighting Unit (Portable & Generator) Pump, Pump Station(Water, Sewer, Portable, Temporary), Welding Machine (Steel Erection & Excavation).

GROUP V: Mechanics Helper, Motorized Roller (walk behind), Stock Attendant, Welder's Helper, Maintenance Engineer Crane(75 ton and over).

Group VI-A: Welder Certified
GROUP VI-B: Utility Man, Warehouse Man.

WAGES: (per hour)

	07/01/2026	03/01/2027
GROUP I		
Cranes- up to 49 tons	$ 71.19	$ 73.11
Cranes- 50 tons to 99 tons	73.69	75.69
Cranes- 100 tons and over	84.27	86.64
GROUP I-A	62.20	63.80
GROUP I-B	57.24	58.67
GROUP II	59.98	61.50
GROUP III-A	57.75	59.20
GROUP III-B	54.93	56.28
GROUP IV-A	57.16	58.58
GROUP IV-B	48.17	49.28
GROUP V	52.01	53.25
Group VI-A	61.05	62.61
GROUP VI-B		
Utility Man	49.30	50.45
Warehouse Man	51.72	52.95

An additional 20% of wage to be paid when required to wear protective equipment on hazardous/toxic waste projects.
Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional $2.00 per hour.
Engineers operating cranes with booms 149 feet or over in length will be paid an additional $3.00 per hour.
Loader operators over 5 cubic yard capacity additional .50 per hour.
Shovel operators over 4 cubic yard capacity additional $1.00 per hour.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 34.42	$ 36.17

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 25, 26, 28) on HOLIDAY PAGE

8-137B

Operating Engineer - Building 08/01/2026

JOB DESCRIPTION Operating Engineer - Building **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, 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, 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**	$ 60.78	$ 4.25*	$ 4.35*	$ 4.33*
Class A	$ 57.78	3.75*	3.85*	4.33*
Class B	$ 56.76	3.75*	3.85*	4.33*
Class C	$ 53.86	3.75*	3.85*	4.33*

(*) 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	$ 34.38

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 Alb

Operating Engineer - Heavy&Highway — 08/01/2026

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Westchester

PARTIAL COUNTIES
Dutchess: All the counties of Westchester and Putnam and the southern part of Dutchess County defined by the northern boundary line of the City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to Van Wagner Road, then north along Van Wagner Road to Bower Road, then east along Bower Road to Route 44 and along Route 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 the border line of the State of Connecticut and bordered on the west by the middle of the Hudson River.

WAGES
GROUP I: Boom Truck, Cherry Picker, Clamshell, Crane, (Crawler, Truck),
Dragline, Drill Rig (Casa Grande, Cat, or Similar), Floating Crane (Crane on Barges) under 100 tons, Gin Pole, Hoist Engineer-Concrete (Crane-Derrick-Mine Hoist), Knuckle Boom Crane, Rough Terrain Crane.

GROUP I-A: Auger (Truck or Truck Mounted), Boat Captain, Bulldozer-All Sizes, Central Mix Plant Operator, Chipper (all types), Close Circuit T.V., Combination Loader/Backhoe, Compactor with Blade, Concrete Finishing Machine, Gradall, Grader (Motor Grader), Elevator & Cage (Materials or Passenger), Excavator (and all attachments), Front End Loaders (1 1/2 yards and over), High Lift Lull and similar, Hoist (Single, Double, Triple Drum), Hoist Portable Mobile Unit, Hoist Engineer (Material), Jack and Bore Machine, Log Skidders, Mill Machines, Mucking Machines, Overhead Crane, Paver (concrete), Post Pounder (of any type), Push Cats, Road Reclaimer, Robot Hammer (Brokk or similar), Robotic Equipment (Scope of Engineer Schedule), Ross Carrier and similar, Scrapers (20 yard struck and over), Side Boom, Slip Form Machine, Spreader (Asphalt), Trenching Machines (Telephies-Vermeer Concrete Saw), Tractor Type Demolition Equipment, Vacuum Truck. Vibratory Roller(Riding) or Roller used in mainline paving operations.

GROUP I-B: Asphalt Mobile Conveyor/Transfer Machine, Road Paver (Asphalt).

GROUP II-A: Ballast Regulators, Compactor Self Propelled, Fusion Machine, Rail Anchor Machines, Roller (4 ton and over), Scrapers (20 yard struck and under).

GROUP II-B: Mechanic (Outside) All Types, Shop Mechanic.

GROUP III: Air Tractor Drill, Asphalt Plant, Batch Plant, Boiler (High Pressure), Concrete Breaker (Track or Rubber Tire), Concrete Pump, Concrete Spreader, Excavator Drill, Farm Tractor, Forklift (all types), Gas Tapping (Live), Hydroseeder, Loader (1 1/2 yards and under), Locomotive (all sizes), Machine Pulling Sheeps Foot Roller, Portable Asphalt Plant, Portable Batch Plant, Portable Crusher (Apprentice), Powerhouse Plant, Roller (under 4 ton), Sheer Excavator, Skid Steer/Bobcat, Stone Crusher, Sweeper (with seat), Well Drilling Machine.

GROUP IV: Service Person (Grease Truck), Deckhand.

GROUP IV-B: Conveyor Belt Machine (Truck Mounted), Heater (all types), Lighting Unit (Portable), Maintenance Engineer (For Crane Only), Mechanics Helper, Pump (Fireproofing), Pumps-Pump Station/Water/Sewer/Gypsum/Plaster, etc., Pump Truck (Sewer Jet or Similar), Welders Helper, Welding Machine (Steel Erection), Well Point System.

GROUP V: All Tower Cranes-All Climbing Cranes and all cranes of 100-ton capacity or greater (3900 Manitowac or similar) irrespective of manufacturer and regardless of how the same is rigged, Hoist Engineer (Steel), Engineer-Pile Driver, Jersey Spreader, Pavement Breaker/Post Hole Digger.

WAGES: Per hour:	07/01/2026	03/01/2027
Group I	$ 72.77	$ 75.10
Group I-A	63.97	65.99
Group I-B	67.49	69.64
Group II-A	61.21	63.14
Group II-B	63.17	65.17
Group III	60.12	62.01
Group IV	54.49	56.18
Group IV-B	46.59	48.01
Group V		
Engineer All Tower, Climbing and Cranes of 100 Tons	82.61	85.29
Hoist Engineer(Steel)	74.67	77.07
Engineer(Pile Driver)	79.73	82.31
Jersey Spreader, Pavement Breaker (Air Ram)Post Hole Digger	62.66	64.64

Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional $2.00 per hour over the rate listed in the Wage Schedule. Engineers operating cranes with booms 149 feet or over in length will be paid an additional $3.00 per hour over the rate listed in the Wage Schedule. Loader and Excavator Operators: over 5 cubic yards capacity $0.50 per hour over the rate listed in the Wage Schedule. Shovel Operators: over 4 cubic yards capacity $1.00 per hour over the rate listed in the Wage Schedule.

SHIFT WORK

A 15% premium on all hours paid, including overtime hours for 2nd and 3rd shifts on all government mandated off-shift work

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker:	$ 38.08 up to 40 Hours	$ 39.68 up to 40 hours
	After 40 hours $ 27.63* PLUS $ 1.45 on all hours worked	After 40 hours $ 28.68* PLUS $ 1.50 on all hours worked

*This amount is subject to premium

OVERTIME PAY

See (B, E, P, *R, **U) on OVERTIME PAGE
* For Holiday codes 8,15,25,26 code R applies
** For Holiday codes 5 & 6 code U applies

HOLIDAY

Paid:	See (5, 6, 8, 15, 25, 26, 28) on HOLIDAY PAGE
Overtime	See (5, 6, 8, 15, 25, 26) on OVERTIME PAGE

* For Holiday codes 8,15,25,26 code R applies
** For Holiday codes 5 & 6 code U applies

Note: If employees are required to work on Easter Sunday they shall be paid at the rate of triple time.

REGISTERED APPRENTICES

(1)year terms at the following rate.

1st term	$ 38.38	$ 39.59
2nd term	44.78	46.19
3rd term	51.18	52.79
4th term	57.57	59.39

Supplemental Benefits per hour:

$ 29.08	$ 30.18

8-137HH

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 - Heavy&Highway 08/01/2026

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 9

ENTIRE COUNTIES
Putnam, Westchester

PARTIAL COUNTIES
Dutchess: South of the North city line of Poughkeepsie

WAGES
Party Chief - One who directs a survey party
Instrument Man - One who runs the instrument and assists Party Chief
Rodman - One who holds the rod and in general, assists the Survey Crew
Categories cover GPS & Underground Surveying

Per Hour:	07/01/2026
Party Chief	$ 85.77
Instrument Man	63.48
Rodman	53.53

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2026
All Categories	
Straight Time:	$ 32.06* + $7.64
Premium:	
Time & 1/2	$ 48.09* + $7.64
Double Time	$ 64.12* + $7.64

*This portion is subject to the SAME premium as wages.

Non-Worked Holiday Supplemental Benefits:
$ 22.47

OVERTIME PAY
See (B, *E, Q) on OVERTIME PAGE
* Doubletime paid on all hours in excess of 8 hours on Saturday

HOLIDAY
Paid: See (5, 6, 7, 11, 12) on HOLIDAY PAGE
Overtime: See (5, 6, 7, 11, 12) on HOLIDAY PAGE

9-15Dh

Operating Engineer - Heavy&Highway - Tunnel — 08/01/2026

JOB DESCRIPTION Operating Engineer - Heavy&Highway - Tunnel **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Westchester

PARTIAL COUNTIES
Dutchess: All the counties of Westchester and Putnam and the southern part of Dutchess County defined by the northern boundary line of the City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to Van Wagner Road, then north along Van Wagner Road to Bower Road, then east along Bower Road to Route 44 and along Route 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 the border line of the State of Connecticut and bordered on the west by the middle of the Hudson River.

WAGES
GROUP I: Boom Truck, Cherry Picker, Clamshell, Crane(Crawler, Truck), Dragline, Drill Rig Casa Grande(Cat or Similar), Floating Crane(Crane on Barge-Under 100 Tons), Hoist Engineer(Concrete/Crane-Derrick-Mine Hoist), Knuckle Boom Crane, Rough Terrain Crane.

GROUP I-A: Auger(Truck or Truck Mounted), Boat Captain, Bull Dozer-all sizes, Central Mix Plant Operator, Chipper-all types, Close Circuit T.V., Combination Loader/Backhoe, Compactor with Blade, Concrete Finishing Machine, Gradall, Grader(Motor Grader), Elevator & Cage(Materials or Passengers), Excavator(and all attachments), Front End Loaders(1 1/2 yards and over), High Lift Lull, Hoist(Single, Double, Triple Drum), Hoist Portable Mobile Unit, Hoist Engineer(Material), Jack and Bore Machine, Log Skidder, Milling Machine, Moveable Concrete Barrier Transfer & Transport Vehicle, Mucking Machines. Overhead Crane, Paver(Concrete), Post Pounder of any type, Push Cats, Road Reclaimer, Robot Hammer(Brokk or similar), Robotic Equipment(Scope of Engineer Schedule), Ross Carrier and similar machines, Scrapers(20 yards struck and over), Side Boom, Slip Form Machine, Spreader(Asphalt), Trenching Machines, Telephies-Vermeer Concrete Saw, Tractor type demolition equipment, Vacuum Truck, Vibratory Roller (Riding) used in mainline paving operations.

GROUP I-B: Asphalt Mobile Conveyor/Transfer Machine, Road Paver(Asphalt).

GROUP II-A: Ballast Regulators, Compactor(Self-propelled), Fusion Machine, Rail Anchor Machines, Roller(4 ton and over), Scrapers(20 yard struck and under).

GROUP II-B: Mechanic(outside)all types, Shop Mechanic.

GROUP III: Air Tractor Drill, Asphalt Plant, Batch Plant, Boiler(High Pressure), Concrete Breaker(Track or Rubber Tire), Concrete Pump, Concrete Spreader, Excavator Drill, Farm Tractor, Forklift(all types of power), Gas Tapping(Live), Hydroseeder, Loader(1 1/2 yards and under), Locomotive(all sizes), Machine Pulling Sheeps Foot Roller, Portable Asphalt Plant, Portable Batch Plant, Portable Crusher(Apprentice), Powerhouse Plant, Roller(under 4 ton), Sheer Excavator, Skidsteer/Bobcat, Stone Crusher, Sweeper(with seat), Well Drilling Machine.

GROUP IV-A: Service Person(Grease Truck), Deckhand.

GROUP IV-B: Conveyor Belt Machine(Truck Mounted), Heater(all types), Lighting Unit(Portable), Maintenance Engineer(for Crane only), Mechanics Helper, Pump(Fireproofing), Pumps-Pump Station/Water/Sewer/Gypsum/Plaster, etc., Pump Truck(Sewer Jet or similar), Welding Machine(Steel Erection), Welders Helper.

GROUP V-A: Engineer(all Tower Cranes, all Climbing Cranes & all Cranes of 100 ton capacity or greater),Hoist Engineer(Steel-Sub Structure), Engineer-Pile Driver, Jersey-Spreader, Pavement breaker, Post Hole Digger

WAGES: (per hour)

	07/01/2026	03/01/2027
GROUP I	$ 72.77	$ 75.10
GROUP I-A	63.97	65.99
GROUP I-B	67.49	69.64
GROUP II-A	61.21	63.14
GROUP II-B	63.17	65.17
GROUP III	60.12	62.01
GROUP IV-A	54.49	56.18
GROUP IV-B	46.59	48.01
GROUP V-A		
Engineer-Cranes	82.61	85.29
Engineer-Pile Driver	79.73	82.31
Hoist Engineer	74.67	77.07
Jersey Spreader/Post Hole Digger	62.66	64.64

An additional 20% of wage to be paid when required to wear protective equipment on hazardous/toxic waste projects.
Operators required to use two buckets pouring concrete on other than road pavement shall receive $0.50 per hour over scale.
Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional $2.00 per hour.
Engineers operating cranes with booms 149 feet or over in length will be paid an additional $3.00 per hour.
Operators of shovels with a capacity over (4) cubic yards shall be paid an additional $1.00 per hour.
Operators of loaders with a capacity over (5) cubic yards shall be paid an additional $0.50 per hour.

SHIFT WORK
A 15% premium on all hours paid, including overtime hours for 2nd and 3rd shifts on all government mandated off-shift work

SUPPLEMENTAL BENEFITS
Per hour:
Journeyworker:

	$ 38.08 up to 40 hours	$ 39.68 up to 40 hours
	After 40 hours: $27.63 plus $1.45 on all hours worked	After 40 hours: $28.68 plus $1.50 on all hours worked

OVERTIME PAY
See (E, P, *R, **T, ***U) on OVERTIME PAGE

*For Holiday codes 8, 15, 25, 26, code R applies.
**For Holiday code 28, code T applies.
***For Holiday codes 5 & 6, code U applies.

HOLIDAY
Paid: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE
For Holiday codes 5 & 6, code U applies.
For Holiday codes 8, 15, 25, 26, code R applies.
If employees are required to work on Easter Sunday, they shall be paid at the rate of triple time.

REGISTERED APPRENTICES
(1)year terms at the following rates:

1st term	$ 38.38	$ 39.59
2nd term	44.78	46.19
3rd term	51.18	52.79
4th term	57.57	59.39

Supplemental Benefits per hour:

All terms	$ 29.08	$ 30.18

8-137Tun

Operating Engineer - Marine Dredging — 08/01/2026

JOB DESCRIPTION Operating Engineer - Marine Dredging **DISTRICT** 4

ENTIRE COUNTIES
Albany, Bronx, Cayuga, Clinton, Columbia, Dutchess, Essex, Franklin, Greene, Jefferson, Kings, Monroe, Nassau, New York, Orange, Oswego, Putnam, Queens, Rensselaer, Richmond, Rockland, St. Lawrence, Suffolk, Ulster, Washington, Wayne, Westchester

WAGES
These wage rates do not apply to Operating Engineers on land-based construction projects. For those projects, refer to the Operating Engineers Heavy/Highway rates. The wage rates listed below apply specifically to all equipment and operators involved in marine dredging work within navigable waters located in the counties listed above.

Per Hour:	07/01/2026	10/01/2026
CLASS A1 Deck Captain, Leverman, Mechanical Dredge Operator, Licensed Tug Operator with MOTV	$ 48.48	$ 49.94
CLASS A2 Crane Operator (360 swing)	43.20	44.50
CLASS B Dozer, Front Loader Operator (On Land)	To conform to Operating Engineer Prevailing Wage in locality where work is being performed including benefits.	
CLASS B1 Derrick Operator (180 swing), Spider/Spill Barge Operator I/II, Fill Placer, Engineer, Chief Mate, Electrician,Chief Welder,Maintenance Engineer, Licensed Boat, Crew Boat Operator	41.93	43.18
CLASS B2 Certified Welder	39.46	40.65
CLASS C1 Drag Barge Operator, Steward, Mate, Assistant Fill Placer	38.38	39.53
CLASS C2 Boat Operator	37.15	38.26
CLASS D Shoreman, Deckhand, Oiler,	30.86	31.79

Rodman, Scowman, Cook,
Messman, Porter/Janitor

SUPPLEMENTAL BENEFITS
Per Hour:
THE FOLLOWING SUPPLEMENTAL BENEFITS APPLY TO ALL CATEGORIES

All Classes:	7% of Hourly Straight time wage + $12.00.	7.5% of Hourly Straight time wage + $12.00.

- Additional $0.63 per hour for Overtime hours

OVERTIME PAY
See (B2, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 26) on HOLIDAY PAGE

4-25a-MarDredge

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 - Survey Crew - Consulting Engineer 08/01/2026

JOB DESCRIPTION Operating Engineer - Survey Crew - Consulting Engineer **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, Westchester

PARTIAL COUNTIES
Dutchess: That part in Duchess County lying South of the North City line of Poughkeepsie.

WAGES
Feasibility and preliminary design surveying, any line and grade surveying for inspection or supervision of construction.

Per hour: 07/01/2026
Survey Classifications

Party Chief	$ 51.16
Instrument Man	42.44
Rodman	36.92

SUPPLEMENTAL BENEFITS
Per Hour:

All Crew Members: $ 24.53

OVERTIME PAY
OVERTIME:.... See (B, E*, Q, V) ON OVERTIME PAGE.
*Double-time paid on the 9th hour on Saturday.

HOLIDAY
Paid: See (5, 6, 7, 11, 16) on HOLIDAY PAGE
Overtime: See (5, 6, 7, 11, 16) on HOLIDAY PAGE

9-15dconsult

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** 1

ENTIRE COUNTIES
Columbia, Dutchess, Greene, Orange, Sullivan, Ulster

WAGES
Per hour

	07/01/2026	05/01/2027 Additional
Brush/Paper Hanger	$ 42.27	$ 2.47*
Dry Wall Finisher	42.27	2.47*
Lead Abatement	42.27	2.47*
Sandblaster-Painter	42.27	2.47*
Spray Rate	43.27	2.47*

*To be allocated at a later date.

See Bridge Painting rates for the following work:

All work performed on tanks, structural steel, all bridges, towers, smoke stacks, flag poles. All employees working on objects with the use of swing stage, boatswain chair, pick and cable. Rate shall apply to all of said areas from the ground up.

SUPPLEMENTAL BENEFITS
Per hour

Journeyworker	$ 28.29

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

Six (6) month terms at the following percentage of Journeyperson's wage

1st	2nd	3rd	4th	5th	6th
50%	55%	65%	75%	85%	95%

Supplemental Benefits per hour worked

1st term	$ 12.09
All others	28.29

1-155

Painter - Bridge & Structural Steel — 08/01/2026

JOB DESCRIPTION Painter - Bridge & Structural Steel **DISTRICT** 8

ENTIRE COUNTIES
Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES
Per Hour:
STEEL:

Bridge Painting:	07/01/2026	10/01/2026
	$ 57.00*	Additional
	+ 12.90**	+ 3.64***

ADDITIONAL $7.00 per hour for POWER TOOL/SPRAY, whether straight time or overtime.

*NOTE: All premium wages are to be calculated on base rate per hour only.

** For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (50 hour cap).

*** To be allocated a later date

NOTE: Generally, 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.

SHIFT WORK
When directly specified in public agency or authority contract documents for an employer to work a second shift and works the second shift with employees other than from the first shift, all employees who work the second shift will be paid 10% of the base wage shift differential in lieu of overtime for the first eight (8) hours worked after which the employees shall be paid at time and one half of the regular wage rate. When a single irregular work shift is mandated in the job specifications or by the contracting agency, wages shall be paid at time and one half for single shifts between the hours of 3pm-11pm or 11pm-7am.

SUPPLEMENTAL BENEFITS
Per Hour:
Journeyworker:

$ 13.49
+ 31.67*

OVERTIME PAY

See (B, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (4, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wage - Per hour:
Apprentices: (1) year terms.

	07/01/2026
1st year	$ 22.80* + 5.64**
2nd year	$ 34.20* + 7.74**
3rd year	$ 45.60* + 10.31**

*NOTE: All premium wages are to be calculated on base rate per hour only.

** For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (50 hour cap).

Supplemental Benefits - Per hour:

1st year	$ 13.74
2nd year	$ 8.09* + 18.99
3rd year	$ 10.79* + 25.34

*Portion not applicable to May 1st to November 15th and Nov 16th to April 30th period mentioned above.

8-DC-9/806/155-BrSS

Painter - Line Striping — 08/01/2026

JOB DESCRIPTION Painter - Line Striping **DISTRICT** 8

ENTIRE COUNTIES
Albany, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Nassau, Orange, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES
Per hour:

Painter (Striping-Highway):	07/01/2026	04/01/2027
Striping-Machine Operator*	$ 36.93	$ 38.45
Linerman Thermoplastic	44.44	46.22

Note: * Includes but is not limited to: Positioning of cones and directing of traffic using hand held devices. Excludes the Driver/Operator of equipment used in the maintenance and protection of traffic safety.

SHIFT WORK
When directly specified in public agency or authority contract documents there shall be a 30% night shift premium pay differential for all work performed after 9:00pm and before 5:00am.

SUPPLEMENTAL BENEFITS
Per hour paid:
Journeyworker:

Striping Machine Operator:	$ 24.95	$ 25.60
Linerman Thermoplastic:	24.95	25.60

OVERTIME PAY

See (B, B2, E2, F, S) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 20) on HOLIDAY PAGE
Overtime: See (5, 20) on HOLIDAY PAGE

REGISTERED APPRENTICES
One (1) year terms at the following wage rates:

	07/01/2026
1st Term:	$ 21.18
2nd Term:	27.40
3rd Term:	33.30

Supplemental Benefits per hour:

1st term:	$ 18.06
2nd term:	22.14
3rd term:	25.59

8-1456-LS

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** 8

ENTIRE COUNTIES
Dutchess

PARTIAL COUNTIES
Delaware: Only the Townships of Middletown and Roxbury.
Ulster: Entire county (including Wallkill and Shawangunk Prisons in Town of Shawangunk) EXCEPT for remainder of Town of Shawangunk, and Towns of Plattekill, Marlboro, and Wawarsing.

WAGES

Per hour:	07/01/2026
Plumber & Steamfitter	$ 62.42

SHIFT WORK
SHIFT WORK:
When directly specified in public agency or authority contract documents, shift work outside the regular hours of work shall be comprised of eight (8) hours per shift not including Saturday, Sundays and holidays. One half (1/2) hour shall be allowed for lunch after the first four (4) hours of each shift. Wage and Fringes for shift work shall be straight time plus a shift premium of twenty-five (25%) percent. A minimum of five days Monday through Friday must be worked to establish shift work.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker:	$ 46.79

OVERTIME PAY
See (B, E, E2, Q, V) on OVERTIME PAGE

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 8, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1)year terms at the following rates:

	07/01/2026
1st year	$ 23.95
2nd year	32.97
3rd year	38.26
4th year	45.83
5th year	52.70

Supplemental Benefits per hour:

1st year	$ 19.70
2nd year	25.30
3rd year	29.38
4th year	34.03
5th year	37.62

8-21.2-SF

Plumber - HVAC / Service — 08/01/2026

JOB DESCRIPTION Plumber - HVAC / Service **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Putnam, Westchester

PARTIAL COUNTIES
Delaware: Only the townships of Middletown and Roxbury
Ulster: Entire County(including Wallkill and Shawangunk Prisons) except for remainder of Town of Shawangunk and Towns of Plattekill, Marlboro, and Wawarsing.

WAGES
Per hour: 07/01/2026

HVAC Service $ 45.43
+ $ 4.52*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker HVAC Service
$ 33.34

OVERTIME PAY
See (B, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
HVAC SERVICE
(1)year terms at the following wages:

1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.
$ 20.56	$ 24.42	$ 30.35	$ 37.33	$ 40.63
+$2.45*	+$2.79*	+$3.34*	+$4.00*	+$4.26*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits per hour:

Apprentices 07/01/2026

1st term $ 22.81
2nd term 24.68
3rd term 26.69
4th term 29.49
5th term 31.46

8-21.1&2-SF/Re/AC

Plumber - Jobbing & Alterations 08/01/2026

JOB DESCRIPTION Plumber - Jobbing & Alterations **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Putnam, Westchester

PARTIAL COUNTIES
Ulster: Entire county (including Wallkill and Shawangunk Prisons in Town of Shawangunk) EXCEPT for remainder of Town of Shawangunk, and Towns of Plattekill, Marlboro, and Wawarsing.

WAGES
Per hour: 07/01/2026

Journeyworker: $ 52.14

Repairs, replacements and alteration work is any repair or replacement of a present plumbing system that does not change existing roughing or water supply lines.

SHIFT WORK
When directly specified in public agency or authority contract documents, shift work outside the regular hours of work shall be comprised of eight (8) hours per shift not including Saturday, Sundays and holidays. One half (1/2) hour shall be allowed for lunch after the first four (4) hours of each shift. Wage and Fringes for shift work shall be straight time plus a shift premium of twenty-five (25%) percent. A minimum of five days Monday through Friday must be worked to establish shift work.

SUPPLEMENTAL BENEFITS
Per hour:
Journeyworker
$ 38.99

OVERTIME PAY

See (B, *E, E2, Q, V) on OVERTIME PAGE
*When used as a make-up day, hours after 8 on Saturday shall be paid at time and one half.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1) year terms at the following wages:

1st year	$ 22.32
2nd year	24.83
3rd year	27.16
4th year	38.07
5th year	40.25

Supplemental Benefits per hour:

1st year	$ 13.07
2nd year	15.31
3rd year	19.67
4th year	26.65
5th year	28.88

8-21.3-J&A

Roofer — 08/01/2026

JOB DESCRIPTION Roofer **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Dutchess, Kings, New York, Orange, Putnam, Queens, Richmond, Rockland, Sullivan, Ulster, Westchester

WAGES

Per Hour:	07/01/2026	05/01/2027 Additional
Roofer/Waterproofer	$ 52.50 + $7.00*	+ $ 3.00

* This portion is not subjected to overtime premiums.

Note: Abatement/Removal of Asbestos containing roofs and roofing material is classified as Roofer.

SUPPLEMENTAL BENEFITS
Per Hour: $ 33.12

OVERTIME PAY
See (B, H) on OVERTIME PAGE
Note: An observed holiday that falls on a Sunday will be observed the following Monday.

HOLIDAY
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1) year term apprentices indentured prior to 01/01/2023

1st	2nd	3rd	4th
$ 18.38	$ 26.25 + 3.50*	$ 31.50 + 4.20*	$ 39.38 + 5.26*

Supplemental Benefits:

1st	2nd	3rd	4th
$ 4.32	$ 16.94	$ 20.17	$ 25.03

* This portion is not subjected to overtime premiums.

(1) year term apprentices indentured after 01/01/2023

1st	2nd	3rd	4th	5th
$ 19.95	$ 23.63 + 3.16*	$ 26.25 + 3.50*	$ 31.50 + 4.20*	$ 39.38 + 5.26*

Supplemental Benefits:

1st	2nd	3rd	4th	5th
$ 8.15	$ 15.32	$ 16.94	$ 20.17	$ 25.03

* This portion is not subjected to overtime premiums.

9-8R

Sheetmetal Worker — 08/01/2026

JOB DESCRIPTION Sheetmetal Worker **DISTRICT** 8

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

WAGES

	07/01/2026
SheetMetal Worker	$ 53.48 + 3.81*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SHIFT WORK
For all NYS D.O.T. and other Governmental mandated off-shift work:
12% increase for additional shifts for a minimum of five (5) days

SUPPLEMENTAL BENEFITS
Journeyworker $ 48.71

OVERTIME PAY
See (B, E, Q,) on OVERTIME PAGE.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 16, 23) on HOLIDAY PAGE
Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

REGISTERED APPRENTICES

1st	2nd	3rd	4th	5th	6th	7th	8th
$ 21.80 + 1.52*	$ 22.61 + 1.71*	$ 25.12 + 1.91*	$ 27.61 + 2.10*	$ 30.13 + 2.29*	$ 32.67 + 2.48*	$ 35.65 + 2.67*	$ 38.61 + 2.86*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits per hour:

Apprentices	
1st term	$ 19.09
2nd term	23.39
3rd term	25.99
4th term	28.59
5th term	31.18
6th term	33.76
7th term	35.89
8th term	38.04

8-38

Sprinkler Fitter — 08/01/2026

JOB DESCRIPTION Sprinkler Fitter **DISTRICT** 1

ENTIRE COUNTIES
Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

WAGES
Per hour

	07/01/2026	01/01/2027	04/01/2027	01/01/2028
Sprinkler Fitter	$ 60.78	$ 60.78	$ 64.37	$ 64.37

SUPPLEMENTAL BENEFITS
Per hour

Journeyworker	$ 32.66	$ 33.66	$ 33.66	$ 34.66

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	$ 30.87	$ 30.87	$ 32.42	$ 32.42
2nd Term	34.46	34.46	36.19	36.19
3rd Term	37.34	37.34	39.20	39.20
4th Term	40.21	40.21	42.22	42.22
5th Term	42.36	42.36	44.48	44.48
6th Term	45.95	45.95	48.25	48.25
7th Term	48.82	48.82	51.27	51.27
8th Term	51.70	51.70	54.28	54.28
9th Term	54.57	54.57	57.30	57.30
10th Term	57.44	57.44	60.31	60.31
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

1-669.2

Teamster - Building / Heavy&Highway — 08/01/2026

JOB DESCRIPTION Teamster - Building / Heavy&Highway **DISTRICT** 11

ENTIRE COUNTIES

Dutchess, Orange, Rockland, Sullivan, Ulster

WAGES

GROUP I: LeTourneau Tractors, Double Barrel Euclids, Athney Wagons and similar equipment (except when hooked to scrapers), I-Beam and Pole Trailers, Tire Trucks, Tractor and Trailers with 5 axles and over, Articulated Back Dumps and Road Oil Distributors, Articulated Water Trucks and Fuel Trucks/Trailers, positions requiring a HAZMAT CDL endorsement.

GROUP II: Drivers on detachable Gooseneck Low Bed Trailers rated over 35 tons.

GROUP III: All equipment 25 yards and up to and including 30-yard bodies and cable Dump Trailers and Powder and Dynamite Trucks.

GROUP IV: All Equipment up to and including 24-yard bodies, Mixer Trucks, Dump Crete Trucks and similar types of equipment, Fuel Trucks, Batch Trucks and all other Tractor Trailers, Hi-Rail Truck.

GROUP V: Tri-Axles, Ten Wheelers, Grease Trucks, Tillerman, Pattern Trucks, Attenuator Trucks, Water Trucks, Bus.

GROUP VI: Straight Trucks.

GROUP VII: Pick-up Trucks for hauling materials and parts, and Escort Man over-the-road.

WAGES: (per hour)	07/01/2026
GROUP I	$ 39.51
GROUP II	40.63
GROUP III	38.95
GROUP IV	38.73
GROUP V	38.62
GROUP VI	38.50
GROUP VII	38.50

NOTE ADDITIONAL PREMIUMS:

- Employees engaged in hazardous/toxic waste removal, on a State or Federally designated hazardous/toxic waste site, where the employee comes in contact with hazardous/toxic waste material and when personal protective equipment is required for respiratory, skin, or eye protection, the employee shall receive an additional 20% premium above the hourly wage.

SHIFT WORK

- On projects requiring an irregular shift, a premium of 10% will be paid on wages. The premium will be paid for off-shift or irregular shift work when mandated by Governmental Agency.

SUPPLEMENTAL BENEFITS

Per hour:

First 40 hours	$ 47.68
Over 40 hours	39.68

OVERTIME PAY
See (*B, E, **E2, ***P, X) on OVERTIME PAGE
*Holidays worked Monday through Friday receive Double Time (2x) after 8 hours.
**Makeup day limited to the employees who were working on the site that week.
***Sunday Holidays are paid at a rate of two and one half times (2.5x) for all hours worked.

HOLIDAY
Paid: See (5, 6, 15, 25) on HOLIDAY PAGE
Overtime: See (*1) on HOLIDAY PAGE
*See OVERTIME PAY section for when additional premium is applicable on Holiday hours worked.
- Any employee working two (2) days in any calendar week during which a holiday occurs shall receive a days pay for each holiday occurring during said week. This provision shall also apply if a holiday falls on a Saturday or Sunday.

11-445B/HH

Teamster - Delivery - Building / Heavy&Highway — 08/01/2026

JOB DESCRIPTION Teamster - Delivery - Building / Heavy&Highway **DISTRICT** 11

ENTIRE COUNTIES
Dutchess, Orange, Rockland, Sullivan, Ulster

WAGES
THESE RATES ARE ONLY TO BE USED FOR DELIVERY OF AGGREGATE MATERIALS TO THE JOB SITE. FOR ALL ONSITE WORK AND HAULING OF SPOILS SEE THE TEAMSTER BUILDING/HEAVY & HIGHWAY RATES.

Group 1	Tractor Trailer Drivers
Group 2	Tri- Axle

Wages:	07/01/2026
Group 1	$ 38.95
Group 2	38.62

Hazardous/Toxic Waste Removal additional 20% when personal protective equipment is required.

SUPPLEMENTAL BENEFITS
Per hour paid:

First 40 hours	$ 47.68
Over 40 hours	0.00

OVERTIME PAY
See (B, E, Q, X) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 13, 15, 16, 20, 22, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 13, 15, 16, 20, 22, 25, 26) on HOLIDAY PAGE
- Employee must work either the scheduled day of work before or the scheduled day of work after the holiday in the workweek.
- Any employee working one (1) day in the calendar week during which a holiday occurs shall receive a day's pay for each holiday occurring during said week. This provision shall also apply if a holiday falls on a Saturday.
- When any of the recognized holidays occur on Sunday and are celebrated any day before or after the Sunday holiday, such days shall be considered as the holiday and paid for as such.

11-445 B/HH Delivery

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 08/28/2026

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 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	*****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	*****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
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

NYSDOL Bureau of Public Work Debarment List 08/28/2026

Article 8

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

PRIME CONTRACTOR'S CERTIFICATION

NEW YORK STATE LABOR LAW, SECTION 220-a

1. That I am an officer of _____ and am duly authorized to make this affidavit on behalf of the prime Contractor on public contract No. _____.

2. That I fully comprehend the terms and provisions of Section 220-a of the Labor Law.

3. That, except as herein stated, there are no amounts due and owing to or on behalf of laborers employed on the project by the Contractor. (Set forth any unpaid wages and supplements, if none, so state).

NAME	AMOUNT

4. That the Contractor hereby files every verified statement required to be obtained by the Contractor from the subContractors.

5. That, upon information and belief, except as stated herein, all laborers (exclusive of executive or supervisory employees) employed on the project have been paid the prevailing wages and supplements for their services through _____, the last day worked on the project by their subContractor. (Set forth any unpaid wages and supplements, if none, so state and utilize clause 5A (below).

NAME	AMOUNT

(5A) That the Contractor has no knowledge of amounts owing to or on behalf of any laborers of its subContractors.

PRIME CONTRACTOR'S CERTIFICATION

NEW YORK STATE LABOR LAW, SECTION 220-a

(continued)

6. In the event it is determined by the Commissioner of Labor that the wages or supplements or both of any such subContractors have not been paid or provided pursuant to the appropriate schedule of wages and supplements, then the Contractor shall be responsible for payment of such wages and supplements pursuant to the provision of Section 223 of the Labor Law.

_____
SIGNATURE

_____
PRINT NAME

_____
TITLE

ACKNOWLEDGMENT:

STATE OF NEW YORK

COUNTY OF _____ } **SS:**

On the _____ 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

If this affidavit is verified by an oath administered by a notary public in a foreign country other than Canada, it must be accompanied by a certificate authenticating the authority of the notary who administers the oath. (See CPLR Section 2309 (c); Real Property Law, Section 311, 312).

SUBCONTRACTOR'S CERTIFICATION

NEW YORK STATE LABOR LAW, SECTION 220-a

1. That I am an officer of _____ a subContractor on public contract No. _____ and I am duly authorized to make this affidavit on behalf of the firm.

2. That I make this affidavit in order to comply with the provisions of Section 220-a of the Labor Law.

3. That on _____ we received from _____, the prime Contractor, a copy of the initial/revised schedule of wages and supplements Prevailing Rate Case Number (PRC) _____ specified in the public improvement contract.

4. That I have reviewed such schedule(s), and agree to pay the applicable prevailing wages and to pay or provide the supplements specified therein.

_____
SIGNATURE

_____
PRINT NAME

_____
TITLE

ACKNOWLEDGMENT:

STATE OF NEW YORK

COUNTY OF _____ } **SS:**

On the _____ 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

If this affidavit is verified by an oath administered by a notary public in a foreign country other than Canada, it must be accompanied by a certificate authenticating the authority of the notary who administers the oath. (See CPLR Section 2309 (c); Real Property Law, Section 311, 312).

END OF SPECIAL PROVISIONS

Part 2
Technical Specifications

Item C-102 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control

DESCRIPTION

102-1. This item shall consist of temporary control measures as shown on the plans or as ordered by the Resident Project Representative (RPR) during the life of a contract to control pollution of air and water, soil erosion, and siltation through the use of silt fences, berms, dikes, dams, sediment basins, fiber mats, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.

Temporary erosion control shall be in accordance with the approved erosion control plan; the approved Construction Safety and Phasing Plan (CSPP) and AC 150/5370-2, *Operational Safety on Airports During Construction*. The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.

Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites.

Temporary control measures shall be designed, installed and maintained to minimize the creation of wildlife attractants that have the potential to attract hazardous wildlife on or near public-use airports.

MATERIALS

102-2.1 Grass. Shall be in accordance with Spec. Section T-906, Hydroseeding.

102-2.2 Mulches. Shall be in accordance with Spec. Section T-906, Hydroseeding.

102-2.3 Fertilizer. Fertilizer shall be a standard commercial grade and shall conform to all federal and state regulations and to the standards of the Association of Official Agricultural Chemists.

102-2.4 Slope drains. Slope drains may be constructed of pipe, fiber mats, rubble, concrete, asphalt, or other materials that will adequately control erosion.

102-2.5 Silt fence. Silt fence shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life. Silt fence shall meet the requirements of ASTM D6461.

Fabric shall be recommended by the manufacturer for use as a silt fence and shall have the following properties:

Physical Properties	Requirements	Test Method
Grab Strength for Supported Fence		
Machine Direction	90 lbs. (MARV) for supported fence	ASTM D 4632
X-Machine Direction	90 lbs. (MARV)) for supported fence	ASTM D 4632
Grab Strength for Unsupported Fence		
Machine Direction	125 lbs. (MARV)) for unsupported fence	ASTM D 4632
X-Machine Direction	100 lbs. (MARV)) for unsupported fence	ASTM D 4632
Permittivity 0.05 sec^{-1} (min.)	ASTM D 4491	
Apparent Opening Size	#50 U.S. Std. Sieve (max.)	ASTM D 4751
Ultraviolet 70 % (min.) retained strength after 500h		ASTM D 4355

Wood posts shall be of sound quality hardwood with minimum dimensions of 1.2 inches by 1.2 inches by 36 inches long. Supported silt fence shall have a maximum post spacing of 4 feet. Unsupported silt fence with elongation $\geq$ 50% shall have a maximum post spacing of 4 feet. Unsupported silt fence with elongation < 50% shall have a maximum post spacing of 2 feet.

Wire fence shall be 14 gauge minimum with maximum 6 inch mesh opening.

102-2.6 Other. All other materials shall meet commercial grade standards and shall be approved by the RPR before being incorporated into the project.

CONSTRUCTION REQUIREMENTS

102-3.1 General. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply.

The RPR shall be responsible for assuring compliance to the extent that construction practices, construction operations, and construction work are involved.

102-3.2 Schedule. Prior to the start of construction, the Contractor shall submit schedules in accordance with the approved Construction Safety and Phasing Plan (CSPP) and the plans for accomplishment of temporary and permanent erosion control work for clearing and grubbing; grading; construction; paving; and structures at watercourses. The Contractor shall also submit a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of waste materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the RPR.

102-3.3 Construction details. The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in the plans and approved CSPP. Except where future construction operations will damage slopes, the Contractor shall perform the permanent seeding and mulching and other specified slope protection work in stages, as soon as substantial areas of exposed slopes can be made available. Temporary erosion and pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

Where erosion may be a problem, schedule and perform clearing and grubbing operations so that grading operations and permanent erosion control features can follow immediately if project conditions permit. Temporary erosion control measures are required if permanent measures cannot immediately follow grading operations. The RPR shall limit the area of clearing and grubbing, excavation, borrow, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent control measures current with the accepted schedule. If seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified as directed by the RPR.

The Contractor shall provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment as directed by the RPR. If temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or directed by the RPR, the work shall be performed by the Contractor and the cost shall be incidental to this item.

The RPR may increase or decrease the area of erodible earth material that can be exposed at any time based on an analysis of project conditions.

The erosion control features installed by the Contractor shall be maintained by the Contractor during the construction period.

Provide temporary structures whenever construction equipment must cross watercourses at frequent intervals. Pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials shall not be discharged into any waterways, impoundments or into natural or manmade channels.

102-3.4 Installation, maintenance and removal of silt fence. Silt fences shall extend a minimum of 16 inches (41 cm) and a maximum of 34 inches (86 cm) above the ground surface. Posts shall be set no more than 10 feet (3 m) on center. Filter fabric shall be cut from a continuous roll to the length required minimizing joints where possible. When joints are necessary, the fabric shall be spliced at a support post with a minimum 12-inch (300-mm) overlap and securely sealed. A trench shall be excavated approximately 4 inches (100 mm) deep by 4 inches (100 mm) wide on the upslope side of the silt fence. The trench shall be backfilled and the soil compacted over the silt fence fabric. The Contractor shall remove and dispose of silt that accumulates during construction and prior to establishment of permanent erosion control. The fence shall be maintained in good working condition until permanent erosion control is established. Silt fence shall be removed upon approval of the RPR.

METHOD OF MEASUREMENT

102-4.1 There shall be no separate measurement for temporary water pollution, soil erosion, and siltation control work.

BASIS OF PAYMENT

102-5.1 There shall be no separate payment for temporary water pollution, soil erosion, and siltation control work. The cost of this work shall be included in established pay items and shall be considered a necessary and subsidiary part of the work.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5200-33 *Hazardous Wildlife Attractants on or Near Airports*

AC 150/5370-2 *Operational Safety on Airports During Construction*

ASTM International (ASTM)

ASTM D6461 *Standard Specification for Silt Fence Materials*

United States Department of Agriculture (USDA)

FAA/USDA Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM C-102

Item C-105 Mobilization

105-1 Description. This item of work shall consist of, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items.

105-2 Mobilization limit. Mobilization shall be limited to four (4) percent of the total project cost.

105-3 Posted notices. Prior to commencement of construction activities, the Contractor must post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster "Equal Employment Opportunity is the Law" in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; Davis Bacon Wage Poster (WH 1321) - DOL "Notice to All Employees" Poster; and Applicable Davis-Bacon Wage Rate Determination. These notices must remain posted until final acceptance of the work by the Owner.

105-4 Engineer/RPR field office. The Contractor shall provide dedicated space for the use of the field RPR and inspectors, as a field office for the duration of the project. This space shall be located conveniently near the construction and shall be separate from any space used by the Contractor. The Contractor shall furnish water, sanitary facilities, heat, air conditioning, and electricity in accordance with local building codes.

105-4.1 Field Office. The Contractor shall supply for the RPR's use, a building or mobile trailer which shall be erected at the location shown on the Contract Drawings and shall be separate from any building used by the Contractor. The field office, equipment and all appurtenances shall be onsite, installed and operational at least 7 days prior to commencement of construction, and shall remain in place for a period of 30 days after the date of final acceptance of the project. The Contractor shall maintain all facilities and furnished equipment in good working condition.

The field office shall have a minimum ceiling height of 7 feet and shall be provided with six weather proof windows and two weatherproof doors, each equipped with adequate locking devices. Each window shall have a minimum area of 8 square feet, shall be screened and of a type that will open and close to provide adequate ventilation.

The field office shall have a minimum of 325 square feet of floor space. The field office shall be partitioned to provide two rooms with an adjoining door. The smaller room shall be not less than 95 square feet in floor area and shall contain two windows.

Lighting shall consist of electric non-glare type luminaries that provide a minimum level of 93 foot-candles at desk height level.

Heating and cooling units shall be capable of maintaining an ambient air temperature of 70 degrees F, +/- 5 degrees.

Hot and cold running water shall be provided. The water may be provided from a municipal water line, or from potable bottled water. Potable bottled water shall utilize a dispensing unit capable of providing hot and cold water.

The field office shall have a separately enclosed room, properly ventilated and complying with applicable sanitary codes with a flush-type toilet. The Contractor shall provide all lavatory amenities, necessary paper and soap products, and hot and cold running water.

The Contractor shall provide a parking area for 5 vehicles. The area shall be 45 feet wide by 18 feet long, and shall be paved, crushed stone, gravel or bank-run material. A sidewalk shall be constructed of the same material connecting the parking area to the door of the field office.

Steps shall be installed at each door to the field office and shall include a hand rail. Steps shall meet the requirements of all applicable building, safety, and health regulations and laws. Portable steps, when used, shall be set level and shall be suitably anchored to the ground to prevent movement.

The office shall be cleaned at least once weekly, and at other times as directed by the RPR.

The Contractor may furnish equivalent facilities in an existing building provided such facilities and buildings are located conveniently near to the construction, and provided the building and location is acceptable to the RPR.

The field office and site shall be maintained in good condition and appearance by the Contractor for the designated period, after which the field office, utilities and appurtenances shall be removed and the site restored to a condition equal to or better than original condition. The Contractor shall be responsible, until use and occupancy of the field office is relinquished by the RPR, for any and all damage, direct or indirect, of whatever nature, occurring to the property of the Owner and RPR, including the property of other employees of the RPR assigned to the field office, which is kept in the field office. The responsibility of property shall include only those items used by appropriate personnel in the performance of project related work activities. Such property shall be replaced within 30 days of the reported damages and shall include any loss caused by, but not limited to, fire, theft, vandalism, and malicious mischief.

The RPR shall provide the Contractor with a detailed list of items, with corresponding dollar values, belonging to the RPR, and the RPR's personnel. The list shall be updated at least every three months, but not more than once a month. The Contractor shall not be responsible for items kept in the RPR's field office that are not on this list.

105-4.2 Field Office Equipment:

A. Desks and chairs. The Contractor shall provide 3 office desks that are at least 2-1/2 feet by 5 feet each and 6 office chairs.

B. The Contractor shall provide 2 drafting tables which are approximately 3 feet by 6 feet and 4 stools.

C. Office table. The Contractor shall provide an office table which is at least 3 feet by 6 feet.

D. Network access, additional equipment and appurtenances. The Contractor shall provide following items in the field office:

a. A secured wired or wireless network with ability for printing and scanning documents and access to high speed internet for multiple computers and/or devices available from the start of the project for the project duration. Internet Access shall be obtained through one of the following methods* (in order of preference):

1. Cable Modem
2. Wireless Broadband Access Card
3. Satellite Modem

ii. *A minimum download speed of 25 Mbps is required for the accepted internet connection. Connection type shall be approved by the RPR.

b. Router meeting minimum requirements of IEEE 802.11n standards

E. Printer paper and ink cartridges. The Contractor shall provide a supply of 8-1/2 x 11 inch and 11 x 17 inch printer paper and spare printer ink cartridges in the field office. The supply shall be replenished as needed throughout the duration of the project.

F. Refrigerator. The Contractor shall provide a standard electric cold storage type refrigerator providing a minimum storage space of 3 cubic feet.

G. Vertical filing rack. The Contractor shall provide one vertical filing rack which is capable of holding 6 sets of plans.

H. Roll file unit. The Contractor shall provide one roll file unit with 12 compartments for storing rolled drawings and cross-sections. The roll file unit shall be at least 2 feet long and each compartment shall be 6 inches by 6 inches.

I. Metal storage cabinet. The Contractor shall provide one metal storage cabinet with four adjustable shelves, a tumbler lock and 2 keys.

J. Fire resistant cabinets. The Contractor shall provide two fire resistant cabinets. Each cabinet shall be 4 drawer, legal size with lock and 2 keys, meeting the requirements for "Insulating Filing Devised, Class 350-1 Hour (D)" of ANSI/UL 72 or the Class D rating of Underwriters Laboratories specification for insulated filing devices.

K. Locker. The Contractor shall provide a metal or wood locker, with lock, of sufficient size for storage of equipment and supplies.

L. Coat racks. The Contractor shall provide a metal or wooden coat rack in each room. The coat rack shall be capable of holding at least 4 coats.

M. Bookcases. The Contractor shall provide self-standing 3 shelf metal bookcase in each room. The bookcase shall be approximately 4 feet high by 4 feet wide by 1 foot deep.

N. First aid kit. The Contractor shall provide a first aid kit properly stocked with appropriate first aid supplies.

O. Fire extinguishers. The Contractor shall provide one fire extinguisher per room. The fire extinguisher shall be a non-toxic dry chemical, fire extinguisher meeting Underwriters Laboratories, Inc., approval for Class A, Class B and Class C fires with a minimum rating of 2A:10B:10C.

P. Tack boards. The Contractor shall provide a cork tack board mounted on a wall in each room. The tack board shall be a minimum of 2 feet high by 4 feet wide.

Q. Waste paper baskets. The Contractor shall provide a metal waste basket in each room.

R. Mailbox. The Contractor shall provide and install a standard mailbox. The mailbox shall be installed at a location to be determined during construction.

S. Airport communication system. The Contractor shall obtain, for use by the RPR, two VHF Air Band Transceivers. The transceivers shall be ICOM A6, as manufactured by ICOM America, Inc., or equal. Each radio shall come equipped with two battery packs, one standard 120V wall charger and one 12V (cigarette lighter) charger. When work has been completed work on the project, the RPR will return the radios, battery packs, wall chargers, and 12V chargers to the Contractor.

METHOD OF MEASUREMENT

105-5 .1 Measurement for payment of mobilization will be made on a lump sum basis. Measurement for partial payment of mobilization will be made based percentage of work completed in accordance with the schedule shown in Section 6.1.

105-5.2 Measurement for payment for the field office, and for field office equipment will be made on lump sum bases. Measurements for partial payment of each item may be made at the discretion of the RPR as the work progresses based on contract time or percent of work completed.

BASIS OF PAYMENT

105-6.1 Payment for mobilization will be made on a lump sum basis. Based upon the contract lump sum price for "Mobilization" partial payments will be allowed as follows:

a. With first pay request, 25%.

b. When 25% or more of the original contract is earned, an additional 25%.

c. When 50% or more of the original contract is earned, an additional 40%.

d. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by Section 90, paragraph 90-11, *Contractor Final Project Documentation,* the final 10%.

105-6.2 The lump sum prices bid for the field office, and for field office equipment shall include all utility charges, equipment, materials, labor and incidentals necessary to complete this item. Partial payments of the lump sum price bid may be made at the discretion of the RPR as the work progresses based on contract time or percent of work completed. No payment shall be made for items omitted by the Owner or not properly maintained by the Contractor throughout the duration of the project.

Payment will be made under:

Item C-105-6.1	Mobilization (4% max.) – per lump sum
Item C-105-6.2	Field Office – per lump sum
Item C-105-6.2	Field Office Equipment – per lump sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Office of Federal Contract Compliance Programs (OFCCP)

Executive Order 11246, as amended

EEOC-P/E-1 – Equal Employment Opportunity is the Law Poster

United States Department of Labor, Wage and Hour Division (WHD)

WH 1321 – Employee Rights under the Davis-Bacon Act Poster

END OF ITEM C-105

Item C-106 Safety, Security and Maintenance of Traffic

DESCRIPTION

106-1.1 General. This work shall consist of maintaining aircraft and vehicular traffic and protecting the public from damage to person and property within the limits of and for the duration of the Contract, and as specified in the Construction Safety and Phasing Plan, Appendix A to Section 70.

Contractor is responsible for maintenance and repair of these items, regardless of cause of damage, until the project is accepted.

The following items are specifically included without limiting the generality implied by these Specifications and the Contract Drawings. Contractor is responsible for maintenance and repair of these items, regardless of cause of damage, until the project is accepted.

- Restoration of all surfaces disturbed as a result of the Contractor's Operations which are not otherwise paid for.
- Installation, maintenance, repair and removal of temporary access roads and maintenance and repair of existing access roads, including dust control measures.
- Installation, maintenance, repair and removal of temporary security fencing and gates.
- Installation, maintenance, repair and removal of temporary barricades, barricade lights, barricade flags, warning signs and hazard markings.
- Installation, maintenance, repair and removal of temporary lights and lighting circuits. Temporary above ground lighting cables shall be delineated with stakes and flagging in turf areas and barricades in paved areas.
- Testing and maintenance of existing and new lighting circuitry.
- Cleaning and maintenance of all paved areas.
- Security requirements, including driver training.

The Owner will be responsible for moving parked vehicles which interfere with the work of this Contract. Contractor shall give the Owner adequate notice of the intended work schedule to allow the Owner time to accommodate the schedule.

106-2.1 Testing of Airport Lighting Circuits. This project is not anticipated to conflict with airfield lighting circuits.

METHOD OF MEASUREMENT

106-2.1 Measurement for payment of safety, security and maintenance of traffic will be made on a lump sum basis. Measurements for partial payment may be made at the discretion of the RPR as the work progresses based on contract time or percent of work completed.

BASIS OF PAYMENT

106-3.1 The lump sum price bid for safety, security and maintenance of traffic shall include all equipment, materials, labor and incidentals necessary to adequately and safely maintain and protect traffic.

In the event the contract completion date is extended, no additional payment will be made for safety, security and maintenance of traffic.

Partial payments of the lump sum price bid may be made for this item at the discretion of the RPR as the work progresses based on contract time or work completed, less any deductions for unsatisfactory safety, security and maintenance of traffic.

No payment will be made under safety, security and maintenance of traffic for each calendar day during which there are substantial deficiencies in compliance with the Specification requirements of any subsection of this Section as determined by the RPR.

The amount of such calendar day non-payment will be determined by dividing the lump sum amount bid for safety, security and maintenance of traffic by the number of calendar days between the date the Contractor commences work and the date of completion as designated in this proposal, without regard to any extension of time.

If the Contractor fails to maintain and protect traffic adequately and safely for a period of 24 hours, the Owner shall correct the adverse conditions by any means it deems appropriate and shall deduct the cost of the corrective work from any monies due the Contractor. The cost of this work shall be in addition to the liquidated damages and non-payment for safety, security and maintenance of traffic listed above.

However, where major nonconformance with the requirements of this Specification is noted by the RPR and prompt Contractor compliance is deemed not to be obtainable, all contract work may be stopped by direct order of the RPR regardless of whether corrections are made by the Owner as stated in the paragraph above.

Payment will be made under:

C-106-3.1	Safety, Security and Maintenance of Traffic - per lump sum

END OF ITEM C-106

Item P-101 Preparation/Removal of Existing Pavements

DESCRIPTION

101-1 This item shall consist of preparation of existing pavement surfaces for overlay, surface treatments, removal of existing pavement, and other miscellaneous items. The work shall be accomplished in accordance with these specifications and the applicable plans.

EQUIPMENT AND MATERIALS

101-2 All equipment and materials shall be specified here and in the following paragraphs or approved by the Resident Project Representative (RPR). The equipment shall not cause damage to the pavement to remain in place.

CONSTRUCTION

101-3.1 Removal of existing pavement.

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

a. Concrete pavement removal. Not used.

b. Asphalt pavement removal. Asphalt pavement to be removed shall be cut to the full depth of the asphalt pavement around the perimeter of the area to be removed.

c. Repair or removal of Base, Subbase, and/or Subgrade. All failed material including surface, base course, subbase course, and subgrade shall be removed and repaired as shown on the plans or as directed by the RPR. Materials and methods of construction shall comply with the applicable sections of these specifications. Any damage caused by Contractor's removal process shall be repaired at the Contractor's expense.

101-3.2 Preparation of joints and cracks prior to overlay/surface treatment. Not used.

101-3.3 Removal of Foreign Substances/contaminates prior to overlay. Not used**.**

101-3.4 Concrete spall or failed asphaltic concrete pavement repair. Not used.

101-3.5 Cold milling. Milling shall be performed with a power-operated milling machine or grinder, capable of producing a uniform finished surface. The milling machine or grinder shall operate without tearing or gouging the underlaying surface. The milling machine or grinder shall be equipped with grade and slope controls, and a positive means of dust control. All millings shall be removed and disposed of in accordance with the Contract Documents. If the Contractor mills or grinds deeper or wider than the plans specify, the Contractor shall replace the material removed with new material at the Contractor's Expense.

a. Patching. Not used.

b. Profiling, grade correction, or surface correction. Not used.

c. Clean-up. The Contractor shall sweep the milled surface daily and immediately after the milling until all residual materials are removed from the pavement surface. Prior to paving, the Contractor shall

wet down the milled pavement and thoroughly sweep and/or blow the surface to remove loose residual material. Waste materials shall be collected and removed from the pavement surface and adjacent areas by sweeping or vacuuming. Waste materials shall be removed and disposed of in accordance with the Contract Documents.

101-3.6. Preparation of asphalt pavement surfaces prior to surface treatment. Not used.

101-3.7 Maintenance. The Contractor shall perform all maintenance work necessary to keep the pavement in a satisfactory condition until the full section is complete and accepted by the RPR. The surface shall be kept clean and free from foreign material. The pavement shall be properly drained at all times. If cleaning is necessary or if the pavement becomes disturbed, any work repairs necessary shall be performed at the Contractor's expense.

101-3.8 Preparation of Joints in Rigid Pavement prior to resealing. Not used.

101-3.9 Preparation of Cracks in Flexible Pavement prior to sealing. Not used.

METHOD OF MEASUREMENT

101-4.1 No separate measurement for payment will be made. The work covered by this section shall be considered as a subsidiary obligation of the Contractor and covered under the other contract items.

BASIS OF PAYMENT

101-5.1 Payment. There shall be no separate payment for pavement removal. Pavement removal shall be considered a subsidiary obligation of the Contractor and covered under the other contract items.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5380-6	Guidelines and Procedures for Maintenance of Airport Pavements.

ASTM International (ASTM)

ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements

END OF ITEM P-101

Item P-152 Excavation, Subgrade, and Embankment

DESCRIPTION

152-1.1 This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct safety areas, runways, taxiways, aprons, and intermediate areas as well as other areas for drainage, building construction, parking, or other purposes in accordance with these specifications and in conformity to the dimensions and typical sections shown on the plans.

152-1.2 Classification. All material excavated shall be classified as defined below:

a. Unclassified excavation. Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature.

152-1.3 Unsuitable excavation. Unsuitable material shall be disposed in accordance with the Contract Documents. Materials containing vegetable or organic matter, such as muck, peat, organic silt, or sod shall be considered unsuitable for use in embankment construction. Material suitable for topsoil may be used on the embankment slope when approved by the RPR.

CONSTRUCTION METHODS

152-2.1 General. Before beginning excavation, grading, and embankment operations in any area, the area shall be cleared or cleared and grubbed.

The suitability of material to be placed in embankments shall be subject to approval by the RPR. All unsuitable material shall be disposed of in waste areas as shown on the plans. All waste areas shall be graded to allow positive drainage of the area and adjacent areas. The surface elevation of waste areas shall be specified on the plans or approved by the RPR.

When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and the RPR notified per Section 70, paragraph 70-20. At the direction of the RPR, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

Areas outside the limits of the pavement areas where the top layer of soil has become compacted by hauling or other Contractor activities shall be scarified and disked to a depth of 4 inches (100 mm), to loosen and pulverize the soil. Stones or rock fragments larger than 4 inches (100 mm) in their greatest dimension will not be permitted in the top 6 inches (150 mm) of the subgrade.

If it is necessary to interrupt existing surface drainage, sewers or under-drainage, conduits, utilities, or similar underground structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve them or provide temporary services. When such facilities are encountered, the Contractor shall notify the RPR, who shall arrange for their removal if necessary. The Contractor, at their own expense, shall satisfactorily repair or pay the cost of all damage to such facilities or structures that may result from any of the Contractor's operations during the period of the contract.

a. Blasting. Blasting shall not be allowed.

152-2.2 Excavation. No excavation shall be started until the work has been staked out by the Contractor and the RPR has obtained from the Contractor, the survey notes of the elevations and measurements of

the ground surface. The Contractor and RPR shall agree that the original ground lines shown on the original topographic mapping are accurate, or agree to any adjustments made to the original ground lines.

Digital terrain model (DTM) files of the existing surfaces, finished surfaces and other various surfaces were used to develop the design plans.

Existing grades on the design cross sections or DTM's, where they do not match the locations of actual spot elevations shown on the topographic map, were developed by computer interpolation from those spot elevations. Prior to disturbing original grade, Contractor shall verify the accuracy of the existing ground surface by verifying spot elevations at the same locations where original field survey data was obtained as indicated on the topographic map. Contractor shall recognize that, due to the interpolation process, the actual ground surface at any particular location may differ somewhat from the interpolated surface shown on the design cross sections or obtained from the DTM's. Contractor's verification of original ground surface, however, shall be limited to verification of spot elevations as indicated herein, and no adjustments will be made to the original ground surface unless the Contractor demonstrates that spot elevations shown are incorrect. For this purpose, spot elevations which are within 0.1 foot (30 mm) of the stated elevations for ground surfaces, or within 0.04 foot (12 mm) for hard surfaces (pavements, buildings, foundations, structures, etc.) shall be considered "no change". Only deviations in excess of these will be considered for adjustment of the original ground surface. If Contractor's verification identifies discrepancies in the topographic map, Contractor shall notify the RPR in writing at least two weeks before disturbance of existing grade to allow sufficient time to verify the submitted information and make adjustments to the design cross sections or DTM's. Disturbance of existing grade in any area shall constitute acceptance by the Contractor of the accuracy of the original elevations shown on the topographic map for that area

All areas to be excavated shall be stripped of vegetation and topsoil. Topsoil shall be stockpiled for future use in areas designated on the plans or by the RPR. All suitable excavated material shall be used in the formation of embankment, subgrade, or other purposes **as** shown on the plans. All unsuitable material shall be disposed of as shown on the plans.

The grade shall be maintained so that the surface is well drained at all times.

When the volume of the excavation exceeds that required to construct the embankments to the grades as indicated on the plans, the excess shall be used to grade the areas of ultimate development or disposed as directed by the RPR. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be obtained from borrow areas.

a. Selective grading. When selective grading is indicated on the plans, the more suitable material designated by the RPR shall be used in constructing the embankment or in capping the pavement subgrade. If, at the time of excavation, it is not possible to place this material in its final location, it shall be stockpiled in approved areas until it can be placed. The more suitable material shall then be placed and compacted as specified. Selective grading shall be considered incidental to the work involved. The cost of stockpiling and placing the material shall be included in the various pay items of work involved.

b. Undercutting. Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for safety areas, subgrades, roads, shoulders, or any areas intended for turf shall be excavated to a minimum depth of 12 inches (300 mm) below the subgrade or to the depth specified by the RPR. Muck, peat, matted roots, or other yielding material, unsatisfactory for subgrade foundation, shall be removed to the depth specified. Unsuitable materials shall be disposed of in accordance with the Contract Documents. The excavated area shall be backfilled with suitable material obtained from the grading operations or borrow areas and compacted to specified densities. The necessary backfill will constitute a part of the embankment. Where rock cuts are made, backfill with select material. Any pockets created in the rock surface shall be drained in accordance with the details shown on the plans.

c. Over-break. Over-break, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the RPR. All over-break shall be graded or removed by the Contractor and disposed of as directed by the RPR. The RPR shall determine if the displacement of such material was unavoidable and their own decision shall be final. Payment will not be made for the removal and disposal of over-break that the RPR determines as avoidable. Unavoidable over-break will be classified as "Unclassified Excavation."

d. Removal of utilities. Not used.

152-2.3 Borrow excavation. There are no borrow sources within the boundaries of the airport property. The Contractor shall locate and obtain borrow sources, subject to the approval of the RPR. All borrow pits shall be opened to expose the various strata of acceptable material to allow obtaining a uniform product. Borrow areas shall be drained and left in a neat, presentable condition with all slopes dressed uniformly.

152-2.4 Drainage excavation. Not used.

152-2.5 Preparation of cut areas or areas where existing pavement has been removed. In those areas on which a subbase or base course is to be placed, the top 12 inches (300 mm) of subgrade shall be compacted to not less than 100 % of maximum density for non-cohesive soils, and 95% of maximum density for cohesive soils as determined by ASTM D698. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

152-2.6 Preparation of embankment area. All sod and vegetative matter shall be removed from the surface upon which the embankment is to be placed. The cleared surface shall be broken up by plowing or scarifying to a minimum depth of 6 inches (150 mm) and shall then be compacted per paragraph 152-2.10.

Sloped surfaces steeper than one (1) vertical to four (4) horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches (300 mm) and compacted as specified for the adjacent fill.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

152-2.7 Control Strip. The first half-day of construction of subgrade and/or embankment shall be considered as a control strip for the Contractor to demonstrate, in the presence of the RPR, that the materials, equipment, and construction processes meet the requirements of this specification. The sequence and manner of rolling necessary to obtain specified density requirements shall be determined. The maximum compacted thickness may be increased to a maximum of 12 inches (300 mm) upon the Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified density. The RPR must witness this demonstration and approve the lift thickness prior to full production.

Control strips that do not meet specification requirements shall be reworked, re-compacted, or removed and replaced at the Contractor's expense. Full operations shall not begin until the control strip has been accepted by the RPR. The Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved in advance by the RPR.

152-2.8 Formation of embankments. The material shall be constructed in lifts as established in the control strip, but not less than 6 inches (150 mm) nor more than 12 inches (300 mm) of compacted thickness.

When more than one lift is required to establish the layer thickness shown on the plans, the construction procedure described here shall apply to each lift. No lift shall be covered by subsequent lifts until tests

verify that compaction requirements have been met. The Contractor shall rework, re-compact and retest any material placed which does not meet the specifications.

The lifts shall be placed, to produce a soil structure as shown on the typical cross-section or as directed by the RPR. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.

Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained due to rain, freezing, or other unsatisfactory weather conditions in the field. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. The Contractor shall drag, blade, or slope the embankment to provide surface drainage at all times.

The material in each lift shall be within ±2% of optimum moisture content before rolling to obtain the prescribed compaction. The material shall be moistened or aerated as necessary to achieve a uniform moisture content throughout the lift. Natural drying may be accelerated by blending in dry material or manipulation alone to increase the rate of evaporation.

The Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content to achieve the specified embankment density.

The RPR will take samples of excavated materials which will be used in embankment for testing and develop a Moisture-Density Relations of Soils Report (Proctor) in accordance with ASTM D698. A new Proctor shall be developed for each soil type based on visual classification.

Density tests will be taken by the RPR for every 3,000 square yards of compacted embankment for each lift which is required to be compacted, or other appropriate frequencies as determined by the RPR.

If the material has greater than 30% retained on the 3/4-inch (19.0 mm) sieve, follow AASHTO T-180 Annex Correction of maximum dry density and optimum moisture for oversized particles.

Rolling operations shall be continued until the embankment is compacted to not less than 100% of maximum density for non-cohesive soils, and 95% of maximum density for cohesive soils as determined by ASTM D698. Under all areas to be paved, the embankments shall be compacted to a depth of 12” and to a density of not less than 100% percent of the maximum density as determined by ASTM D698. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

On all areas outside of the pavement areas, no compaction will be required on the top 4 inches (100 mm) which shall be prepared for a seedbed in accordance with Item T-906.

The in-place field density shall be determined in accordance with ASTM 6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. The RPR shall perform all density tests. If the specified density is not attained, the area represented by the test or as designated by the RPR shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached. The cost of failing tests shall be borne by the Contractor.

Compaction areas shall be kept separate, and no lift shall be covered by another lift until the proper density is obtained.

During construction of the embankment, the Contractor shall route all construction equipment evenly over the entire width of the embankment as each lift is placed. Lift placement shall begin in the deepest portion of the embankment fill. As placement progresses, the lifts shall be constructed approximately parallel to the finished pavement grade line.

When rock, concrete pavement, asphalt pavement, and other embankment material are excavated at approximately the same time as the subgrade, the material shall be incorporated into the outer portion of the embankment and the subgrade material shall be incorporated under the future paved areas. Stones, fragmentary rock, and recycled pavement larger than 4 inches (100 mm) in their greatest dimensions will not be allowed in the top 12 inches (300 mm) of the subgrade. Rockfill shall be brought up in lifts as specified or as directed by the RPR and the finer material shall be used to fill the voids forming a dense, compact mass. Rock, cement concrete pavement, asphalt pavement, and other embankment material shall not be disposed of except at places and in the manner designated on the plans or by the RPR.

When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in lifts of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the embankment as directed in lifts not exceeding 2 feet (60 cm) in thickness. Each lift shall be leveled and smoothed with suitable equipment by distribution of spalls and finer fragments of rock. The lift shall not be constructed above an elevation 4 feet (1.2 m) below the finished subgrade.

152-2.9 Proof rolling. Not Used.

152-2.10 Compaction requirements. The subgrade under areas to be paved shall be compacted to a depth of 12 inches (300 mm) and to a density of not less than 100 percent of the maximum dry density as determined by ASTM D698. The subgrade in areas outside the limits of the pavement areas shall be compacted to a depth of 12 inches (300 mm) and to a density of not less than 95 percent of the maximum density as determined by ASTM D698.

The material to be compacted shall be within ±2% of optimum moisture content before being rolled to obtain the prescribed compaction (except for expansive soils). When the material has greater than 30 percent retained on the ¾ inch (19.0 mm) sieve, follow the methods in ASTM D698**.** Tests for moisture content and compaction will be taken at a minimum of 3,000 S.Y. of subgrade. All quality assurance testing shall be done by the RPR. The cost of failing tests shall be borne by the Contractor.

The in-place field density shall be determined in accordance with ASTM D6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938 within 12 months prior to its use on this contract. The gage shall be field standardized daily

Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

If the specified density is not attained, the entire lot shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

All cut-and-fill slopes shall be uniformly dressed to the slope, cross-section, and alignment shown on the plans or as directed by the RPR and the finished subgrade shall be maintained.

152-2.11 Finishing and protection of subgrade. Finishing and protection of the subgrade is incidental to this item. Grading and compacting of the subgrade shall be performed so that it will drain readily. All low areas, holes or depressions in the subgrade shall be brought to grade. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans. All ruts or rough places that develop in the completed subgrade shall be graded, re-compacted, and retested. The Contractor shall protect the subgrade from damage and limit hauling over the finished subgrade to only traffic essential for construction purposes.

The Contractor shall maintain the completed course in satisfactory condition throughout placement of subsequent layers. No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been accepted by the RPR.

152-2.12 Haul. All hauling will be considered a necessary and incidental part of the work. The Contractor shall include the cost in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

The Contractor's equipment shall not cause damage to any excavated surface, compacted lift or to the subgrade as a result of hauling operations. Any damage caused as a result of the Contractor's hauling operations shall be repaired at the Contractor's expense.

The Contractor shall be responsible for providing, maintaining and removing any haul roads or routes within or outside of the work area, and shall return the affected areas to their former condition, unless otherwise authorized in writing by the Owner. No separate payment will be made for any work or materials associated with providing, maintaining and removing haul roads or routes.

152-2.13 Surface Tolerances. In those areas on which a subbase or base course is to be placed, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches (75 mm), reshaped and re-compacted to grade until the required smoothness and accuracy are obtained and approved by the RPR. The Contractor shall perform all final smoothness and grade checks in the presence of the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense.

a. Smoothness. The finished surface shall not vary more than +/- ½ inch (12 mm) when tested with a 12-foot (3.7-m) straightedge applied parallel with and at right angles to the centerline. The straightedge shall be moved continuously forward at half the length of the 12-foot (3.7-m) straightedge for the full length of each line on a 50-foot (15-m) grid.

b. Grade. The grade and crown shall be measured on a 50-foot (15-m) grid and shall be within +/- 0.05 feet (15 mm) of the specified grade.

On safety areas, turfed areas and other designated areas within the grading limits where no subbase or base is to placed, grade shall not vary more than 0.10 feet (30 mm) from specified grade. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

152-2.14 Topsoil. When topsoil is specified or required as shown on the plans, or under Item T-905, it shall be salvaged from stripping or other grading operations. The topsoil shall meet the requirements of Item T-905. If, at the time of excavation or stripping, the topsoil cannot be placed in its final section of finished construction, the material shall be stockpiled at approved locations. Stockpiles shall be located as shown on the plans and the approved CSPP, and shall not be placed on areas that subsequently will require any excavation or embankment fill. If, in the judgment of the RPR, it is practical to place the salvaged topsoil at the time of excavation or stripping, the material shall be placed in its final position without stockpiling or further re-handling.

Upon completion of grading operations, stockpiled topsoil shall be handled and placed as shown on the plans and as required in Item T-905. Topsoil shall be paid for as provided in Item T-905. No direct payment will be made for topsoil under Item P-152.

METHOD OF MEASUREMENT

152-3.1 There shall be no separate measurement for payment for unclassified excavation or for borrow excavation. All excavation shall be considered a subsidiary obligation of the work.

BASIS OF PAYMENT

152-4.1 There shall be no separate payment for unclassified excavation or for borrow excavation. All excavation shall be considered a subsidiary obligation of the work, the cost of which shall be included in established pay items.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO T-180	Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop

ASTM International (ASTM)

ASTM D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3))
ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2700 kN-m/m^3))
ASTM D6938	Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

Advisory Circulars (AC)

AC 150/5370-2	Operational Safety on Airports During Construction Software

Software

FAARFIELD – FAA Rigid and Flexible Iterative Elastic Layered Design

U.S. Department of Transportation

FAA RD-76-66	Design and Construction of Airport Pavements on Expansive Soils

END OF ITEM P-152

Item P-209 Crushed Aggregate Base Course

DESCRIPTION

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

MATERIALS

209-2.1 Crushed aggregate base. Crushed aggregate shall consist of clean, sound, durable particles of crushed stone or crushed gravel and shall be free from coatings of clay, silt, organic material, clay lumps or balls or other deleterious materials or coatings. The method used to produce the crushed gravel shall result in the fractured particles in the finished product as consistent and uniform as practicable. Fine aggregate portion, defined as the portion passing the No. 4 (4.75 mm) sieve shall consist of fines from the coarse aggregate crushing operation. The fine aggregate shall be produced by crushing stone or crushed gravel that meet the coarse aggregate requirements for wear and soundness. Aggregate base material requirements are listed in the following table.

Crushed Aggregate Base Material Requirements

Material Test	Requirement	Standard
Coarse Aggregate		
Resistance to Degradation	Loss: 45% maximum	ASTM C131
Soundness of Aggregates by Use of Sodium Sulfate **or** Magnesium Sulfate	Loss after 5 cycles: 12% maximum using Sodium sulfate - or - 18% maximum using magnesium sulfate	ASTM C88
Percentage of Fractured Particles	Minimum 90% by weight of particles with at least two fractured faces and 98% with at least one fractured face[1]	ASTM D5821
Flat Particles, Elongated Particles, or Flat and Elongated Particles	10% maximum, by weight, of flat, elongated, or flat and elongated particles [2]	ASTM D4791
Clay lumps and friable particles	Less than or equal to 3 percent	ASTM C142
Fine Aggregate		
Liquid limit	Less than or equal to 25	ASTM D4318
Plasticity Index	Not more than five (5)	ASTM D4318

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

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

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

Gradation of Aggregate Base

Sieve Size	Design Range Percentage by Weight passing	Contractor's Final Gradation	Job Control Grading Band Tolerances[1] (Percent)
2 inch (50 mm)	100		0
1-1/2 inch (37.5 mm)	95-100		±5
1 inch (25.0 mm)	70-95		±8
3/4 inch (19.0 mm)	55-85		±8
No. 4 (4.75 mm)	30-60		±8
No. 40[2] (425 µm)	10-30		±5
No. 200[2] (75 µm)	0-10		±3

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

[2] The fraction of material passing the No 200 (75 µm) sieve shall not exceed two-thirds the fraction passing the No 40 (425 µm) sieve.

209-2.3 Sampling and Testing.

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

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

In lieu of daily testing for Gradation Requirements, Contractor may elect to place aggregate in stockpiles prior to transporting to the project site. Construction and sampling of stockpiles shall be in accordance with ASTM D-75. The maximum stockpile size shall not exceed 4,000 c.y unless authorized by the RPR. Testing shall be in accordance with ASTM C117 and C136. A stockpile shall be considered acceptable for transportation to the project site when the samples tested meet the Gradation Requirements.

At least two weeks prior to the start of production, the Contractor shall inform the RPR of the methods which are proposed for providing aggregate to the project site so that arrangements can be made for sampling and testing aggregates.

209-2.4 Separation Geotextile Separation geotextile shall be Class 2, 0.02 sec^{-1} permittivity per ASTM D4491, Apparent opening size per ASTM D4751 with 0.60 mm maximum average roll value.

CONSTRUCTION METHODS

209-3.1 Control strip. The first half-day of construction shall be considered the control strip. The Contractor shall demonstrate, in the presence of the RPR, that the materials, equipment, and construction processes meet the requirements of the specification. The sequence and manner of rolling necessary to obtain specified density requirements shall be determined. The maximum compacted thickness may be increased to a maximum of 12 inches (300 mm) upon the Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified density. The RPR must witness this demonstration and approve the lift thickness prior to full production.

Control strips that do not meet specification requirements shall be reworked, re-compacted or removed and replaced at the Contractor's expense. Full operations shall not continue until the control strip has been accepted by the RPR. The Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved by the RPR.

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

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

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

The aggregate shall meet gradation and moisture requirements prior to compaction. The base course shall be constructed in lifts as established in the control strip, but not less than 4 inches (100 mm) nor more than 12 inches (300 mm) of compacted thickness.

When more than one lift is required to establish the layer thickness shown on the plans, the construction procedure described here shall apply to each lift. No lift shall be covered by subsequent lifts until tests verify that compaction requirements have been met. The Contractor shall rework, re-compact and retest any material placed which does not meet the specifications at the Contractor's expense.

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

The field density of each compacted lift of material shall be at least100% of the maximum density of laboratory specimens prepared from samples of the base material delivered to the jobsite. The laboratory specimens shall be compacted and tested in accordance with ASTM D698. The moisture content of the material during placing operations shall be within ±2 percentage points of the optimum moisture content as determined by ASTM D698. Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified. If the material has greater than 30% retained on the 3/4-inch (19.0

mm) sieve, follow AASHTO T-180 Annex Correction of Maximum Dry Density and Optimum Moisture for Oversized Particles.

209-3.6 Weather limitations. Material shall not be placed unless the ambient air temperature is at least 40°F (4°C) and rising. Work on base course shall not be conducted when the subgrade or subbase is wet or frozen or the base material contains frozen material.

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

209-3.8 Surface tolerances. After the course has been compacted, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches (75 mm), reshaped and recompacted to grade until the required smoothness and accuracy are obtained and approved by the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense. The smoothness and accuracy requirements specified here apply only to the top layer when base course is constructed in more than one layer.

a. Smoothness. The finished surface shall not vary more than 3/8-inch (9 mm) when tested with a 12-foot (3.7-m) straightedge applied parallel with and at right angles to the centerline. The straightedge shall be moved continuously forward at half the length of the 12-foot (3.7-m) straightedge for the full length of each line on a 50-foot (15-m) grid.

b. Grade. The grade and crown shall be measured on a 50-foot (15-m) grid and shall be within +0 and -1/2 inch (12 mm) of the specified grade.

209-3.9 Acceptance sampling and testing. Crushed aggregate base course shall be accepted for density and thickness on an area basis. Two tests shall be made for density and thickness for each 1200 square yds. Sampling locations will be determined on a random basis per ASTM D3665.

a. Density. The RPR shall perform all density tests.

Each area shall be accepted for density when the field density is at least 100% of the maximum density of laboratory specimens compacted and tested per ASTM D698. The in-place field density shall be determined per ASTM D1556 or ASTM D6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. If the specified density is not attained, the area represented by the failed test must be reworked and/or recompacted and two additional random tests made. This procedure shall be followed until the specified density is reached. Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

b. Thickness. Depth tests shall be made by test holes at least 3 inches (75 mm) in diameter that extend through the base. The thickness of the base course shall be within +0 and -1/2 inch (12 mm) of the specified thickness as determined by depth tests taken by the Contractor in the presence of the RPR for each area. Where the thickness is deficient by more than 1/2-inch (12 mm), the Contractor shall correct such areas at no additional cost by scarifying to a depth of at least 3 inches (75 mm), adding new material of proper gradation, and the material shall be blended and recompacted to grade. The Contractor shall replace, at his expense, base material where depth tests have been taken.

Contractor may check grade and crown by survey provided a survey is performed on the approved subgrade/subbase prior to placing base material. The survey shall be along centerline, or ridge lines at 50

foot intervals with elevations taken along sections at 50 foot intervals. In addition, elevations shall be taken at all grade breaks and vertical curves. Contractor shall survey the finished surface of the base course at the same locations that the survey was taken on the subgrade/subbase. Contractor shall provide an analysis of the difference in elevations between the two surveys to the RPR for approval.

Alternate methods of checking the fine grade may be used only when authorized by the RPR.

209-3.10 Removal of water. The Contractor is responsible for removal of water regardless of its source. Measures shall be taken to protect the excavation from surface water runoff as well as for dewatering the excavation from any water which has entered the excavation. The cost of the removal of water shall be considered as a subsidiary obligation of the Contractor and included in the contract price for the pay items of work involved.

METHOD OF MEASUREMENT

209-4.1 There shall be no separate measurement for crushed aggregate base course. Crushed aggregate base course shall be considered a subsidiary obligation of the work.

209-4.2 There shall be no separate measurement for separation geotextile. Separation geotextile shall be considered a subsidiary obligation of the work.

BASIS OF PAYMENT

209-5.1 There shall be no separate measurement for crushed aggregate base course. Crushed aggregate base course shall be considered a subsidiary obligation of the work, the cost of which shall be included in other established pay items.

209-5.2 There shall be no separate measurement for separation geotextile. Separation geotextile shall be considered a subsidiary obligation of the work, the cost of which shall be included in other established pay items.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C29	Standard Test Method for Bulk Density (“Unit Weight”) and Voids in Aggregate
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates

ASTM D75	Standard Practice for Sampling Aggregates
ASTM D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3))
ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2700 kN-m/m^3))
ASTM D2167	Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM D3665	Standard Practice for Random Sampling of Construction Materials
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4491	Standard Test Methods for Water Permeability of Geotextiles by Permittivity
ASTM D4643	Standard Test Method for Determination of Water Content of Soil and Rock by Microwave Oven Heating
ASTM D4751	Standard Test Methods for Determining Apparent Opening Size of a Geotextile
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
ASTM D6938	Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
ASTM D7928	Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis

American Association of State Highway and Transportation Officials (AASHTO)

M288	Standard Specification for Geosynthetic Specification for Highway Applications

END OF ITEM P-209

Item P-603 Emulsified Asphalt Tack Coat

DESCRIPTION

603-1.1 This item shall consist of preparing and treating an asphalt or concrete surface with asphalt material in accordance with these specifications and in reasonably close conformity to the lines shown on the plans.

MATERIALS

603-2.1 Asphalt materials. The asphalt material shall be an emulsified asphalt as shown in Table 1, as an asphalt application for tack coat appropriate to local conditions. The emulsified asphalt shall not be diluted. The Contractor shall provide a copy of the manufacturer's Certificate of Analysis (COA) for the asphalt material to the Resident Project Representative (RPR) before the asphalt material is applied for review and acceptance. The furnishing of COA for the asphalt material shall not be interpreted as a basis for final acceptance. The manufacturer's COA may be subject to verification by testing the material delivered for use on the project.

Table 1 Bituminous Material

Type and Grade	Specification	Application Temperatures	
		Deg. F	Deg. C
Emulsified Asphalt			
MS-1	ASTM D 977	70-160	20-70
HFMS-1	ASTM D 977	70-160	20-70
SS-1	ASTM D 977	70-160	20-70
SS-1h	ASTM D 977	70-160	20-70
CSS-1	ASTM D 2397	70-160	20-70
CSS-1h	ASTM D 2397	70-160	20-70

CONSTRUCTION METHODS

603-3.1 Weather limitations. The tack coat shall be applied only when the existing surface is dry and the atmospheric temperature is 50°F (10°C) or above; the temperature has not been below 35°F (2°C) for the 12 hours prior to application; and when the weather is not foggy or rainy. The temperature requirements may be waived when directed by the RPR.

603-3.2 Equipment. The Contractor shall provide equipment for heating and applying the emulsified asphalt material. The emulsion shall be applied with a manufacturer-approved computer rate-controlled asphalt distributor. The equipment shall be in good working order and contain no contaminants or diluents in the tank. Spray bar tips must be clean, free of burrs, and of a size to maintain an even distribution of the emulsion. Any type of tip or pressure source is suitable that will maintain predetermined flow rates and constant pressure during the application process with application speeds under eight (8) miles per hour (13 km per hour) or seven (700) feet per minute (213 m per minute).

The equipment will be tested under pressure for leaks and to ensure proper set-up before use to verify truck set-up (via a test-shot area), including but not limited to, nozzle tip size appropriate for application, spray-bar height and pressure and pump speed, evidence of triple-overlap spray pattern, lack of leaks, and any other factors relevant to ensure the truck is in good working order before use.

The distributor truck shall be equipped with a minimum 12-foot (3.7-m) spreader spray bar with individual nozzle control with computer-controlled application rates. The distributor truck shall have an easily accessible thermometer that constantly monitors the temperature of the emulsion, and have an operable mechanical tank gauge that can be used to cross-check the computer accuracy. If the distributor is not equipped with an operable quick shutoff valve, the prime operations shall be started and stopped on building paper.

The distributor truck shall be equipped to effectively heat and mix the material to the required temperature prior to application as required. Heating and mixing shall be done in accordance with the manufacturer's recommendations. Do not overheat or over mix the material.

The distributor shall be equipped with a hand sprayer.

Asphalt distributors must be calibrated annually in accordance with ASTM D2995. The Contractor must furnish a current calibration certification for the asphalt distributor truck from any State or other agency as approved by the RPR.

A power broom and/or power blower suitable for cleaning the surfaces to which the asphalt tack coat is to be applied shall be provided.

603-3.3 Application of emulsified asphalt material. The emulsified asphalt shall not be diluted. Immediately before applying the emulsified asphalt tack coat, the full width of surface to be treated shall be swept with a power broom and/or power blower to remove all loose dirt and other objectionable material.

The emulsified asphalt material shall be uniformly applied with an asphalt distributor at the Emulsion Application Bar Rate appropriate for the conditions and surface specified in the table below. The type of asphalt material and application rate shall be approved by the RPR prior to application.

Emulsified Asphalt

Surface Type	Residual Rate, gal/SY (L/square meter)	Emulsion Application Bar Rate, gal/SY (L/square meter)
New asphalt	0.02-0.05 (0.09-0.23)	0.03-0.07 (0.13-0.32)
Existing asphalt	0.04-0.07 (0.18-0.32)	0.06-0.11 (0.27-0.50)
Milled Surface	0.04-0.08 (0.18-0.36)	.0.06-0.12 (0.27-0.54)
Concrete	0.03-0.05 (0.13-0.23)	0.05-0.08 (0.23-0.36)

After application of the tack coat, the surface shall be allowed to cure without being disturbed for the period of time necessary to permit drying and setting of the tack coat. This period shall be determined by the RPR. The Contractor shall protect the tack coat and maintain the surface until the next course has been placed. When the tack coat has been disturbed by the Contractor, tack coat shall be reapplied at the Contractor's expense.

603-3.4 Freight and waybills The Contractor shall submit waybills and delivery tickets, during progress of the work. Before the final statement is allowed, file with the RPR certified waybills and certified delivery tickets for all emulsified asphalt materials used in the construction of the pavement covered by the contract. Do not remove emulsified asphalt material from storage until the initial outage and temperature measurements have been taken. The delivery or storage units will not be released until the final outage has been taken.

METHOD OF MEASUREMENT

603-4.1 There shall be no separate measurement for payment for emulsified asphalt tack coat.

BASIS OF PAYMENT

603.5-1 There shall be no separate payment for emulsified asphalt tack coat. Emulsified asphalt tack coat shall be considered an ancillary and subsidiary part of the work, the cost of which shall be included in other established pay items.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D1250	Standard Guide for Use of the Petroleum Measurement Tables
ASTM D2995	Standard Practice for Estimating Application Rate and Residual Application Rate of Bituminous Distributors
ASTM D3628	Standard Practice for Selection and Use of Emulsified Asphalts

TABLE IV-3 TEMPERATURE-VOLUME CORRECTIONS FOR EMULSIFIED ASPHALTS

°C	°F	*M	°C	°F	*M	°C	°F	*M	°C	°F	*M	°C	°F	*M
10.0	50	1.00250	20.0	68	0.99800	30.0	86	0.99350	40.0	104	0.98900	50.0	122	0.98450
10.6	51	1.00225	20.6	69	0.99775	30.6	87	0.99325	40.6	105	0.98875	50.6	123	0.98425
11.1	52	1.00200	21.1	70	0.99750	31.1	88	0.99300	41.1	106	0.98850	51.1	124	0.98400
11.7	53	1.00175	21.7	71	0.99725	31.7	89	0.99275	41.7	107	0.98825	51.7	125	0.98375
12.2	54	1.00150	22.2	72	0.99700	32.2	90	0.99250	42.2	108	0.98800	52.2	126	0.98350
12.8	55	1.00125	22.8	73	0.99675	32.8	91	0.99225	42.8	109	0.98775	52.8	127	0.98325
13.3	56	1.00100	23.3	74	0.99650	33.3	92	0.99200	43.3	110	0.98750	53.3	128	0.98300
13.9	57	1.00075	23.9	75	0.99625	33.9	93	0.99175	43.9	111	0.98725	53.9	129	0.98275
14.4	58	1.00050	24.4	76	0.99600	34.4	94	0.99150	44.4	112	0.98700	54.4	130	0.98250
15.0	59	1.00025	25.0	77	0.99575	35.0	95	0.99125	45.0	113	0.98675	55.0	131	0.98225
15.6	60	1.00000	25.6	78	0.99550	35.6	96	0.99100	45.6	114	0.98650	55.6	132	0.98200
16.1	61	0.99975	26.1	79	0.99525	36.1	97	0.99075	46.1	115	0.98625	56.1	133	0.98175
16.7	62	0.99950	26.7	80	0.99500	36.7	98	0.99050	46.7	116	0.98600	56.7	134	0.98150
17.2	63	0.99925	27.2	81	0.99475	37.2	99	0.99025	47.2	117	0.98575	57.2	135	0.98125
17.8	64	0.99900	27.8	82	0.99450	37.8	100	0.99000	47.8	118	0.98550	57.8	136	0.98100
18.3	65	0.99875	28.3	83	0.99425	38.3	101	0.98975	48.3	119	0.98525	58.3	137	0.98075
18.9	66	0.99850	28.9	84	0.99400	38.9	102	0.98950	48.9	120	0.98500	58.9	138	0.98050
19.4	67	0.99825	29.4	85	0.99375	39.4	103	0.98925	49.4	121	0.98475	59.4	139	0.98025

TABLE IV-3 TEMPERATURE-VOLUME CORRECTIONS FOR EMULSIFIED ASPHALTS

°C	°F	*M	°C	°F	*M	°C	°F	*M	°C	°F	*M	°C	°F	*M
60.0	140	0.98000	68.3	155	0.97625	76.7	170	0.97250						
60.6	141	0.97975	68.9	156	0.97600	77.2	171	0.97225						
61.1	142	0.97950	69.4	157	0.97575	77.8	172	0.97200						
61.7	143	0.97925	70.0	158	0.97550	78.3	173	0.97175						
62.2	144	0.97900	70.6	159	0.97525	78.9	174	0.97150						
62.8	145	0.97875	71.1	160	0.97500	79.4	175	0.97125						
63.3	146	0.97850	71.7	161	0.97475	80.0	176	0.97100						
63.9	147	0.97825	72.2	162	0.97450	80.6	177	0.97075						
64.4	148	0.97800	72.8	163	0.97425	81.1	178	0.97050						
65.0	149	0.97775	73.3	164	0.97400	81.7	179	0.97025						
65.6	150	0.97750	73.9	165	0.97375	82.2	180	0.97000						
66.1	151	0.97725	74.4	166	0.97350	82.8	181	0.96975						
66.7	152	0.97700	75.0	167	0.97325	83.3	182	0.96950						
67.2	153	0.97675	75.6	168	0.97300	83.9	183	0.96925						
67.8	154	0.97650	76.1	169	0.97275	84.4	184	0.96900						

°C = Observed Temperature in Degrees Celsius.

°F = Temperature in Degrees Fahrenheit.

*M = Multiplier for correcting volumes to the basis of 15.6 °C (60°F).

END ITEM P-603

Item P-605 Joint Sealants for Pavements

DESCRIPTION

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

MATERIALS

605-2.1 Joint sealants. Joint sealant materials shall meet the requirements of the following types as indicated on the Contract Drawings:

ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements

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

605-2.2 Backer rod. The material furnished shall be a compressible, non-shrinking, non-staining, non-absorbing material that is non-reactive with the joint sealant in accordance with ASTM D5249. The backer-rod material shall be 25% ± 5 % larger in diameter than the nominal width of the joint. Type 1 backer rods shall be used for hot-applied sealants. Type 1 or Type 3 backer rods shall be used for cold-applied sealants.

605-2.3 Bond breaking tapes. Provide a bond breaking tape or separating material that is a flexible, non-shrinkable, non-absorbing, non-staining, and non-reacting adhesive-backed tape. The material shall have a melting point at least 5°F (3°C) greater than the pouring temperature of the sealant being used when tested in accordance with ASTM D789. The bond breaker tape shall be approximately 1/8 inch (3 mm) wider than the nominal width of the joint and shall not bond to the joint sealant.

CONSTRUCTION METHODS

605-3.1 Time of application. Joints shall be sealed as soon after completion of the curing period as feasible and before the pavement is opened to traffic, including construction equipment. The pavement temperature shall be 50°F (10°C) and rising at the time of application of the poured joint sealing material. Do not apply sealant if moisture is observed in the joint.

When used with P-606, such as light can installation, P-605 shall not be applied until the P-606 has fully cured.

605-3.2 Equipment. Machines, tools, and equipment used in the performance of the work required by this section shall be approved before the work is started and maintained in satisfactory condition at all times. Submit a list of proposed equipment to be used in performance of construction work including descriptive data, 30 days prior to use on the project.

a. Tractor-mounted routing tool. Provide a routing tool, used for removing old sealant from the joints, of such shape and dimensions and so mounted on the tractor that it will not damage the sides of the

joints. The tool shall be designed so that it can be adjusted to remove the old material to varying depths as required. The use of V-shaped tools or rotary impact routing devices will not be permitted. Hand-operated spindle routing devices may be used to clean and enlarge random cracks.

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

c. Sandblasting equipment. Sandblasting is not allowed.

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

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

f. Hot-poured sealing equipment. The unit applicators used for heating and installing ASTM D6690 joint sealant materials shall be mobile and shall be equipped with a double-boiler, agitator-type kettle with an oil medium in the outer space for heat transfer; a direct-connected pressure-type extruding device with a nozzle shaped for inserting in the joint to be filled; positive temperature devices for controlling the temperature of the transfer oil and sealant; and a recording type thermometer for indicating the temperature of the sealant. The applicator unit shall be designed so that the sealant will circulate through the delivery hose and return to the inner kettle when not in use.

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

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

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

b. Sealing. Immediately before sealing, the joints shall be thoroughly cleaned of all remaining laitance, curing compound, filler, protrusions of hardened concrete, old sealant and other foreign material from the sides and upper edges of the joint space to be sealed. Cleaning shall be accomplished by tractor-mounted routing equipment, concrete saw or waterblaster as specified in paragraph 605-3.2. The newly exposed concrete joint faces and the pavement surface extending a minimum of 1/2 inch (12 mm) from the joint edge shall be sandblasted clean. Sandblasting shall be accomplished in a minimum of two passes. One pass per joint face with the nozzle held at an angle directly toward the joint face and not more than 3 inches (75 mm) from it. After final cleaning and immediately prior to sealing, blow out the joints with compressed air and leave them completely free of debris and water. The joint faces shall be surface dry when the seal is applied.

c. Backer Rod. When the joint opening is of a greater depth than indicated for the sealant depth, plug or seal off the lower portion of the joint opening using a backer rod in accordance with paragraph 605-2.2

to prevent the entrance of the sealant below the specified depth. Take care to ensure that the backer rod is placed at the specified depth and is not stretched or twisted during installation.

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

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

Immediately preceding, but not more than 50 feet (15 m) ahead of the joint sealing operations, perform a final cleaning with compressed air. Fill the joints from the bottom up to 1/4 inch (6 mm) ±1/16 inch (2 mm) below the top of pavement surface; or bottom of groove for grooved pavement. Remove and discard excess or spilled sealant from the pavement by approved methods. Install the sealant in such a manner as to prevent the formation of voids and entrapped air. In no case shall gravity methods or pouring pots be used to install the sealant material. Traffic shall not be permitted over newly sealed pavement until authorized by the RPR. When a primer is recommended by the manufacturer, apply it evenly to the joint faces in accordance with the manufacturer's instructions. Check the joints frequently to ensure that the newly installed sealant is cured to a tack-free condition within the time specified.

Backer rod and bond-breaking tape shall be compatible with the sealant.

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

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

METHOD OF MEASUREMENT

605-4.1 There shall be no separate measurement for joint sealing.

BASIS OF PAYMENT

605-5.1 There shall be no separate payment for joint sealing. Joint sealing shall be considered an incidental and subsidiary part of the overall project work, the cost of which shall be included in established pay items.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM D789	Standard Test Method for Determination of Relative Viscosity of Polyamide (PA)

ASTM D5249	Standard Specification for Backer Material for Use with Cold- and Hot-Applied Joint Sealants in Portland-Cement Concrete and Asphalt Joints
ASTM D6690	Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt

Advisory Circulars (AC)

AC 150/5340-30	Design and Installation Details for Airport Visual Aids

END ITEM P-605

Item P-640 Building Construction

DESCRIPTION

640-1.1 This item shall consist of all trades associated with the construction of a new building as shown on the Contract Drawings. Trades associated with the building construction shall include, but are not limited to, general construction, mechanical construction, electrical construction, and plumbing. The scope of work for each trade shall be awarded as separate contracts.

640-1.2 CONTRACT SCOPE OF WORK. See Specification Section 011200. The scope of work for each contract as it pertains to the construction of the proposed building is generally defined by information contained within the Contract Plans identified by the following sheet references:

	BUILDING CONTRACT PERTAINING TO SCOPE OF WORK DEPICTED (WHOLE OR IN PART) BY DRAWING SERIES SET	
SHEET SERIES	**GENERAL**	**ELECTRICAL**
GI-SERIES	X	X
GC-SERIES	X	X
CG-SERIES	X	
ES-SERIES	X	X
A-SERIES	X	
S-SERIES	X	
M-SERIES	X	
E-SERIES	X	X

In general, the scope of work for Item P-640 begins within 5 feet outward from the face of the proposed building and is contained within the building footprint.

Contractor(s) shall review all drawings to ensure proper coordination between contracts and to observe areas/situations in which scopes of work interface between trades. Contractor(s) is/are advised that information pertaining to their scope of work may be contained on drawings and/or details that largely pertain to other prime contracts.

CONSTRUCTION METHODS

640-2.3 EXECUTION. Building construction shall comply with Division 01 through Division 28 specifications.

METHOD OF MEASUREMENT

640-3.1 Building construction shall be measured on a lump sum basis per contract.

BASIS OF PAYMENT

640-4.1 Payment for building construction shall be at the Contract lump sum price. The Contract lump sum price shall include all materials, equipment, labor, tools, incidentals, and administrative coordination required to complete the scope of work.

Payment will be made under:

Item P-640-4.1	SRE Building (General Contractor) - per lump sum
Item P-640-4.1	SRE Building (Electrical Contractor) - per lump sum

SUBMITTALS AND CERTIFICATIONS

640-5.1 See Division 01 through Division 28 Specifications.

END OF ITEM P-640

Item P-670 Automated Machine Guidance

DESCRIPTION

670-1.1 The Contractor may elect to utilize automated machine guidance (AMG) to determine three-dimensional locations for earth work activities and material placement. AMG is the process of automatically adjusting the motion of a machine with an onboard computer that obtains its position from global positioning systems, robotic total stations, lasers, or combinations of these methods while referencing the Contractor's model developed for the project. This procedure can be used in operations such as earth excavation, material placement, grading, trimming, and/or paving.

CONSTRUCTION METHODS

670-2.1 Work Plan. Provide a work plan to the Engineer stating whether or not AMG will be used on the project at the preconstruction meeting or prior. Each Contractor using AMG will provide a work plan to indicate the items of work covered within the specifications, type of AMG procedure, anticipated accuracy of each operation, and any areas where AMG operations need to be supplemented with conventional staking. The work plan must identify the Contractor's past experience with AMG operations, description of AMG equipment, equipment calibration procedures, equipment calibration frequency, and a description of the control necessary to support the proposed AMG operation(s). The work plan must designate a primary AMG contact. The Engineer reserves the right to request additional information or clarification prior to review of the work plan.

670-2.2 Survey meeting. A meeting with the Contractor and other involved parties (FAA, State DOT, Owner, Engineer, AMG contact, Contractor's model creator, surveyors, inspectors, etc.) shall be held prior to field operations. The purpose of the meeting is to discuss the implementation of the work plan and exchange of electronic data between both parties. The Contractor must explain the operations and procedures for the AMG technology, discuss the development of the Contractor's model, and present their survey control plan. The meeting attendees would also discuss the workflow for field verification, steps to be taken to resolve concerns with the Contractor's model, and compliance of AMG operations with the contract.

670-2.3 Contractor's model. Contractor shall employ a third party to verify model is accurate. Transmit, to the Engineer a certification statement which states in part the following: "The Contractor's model(s) developed for the project is an accurate representation of the contract, submittal of this certification is in accordance with the Contractor's obligations and requirements within the Contractor Staking Quality Control Plan, AMG Work Plan and applicable statutory requirements for construction layout."

A. Contract and Reference Information Documents (RID). The model must be created based upon the contract. RID reference documents for the project may be used for creation of the model at the Contractor's discretion, provided use is consistent with the terms and conditions of the Owner disclaimer and the use does not form the basis for a claim. Bring any conflicts identified between the contract and RID documents to the attention of the Engineer as soon as possible. If the Contractor determines a need for additional data or requires electronic formatting of files different than provided, it is the responsibility of the Contractor to prepare such files prior to commencement of the AMG operation without additional costs to the Owner.

B. Liability and verification. The contract plans will govern construction activities. The Engineer will not approve the Contractor's model(s). The Contractor accepts all liability associated with the creation and use of the Contractor's model. Field verify existing project features to determine the suitability of any provided contract information. Features to be verified include, but are not limited to, ties at project limits, existing pavement grades and limits, existing turf grades, control points, benchmarks, section corners, monuments, and other critical locations.

670-2.4 Control. The Contractor shall verify horizontal and vertical control points shown on the plans prior to the commencement of any AMG operations. The tolerance for horizontal control points shall be within 0.04 foot (northing and/or easting)of established location. The tolerance for vertical control points shall be within 0.02 foot of established elevation. Notify the Engineer if any control points exceed the established tolerances.

If the Contractor's AMG operation requires a greater density of control than that provided from the Engineer, the Contractor is responsible for densification of the AMG control. The additional AMG control will be established with sufficient frequency and precision to adequately support the AMG operation being performed. Ensure the control points are stable and properly marked to allow verification activities to be performed by the Engineer. Submit initial AMG control information (Point, Northing, Easting, Elevation, and Description) to the Engineer at least 2 calendar days prior to AMG operations. Ensure any subsequent AMG control information is provided in the same format and time consideration.

670-2.5 Contractor responsibility. The Contractor's AMG operation can only eliminate required staking if the Contractor's AMG operation meets the requirements and tolerances defined in these contract documents. The Contractor is responsible for all quality control necessary for their AMG operations to meet the prescribed tolerances for each associated specification. If prescribed tolerances are not met, the Contractor will either proceed with regular operations without the use of AMG or suspend operations to evaluate and address the AMG operations deficiencies. Once the cause of the inaccuracies is determined, the Contractor must provide the Engineer with a written corrective action plan addressing the concerns for the Engineer's approval. The Contractor may only resume AMG operations with the approval of the Engineer. If subsequent failures to meet specifications and accuracies are experienced, the Contractor will be suspended from AMG operations and conventional staking operations must be provided at no cost to the Owner.

Notify the Engineer at least 24 hours prior to commencement of AMG operations.

670-2.6 Quality Assurance. The Engineer will perform continuous and independent quality assurance for AMG operations to ensure compliance of the finished surfaces with corresponding specifications for the material being placed or removed. The Engineer will use equipment and methods that adequately support the precision level of the verification. The Engineer is prohibited from using the Contractor's equipment in the quality assurance verification process. Acceptance of the results of AMG operations will be based upon quality assurance results falling within prescribed tolerances for each associated pay item. If the Engineer determines that the prescribed tolerances are not being met, the Contractor must suspend AMG operations and follow direction specified for corrective action in subsection 670-2.5.

METHOD OF MEASUREMENT

670-3.1 No separate measurement for payment shall be made for automated machine guidance. Automated machine guidance shall be considered necessary and incidental to the work of this Contract.

BASIS OF PAYMENT

670-4.1 No payment will be made separately or directly for automated machine guidance. Automated machine guidance shall be considered necessary and incidental to the work of this Contract and the costs shall be included in the various pay items involved.

END OF ITEM P-670

Item T-905 Topsoil

DESCRIPTION

905-1.1 This item shall consist of preparing the ground surface for topsoil application, removing topsoil from designated stockpiles or areas to be stripped on the site or from approved sources off the site, and placing and spreading the topsoil on prepared areas in accordance with this specification at the locations shown on the plans or as directed by the RPR.

MATERIALS

905-2.1 Topsoil. Topsoil shall be the surface layer of soil with no admixture of refuse or any material toxic to plant growth, and it shall be reasonably free from subsoil and stumps, roots, brush, stones (2 inches (50 mm) or more in diameter), and clay lumps or similar objects. Topsoil shall be screened prior to placement. Brush and other vegetation that will not be incorporated with the soil during handling operations shall be cut and removed. Ordinary sod and herbaceous growth such as grass and weeds are not to be removed, but shall be thoroughly broken up and intermixed with the soil during handling operations. Heavy sod or other cover, which cannot be incorporated into the topsoil by discing or other means, shall be removed. The topsoil or soil mixture, unless otherwise specified or approved, shall have a pH range of approximately 5.5 pH to 7.6 pH, when tested in accordance with the methods of testing of the Association of Official Agricultural Chemists in effect on the date of invitation of bids. The organic content shall be not less than 3% nor more than 20% as determined by the loss on ignition or dry combustion method in accordance with ASTM D2974. There shall be not less than 20% nor more than 80% of the material passing the 200 mesh (75 μm) sieve as determined by the wash test in accordance with ASTM C117.

Natural topsoil may be amended by the Contractor with approved materials and methods to meet the above specifications.

905-2.2 Inspection and tests. Within 10 days following acceptance of the bid, the RPR shall be notified of the source of topsoil to be furnished by the Contractor. The topsoil shall be inspected to determine if the selected soil meets the requirements specified and to determine the depth to which stripping will be permitted. At this time, the Contractor may be required to take representative soil samples from several locations within the area under consideration and to the proposed stripping depths, for testing purposes as specified in paragraph 905-2.1.

CONSTRUCTION METHODS

905-3.1 General. Areas to be topsoiled shall be shown on the plans. If topsoil is available on the site, the location of the stockpiles or areas to be stripped of topsoil and the stripping depths shall be shown on the plans.

Suitable equipment necessary for proper preparation and treatment of the ground surface, stripping of topsoil, and for the handling and placing of all required materials shall be on hand, in good condition, and approved by the RPR before the various operations are started.

905-3.2 Preparing the ground surface. Immediately prior to dumping and spreading the topsoil on any area, the surface shall be loosened by discs or spike-tooth harrows, or by other means approved by the RPR, to a minimum depth of 2 inches (50 mm) to facilitate bonding of the topsoil to the covered subgrade soil. The surface of the area to be topsoiled shall be cleared of all stones larger than 2 inches (50 mm) in any diameter and all litter or other material which may be detrimental to proper bonding, the rise of capillary moisture, or the proper growth of the desired planting. Limited areas, as shown on the plans, which are too compact to respond to these operations shall receive special scarification.

Grades on the area to be topsoiled, which have been established by others as shown on the plans, shall be maintained in a true and even condition. Where grades have not been established, the areas shall be smooth-graded and the surface left at the prescribed grades in an even and compacted condition to prevent the formation of low places or pockets where water will stand.

905-3.3 Obtaining topsoil. Prior to the stripping of topsoil from designated areas, any vegetation, briars, stumps and large roots, rubbish or stones found on such areas, which may interfere with subsequent operations, shall be removed using methods approved by the RPR. Heavy sod or other cover, which cannot be incorporated into the topsoil by discing or other means shall be removed.

When suitable topsoil is available on the site, the Contractor shall remove this material from the designated areas and to the depth as directed by the RPR. The topsoil shall be spread on areas already tilled and smooth-graded, or stockpiled in areas approved by the RPR. Any topsoil stockpiled by the Contractor shall be rehandled and placed without additional compensation. Any topsoil stockpiled by the Contractor and any topsoil that has been stockpiled on the site by others that is required for topsoil purposes, shall be removed from the stockpile and placed by the Contractor. The sites of all stockpiles and areas adjacent thereto which have been disturbed by the Contractor shall be graded if required and put into a condition acceptable for seeding.

After all topsoil operations are complete, excess topsoil which has been stockpiled by the Contractor shall be spoiled in accordance with the Contract Documents. Prior to placing spoil off airport property, Contractor shall submit a "Spoil Deposition and Release" to the RPR. A sample form is contained in Appendix 4 of the CSPP located in Attachment A to Section 70-08 of these Specifications and shall be acceptable to the RPR prior to removing material from the work area. No direct payment will be made for spoiling operations. The cost of spoiling material off-site shall be considered incidental to this Contract and the costs shall be included in the various pay items involved.

When suitable topsoil is secured off the airport site, the Contractor shall locate and obtain the supply, subject to the approval of the RPR. The Contractor shall notify the RPR sufficiently in advance of operations in order that necessary measurements and tests can be made. The Contractor shall remove the topsoil from approved areas and to the depth as directed. The topsoil shall be hauled to the site of the work and placed for spreading, or spread as required. Any topsoil hauled to the site of the work and stockpiled shall be rehandled and placed without additional compensation.

905-3.4 Placing topsoil. The topsoil shall be evenly spread on the prepared areas to a uniform depth as shown on the plans after compaction, unless otherwise shown on the plans or stated in the special provisions. Spreading shall not be done when the ground or topsoil is frozen, excessively wet, or otherwise in a condition detrimental to the work. Spreading shall be carried on so that turfing operations can proceed with a minimum of soil preparation or tilling.

After spreading, any large, stiff clods and hard lumps shall be broken with a pulverizer or by other effective means, and all stones or rocks (2 inches (50 mm) or more in diameter), roots, litter, or any foreign matter shall be raked up and disposed of by the Contractor. after spreading is completed, the topsoil shall be satisfactorily compacted by rolling with a cultipacker or by other means approved by the RPR. The compacted topsoil surface shall conform to the required lines, grades, and cross-sections. Any

topsoil or other dirt falling upon pavements as a result of hauling or handling of topsoil shall be promptly removed.

METHOD OF MEASUREMENT

905-4.1 There shall be no separate measurement for topsoil or for topsoil handling/placement.

BASIS OF PAYMENT

905-5.1 There shall be no separate payment for topsoil or for topsoil handling/placement. Topsoil and topsoil handling/placement shall be considered an incidental and subsidiary part of the Project work, the cost of which shall be included in established pay items.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM C117	Materials Finer than 75 μm (No. 200) Sieve in Mineral Aggregates by Washing

Advisory Circulars (AC)

AC 150/5200-33	Hazardous Wildlife Attractants on or Near Airports

FAA/United States Department of Agriculture

Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM T-905

Item T-906 Hydroseeding

DESCRIPTION

906-1.1 Hydroseeding and related operations, including liming and fertilizing, shall be performed in all areas outside the limits of the pavement where existing growth has been covered or removed or disturbed by stripping, grading, ditching or other construction operations as shown on the Plans or as directed by the RPR in accordance with these Specifications.

MATERIALS

906-2.1 Seed. The species and application rates of grass, legume and cover-crop seed furnished shall be those stipulated herein. Seed shall conform to the requirements of Federal Specification JJJ-S-181.

Seed shall be furnished separately or in mixtures in standard containers with the seed name, lot number, net weight, percentages of purity and of germination and hard seed, and percentage of maximum weed seed content clearly marked for each kind of seed. The Contractor shall furnish the RPR duplicate signed copies of a statement by the vendor certifying that each lot of seed has been tested by a recognized laboratory for seed testing within 6 months of date of delivery. This statement shall include: name and address of laboratory, date of test, lot number for each kind of seed and the results of tests as to name, percentages of purity and of germination, and percentage of weed content for each kind of seed furnished, and, in the case of a mixture, the proportions of each kind of seed.

Grass seed shall be fresh, recleaned seed of the latest crop. The seed mixture specified below is based on percentage of pure seed (purety exgermination). The exact quantity of bulk seed used will depend on the grade of seed available. The tolerance for P.L.S. shall be those called official and tabulated on pages 22 and 23, United States Department of Agriculture Services and Regulatory Announcement No. 156.

Seed shall be fresh, clean, new crop delivered in unopened packages, bearing guaranteed analysis. Seed shall be as follows:

Percent By Weight	Variety	Percent Purity	Percent Germination
45	Kentucky Blue Grass	90	80
15	Perennial Rye Grass	95	85
20	Tall Fescue	95	80
20	Fine Fescues[1]	95	80

[1] Fine fescues include creeping red fescue, chewings fescue, hard fescue, and sheep fescue.

906-2.2 Lime. Lime shall be applied at the Contractors discretion if required to create a suitable seedbed. Lime shall be ground limestone containing not less than 85% of total carbonates, and shall be ground to such fineness that 90% will pass through a No. 20 mesh sieve and 50% will pass through a No. 100 mesh sieve. Dolomitic lime or a high magnesium lime shall contain at least 10% of magnesium oxide. All liming materials shall conform to the requirements of ASTM C 602.

906-2.3 Fertilizer. Fertilizer shall be complete and partially organic. Fertilizer shall consist of the following nutrients by weight:

Nitrogen	10%
Phosphorous	0%[1]
Potash	4%

[1] Fertilizers which contain up to 0.67% phosphorous are allowed

906-2.4 Mulching. Mulching shall be wood fiber processed so that the fibers will remain in uniform suspension in water under agitation and will blend with grass seed, fertilizer and other additives to form a homogenous slurry. It shall have the characteristics which, upon hydraulic application, shall form a blotter-like ground coating with moisture absorption and percolation properties and the ability to cover and hold grass seed in intimate contact with the soil.

Wood fiber shall contain no growth or germination inhibiting factors, and shall be dyed green. Wood fibers shall be supplied in the manufacturer's standard containers weighing not over 100 pounds each, with the name of the material, net weight of contents, the manufacturer's name and the air dry weight of fiber (equivalent to 10% moisture) appearing on each container.

Mulching shall have the following properties:

1.	Percent Moisture Content:	10%
2.	Percent Organic Matter (Wood Fiber):	99.2%
3.	Percent Ash Content:	0.8%
4.	pH:	4.8
5.	Water Holding Capacity:	2.2 lbs. water (min.)/0.22 lbs. fiber

CONSTRUCTION METHODS

906-3.1 Advance preparation and cleanup. After grading of areas has been completed and before applying fertilizer and ground limestone, areas to be hydroseeded shall be raked or otherwise cleared of stones larger than 1 inch in any diameter, sticks, stumps and other debris which might interfere with sowing of seed, growth of grasses or subsequent maintenance of grass covered areas. If any damage by erosion or other causes has occurred after the completion of grading and before beginning the application of fertilizer and ground limestone, the Contractor shall repair such damage. This may include filling gullies, smoothing irregularities and repairing other incidental damage.

An area to be hydroseeded shall be considered a satisfactory seedbed without additional treatment if it has recently been thoroughly loosened and worked to a depth of not less than 5 inches as a result of grading operations and, if immediately prior to hydroseeding, the top 3 inches of soil is loose, friable, reasonably free from large clods, rocks, large roots, or other undesirable matter, and if shaped to the required grade.

However, when the area to be hydroseeded is sparsely sodded, weedy, barren and unworked, or packed and hard, any grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the soil then scarified or otherwise loosened to a depth not less than 5 inches. Clods shall be broken and the top 3 inches of soil shall be worked into a satisfactory seedbed by discing, or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

906-3.2 Fertilizing. Fertilizer in the slurry mix shall be such that 20 pounds of fertilizer shall be applied per 1,000 square feet.

906-3.3 Seeding mixture. The seed mixture in the slurry mix shall be such that 3 pounds of seed shall be applied per 1,000 square feet.

906-3.4 Application method. Particular care shall be exercised to insure that the application is made uniformly and at the prescribed rate and to guard against misses and overlapped areas. Proper predetermined quantities of the mixture in accordance with specifications shall be used to cover specified sections of known area. Checks on the rate and uniformity of application may be made by observing the degree of wetting of the ground or by distributing test sheets of paper or pans over the area at intervals and observing the quantity of material deposited thereon.

If required to prepare a suitable seedbed, lime shall be applied separately and prior to the application of any fertilizer or seed and only on seedbeds that have previously been prepared as described above. The Contractor shall be responsible for determining if the addition of lime is required to produce a suitable seedbed. Not more than 220 pounds of lime shall be added to and mixed with each 100 gallons of water. After the applied lime mixture has dried, the lime shall be worked into the top 3 inches of soil, after which the seedbed shall again be properly graded and dressed to a smooth finish. The cost of providing and placing lime shall be considered incidental and shall be included in the cost of hydroseeding.

906-3.5 Maintenance of seeded areas. The Contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the RPR. Surfaces gullied or otherwise damaged following seeding shall be repaired by re-grading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

It is required that the Contractor establish a good stand of grass of uniform color and density to the satisfaction of the RPR. If at the time when the contract has been otherwise completed it is not possible to make an adequate determination of the color, density, and uniformity of such stand of grass, payment will not be made for the unaccepted portions of the areas until such time as these requirements have been met.

METHOD OF MEASUREMENT

906-4.1 No measurement will be made for direct payment of hydroseeding as the cost of furnishing and sowing shall be considered a subsidiary obligation in completing the various items involved.

BASIS OF PAYMENT

906-5.1 No payment will be made separately or directly for this item on any part of the work unless otherwise listed in the various payment items. All hydroseeding will be considered a necessary and incidental part of the work and its cost shall be considered by the Contractor and included in the contract price for the pay items of work involved.

MATERIAL REQUIREMENTS

ASTM C602	Agricultural Liming Materials
Fed. Spec. JJJ-S-181B	Agricultural Seeds
Fed. Spec. O-F-241D	Commercial Mixed Fertilizer

END OF ITEM T-906

Item L-110 Airport Underground Electrical Duct Banks and Conduits

DESCRIPTION

110-1.1 This item shall consist of underground electrical conduits and duct banks (single or multiple conduits encased in concrete or buried in sand) installed per this specification at the locations and per the dimensions, designs, and details shown on the plans. This item shall include furnishing and installing of all underground electrical duct banks and individual and multiple underground conduits and removal of existing duct banks. It shall also include all trenching, backfilling, removal, and restoration of any paved or turfed areas which are not otherwise disturbed; concrete encasement, mandrelling, pulling lines, duct markers, plugging of conduits, and the testing of the installation as a completed system ready for installation of cables per the plans and specifications. This item shall also include furnishing and installing conduits and all incidentals for providing positive drainage of the system. Verification of existing ducts is incidental to the pay items provided in this specification.

Restoration within grading limits will not be necessary as the establishment of paved or turf surfaces are included in the various pay items of the proposed work of this contact.

EQUIPMENT AND MATERIALS

110-2.1 General.

a. All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

b. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications and acceptable to the RPR. Materials supplied and/or installed that do not comply with these specifications shall be removed, when directed by the RPR and replaced with materials, that comply with these specifications, at the Contractor's cost.

c. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in project that accrue directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be neatly bound in a properly sized 3-ring binder, tabbed by specification section. The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes specified in this document.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least twelve (12) months from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

110-2.2 Steel conduit. Rigid galvanized steel (RGS) conduit and fittings shall be hot dipped galvanized inside and out and conform to the requirements of Underwriters Laboratories Standards 6, 514B, and 1242. All RGS conduits or RGS elbows installed below grade, in concrete, permanently wet locations or other similar environments shall be painted with a 10-mil thick coat of asphaltum sealer or shall have a factory-bonded polyvinyl chloride (PVC) cover. Any exposed galvanizing or steel shall be coated with 10 mils of asphaltum sealer. PVC coated rigid galvanized steel conduit shall have a 0.04-inch thick factory applied PVC coating meeting NEMA Standard No. RN1. Fittings shall have the same coating. When using PVC coated RGS conduit, care shall be exercised not to damage the factory PVC coating. Damaged PVC coating shall be repaired per the manufacturer's written instructions. In lieu of PVC coated RGS, corrosion wrap tape shall be permitted to be used where RGS is in contact with direct earth."

110-2.3 Plastic conduit and fittings. Plastic conduit and fittings shall be in compliance with Article 352 of the current National Electrical Code and as follows:

a. PVC conduit shall conform to UL 651 or UL 651A. In addition, the conduit shall be one of the following types, as shown on the plans:

1. Type I–Schedule 40 or Schedule 80 PVC suitable for underground use either direct-buried or encased in concrete.

2. Type II–Schedule 40 PVC suitable for either above ground or underground use.

3. Type III – Schedule 80 PVC suitable for either above ground or underground use either direct-buried or encased in concrete.

b. HDPE conduit shall conform to UL 651A. In addition, the conduit shall be the following type:

1. Type III –HDPE pipe, minimum standard dimensional ratio (SDR) 11, suitable for placement with directional boring under pavement.

c. PVC fittings shall conform to UL 514B.

d PVC junction boxes and covers shall conform to UL 514C.

The type of solvent cement shall be as recommended by the conduit/fitting manufacturer.

110-2.4 Split conduit. Split conduit shall be pre-manufactured for the intended purpose and shall be made of steel or plastic.

110-2.5 Conduit spacers. Conduit spacers shall be prefabricated interlocking units manufactured for the intended purpose. They shall be of double wall construction made of high grade, high density polyethylene complete with interlocking cap and base pads. They shall be designed to accept No. 4 reinforcing bars installed vertically.

110-2.6 Concrete. Concrete foundations shall be proportioned, placed, and cured per state department of transportation structural concrete with minimum 25% Type F fly ash, and a minimum allowable compressive strength of 4,000 psi (28 MPa).

110-2.7 Precast concrete structures. Precast concrete structures shall be furnished by a plant meeting National Precast Concrete Association Plant Certification Program or another RPR approved third party certification program. Precast concrete structures shall conform to ASTM C478.

110-2.8 Flowable backfill. Flowable material used to back fill conduit and duct bank trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material.

110-2.9 Detectable warning tape. Plastic, detectable, American Public Works Association (APWA) red (electrical power lines, cables, conduit and lighting cable), orange (telephone/fiber optic cabling) with continuous legend magnetic tape shall be polyethylene film with a metallized foil core and shall be 3-6 inches (75-150 mm) wide. Detectable tape is incidental to the respective bid item. The legend shall read "CAUTION: BURIED ELECTRIC LINE BELOW", or similar language which includes the words "CAUTION" and "ELECTRIC".

110-2.10 Bedding. Bedding shall meet the requirements of ASTM C 33, fine aggregate for concrete. Gradation shall be in accordance with the table below:

	Percentage By Weight
Sieve Designations	**Passing Sieves**
3/8 Inch	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	5-30
No. 100	0-10

110-2.11 Flexible conduit. Flexible conduit shall be liquid-tight non-metallic conforming to the requirements of NEC 356 and UL 1660. Fittings shall conform to UL 514B. Where connected to rigid steel or PVC conduit, the flexible conduit shall have the same inside diameter.

110-2.12 Reinforcing steel. Reinforcing steel shall be deformed bars of new billet steel meeting the requirements of ASTM A 615, Grade 60. Reinforcing steel shall be hot dipped galvanized in accordance with ASTM A-123, or epoxy coated.

110-2.13 Concrete bonding agent. Concrete bonding agent shall conform to the requirements of ASTM C 881. Concrete bonding agent shall be Type V, Grade 2 and un-pigmented. Concrete bonding agent shall be Class A, B, or C, depending on the temperature of the concrete surface to which the agent will be applied.

110-2.14 Backfill. Backfill shall be suitable on-site material obtained from the trench excavation, unless otherwise shown on the Contract Drawings.

110-2.15 Not used.

110-2.16 Not used.

110-2.17 Concrete grouting material. This material shall have a maximum initial setting time of one hour. Compressive strength shall be a minimum of 2,000 psi after one day and 5,000 psi after 28 days. The material shall be able to withstand 25 cycles of freeze-thaw (10% NaCl) with a maximum loss of 4%. The material may exhibit expansion at no more than 0.40% and shrinkage of no more than 0.05% such that no cracks are produced. The bond strength shall be a minimum of 200 psi after 5 days air cure without the use of a special bonding agent. The material shall exhibit no appreciable heat of hydration.

110-2.18 Separation Geotextile. Separation geotextile shall be Class 2; 0.02 sec^{-1} permittivity per ASTM D4491; Apparent opening size per ASTM D4751 with 0.60 mm maximum average roll value.

CONSTRUCTION METHODS

110-3.1 General. The Contractor shall install underground duct banks and conduits at the approximate locations indicated on the plans. The RPR shall indicate specific locations as the work progresses, if required to differ from the plans. Duct banks and conduits shall be of the size, material, and type indicated on the plans or specifications. Where no size is indicated on the plans or in the specifications, conduits shall be not less than 2 inches (50 mm) inside diameter or comply with the National Electrical Code based on cable to be installed, whichever is larger. All duct bank and conduit lines shall be laid so as to grade toward access points and duct or conduit ends for drainage. Unless shown otherwise on the plans, grades shall be at least 3 inches (75 mm) per 100 feet (30 m). On runs where it is not practicable to maintain the grade all one way, the duct bank and conduit lines shall be graded from the center in both directions toward access points or conduit ends, with a drain into the storm drainage system. Pockets or traps where moisture may accumulate shall be avoided. Under pavement, the top of the duct bank shall not be less than 18 inches (0.5 m) below the subgrade; in other locations, the top of the duct bank or underground conduit shall be not less than 18 inches (0.5 m) below finished grade.

The Contractor shall mandrel each individual conduit whether the conduit is direct-buried or part of a duct bank. An iron-shod mandrel, not more than 1/4 inch (6 mm) smaller than the bore of the conduit shall be pulled or pushed through each conduit. The mandrel shall have a leather or rubber gasket slightly larger than the conduit hole.

The Contractor shall swab out all conduits/ducts and clean base can, manhole, pull boxes, etc., interiors immediately prior to pulling cable. Once cleaned and swabbed the light bases, manholes, pull boxes, etc., and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, base cans, manholes, etc., is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be recleaned at the Contractor’s expense. All accessible points shall be kept closed when not installing cable. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the RPR of any blockage in the existing ducts.

For pulling the permanent wiring, each individual conduit, whether the conduit is direct-buried or part of a duct bank, shall be provided with a 1,000 pound test polypropylene pull rope. The ends shall be secured and sufficient length shall be left in access points to prevent it from slipping back into the conduit. Where spare conduits are installed, as indicated on the plans, the open ends shall be plugged with removable tapered plugs, designed for this purpose.

All conduits shall be securely fastened in place during construction and shall be plugged to prevent contaminants from entering the conduits. Any conduit section having a defective joint shall not be installed. Ducts shall be supported and spaced apart using approved spacers at intervals not to exceed 5 feet (1.5 m).

Unless otherwise shown on the plans, concrete encased duct banks shall be used when crossing under pavements expected to carry aircraft loads, such as runways, taxiways, taxilanes, ramps and aprons. When under paved shoulders and other paved areas, conduit and duct banks shall be encased using flowable fill for protection.

All conduits within concrete encasement of the duct banks shall terminate with female ends for ease in current and future use. Install factory plugs in all unused ends. Do not cover the ends or plugs with concrete.

Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored.

Trenches for conduits and duct banks may be excavated manually or with mechanical trenching equipment unless in pavement, in which case they shall be excavated with mechanical trenching

equipment. Walls of trenches shall be essentially vertical so that a minimum of shoulder surface is disturbed. Blades of graders shall not be used to excavate the trench.

Existing material, regardless of its nature, shall be removed to a depth of at least 3 inches (75 mm) below the required conduit or duct bank depth and it shall be replaced with bedding. Flowable backfill may alternatively be used The cost of excavation, regardless of the type of material encountered, shall be included in the various pay items involved.

Underground electrical warning (Caution) tape shall be installed in the trench above all underground duct banks and conduits in unpaved areas. Contractor shall submit a sample of the proposed warning tape for approval by the RPR. If not shown on the plans, the warning tape shall be located 6 inches above the duct/conduit or the counterpoise wire if present.

Joints in plastic conduit shall be prepared per the manufacturer's recommendations for the particular type of conduit. Plastic conduit shall be prepared by application of a plastic cleaner and brushing a plastic solvent on the outside of the conduit ends and on the inside of the couplings. The conduit fitting shall then be slipped together with a quick one-quarter turn twist to set the joint tightly. Where more than one conduit is placed in a single trench, or in duct banks, joints in the conduit shall be staggered a minimum of 2 feet (60 cm).

Changes in direction of runs exceeding 10 degrees, either vertical or horizontal, shall be accomplished using manufactured sweep bends.

Whether or not specifically indicated on the drawings, where the soil encountered at established duct bank grade is an unsuitable material, as determined by the RPR, the unsuitable material shall be removed and replaced with suitable material. Additional duct bank supports shall be installed, as approved by the RPR.

All excavation shall be unclassified and shall be considered incidental. Dewatering necessary for duct installation, and erosion per federal, state, and local requirements is incidental.

Unless otherwise specified, excavated materials that are deemed by the RPR to be unsuitable for use in backfill or embankments shall be removed and disposed of per the Contract Documents.

Any excess excavation shall be filled with suitable material approved by the RPR and compacted.

It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables) cross proposed installations, the Contractor shall ensure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:

a. Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred

b. Trenching, etc., in cable areas shall then proceed with approval of the RPR, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.

In the event that any cable is damaged during the course of construction, the Contractor shall be responsible for the immediate and complete repair.

110-3.2 Duct banks. Not used.

110-3.3 Conduits without concrete encasement. Trenches for single-conduit lines shall be not less than 6 inches (150 mm) nor more than 12 inches (300 mm) wide. The trench for 2 or more conduits installed at the same level shall be proportionately wider. Trench bottoms for conduits without concrete encasement shall be made to conform accurately to grade so as to provide uniform support for the conduit along its entire length.

Unless otherwise shown on the plans, a layer of fine earth material, at least 3 inches (75 mm) thick (loose measurement) shall be placed in the bottom of the trench as bedding for the conduit. The bedding material shall consist of soft dirt, sand or other fine fill, and it shall contain no particles that would be retained on a 1/4-inch (6.3 mm) sieve. The bedding material shall be tamped until firm. Flowable backfill may alternatively be used.

Unless otherwise shown on plans, conduits shall be installed so that the tops of all conduits within the Airport's secured area where trespassing is prohibited are at least 18 inches (0.5 m) below the finished grade. Conduits outside the Airport's secured area shall be installed so that the tops of the conduits are at least 24 inches (60 cm) below the finished grade per National Electric Code (NEC), Table 300.5.

When two or more individual conduits intended to carry conductors of equivalent voltage insulation rating are installed in the same trench without concrete encasement, they shall be spaced not less than 3 inches (75 mm) apart (measured from outside wall to outside wall) in a horizontal direction and not less than 6 inches (150 mm) apart in a vertical direction. Where two or more individual conduits intended to carry conductors of differing voltage insulation rating are installed in the same trench without concrete encasement, they shall be placed not less than 3 inches (75 mm) apart (measured from outside wall to outside wall) in a horizontal direction and lot less than 6 inches (150 mm) apart in a vertical direction.

Trenches shall be opened the complete length between normal termination points before conduit is installed so that if any unforeseen obstructions are encountered, proper provisions can be made to avoid them.

Conduits shall be installed using conduit spacers. No. 4 reinforcing bars shall be driven vertically into the soil a minimum of 6 inches (150 mm) to anchor the assembly into the earth while backfilling. For this purpose, the spacers shall be fastened down with locking collars attached to the vertical bars. Spacers shall be installed at 5-foot (1.5-m) intervals. Spacers shall be in the proper sizes and configurations to fit the conduits. Locking collars and spacers shall be submitted to the RPR for review prior to use.

Install a plastic, detectable, color as noted, 3 to 6 inches (75 to 150 mm) wide tape, above all underground conduit or duct lines not installed under pavement, at the depth shown on the plans. One warning tape shall be installed above each counterpoise wire installed.

110-3.4 Markers. The location of each end and of each change of direction of conduits and duct banks shall be marked by a concrete slab marker 2 feet (60 cm) square and 4 - 6 inches (100 - 150 mm) thick extending approximately one inch (25 mm) above the surface. The markers shall also be located directly above the ends of all conduits or duct banks, except where they terminate in a junction/access structure or building. Each cable or duct run from a line of lights and signs to the equipment vault must be marked at approximately every 200 feet (61 m) along the cable or duct run, with an additional marker at each change of direction of cable or duct run.

The Contractor shall impress the word "DUCT" or "CONDUIT" on each marker slab. Impression of letters shall be done in a manner, approved by the RPR, for a neat, professional appearance. All letters and words must be neatly stenciled. After placement, all markers shall be given one coat of high-visibility orange paint, as approved by the RPR. The Contractor shall also impress on the slab the number and size of conduits beneath the marker along with all other necessary information as determined by the RPR. The letters shall be 4 inches (100 mm) high and 3 inches (75 mm) wide with width of stroke 1/2 inch (12 mm) and 1/4 inch (6 mm) deep or as large as the available space permits. Furnishing and installation of duct markers is incidental to the respective duct pay item.

110-3.5 Backfilling for conduits. For conduits, sand, soft earth, or other fine fill (loose measurement), as shown on the Plans, shall be placed around the conduits ducts and carefully tamped around and over them with hand tampers. The remaining trench shall then be backfilled and compacted except that material used for back fill shall be select material not larger than 4 inches (100 mm) in diameter.

Trenches shall not contain pools of water during back filling operations.

The trench shall be completely backfilled and tamped level with the adjacent surface; except that, where sod is to be placed over the trench, the backfilling shall be stopped at a depth equal to the thickness of the sod to be used, with proper allowance for settlement.

Any excess excavated material shall be removed and disposed of per instructions issued by the RPR.

110-3.6 Backfilling for duct banks. Not used.

110-3.7 Restoration. Where sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by the work shall be restored to its original condition. The restoration shall include topsoiling, and hydroseeding shown on the plans. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. Following restoration of all trenching near airport movement surfaces, the Contractor shall thoroughly visually inspect the area for foreign object debris (FOD), and remove any such FOD that is found. This FOD inspection and removal shall be considered incidental to the pay item of which it is a component part.

110-3.8 Ownership of removed cable. All cable removed shall become the property of the Contractor and shall be disposed of in a manner which is in accordance with all Federal, State and Local regulations. In no case, shall any removed cables be left within the airport limits. Contractor shall make every effort to recycle the used cable at an approved recycling center. When the Contractor chooses to dispose of cable off the airport property, the Contractor shall obtain and file with the RPR permission in writing from the property owner for the use of private property for this purpose.

110-3.9 Conduit and duct bank removal.

Where existing conduits and duct banks are to be removed in the same trench as proposed conduits and duct banks, the Contractor shall consider such removal as an incidental part of construction and include the costs thereof in the various pay items involved. Where existing conduits and duct banks are to be removed outside of proposed trenching limits, they shall be paid for separately. The cost of such removal shall include excavation, conduit and duct bank removal, disposal, and backfill. Restoration shall be as specified below in the section titled "Restoration". Backfill shall be with suitable on-site material unless otherwise shown or specified. Backfill under paved areas shall be as shown on the plans. Conduit and duct banks shall be removed as shown on the plans and as directed by the Engineer. When conduit and duct banks are removed and disconnected from existing structures, the openings in the structure shall be closed watertight with brick and mortar. When conduits and duct banks are to be replaced, any structure modifications required to accept the proposed conduit and duct bank shall be done with all connections grouted watertight.

Where conduits or duct banks are installed or removed outside of the general grading limits, or in areas that would not otherwise be disturbed, restoration shall be considered necessary and incidental to the work of this item and the costs shall be included in the associated pay items of work involved.

Where conduits or duct banks are installed or removed within the general grading limits, restoration of the area will not be necessary as payment for establishment of turf or pavement will be included in the various pay items of work involved.

METHOD OF MEASUREMENT

110-4.1 No separate measurement shall be made for conduit installation.

BASIS OF PAYMENT

110-5.1 No separate payment shall be made for conduit installation. Conduit installation shall be considered a necessary and subsidiary component of the work, the cost of which shall be included in established pay items.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circular (AC)

AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-53	Airport Lighting Equipment Certification Program

ASTM International (ASTM)

ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement

National Fire Protection Association (NFPA)

NFPA-70	National Electrical Code (NEC)

Underwriters Laboratories (UL)

UL Standard 6	Electrical Rigid Metal Conduit - Steel
UL Standard 514B	Conduit, Tubing, and Cable Fittings
UL Standard 514C	Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
UL Standard 1242	Electrical Intermediate Metal Conduit Steel
UL Standard 651	Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
UL Standard 651A	Type EB and A Rigid PVC Conduit and HDPE Conduit

END OF ITEM L-110

SECTION 014100 - SPECIAL INSPECTION & TESTING

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS & DEFINITIONS

A. Special Inspection and Structural Testing shall be in accordance with Chapter 17 of the 2025 Building Code of New York State (BCNYS).

B. The program of Special Inspection and Structural Testing is a quality assurance program intended to ensure that the work is performed in accordance with the Contract Documents.

C. Definitions:

1. Approved: Acceptable to the building official.
2. Approved Agency: An established and recognized agency that is regularly engaged in conducting tests, furnishing inspection services or furnishing product certification where such agency has been approved by the building official.
3. Building Official: The officer or other designated authority charged with the administration and enforcement of the code, or a duly authorized representative.
4. Special Inspection: Inspection of construction requiring the expertise of and approved special inspector in order to ensure compliance with the code and the approved construction documents:
    a. Continuous Special Inspection: Special Inspection by the special inspector who is present continuously when and where the work to be inspected has been or is being performed.
    b. Periodic Special Inspection: Special Inspection by the special inspector who is intermittently present where the work to be inspected is being performed.
5. Special Inspector: A qualified person employed or retained by an approved agency and approved by the building official as having the competence necessary to inspect a particular type of construction requiring special inspection.

D. This specification section is intended to inform the Contractor of the Owner’s quality assurance program and the extent of the Contractor’s responsibilities. This specification section is also intended to notify the Special Inspector, Approved Agency, and other Agents of the Special Inspector of their requirements and responsibilities.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

B. Statement of Special Inspections (attached).

1.3 SCHEDULE OF INSPECTION AND TESTS

A. Required inspections and tests are described herein and in the individual specification Sections for the items to be inspected or tested.

B. An approved agency will be retained by the Owner. The Special Inspector, his agents and the approved agency shall perform, but not be limited to, the following project testing and inspection services:

(a.) Concrete.
(b.) Wood.
(c.) Soils.
(d.) Fabricated items.

1.4 AGENCY APPROVAL

A. An approved agency shall provide all information as necessary for the building official to determine that the agency meets the applicable requirements specified in Sections 1703.1.1 through 1703.1.3 of the 2025 BCNYS.

1.5 SPECIAL INSPECTOR QUALIFICATIONS

A. Prior to the start of the construction, the approved agencies shall provide written documentation to the building official demonstrating the competence and relevant experience or training of the special inspectors who will perform the special inspections and tests during construction. Experience or training shall be considered to be relevant where the documented experience or training is related in complexity to the same type of special inspection or testing activities for projects of similar complexity and material qualities. These qualifications are in addition to qualifications specified in other sections of the 2025 BCNYS.

1.6 SUBMITTALS

A. Prior to the start of the construction, the approved agencies shall provide written documentation to the building official demonstrating the competence and relevant experience or training of the special inspectors who will perform the special inspections and tests during construction.

B. The Special Inspector and Approved Agency shall disclose any past or present business relationship or potential conflict of interest with the Contractor or any of the Subcontractors whose work will be inspected or tested.

1.7 APPROVED AGENCY TESTING AND INSPECTION FREQUENCY

A. Specific items to be tested and the frequency as to which the tests are to be performed are noted on the attached “Statement of Special Inspections.”

1.8 PAYMENT

A. The Owner shall engage and pay for the services of the Special Inspector, Agents of the Special Inspector, and Approved Agency.

B. If any materials, which require Special Inspections, are fabricated in a plant, which is not located within 100 miles of the project, the contractor shall be responsible for the travel expenses of the Special Inspector or Approved Agency.

C. The Contractor shall be responsible for the cost of any retesting or reinspection of work which fails to comply with the requirements of the Contract Documents

1.9 CONTRACTOR'S RESPONSIBILITIES

A. Contractor shall cooperate with the Special Inspector, his agents, the Approved Agency and the Owner to facilitate the execution of required services.

B. Contractor is responsible for coordinating his work with the Approved Agency so that no work is installed without the proper tests being performed.

C. Contractor shall secure and deliver to the Approved Agency, where required, quantities of samples of materials to be tested.

D. Contractor shall furnish casual labor and facilities for storage of test samples.

E. Contractor shall assist Approved Agency to obtain samples at job site.

F. Contractor shall provide and pay for all project required concrete mix designs and related confirming cylinders.

G. Contractor shall provide certified mill reports for project reinforcing and structural steel covering physical and chemical properties.

H. Contractor shall provide and pay for all testing of individual masonry units indicating compliance per specified ASTM requirements.

I. Contractor shall advise Approved Agency, in advance, of sources of material, and instruct supplier to cooperate with Approved Agency to achieve required inspection.

J. Contractor shall notify the Approved Agency a minimum of 24 hours in advance of operations to allow for Approved Agency assignment of personnel and scheduling of test. If Approved Agency visits site and tests cannot take place, Contractor shall reimburse the Owner for total cost.

K. Contractor shall provide and pay for all project mortar and grout mix designs and confirming cylinders and/or cubes.

L. Contractor shall construct the masonry prisms required for testing of load bearing masonry under the observation of the Approved Agency.

M. Contractor shall notify Approved Agency 24 hours before each concrete pour and identify the proposed quantity of the pour.

N. Contractor shall employ a steel and wood fabricator which is approved by the building official. If the contractor employs a non-approved fabricator, the contractor shall pay for all special inspections required by the NYS Building Code. If the contractor employs an approved fabricator, such fabricator shall provide a letter at the completion of the fabrication process stating work was performed in accordance with approved construction documents.

O. The Contractor shall keep at the project site the latest set of construction drawings, field sketches, approved shop drawings, and specifications for use by the inspectors and testing technicians.

P. The Special Inspection program shall in no way relieve the Contractor of his obligation to perform work in accordance with the requirements of the Contract Documents or from implementing an effective Quality Control program. All work that is subjected to Special Inspections shall first be reviewed by the Contractor's quality control personnel.

Q. The Contractor shall be solely responsible for construction site safety.

R. Contractor's responsibility related to project testing as required by technical sections hereinafter:

1. The Contractor shall make arrangements and schedule the proper authorities for inspection of the system.

2. The Contractor shall obtain from governing authorities the proper test procedures that are required for the system tests.

3. All tests shall be made in the presence and to the satisfaction of authorities having jurisdiction and the Contractor shall provide five (5) copies of tests witnessed to the Engineer.

4. See technical sections hereinafter for further details of testing requirements.

S. Contractor shall correct any discrepancies noted in Approved Agency report. Contractor shall coordinate with Approved Agency to review corrections and update reports. Final reports shall show all discrepancies were corrected.

1.10 APPROVED AGENCY RESPONSIBILITIES

A. Approved Agency shall cooperate with Contractor and provide qualified personnel.

B. Approved Agency shall inspect and/or test assemblies, specimens, work performed, and techniques as specified.

C. Approved agencies shall keep records of special inspections and tests. The approved agency shall submit reports of special inspections and tests to the building official and to the registered design professional in responsible charge. Reports shall indicate that work inspected or tested was or was not completed in conformance to approved construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the building official and to the registered design professional in responsible charge prior to the completion of that phase of the work. A final report documenting required special inspections and tests, and correction of any discrepancies noted in the inspections or tests, shall be submitted at a point in time agreed upon prior to the start of work by the owner or the owner's authorized agent to the building official.

D. Approved Agency shall promptly process and distribute all copies of test reports and

related instructions to ensure all necessary retesting and/or replacement of materials with the least possible delay to the progress of the work. The Approved Agency shall provide a written report within three days related to every project test and inspection except daily reports are required for concrete testing. Distribution of electronic reports to each of the following:

1. Owner
2. Contractor
3. Engineer/Architect
4. Building Code Official

E. Each report shall include:

1. Date issued.
2. Project title and number.
3. Approved Agency name, address, and telephone number.
4. Name of Special Inspector and/or Approved Agency inspector and job number.
5. Date and time of sampling or inspection.
6. Record of temperature and weather conditions.
7. Date of test.
8. Identification of specification section.
9. Location of sample or test in the project.
10. Type of inspection or tests.
11. Interpretation of test results.
12. Each report shall have testing laboratory written comments stating that the test results comply with the specified requirements and/or identify retest instructions given to the Contractor and require follow-up test reports that are identified as the retest reports. The retest reports shall identify the original test report.
13. A non-compliance list must be maintained by the Approved Agency. The list must be distributed to the Contractor, Owner, and Architect/Engineer weekly. The non-compliance list must include the following:
    a. All the non-compliance items found during inspections and were not resolved within the day of inspection.
    b. A brief description/title of the non-compliance.
    c. The date the non-compliance was resolved.
    d. The type of resolution.
    e. The initials of the Special Inspector.

F. In addition to the submittal of reports of special inspections and tests in accordance with 2025 BCNYS Section 1704.2.4, reports and certificates shall be submitted by the owner or the owner's authorized agent to the building official for each of the following:
1. Certificates of compliance for the fabrication of structural, load-bearing or lateral load-resisting members or assemblies on the premises of an approved fabricator in accordance with 2025 BCNYS Section 1704.2.5.1.
2. Certificates of compliance for the seismic qualification of nonstructural components, supports and attachments in accordance with Section 2025 BCNYS 1705.13.2.
3. Certificates of compliance for designated seismic systems in accordance with 2025 BCNYS Section 1705.13.3.
4. Reports of preconstruction tests for shotcrete in accordance with 2025 BCNYS Section 1908.5.

5. Certificates of compliance for open web steel joists and joist girders in accordance with 2025 BCNYS Section 2207.5.
6. Reports of material properties verifying compliance with the requirements of AWS D1.4 for weldability as specified in Section 26.6.4 of ACI 318for reinforcing bars in concrete complying with a standard other than ASTM A706 that are to be welded.
7. Reports of mill tests in accordance with Section 20.2.2.5 of ACI 318 for reinforcing bars complying with ASTM A615 and used to resist earthquake-induced flexural or axial forces in the special moment frames, special structural walls or coupling beams connecting special structural walls of seismic force-resisting systems in structures assigned to Seismic Design Category B, C, D, E or F.

G. The Approved Agency is not authorized to release, revoke, alert or enlarge on requirements of Contract Documents.

H. The Approved Agency is not authorized to perform any duties of the Contractor.

I. The Approved Agency shall make tests necessary to assure compliance with the plans and specifications and label all test samples and cylinders with identifying marks.

J. The Special Inspector and/or Approved Agency shall not have control over the Contractor’s means and methods of construction.

K. The Special Inspector and/or Approved Agency shall not be responsible for construction site safety.

L. The Special Inspector and/or Approved Agency have no authority to stop the work.

1.11 APPROVED AGENCY INSURANCE REQUIREMENTS

A. Provide comprehensive and general liability insurance with limits of liability of not less than five hundred thousand dollars ($500,000) for property damage per occurrence.

B. Provide statutory worker's compensation insurance and employer's liability insurance with applicable maximum coverage as required by governing law.

C. Provide excess liability insurance, umbrella form, in the amount of five hundred thousand dollars ($500,000).

D. Provide errors and omissions professional liability insurance in the amount of one million dollars ($1,000,000).

PART 2 PRODUCTS (Not used)

PART 3 EXECUTION

3.1 TESTING REQUIREMENTS

A. General

1. Testing shall be by the Special Inspector and Approved Agency and its agents, unless noted otherwise herein.

2. Owner's providing and use of testing services shall in no way relieve the Contractor of his responsibility to furnish materials and construction in full compliance with drawings and specifications.

3. Required inspections and tests are noted on the attached Statement of Special Inspections.

3.3 FINAL REPORT OF SPECIAL INSPECTIONS

A. The Final Report of Special Inspections shall be completed by the Special Inspector and /or the Approved Agency and be submitted to the Engineer and building official prior to issuance of a Certificate of Use and Occupancy.

END OF SECTION

C&S COMPANIES	**C&S ENGINEERS, INC.** **499 COL. EILEEN COLLINS BLVD.** **Syracuse, NY 13212**	**STATEMENT OF SPECIAL INSPECTIONS & TESTS** As Required by the 2025 Building Code of New York State (BCNYS)

BCNYS § 1704.3 requires that the project Registered Design Professional in responsible charge to complete the Statement of Special Inspections. Completion of this Statement of Special Inspections and submission to the Code Compliance Unit with the Construction Permit Application is a condition for issuance of the Construction Permit.

Project: Hudson Valley Regional Airport	**Project #: 128.065.001**
Project Title: Airport Support Buildings	**Project Manager: P. Hludzenski, P.E.**
Architect/Engineer: C&S ENGINEERS, INC.	
Name of Person Completing this Statement: J. Obleman, PE	**Date: 06/27/2026**
Comments:	

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	**CONTINUOUS**	**PERIODIC**	**BCNYS REFERENCE**	**CHECK IF REQUIRED**	**SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]**	**COMMENTARY/NOTES and REFERENCE STANDARDS**
A. Special Cases (Add requirements under Part S as necessary)			1705.1.1			Special Inspections and Tests shall be required for proposed work that is, in the opinion of the building official, unusual in its nature.
B. Steel Construction.			1705.2			
1. Structural Steel			1705.2.1			
a. Inspection tasks prior to welding;			1705.2.1			AISC 360 Table N5.4-1
i. Welding procedure specifications (WPSs) available	X		1705.2.1	☐		AISC 360 Table N5.4-1
ii. Manufacturer certifications for welding consumables available	X		1705.2.1	☐		AISC 360 Table N5.4-1
iii. Material identification (type/grade)		X	1705.2.1	☐		AISC 360 Table N5.4-1
iv. Welder identification system		X	1705.2.1	☐		AISC 360 Table N5.4-1 The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type.
v. Fit up of groove welds (including joint geometry)		X	1705.2.1	☐		AISC 360 Table N5.4-1
vi. Configuration and finish of access holes		X	1705.2.1	☐		AISC 360 Table N5.4-1

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	**CONTINUOUS**	**PERIODIC**	**BCNYS REFERENCE**	**CHECK IF REQUIRED**	**SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]**	**COMMENTARY/NOTES and REFERENCE STANDARDS**
vii. Fit-up of fillet welds		X	1705.2.1	☐		AISC 360 Table N5.4-1
viii. Check Welding equipment		X	1705.2.1	☐		AISC 360 Table N5.4-1
b. Inspection Tasks During Welding			1705.2.1			AISC 360 Table N5.4-2
i. Use of qualified welders.		X	1705.2.1	☐		AISC 360 Table N5.4-2
ii. Control and Handling of welding consumables.		X	1705.2.1	☐		AISC 360 Table N5.4-2
iii. No welding over cracked tack welds.		X	1705.2.1	☐		AISC 360 Table N5.4-2
iv. Environmental Conditions		X	1705.2.1	☐		AISC 360 Table N5.4-2
v. Verify WPS followed		X	1705.2.1	☐		AISC 360 Table N5.4-2
vi. Verify Welding Techniques		X	1705.2.1	☐		AISC 360 Table N5.4-2
c. Inspection Tasks after Welding			1705.2.1			AISC 360 Table N5.4-3
i. Welds cleaned		X	1705.2.1	☐		AISC 360 Table N5.4-3
ii. Size, length, and location of welds	X		1705.2.1	☐		AISC 360 Table N5.4-3
iii. Welds meet visual acceptance criteria	X		1705.2.1	☐		AISC 360 Table N5.4-3
iv. Arc strikes	X		1705.2.1	☐		AISC 360 Table N5.4-3
v. K-area			1705.2.1	☐		AISC 360 Table N5.4-3; When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. (75mm) of the weld.
vi. Backing removed and weld tabs removed (if required)	X		1705.2.1	☐		AISC 360 Table N5.4-3
vii. Repair activities	X		1705.2.1	☐		AISC 360 Table N5.4-3
viii. Document acceptance or rejection of welded joint or member	X		1705.2.1	☐		AISC 360 Table N5.4-3
d. Inspection Tasks Prior to Bolting			1705.2.1			AISC 360 Table N5.6-1
i. Manufacturer's certification available for fastener materials	X		1705.2.1	☒		AISC 360 Table N5.6-1
ii. Fasteners marked in accordance with ASTM requirements		X	1705.2.1	☒		AISC 360 Table N5.6-1

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
iii. Proper fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)		X	1705.2.1	☒		AISC 360 Table N5.6-1
iv. Proper bolting procedure selected for joint detail		X	1705.2.1	☒		AISC 360 Table N5.6-1
INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	**CONTINUOUS**	**PERIODIC**	**BCNYS REFERENCE**	**CHECK IF REQUIRED**	**SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]**	**COMMENTARY/NOTES and REFERENCE STANDARDS**
v. Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements.		X	1705.2.1	☐		AISC 360 Table N5.6-1
vi. Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used.		X	1705.2.1	☐		AISC 360 Table N5.6-1
vii. Proper storage provided for bolts, nuts, washers and other fastener components.		X	1705.2.1	☐		AISC 360 Table N5.6-1
e. Inspection Tasks During Bolting			1705.2.1			AISC 360 Table N5.6-2
i. Fastener assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required.		X	1705.2.1	☒		AISC 360 Table N5.6-2
ii. Joint brought to the snug-tight condition prior to the pretensioning operation.		X	1705.2.1	☒		AISC 360 Table N5.6-2
iii. Fastener component not turned by the wrench prevented from rotating.		X	1705.2.1	☒		AISC 360 Table N5.6-2
iv. Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges.		X	1705.2.1	☐		AISC 360 Table N5.6-2
f. Inspection Tasks After Bolting			1705.2.1			AISC 360 Table N5.6-3
i. Document acceptance or rejection of bolted connections.	X		1705.2.1	☒		AISC 360 Table N5.6-3
g. Inspection of Steel Elements of Composite			1705.2.1			AISC 360 Table N6.1

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
Construction Prior to Concrete Placement						
i. Placement and installation of steel deck.	X		1705.2.1	☐		AISC 360 Table N6.1
ii. Placement and installation of steel headed stud anchors.	X		1705.2.1	☐		AISC 360 Table N6.1
iii. Document acceptance or rejection of steel elements	X		1705.2.1	☐		AISC 360 Table N6.1
2. Cold-Formed Steel Deck			1705.2.2	☐		
a. Inspection or Execution Tasks prior to Deck Placement			1705.2.2			SDI QA/QC Table 1.1
INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	**CONTINUOUS**	**PERIODIC**	**BCNYS REFERENCE**	**CHECK IF REQUIRED**	**SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]**	**COMMENTARY/NOTES and REFERENCE STANDARDS**
i. Verify compliance of materials (deck and all deck accessories) with construction documents, including profiles, material properties, and base metal thickness.	X		1705.2.2	☐		SDI QA/QC Table 1.1
ii. Document acceptance or rejection of deck and deck accessories.	X		1705.2.2	☐		SDI QA/QC Table 1.1
b. Inspection or Execution Tasks after Deck Placement						SDI QA/QC Table 1.2
i. Verify compliance of deck and all deck accessories installation with construction documents.	X		1705.2.2	☐		SDI QA/QC Table 1.2
ii. Verify deck materials are represented by the mill certifications that comply with the construction documents.	X		1705.2.2	☐		SDI QA/QC Table 1.2
iii. Document acceptance or rejection of installation of deck and deck accessories.	X		1705.2.2	☐		SDI QA/QC Table 1.2
c. Inspection or Execution Tasks Prior to Welding			1705.2.2			SDI QA/QC Table 1.3
i. Welding Procedure Specifications (WPS) available.		X	1705.2.2	☐		SDI QA/QC Table 1.3
ii. Manufacturer certifications for welding consumables available		X	1705.2.2	☐		SDI QA/QC Table 1.3
iii. Material identification (type/grade).		X	1705.2.2	☐		SDI QA/QC Table 1.3

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
iv. Check welding equipment.		X	1705.2.2	☐		SDI QA/QC Table 1.3
d. Inspection or Execution Tasks during Welding			1705.2.2			SDI QA/QC Table 1.4
i. Use of qualified welders.		X	1705.2.2	☐		SDI QA/QC Table 1.4
ii. Control and handling of welding consumables.		X	1705.2.2	☐		SDI QA/QC Table 1.4
iii. Environmental conditions (wind speed, moisture, temperature).		X	1705.2.2	☐		SDI QA/QC Table 1.4
iv. Verify WPS followed.		X	1705.2.2	☐		SDI QA/QC Table 1.4
e. Inspection or Execution Tasks after Welding			1705.2.2			SDI QA/QC Table 1.5
i. Verify size and location of welds, including support, sidelap, and perimeter welds.	X		1705.2.2	☐		SDI QA/QC Table 1.5
ii. Welds meet visual acceptance criteria.	X		1705.2.2	☐		SDI QA/QC Table 1.5
INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	**CONTINUOUS**	**PERIODIC**	**BCNYS REFERENCE**	**CHECK IF REQUIRED**	**SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]**	**COMMENTARY/NOTES and REFERENCE STANDARDS**
iii. Verify repair activities.	X		1705.2.2	☐		SDI QA/QC Table 1.5
iv. Document acceptance or rejection of welds.	X		1705.2.2	☐		SDI QA/QC Table 1.5
f. Inspection or Execution Tasks prior to Mechanical Fastening			1705.2.2			SDI QA/QC Table 1.6
i. Manufacturer installation instructions available for mechanical fasteners.		X	1705.2.2	☐		SDI QA/QC Table 1.6
ii. Proper tools available for fastener installation.		X	1705.2.2	☐		SDI QA/QC Table 1.6
iii. Proper storage for mechanical fasteners.		X	1705.2.2	☐		SDI QA/QC Table 1.6
g. Inspection or Execution Tasks during Mechanical Fastening			1705.2.2			SDI QA/QC Table 1.7
i. Fasteners are positioned as required.		X	1705.2.2	☐		SDI QA/QC Table 1.7
ii. Fasteners are installed in accordance with manufacturer's instructions.		X	1705.2.2	☐		SDI QA/QC Table 1.7
h. Inspection or Execution Tasks after Mechanical Fastening			1705.2.2			SDI QA/QC Table 1.8

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
i. Check spacing, type, and installation of support fasteners.	X		1705.2.2	☐		SDI QA/QC Table 1.8
ii. Check spacing, type, and installation of sidelap fasteners.	X		1705.2.2	☐		SDI QA/QC Table 1.8
iii. Check spacing, type, and installation of perimeter fasteners.	X		1705.2.2	☐		SDI QA/QC Table 1.8
iv. Verify repair activities.	X		1705.2.2	☐		SDI QA/QC Table 1.8
v. Document acceptance or rejection of mechanical fasteners.	X		1705.2.2	☐		SDI QA/QC Table 1.8
3. Open-Web Steel Joists and Joist Girders			1705.2.3			
a. Installation of open-web steel joists and joist girders			Table 1705.2.3	☐		
i. End connections – welded or bolted.		X	Table 1705.2.3	☐		SJI Specifications listed in Section 2207.1.
ii. Bridging – Horizontal or diagonal.			Table 1705.2.3			
a. Standard bridging.		X	Table 1705.2.3	☐		SJI Specifications listed in Section 2207.1.
b. Bridging that differs from the SJI specifications listed in Section 2207.1		X	Table 1705.2.3	☐		
INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	**CONTINUOUS**	**PERIODIC**	**BCNYS REFERENCE**	**CHECK IF REQUIRED**	**SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]**	**COMMENTARY/NOTES and REFERENCE STANDARDS**
4. Cold-Formed Steel Trusses spanning 60 feet or Greater		X	1705.2.4	☐		The Special Inspector shall verify that the temporary restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.
C. Concrete Construction			1705.3			
1. Inspect reinforcement, including prestressing tendons, and verify placement.		X	Table 1705.3	☒		ACI 318 Ch. 20, 25.2, 25.3, 26.6.1-26.6.3 IBC 1908.4
2 Reinforcing Bar Welding:			Table 1705.3 1705.3.1			AWS D1.4, ACI 318: 26.6.4
a. Verify weldability of reinforcing bars other than ASTM A706:		X	Table 1705.3	☐	NOT PERMITTED	AWS D1.4 ACI 318: 26.6.4

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
b. Inspect single pass fillet welds, maximum 5/16"; and		X	Table 1705.3	☐	NOT PERMITTED	AWS D1.4 ACI 318: 26.6.4
c. Inspect all other welds	X		Table 1705.3	☐	NOT PERMITTED	AWS D1.4 ACI 318: 26.6.4
3. Inspect anchors cast in concrete.		X	Table 1705.3	☒		ACI 318: 17.8.2
4. Inspect anchors post-installed in hardened concrete members.		X	Table 1705.3	☒		
a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.	X		Table 1705.3	☒		ACI 318: 17.8.2.4
b. Mechanical anchors and adhesive anchors not defined in item 4a.		X	Table 1705.3	☒		ACI 318: 17.8.2
5. Verify use of required design mix		X	Table 1705.3	☒		ACI 318: Ch. 19, 26.4.3, 26.4.4 IBC 1904.1, 1904.2, 1908.2, 1908.3
6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of concrete.	X		Table 1705.3	☒		ASTM C172, ASTM C31; ACI 318: 26.4, 26.12; IBC 1908.10
7. Inspect concrete and shotcrete placement for proper application techniques.	X		Table 1705.3	☒		ACI 318: 26.5; IBC 1908.6, 1908.7, 1908.8
8. Verify maintenance of specified curing temperature and techniques.		X	Table 1705.3	☒		ACI 318: 26.5.3-26.5.5 IBC: 1908.9
INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	**CONTINUOUS**	**PERIODIC**	**BCNYS REFERENCE**	**CHECK IF REQUIRED**	**SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]**	**COMMENTARY/NOTES and REFERENCE STANDARDS**
9. Inspect Prestressed concrete for:			Table 1705.3	☐		
a. Application of prestressing forces; and	X		Table 1705.3	☐		ACI 318: 26.10
b. Grouting of bonded prestressing tendons	X		Table 1705.3	☐		ACI 318: 26.10
10. Inspect erection of precast concrete members		X	Table 1705.3	☐		ACI 318: Ch. 26.8
11. Verify in-situ concrete strength, prior to stressing tendons in post-tensioned concrete and prior to removal of		X	Table 1705.3	☐		ACI 318: 26.11.2

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
shores and forms from beams and structural slabs.						
12. Inspect formwork for shape, location and dimensions of the concrete member being formed.		X	Table 1705.3	☒		
D. Masonry Construction (Check LA, LB or LC below) ☒ LA = Level A Quality Assurance ☐ LB = Level B Quality Assurance ☐ LC = Level C Quality Assurance			1705.4			TMS 402/ACI530/ASCE5 TMS 602/ACI530.1/ASCE6
Level A Quality Assurance: Minimum Verification						
A1. Prior to construction, verify certificates of compliance used in masonry construction.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.1
Level B Quality Assurance: Minimum Special Inspections						
B1. Verify Compliance with approved submittals.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B2: As masonry construction begins, verify that the following are in compliance:				☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B2a: Proportions of site-prepared mortar.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B2b: Construction of Mortar Joints.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B2c: Grade and size of prestressing tendons and anchorage.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	**CONTINUOUS**	**PERIODIC**	**BCNYS REFERENCE**	**CHECK IF REQUIRED**	**SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]**	**COMMENTARY/NOTES and REFERENCE STANDARDS**
B2d: Location of reinforcement, connectors, and prestressing tendons and anchorage.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B2e: Prestressing technique.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
B2f: Properties of thin bed mortar for AAC masonry.	X	X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2 Continuous inspection required for the first 5000sf of AAC Masonry, Periodic inspection is required after the first 5000sf of AAC masonry.
B3. Prior to grouting, verify that the following are in compliance:		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B3a: Grout space.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B3b: Grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorage.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B3c: Placement of reinforcement, connectors, and prestressing tendons and anchorage.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B3d: Proportions of site-prepared grout for bonded tendons.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B3e: Construction of mortar joints.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4: Verify during construction:		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4a: Size and location of structural elements.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4b: Type, size and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4c: Welding of reinforcement.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4d: Preparation, construction, and protection of masonry during cold weather (temperature below 40dF) or hot weather (temperature above 90dF)		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4e: Application and measurement of prestressing force.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.2

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	**CONTINUOUS**	**PERIODIC**	**BCNYS REFERENCE**	**CHECK IF REQUIRED**	**SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]**	**COMMENTARY/NOTES and REFERENCE STANDARDS**
B4f: Placement of grout and prestressing grout for bonded tendons is in compliance.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B4g: Placement of AAC masonry units and construction of thin-bed mortar joints.	X	X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2 Continuous inspection required for the first 5000sf of AAC Masonry, Periodic inspection is required after the first 5000sf of AAC masonry.
B5: Observe preparation of grout specimens, mortar specimens, and/or prisms.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.2
Minimum Tests						
B6: Verification of Slump flow and Visual Stability Index (VSI) as delivered to the project site in accordance with Specification Article 1.5B1.b.3 for self-consolidating grout.				☐		TMS 402/ACI530/ASCE5 Table 3.1.2
B7: Verification of f'm and f'aac in accordance with Specification Article 1.4B prior to construction, except where specifically exempted by this Code.				☐		TMS 402/ACI530/ASCE5 Table 3.1.2
Level C Quality Assurance: Minimum Special Inspections						
C1. Verify compliance with the approved submittals.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2. Verify that the following are in compliance:				☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2a. Proportions of site mixed mortar, grout and prestressing grout for bonded tendons.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2b. Grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2c. Placement of masonry units and construction of mortar joints.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.3

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
C2d. Placement of reinforcement, connectors, and prestressing tendons and anchorages.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2e. Grout spacing prior to grouting.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2f. Placement of grout and prestressing grout for bonded tendons.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	**CONTINUOUS**	**PERIODIC**	**BCNYS REFERENCE**	**CHECK IF REQUIRED**	**SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]**	**COMMENTARY/NOTES and REFERENCE STANDARDS**
C2g. Size and location of structural elements.		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2h. Type, size, and location of anchors including other details of anchorage of masonry to structural members, frames, or other construction.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2i. Welding of reinforcement.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2j. Preparation, construction, and protection of masonry during cold weather (temperature below 40dF) or hot weather (temperature above 90dF).		X		☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2k. Application and measurement of prestressing force.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2l. Placement of AAC masonry units and construction of thin-bed mortar joints.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C2m. Properties of thin-bed mortar for AAC masonry.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
C3. Observe preparation of grout specimens, mortar specimens, and/or prisms.	X			☐		TMS 402/ACI530/ASCE5 Table 3.1.3
Minimum Tests						
D1. Verification of f'm and f'AAC in accordance with Specification Article 1.4B prior to construction and for every 5,000sf during construction.				☐		TMS 402/ACI530/ASCE5 Table 3.1.3
D2. Verification of proportions of materials in premixed or				☐		TMS 402/ACI530/ASCE5 Table 3.1.3

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
preblended mortar, prestressing grout, and grout other than self-consolidating grout, as delivered to the project site.						
D3. Verification of Slump flow and Visual Stability Index (VSI) as delivered to the project site in accordance with Specification Article 1.5B.1.b.3 for self-consolidating grout.				☐		TMS 402/ACI530/ASCE5 Table 3.1.3
E. Wood Construction			1705.5			
1. High Load Diaphragms		X	1705.5.1	☐		
2. Metal Plate Connected Wood Trusses spanning 60 feet or Greater		X	1705.5.2	☐		
F. Soils			1705.6			
INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	**CONTINUOUS**	**PERIODIC**	**BCNYS REFERENCE**	**CHECK IF REQUIRED**	**SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]**	**COMMENTARY/NOTES and REFERENCE STANDARDS**
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.		X	Table 1705.6	☒		
2. Verify excavations are extended to a proper depth and have reached proper material.		X	Table 1705.6	☒		
3. Perform classification and testing of compacted fill materials.		X	Table 1705.6	☒		
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	X		Table 1705.6	☒		
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.		X	Table 1705.6	☒		
G. Driven Deep Foundations			1705.7			
1. Verify element materials, sizes and lengths, comply with the requirements.	X		Table 1705.7	☐		
2. Determine capacities of test elements and conduct additional	X		Table 1705.7	☐		

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
load tests, as required.						
3. Inspect driving operations and maintain complete and accurate records for each elements.	X		Table 1705.7	☐		
4. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element.	X		Table 1705.7	☐		
5. For steel elements, perform additional special inspections in accordance with Section 1705.2.	-	-	Table 1705.7	☐		
6. For concrete elements and concrete-filled elements, perform tests and additional special inspections in accordance with Section 1705.3.	-	-	Table 1705.7	☐		
INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	**CONTINUOUS**	**PERIODIC**	**BCNYS REFERENCE**	**CHECK IF REQUIRED**	**SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]**	**COMMENTARY/NOTES and REFERENCE STANDARDS**
7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge.	-	-	Table 1705.7	☐		
H. Cast-in-place Deep Foundations			1705.8			
1. Inspect drilling operations and maintain complete and accurate records for each element.	X		Table 1705.8	☐		
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata	X		Table 1705.8	☐		

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
capacity. Record concrete or grout volumes.						
3. For concrete elements, perform tests and additional special inspections in accordance with Section 1705.3.	-	-	Table 1705.8	☐		
I. Helical Pile Foundations	X		1705.9			
J. Fabricated Items			1705.10 1704.2.5			Where fabrication of structural, load-bearing, or lateral load resisting members or assemblies is being conducted on the premises of a fabricators shop
1. Structural Steel		X		☐		
2. Steel Joists		X		☐		
3. Precast Concrete		X		☐		
4. Wood Construction		X		☐		
K. Special Inspections for Wind Resistance			1705.11			RDP to identify the main windforce-resisting systems and wind-resisting components that are subject to special inspection per BCNYS Section 1704.3.3.
1. Structural Wood	X	X	1705.11.1	☐		
2. Cold Formed steel light framed Construction		X	1705.11.2	☐		
3. Wind-resisting Components		X	1705.11.3	☐		
L. Special Inspections for Seismic Resistance			1705.12			RDP to identify the designated seismic systems and seismic force-resisting systems that are subject to special inspection per BCNYS Section 1704.3.2.
INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	**CONTINUOUS**	**PERIODIC**	**BCNYS REFERENCE**	**CHECK IF REQUIRED**	**SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]**	**COMMENTARY/NOTES and REFERENCE STANDARDS**
1. Structural Steel		X	1705.12.1	☐		AISC 341 Section J
2. Structural Wood	X	X	1705.12.2	☐		
3. Cold Formed steel light framed Construction		X	1705.12.3	☐		
4. Designated seismic systems	X	X	1705.12.4	☐		ASCE 7 Section 13.2.2
5. Architectural Components		X	1705.12.5	☐		
6. Plumbing, Mechanical, and Electrical Components		X	1705.12.6	☐		

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
7. Storage Racks		X	1705.12.7	☐		
8. Seismic Isolation Systems		X	1705.12.8	☐		
9. Cold Formedsteel special bolted moment frames		X	1705.12.9	☐		
M. Testing for Seismic Resistance			1705.13			
1. Structural Steel		X	1705.13.1	☐		
2. Nonstructural Components		X	1705.13.2	☐		
3. Designated Seismic Systems		X	1705.13.3	☐		
4. Seismic Isolation Systems		X	1705.13.4	☐		
N. Sprayed Fire-Resistant Materials			1705.14			
1. Physical and visual tests		X	1705.14.1	☐		
2. Structural Member Surface Conditions		X	1705.14.2	☐		
3. Application		X	1705.14.3	☐		
4. Thickness		X	1705.14.4	☐		
5. Density		X	1705.14.5	☐		
6. Bond Strength		X	1705.14.6	☐		
O. Mastic and Intumescent Fire-Resistant Coatings		X	1705.15	☐		
P. Exterior Insulation and Finish Systems (EIFS)			1705.16			
1. Exterior Insulation and Finish Systems (EIFS)		X	1705.16	☐		
2. Water Resistive Barrier Coating		X	1705.16.1	☐		
Q. Fire-Resistant Penetrations and Joints			1705.17			
1. Penetration Firestops		X	1705.17.1	☐		
2. Fire-resistant joint systems		X	1705.17.2	☐		
R. Testing for Smoke Control			1705.18			
1. Testing Scope		X	1705.18.1	☐		
2. Qualifications		X	1705.18.2	☐		
S. Additional Special Inspections/Tests			The registered design professional of record shall identify if additional tests and inspection defined by BC Section 1705.1.1 are required and provide specific requirements below.			
1.	☐	☐		☐		
2.	☐	☐		☐		
3.	☐	☐		☐		
4.	☐	☐		☐		

INSPECTIONS AND TESTS (Continuous & Periodic is as defined by the BCNYS)	CONTINUOUS	PERIODIC	BCNYS REFERENCE	CHECK IF REQUIRED	SPECIFICATION REFERENCE AND CLARIFYING NOTES (by RDP)[1]	COMMENTARY/NOTES and REFERENCE STANDARDS
5.	☐	☐		☐		
6.	☐	☐		☐		
7.	☐	☐		☐		
8.	☐	☐		☐		
9.	☐	☐		☐		
10.	☐	☐		☐		

NOTES:

1. RDP to provide reference specification section detailing the requirements for inspections and/or tests and other clarifying notes, as necessary.
2. Commentary/Notes are provided for information only and are not intended to provide complete details of the required tests and inspections. Refer to the Building Code of New York State for complete and detailed requirements.

SECTION 031000 - CONCRETE FORMING AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Form-facing materials.

B. Related Requirements:

1. Section 032000 "Concrete Reinforcing" for steel reinforcing bars and welded-wire reinforcement.
2. Section 033000 "Cast-in-place Concrete" for concrete materials and mixing requirements.

1.2 DEFINITIONS

A. Formwork: The total system of support of freshly placed concrete, including the mold or sheathing that contacts the concrete, as well as supporting members, hardware, and necessary bracing.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review the following:

a. Special inspection and testing and inspecting agency procedures for field quality control.
b. Construction, movement, contraction, and isolation joints
c. Shoring and reshoring procedures.
d. Anchor rod and anchorage device installation tolerances.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:

C. Shop Drawings: Prepared by, and signed and sealed by, a qualified professional engineer responsible for their preparation, detailing fabrication, assembly, and support of forms.

1. For exposed vertical concrete walls, indicate dimensions and form tie locations.

2. Indicate dimension and locations of construction and movement joints required to construct the structure in accordance with ACI 301.

    a. Location of construction joints is subject to approval of Engineer.

3. Indicate proposed schedule and sequence of stripping of forms, shoring removal, and reshoring installation and removal.
4. Indicate layout of insulating concrete forms, dimensions, course heights, form types, and details.

1.5 INFORMATIONAL SUBMITTALS

A. Research Reports: For insulating concrete forms indicating compliance with ICC's Acceptance Criteria AC353.

B. Field quality-control reports.

C. Minutes of preinstallation conference.

D. Qualification Statements: For testing and inspection agency.

1.6 QUALITY ASSURANCE

A. Testing and Inspection Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Concrete Formwork: Design, engineer, erect, shore, brace, and maintain formwork, shores, and reshores in accordance with ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, lines, and dimensions.

    1. Design wood panel forms in accordance with APA's "Concrete Forming Design/Construction Guide."
    2. Design formwork to limit deflection of form-facing material to 1/240 of center-to-center spacing of supports.

2.2 FORM-FACING MATERIALS

A. As-Cast Surface Form-Facing Material:

    1. Provide continuous, true, and smooth concrete surfaces.

2. Furnish in largest practicable sizes to minimize number of joints.
3. Acceptable Materials: As required to comply with Surface Finish designations specified in Section 033000 "Cast-In-Place Concrete, and as follows:
   a. Plywood, metal, or other approved panel materials.

2.3 RELATED MATERIALS

A. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

B. Form-Release Agent: Commercially formulated form-release agent that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
2. Form release agent for form liners to be acceptable to form liner manufacturer.

C. Form Ties: Factory-fabricated, removable or snap-off, glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
2. Furnish ties that, when removed, leave holes no larger than 1 inch in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

PART 3 - EXECUTION

3.1 INSTALLATION OF FORMWORK

A. Comply with ACI 301.

B. Construct formwork, so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117 and to comply with the Surface Finish designations specified in Section 033000 "Cast-in-Place Concrete" for as-cast finishes.

C. Limit concrete surface irregularities as follows:

1. Surface Finish-2.0: ACI 117 Class B, 1/4 inch.

D. Construct forms tight enough to prevent loss of concrete mortar.

1. Minimize joints.
2. Exposed Concrete: Symmetrically align joints in forms.

E. Construct removable forms for easy removal without hammering or prying against concrete surfaces.

1. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces.
2. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
3. Install keyways, reglets, recesses, and other accessories, for easy removal.

F. Do not use rust-stained, steel, form-facing material.

G. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces.

1. Provide and secure units to support screed strips
2. Use strike-off templates or compacting-type screeds.

H. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible.

1. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar.
2. Locate temporary openings in forms at inconspicuous locations.

I. Chamfer exterior corners and edges of permanently exposed concrete.

J. At construction joints, overlap forms onto previously placed concrete not less than 12 inches.

K. Form openings, chases, offsets, sinkages, blocking, screeds, and bulkheads required in the Work.

1. Determine sizes and locations from trades providing such items.
2. Obtain written approval of Engineer prior to forming openings not indicated on Drawings.

L. Construction and Movement Joints:

1. Construct joints true to line with faces perpendicular to surface plane of concrete.
2. Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.
3. Place joints perpendicular to main reinforcement.
4. Locate joints for beams, slabs, joists, and girders in the middle third of spans.

    a. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.

5. Space vertical joints in walls as indicated on Drawings.

M. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection.

1. Locate ports and openings in bottom of vertical forms, in inconspicuous location, to allow flushing water to drain.
2. Close temporary ports and openings with tight-fitting panels, flush with inside

face of form, and neatly fitted, so joints will not be apparent in exposed concrete surfaces.

N. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

O. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

P. Coat contact surfaces of forms with form-release agent, in accordance with manufacturer's written instructions, before placing reinforcement.

3.2 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete.

1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.
3. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
4. Clean embedded items immediately prior to concrete placement.

3.3 REMOVING AND REUSING FORMS

A. Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations, and curing and protection operations need to be maintained.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that support weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work.

1. Split, frayed, delaminated, or otherwise damaged form-facing material are unacceptable for exposed surfaces.
2. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints.

1. Align and secure joints to avoid offsets.
2. Do not use patched forms for exposed concrete surfaces unless approved by Engineer.

3.4 INSTALLATION OF SHORING AND RESHORING

A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.

1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.

B. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.5 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

C. Inspections:

1. Inspect formwork for shape, location, and dimensions of the concrete member being formed.
2. Inspect insulating concrete forms for shape, location, and dimensions of the concrete member being formed.

D. Prepare test and inspection reports.

END OF SECTION 031000

SECTION 032000 - CONCRETE REINFORCING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Steel reinforcement bars.
2. Welded-wire reinforcement.

B. Related Requirements:

1. Section 031000 "Concrete Forming and Accessories"
2. Section 033000 "Cast-in-place Concrete" for concrete materials and mixing requirements.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review the following:

a. Special inspection and testing and inspecting agency procedures for field quality control.
b. Construction contraction and isolation joints.
c. Steel-reinforcement installation.

1.3 ACTION SUBMITTALS

A. Product Data: For the following:

1. Each type of steel reinforcement.
2. Bar supports.

B. Shop Drawings: Comply with ACI SP-066:

1. Include placing drawings that detail fabrication, bending, and placement.
2. Include bar sizes, lengths, materials, grades, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, location of splices, lengths of lap splices, details of mechanical splice couplers, details of welding splices, tie spacing, hoop spacing, and supports for concrete reinforcement.

C. Construction Joint Layout: Indicate proposed construction joints required to build the structure.

1. Location of construction joints is subject to approval of Engineer.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Statements: For testing and inspection agency.

B. Welding certificates.

1. Reinforcement To Be Welded: Welding procedure specification in accordance with AWS D1.4/D1.4M.

C. Material Test Reports: For the following, from a qualified testing agency:

1. Steel Reinforcement:

a. For reinforcement to be welded, mill test analysis for chemical composition and carbon equivalent of the steel in accordance with ASTM A706/A706M.

D. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

B. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.4/D 1.4M.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage and to avoid damaging coatings on steel reinforcement.

1. Store reinforcement to avoid contact with earth.

PART 2 - PRODUCTS

2.1 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A615/A615M, Grade 60 deformed.

B. Low-Alloy Steel Reinforcing Bars: ASTM A706/A706M, deformed.

C. Headed-Steel Reinforcing Bars: ASTM A970/A970M.

D. Plain-Steel Welded-Wire Reinforcement: ASTM A1064/A1064M, plain, fabricated from as-drawn steel wire into flat sheets.

E. Deformed-Steel Welded-Wire Reinforcement: ASTM A1064/A1064M, flat sheet.

2.2 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A615/A615M, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs.

B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire reinforcement in place.

1. Manufacture bar supports from steel wire, plastic, or precast concrete in accordance with CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

a. For concrete surfaces exposed to view, where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire, all-plastic bar supports, or CRSI Class 2 stainless steel bar supports.

C. Steel Tie Wire: ASTM A1064/A1064M, annealed steel, not less than 0.0508 inch in diameter.

1. Finish: Plain.

2.3 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

PART 3 - EXECUTION

3.1 PREPARATION

A. Protection of In-Place Conditions:

1. Do not cut or puncture vapor retarder.
2. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.

3.2 INSTALLATION OF STEEL REINFORCEMENT

A. Comply with CRSI's "Manual of Standard Practice" for placing and supporting reinforcement.

B. Accurately position, support, and secure reinforcement against displacement.

1. Locate and support reinforcement with bar supports to maintain minimum concrete cover.
2. Do not tack weld crossing reinforcing bars.

C. Preserve clearance between bars of not less than 1 inch, not less than one bar diameter, or not less than 1-1/3 times size of large aggregate, whichever is greater.

D. Provide concrete coverage in accordance with ACI 318.

E. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

F. Splices: Lap splices as indicated on Drawings.

1. Bars indicated to be continuous, and all vertical bars to be lapped not less than 36 bar diameters at splices, or 24 inches, whichever is greater.
2. Stagger splices in accordance with ACI 318.
3. Weld reinforcing bars in accordance with AWS D1.4/D 1.4M, where indicated on Drawings.

G. Install welded-wire reinforcement in longest practicable lengths.

1. Support welded-wire reinforcement in accordance with CRSI "Manual of Standard Practice."

    a. For reinforcement less than W4.0 or D4.0, continuous support spacing to not exceed 12 inches.

2. Lap edges and ends of adjoining sheets at least one wire spacing plus 2 inches for plain wire and 8 inches for deformed wire.
3. Offset laps of adjoining sheet widths to prevent continuous laps in either direction.
4. Lace overlaps with wire.

3.3 JOINTS

A. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.

1. Place joints perpendicular to main reinforcement.
2. Continue reinforcement across construction joints unless otherwise indicated.
3. Do not continue reinforcement through sides of strip placements of floors and slabs.

B. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length, to prevent concrete bonding to one side of joint.

3.4 INSTALLATION TOLERANCES

A. Comply with ACI 117.

3.5 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Testing Agency: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

C. Inspections:

1. Steel-reinforcement placement.
2. Steel-reinforcement welding.

END OF SECTION 032000

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Concrete standards.
2. Steel reinforcement.
3. Reinforcement accessories.
4. Curing materials.
5. Accessories.
6. Repair materials.
7. Concrete mixture materials.
8. Concrete mixture class types.
9. Fabricating reinforcement.
10. Concrete mixing.

B. Related Requirements:

1. Section 031000 "Concrete Forming and Accessories"
2. Section 032000 "Concrete Reinforcing" for steel reinforcing bars and welded-wire reinforcement.

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement or blended hydraulic cement alone or in combination with one or more of the following:

1. Fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

B. Water/Cementitious Materials (w/cm) Ratio: The ratio by weight of mixing water to cementitious materials.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:

a. Contractor's superintendent.
b. Independent testing agency responsible for inspections and acceptance testing of concrete at Project site.
c. Ready-mix concrete manufacturer.

d. Concrete Subcontractor.
e. Special concrete finish Subcontractor.

2. Review the following:

a. Special inspection and testing and inspecting agency procedures for field quality control.
b. Construction joints, control joints, isolation joints, and joint-filler strips.
c. Semirigid joint fillers.
d. Anchor rod and anchorage device installation tolerances.
e. Cold- and hot-weather concreting procedures.
f. Concrete finishes and finishing.
g. Curing procedures.
h. Forms and form-removal limitations.
i. Shoring and reshoring procedures.
j. Methods for achieving specified floor and slab flatness and levelness.
k. Floor and slab flatness and levelness measurements.
l. Concrete repair procedures.
m. Concrete protection.
n. Initial curing of standard-cured and field curing of field-cured test cylinders (ASTM C31/C31M.)
o. Protection of field cured field test cylinders.
p. Distribution of test reports.

1.4 ACTION SUBMITTALS

A. Product Data:

1. Portland cement.
2. Blended hydraulic cement.
3. Performance-based hydraulic cement.
4. Fly ash.
5. Slag cement.
6. Natural or other pozzolans.
7. Aggregates.
8. Ground calcium carbonate and aggregate mineral fillers.
9. Admixtures:

a. Include limitations of use. Admixtures that do not comply with reference ASTM International requirements must be submitted with test data for approval.

10. Liquid floor treatments.
11. Curing materials.

a. Include documentation from color pigment manufacturer, indicating that proposed methods of curing are recommended by color pigment manufacturer.

12. Joint fillers.

13. Repair materials.

B. Design Mixtures: For each concrete mixture, include the following:

1. Mixture identification.
2. Compressive strength at 28 days or other age as specified.
3. Compressive strength required at stages of construction.
4. Durability exposure classes for Exposure Categories F, S, W, and C.
5. Maximum w/cm ratio.
6. Slump or slump flow limit.
7. Air content.
8. Nominal maximum aggregate size.
9. Intended placement method.
10. Submit adjustments to design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant changes.

C. Shop Drawings:

1. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.

a. Location of construction joints is subject to approval of the Engineer.

D. Samples: For vapor retarder.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For the following:

1. Installer: Include copies of applicable ACI certificates.
2. Testing Agency: Include documentation indicating compliance with ASTM E329 or ASTM C1077 and copies of applicable ACI certificates for testing technicians or ACI Concrete Construction Special Inspector - MH, ASCC.

B. Material Certificates: For each of the following:

1. Cementitious materials.
2. Admixtures.
3. Curing compounds.
4. Bonding agents.
5. Adhesives.
6. Semirigid joint filler.
7. Joint-filler strips.
8. Repair materials.

C. Material Test Reports: For the following:

1. Portland cement.
2. Blended hydraulic cement.
3. Performance-based hydraulic cement.

4. Fly ash.
5. Slag cement.
6. Natural or other pozzolans.
7. Aggregates.
8. Ground calcium carbonate and aggregate mineral filler.
9. Admixtures.

D. Floor surface flatness and levelness measurements report, indicating compliance with specified tolerances in accordance with ACI 117 and in compliance with ASTM E1155 (ASTM E1155M).

E. Field quality-control reports.

F. Minutes of preinstallation conference.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified Installer who employs Project personnel qualified as an ACI-certified Concrete Flatwork Associate and Concrete Flatwork Finisher and a supervisor who is a certified ACI Advanced Concrete Flatwork Finisher/Technician or an ACI Concrete Flatwork Finisher with experience installing and finishing concrete.

1. Post-Installed Concrete Anchors Installers: ACI-certified Adhesive Anchor Installer.

B. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1. Manufacturer's production facilities and delivery vehicles certified in accordance with NRMCA's certification requirements or equivalent approval by a State DOT.

C. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing that performs duties on behalf of the Architect/Engineer.

1. Personnel performing laboratory tests to be an ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Level 1. Testing agency laboratory supervisor tests to be an ACI-certified Concrete Laboratory Testing Technician, Level 2.

D. Field Quality-Control Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

1. Personnel conducting field tests on plastic concrete properties are to be qualified as an ACI Concrete Field Testing Technician, Grade 1, in accordance with policies from ACI CPP 610.1 or an equivalent certification program.

1.7 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on each concrete mixture.

1. Include the following information in each test report:

a. Admixture dosage rates.
b. Slump.
c. Air content.
d. Seven-day compressive strength.
e. 28-day compressive strength.
f. Evaluation of permeability-reducing admixtures.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Comply with ASTM C94/C94M and ACI 301 (ACI 301M).

1.9 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 301 as follows:

1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
2. When air temperature has fallen to, or is expected to fall below 40 deg F during the protection period, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
3. Do not use frozen materials or materials containing ice or snow.
4. Do not place concrete in contact with surfaces less than 35 deg F, other than reinforcing steel.

B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows:

1. Maintain concrete temperature at time of discharge to not exceed 95 deg F (35 deg C).
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE STANDARDS

A. ACI Publications: Comply with ACI 301 unless modified by requirements in the Contract Documents.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

B. Deformed-Steel Wire: ASTM A 1064/A 1064M.

C. Plain- Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, plain, fabricated from as drawn steel wire into flat sheets.

D. Deformed--Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, flat sheet.

2.3 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars, cut true to length with ends square and free of burrs.

B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For concrete surfaces exposed to view, where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

2.4 VAPOR RETARDERS

A. Sheet Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Henry Company; Moistop Ultra 10.
b. GCP applied Technologies.; Florprufe 120.
c. Insulation Solutions, Inc.; Viper VaporCheck 10.
d. Meadows, W. R., Inc.; Perminator 10 mil.
e. Stego Industries, LLC; Stego Wrap Class A Vapor Retarder 10 mil

2.5 LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Clear, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; that penetrates, hardens, and densifies concrete surfaces.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ChemMasters; Chemisil Plus.
b. ChemTec Int'l; ChemTec One.
c. Curecrete Distribution Inc.; Ashford Formula.
d. Dayton Superior Corporation; Day-Chem Sure Hard (J-17).
e. Euclid Chemical Company (The), an RPM company; Euco Diamond Hard.
f. Kaufman Products, Inc.; SureHard.
g. L&M Construction Chemicals, Inc.; Seal Hard.
h. Meadows, W. R., Inc.; LIQUI-HARD.
i. Metalcrete Industries; Floorsaver.
j. Nox-Crete Products Group; Duro-Nox.
k. Symons by Dayton Superior; Buff Hard.

2.6 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.

C. Moisture-Retaining Cover: ASTM C171, polyethylene film burlap-polyethylene sheet.

D. Water: Potable water that does not cause staining of the surface.

E. Clear, Waterborne, Membrane-Forming, Dissipating Curing Compound: ASTM C309, Type 1, Class B.

2.7 ACCESSORIES

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D1751, asphalt-saturated cellulosic fiber.

B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 in accordance with ASTM D2240.

C. Bonding Agent: ASTM C1059/C1059M, Type II, nonredispersible, acrylic emulsion or styrene butadiene.

D. Epoxy Bonding Adhesive: ASTM C881/C881M, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade and class to suit requirements, and as follows:

1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.8 REPAIR MATERIALS

A. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch (6 mm) and that can be filled in over a scarified

surface to match adjacent floor elevations.

1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3 to 6 mm) or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi (34.5 MPa) at 28 days when tested in accordance with ASTM C109/C109M.

2.9 CONCRETE MIXTURE MATERIALS

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301 (ACI 301M).

1. Use a qualified testing agency for preparing and reporting proposed mixture designs, based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland or hydraulic cement in concrete assigned to Exposure Class F3 as follows:

1. Fly Ash or Other Pozzolans: 25 percent by mass.
2. Slag Cement: 50 percent by mass.
3. Silica Fume: 10 percent by mass.
4. Total of Fly Ash or Other Pozzolans, Slag Cement, and Silica Fume: 50 percent by mass, with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.
5. Total of Fly Ash or Other Pozzolans and Silica Fume: 35 percent by mass with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.

C. Admixtures: Use admixtures in accordance with manufacturer's written instructions.

1. Use corrosion-inhibiting admixture in concrete mixtures where indicated.
2. Use permeability-reducing admixture in concrete mixtures where indicated.

2.10 CONCRETE MIXTURE CLASS TYPES

A. Class B: Normal-weight concrete used for foundation walls.

1. Minimum Compressive Strength: 4500 psi (27.6 MPa) at 28 days.
2. Maximum w/cm Ratio: 0.45.
3. Slump Limit: 4 inches (100 mm), plus or minus 1 inch (25 mm).
4. Air Content:

    a. Exposure Classes F2 and F3: 6.0 percent, plus or minus 1.5 percent at

point of delivery for concrete containing 1-inch (25-mm) nominal maximum aggregate size.

B. Class C: Normal-weight concrete used for interior slabs-on-ground.

1. Minimum Compressive Strength: 4000 psi (27.6 MPa) at 28 days.
2. Maximum w/cm Ratio : 0.45.
3. Slump Limit: 4 inches (100 mm), plus or minus 1 inch (25 mm).
4. Air Content:

a. Do not use an air-entraining admixture or allow total air content to exceed 3 percent for concrete used in trowel-finished floors.

2.11 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.12 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M and furnish delivery ticket.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete in accordance with ASTM C94/C94M. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity of 1 cu. yd. (0.76 cu. m) or smaller, continue mixing at least 1-1/2 minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
2. For mixer capacity larger than 1 cu. yd. (0.76 cu. m), increase mixing time by 15 seconds for each additional 1 cu. yd. (0.76 cu. m).
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions:

1. Before placing concrete, verify that installation of concrete forms, accessories, reinforcement, and embedded items is complete and that required inspections have been performed.
2. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide reasonable auxiliary services to accommodate field testing and inspections, acceptable to testing agency, including the following:

1. Daily access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Secure space for storage, initial curing, and field curing of test samples, including source of water and continuous electrical power at Project site during site curing period for test samples.
4. Security and protection for test samples and for testing and inspection equipment at Project site.

3.3 TOLERANCES

A. Comply with ACI 117 (ACI 117M).

3.4 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to or supported by cast-in-place concrete.

1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.

3.5 INSTALLATION OF CAST-IN-PLACE CONCRETE

A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.

1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.

B. Notify Engineer and testing and inspection agencies 24 hours prior to commencement of concrete placement.

C. Water addition in transit or at the Project site must be in accordance with ASTM C94/C94M and must not exceed the permitted amount indicated on the concrete delivery ticket.

D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.

1. If a section cannot be placed continuously, provide construction joints as

indicated.
2. Deposit concrete to avoid segregation.
3. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
4. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 301 (ACI 301M).

    a. Do not use vibrators to transport concrete inside forms.
    b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer.
    c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
    d. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Do not place concrete floors and slabs in a checkerboard sequence.
2. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
3. Maintain reinforcement in position on chairs during concrete placement.
4. Screed slab surfaces with a straightedge and strike off to correct elevations.
5. Level concrete, cut high areas, and fill low areas.
6. Slope surfaces uniformly to drains where required.
7. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
8. Do not further disturb slab surfaces before starting finishing operations.

3.6 INSTALLATION OF JOINTS

A. Construct joints true to line, with faces perpendicular to surface plane of concrete.

B. Construction Joints: Coordinate with floor slab pattern and concrete placement sequence.

1. Install so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as approved by Engineer.
2. Place joints perpendicular to main reinforcement.

    a. Continue reinforcement across construction joints unless otherwise indicated.

3. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
4. Locate joints for beams, slabs, joists, and girders at third points of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.

5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
6. Space vertical joints in walls as indicated on Drawings. Unless otherwise indicated on Drawings, locate vertical joints beside piers integral with walls, near corners, and in concealed locations where possible.

C. Control Joints in Slabs-on-Ground: Form weakened-plane control joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least one-fourth of concrete thickness as follows:

1. Grooved Joints: Form control joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3 mm). Repeat grooving of control joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
2. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch (3-**mm-)** wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random cracks.

D. Isolation Joints in Slabs-on-Ground: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated on Drawings.
2. Terminate full-width joint-filler strips not less than 1/2 inch (13 mm) or more than 1 inch (25 mm) below finished concrete surface, where joint sealants, specified in Section 079200 "Joint Sealants," are indicated.
3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Doweled Joints:

1. Install dowel bars and support assemblies at joints where indicated on Drawings.
2. Lubricate or asphalt coat one-half of dowel bar length to prevent concrete bonding to one side of joint.

F. Dowel Plates: Install dowel plates at joints where indicated on Drawings.

3.7 APPLICATION OF FINISHING FLOORS AND SLABS

A. Float Finish:

1. When bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operation of specific float apparatus, consolidate concrete surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats.
2. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture and complies with ACI 117 (ACI A117M) tolerances for conventional concrete.

3. Apply float finish to surfaces to receive trowel finish.

B. Trowel Finish:

1. After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel.
2. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance.
3. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
4. Do not add water to concrete surface. Use of an approved finishing aid is acceptable.
5. Do not apply troweled finish to concrete, which has a total air content greater than 3 percent.
6. Apply a trowel finish to surfaces exposed to view.
7. Finish surfaces to the following tolerances, in accordance with ASTM E1155 (ASTM E1155M), for a randomly trafficked floor surface:

a. Slabs on Ground:

1) Specified overall values of flatness, FF 25; and of levelness, FL 20; with minimum local values of flatness, FF 17; and of levelness, FL 15.

C. Trowel and Fine-Broom Finish: First apply a trowel finish to surfaces. While concrete is still plastic, slightly scarify surface with a fine broom perpendicular to main traffic route.

1. Coordinate required final finish with Engineer before application.
2. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

D. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and locations indicated on Drawings.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with a fiber-bristle broom perpendicular to main traffic route.
2. Coordinate required final finish with Engineer before application.

3.8 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

A. Filling in:

1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
2. Mix, place, and cure concrete, as specified, to match color and texture with in-place construction exposed to view.
3. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by troweling surfaces to a hard, dense finish with corners, intersections,

and terminations slightly rounded.

3.9 APPLICATION OF CONCRETE CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 305.1 (ACI 305.1M) for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or drying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for remainder of curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

E. Cure concrete according to ACI 308.1, by one or a combination of the following methods. Slab on grade shall be moisture cured by either item 1 or 2 below:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

    a. Water.
    b. Continuous water-fog spray.
    c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.

    a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
    b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
    c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies does not interfere with bonding of floor covering used on Project.

3. Curing Compound (Only with Engineer’s Approval): Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

   a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound does not interfere with bonding of floor covering used on Project.

4. Curing and Sealing Compound (only with Engineer’s Approval): Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.10 APPLICATION OF LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment in accordance with manufacturer's written instructions.

   1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
   2. Do not apply to concrete that is less than seven days' old.
   3. Prepare and apply materials in accordance with manufacturer’s instructions

3.11 INSTALLATION OF JOINT FILLING

A. Prepare, clean, and install joint filler in accordance with manufacturer's written instructions.

   1. Defer joint filling until concrete has aged at least one month(s).

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints.

3.12 INSTALLATION OF CONCRETE SURFACE REPAIRS

A. Defective Concrete:

   1. Repair and patch defective areas when approved by Engineer.
   2. Remove and replace concrete that cannot be repaired and patched to meet specification requirements.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks in excess of 0.01 inch (0.25 mm) spalls, air bubbles exceeding surface finish limits, honeycombs, rock pockets, fins and other projections on the surface exceeding surface finish limits, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension to solid concrete.

    a. Limit cut depth to 3/4 inch (19 mm).
    b. Make edges of cuts perpendicular to concrete surface.
    c. Clean, dampen with water, and brush-coat holes and voids with bonding agent.
    d. Fill and compact with patching mortar before bonding agent has dried.
    e. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement, so that, when dry, patching mortar matches surrounding color.

    a. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching.
    b. Compact mortar in place and match surrounding surface.

3. Repair defects on concealed formed surfaces that will affect concrete's durability and structural performance, as determined by Engineer.

D. Repairing Unformed Surfaces:

1. Test unformed surfaces, such as floors and slabs, for finish, and verify surface tolerances specified for each surface.

    a. Correct low and high areas.
    b. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

2. Repair finished surfaces containing surface defects, including spalls, popouts, honeycombs, rock pockets, crazing, and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width.
3. After concrete has cured at least 14 days, correct high areas by grinding.
4. Correct localized low areas during, or immediately after, completing surface-finishing operations by adding patching mortar.

    a. Finish repaired areas to blend into adjacent concrete.

5. Correct other low areas scheduled to receive floor coverings with a repair underlayment.

    a. Prepare, mix, and apply repair underlayment and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
    b. Feather edges to match adjacent floor elevations.

6. Correct other low areas scheduled to remain exposed with repair topping.

    a. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations.
    b. Prepare, mix, and apply repair topping and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

7. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete.

    a. Remove defective areas with clean, square cuts, and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around.
    b. Dampen concrete surfaces in contact with patching concrete and apply bonding agent.
    c. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate.
    d. Place, compact, and finish to blend with adjacent finished concrete.
    e. Cure in same manner as adjacent concrete.

8. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar.

    a. Groove top of cracks and cut out holes to sound concrete, and clean off dust, dirt, and loose particles.
    b. Dampen cleaned concrete surfaces and apply bonding agent.
    c. Place patching mortar before bonding agent has dried.
    d. Compact patching mortar and finish to match adjacent concrete.
    e. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Engineer's approval.

3.13 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a special inspector to perform field tests and inspections and prepare testing and inspection reports.

B. Testing Agency: Engage a qualified testing and inspecting agency to perform tests and

inspections and to submit reports.

1. Testing agency to be responsible for providing curing facility for initial curing of strength test specimens on-site and verifying that test specimens are cured in accordance with standard curing requirements in ASTM C31/C31M.
2. Testing agency to immediately report to Engineer, Contractor, and concrete manufacturer any failure of Work to comply with Contract Documents.
3. Testing agency to report results of tests and inspections, in writing, to Owner, Engineer, Contractor, and concrete manufacturer within 48 hours of inspections and tests.

    a. Test reports to include reporting requirements of ASTM C31/C31M, ASTM C39/C39M, and ACI 301, including the following as applicable to each test and inspection:

        1) Project name.
        2) Name of testing agency.
        3) Names and certification numbers of field and laboratory technicians performing inspections and testing.
        4) Name of concrete manufacturer.
        5) Date and time of inspection, sampling, and field testing.
        6) Date and time of concrete placement.
        7) Location in Work of concrete represented by samples.
        8) Date and time sample was obtained.
        9) Truck and batch ticket numbers.
        10) Design compressive strength at 28 days.
        11) Concrete mixture designation, proportions, and materials.
        12) Field test results of fresh concrete, including slump or slump flow, air content, temperature and density.
        13) Information on storage and curing of samples at the Project site, including curing method and maximum and minimum temperatures during initial curing period.
        14) Type of fracture and compressive break strengths at seven days and 28 days.

4. Provide a space and source of power or other resources for curing and access to test specimens by the testing agency.

C. Delivery Tickets: comply with ASTM C94/C94M.

D. Inspections:

1. Headed bolts and studs.
2. Verification of use of required design mixture.
3. Concrete placement, including conveying and depositing.
4. Curing procedures and maintenance of curing temperature.
5. Verification of concrete strength before removal of shores and forms from beams and slabs.
6. Batch Plant Inspections: On a random basis, as determined by Engineer.

E. Concrete Tests: Testing of composite samples of fresh concrete obtained in

accordance with ASTM C 172/C 172M to be performed in accordance with the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 150 cu. yd. (114 cu. m) or fraction thereof.

    a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing is to be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C143/C143M:

    a. One test at point of delivery for each composite sample, but not less than one test for each day's pour of each concrete mixture.
    b. Perform additional tests as needed.

3. Slump Flow: ASTM C1611/C1611M:

    a. One test at point of delivery for each composite sample when strength test specimens are cast, but not less than one test for each day's pour of each concrete mixture.
    b. Perform additional tests as needed.

4. Air Content: ASTM C231/C231M pressure method, for normal-weight concrete;

    a. One test for each composite sample when strength test specimens are cast, but not less than one test for each day's pour of each concrete mixture.

5. Concrete Temperature: ASTM C1064/C1064M:

    a. One test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample when strength test specimens are cast.

6. Concrete Density: ASTM C138/C138M:

    a. One test for each composite sample when strength test specimens are cast.

7. Unit Weight: ASTM C138/C138M density of fresh structural lightweight concrete.

    a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture. The fresh density should be consistent with that associated with the equilibrium density within a tolerance of plus or minus 4 lb/ft.3.

8. Compression Test Specimens: ASTM C31/C31M:

    a. Cast and standard cure two sets of two 6 inches (150 mm) by 12-inches

(300 mm) or 4-inch (100-mm) by 8-inch (200-mm) cylindrical specimens for each composite sample.
b. Cast, and field cure three sets of two standard cylindrical specimens for each composite sample.

9. Compressive-Strength Tests: ASTM C39/C39M.

    a. Test one set of two standard cured specimens at seven days and one set of two specimens at 28 days.
    b. Test one set of two field-cured specimens at seven days and one set of two specimens at 28 days.
    c. A compressive-strength test to be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

10. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor to evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
11. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests of standard cured cylinders equals or exceeds specified compressive strength, and no compressive-strength test value falls below specified compressive strength by more than 500 psi if specified compressive strength is 5000 psi, or no compressive strength test value is less than 10 percent of specified compressive strength if specified compressive strength is greater than 5000 psi.
12. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
13. Additional Tests:

    a. Testing and inspecting agency to make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer.
    b. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by Engineer.

        1) Acceptance criteria for concrete strength to be in accordance with ACI 301, Section 1.7.6.3.

14. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
15. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

F. Measure floor and slab flatness and levelness in accordance with ASTM E1155 within 48 hours of completion of floor finishing and promptly report test results to Engineer.

3.14 PROTECTION

A. Protect concrete surfaces as follows:

1. Protect from petroleum stains.
2. Diaper hydraulic equipment used over concrete surfaces.
3. Prohibit vehicles from interior concrete slabs.
4. Prohibit use of pipe-cutting machinery over concrete surfaces.
5. Prohibit placement of steel items on concrete surfaces.
6. Prohibit use of acids or acidic detergents over concrete surfaces.
7. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.
8. Protect concrete surfaces scheduled to receive surface hardener or polished concrete finish using floor slab protective covering.

END OF SECTION 033000

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood products.
2. Wood-preservative-treated lumber.
3. Dimension lumber framing.
4. Miscellaneous lumber.
5. Fasteners

B. Related Requirements:

1. Section 061753 "Shop-Fabricated Wood Trusses" for wood trusses made from dimension lumber.

1.2 DEFINITIONS

A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.

B. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.

C. Exposed Framing: Framing not concealed by other construction.

D. Lumber grading agencies, and abbreviations used to reference them, include the following:

1. NeLMA: Northeastern Lumber Manufacturers' Association.
2. NLGA: National Lumber Grades Authority.
3. SPIB: The Southern Pine Inspection Bureau.
4. WCLIB: West Coast Lumber Inspection Bureau.
5. WWPA: Western Wood Products Association.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.

1.4 INFORMATIONAL SUBMITTALS

A. Material Certificates:

1. For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
2. For preservative-treated wood products. Indicate type of preservative used and net amount of preservative retained.

B. Evaluation Reports: For the following, from ICC-ES:

1. Wood-preservative-treated wood.
2. Post-installed anchors.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS

A. Lumber: Comply with DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Dress lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content:

1. Dimension Lumber: 19 percent unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA U1, Use categories as follows:

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat all rough carpentry unless otherwise indicated.

1. Wood splashboards, blocking, furring, stripping, and similar members in contact with concrete or within 24 inches of finish grade.

2.3 DIMENSION LUMBER FRAMING

A. All framing: No. 1 grade.

1. Species:

a. Southern pine; SPIB.

2.4 MISCELLANEOUS LUMBER

A. Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.

2.5 FASTENERS

A. General: Fasteners are to be of size and type indicated and comply with requirements specified in this article for material and manufacture. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M or ASTM F2329.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

C. Do not splice structural members between supports unless otherwise indicated.

D. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use inorganic boron for items that are continuously protected from liquid water.
2. Use copper naphthenate for items not continuously protected from liquid water.

E. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

F. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. Table 2304.10.1, "Fastening Schedule," in ICC's International Building Code (IBC).
2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
3. ICC-ES evaluation report for fastener.

3.2 FRAMING INSTALLATION: Conform to NFP WCD1A unless otherwise indicated or specified. Fit framing lumber and other rough carpentry, set accurately to the required lines and levels, and secure in place in a rigid manner. Do not splice framing members between bearing points. Set purlins with their crown edge up. Reinforce all members damaged by such cutting or boring by means of specially formed and approved sheet metal or bar steel shapes, or remove and provide new, as approved. Provide as necessary for the proper completion of the work all framing members not indicated or specified. Spikes, nails, and bolts shall be drawn up tight. Size, spacing and allowable loads for timber connections and fastenings shall conform to NFP NDS. All blocking and bracing shall be full width or depth of posts.

A. Dimensional Lumber Headers and Beams: Fabricate from stress rated lumber and from maximum lengths available, with a minimum number of splices. Spike members together with 10-penny special nails, a minimum of two near each end and stagger 12 inches o.c. intermittently between. Provide full depth blocking 24 inches on center. Where beams provide bearing for trusses, increase height of blocking and spike to trusses.

B. Girts: Provide girts not less than nominal 2 by 6 inch to receive performed metal siding or sheathing. Apply girts, in straight parallel rows, to outside face at the spacing indicated. Nail girl to post with a minimum of two 20-penny nails.

C. Purlins: Provide purlins not less than nominal 2 by 4 inch, to receive performed metal roofing. Apply purlins in straight, parallel rows, in the direction and spacing indicated. Fasten purlins to rafters or trusses with a minimum of two 10-penny nails or as shown on Contract Drawings.

D. Bearing Blocks: Provide blocks for girts, headers, and other bearing members as required. Bearing blocks shall be the full width of the members and of sufficient length to transfer the bearing stresses to the posts. Bearing blocks shall be full width of attached member and not less than 2’0” long.

E. Wood Nailers: Provide continuous wood nailers, both horizontally and vertically as required to attach metal flashings and trim. Provide minimum 1-1/2-inch thick material around openings, where roofs intersect walls and where walls abut overhands. Nailers shall be plumb, rigid and level.

F. Corner Cross Bracing: Provide bracing at all external corner posts. Bracing shall be nominal 2-inch by 4-inch, laying flat against interior faces of posts. Extend bracing at an angle of approximately 45 degrees vertical, and fasten to each post with a minimum of two 10-penny nails.

G. Header to Post Bracing: Provide at 45 degrees, bracing at all posts except for posts located at overhead door locations. Bracing shall be not less than 3-inch thick material by the full depth of post. Extend bracing at an angle of approximately 45 degrees, and toe nail to bottom of header and side of post with a minimum of 20-penny nails.

H. Diagonal Corner Bracing: Provide two diagonal bracing members in truss space at all external corners. Bracing shall be of nominal 2 by 6-inch, nailed under top chord. Extend bracing at an angle of approximately 45 degrees horizontally, and fasten at each truss with a minimum of two 10-penny nails. Splice corner bracing with lapped 2 x 6-inch over all intersecting runners.

I. Wood Blocking: Provide proper sizes and shapes at proper locations for the installation and attachment of wood and other finish materials, fixtures, equipment, and items indicated or specified.

J. Wind Bracing: Provide interior wind bracing perpendicular to the truss span, nail across bottom chords of trusses spaced in accordance with approved shop drawings, maximum 10-foot centers. Nail bracing at each truss chord with a minimum of two 10-penny nails.

K. Sway Bracing: Provide cross sway bracing under the space ridge at bays indicated.

3.3 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000

SECTION 061753 - SHOP-FABRICATED WOOD TRUSSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood products.

1.2 ALLOWANCES

A. Provide wood truss bracing under the Metal-Plate-Connected Truss Bracing Allowance as specified in Section 012100 "Allowances."

1.3 DEFINITIONS

A. Metal-Plate-Connected Wood Trusses: Planar structural units consisting of metal-plate-connected members fabricated from dimension lumber and cut and assembled before delivery to Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For metal-plate connectors, metal truss accessories, and fasteners.

B. Shop Drawings: Show fabrication and installation details for trusses.

1. Show location, pitch, span, camber, configuration, and spacing for each type of truss required.
2. Indicate sizes, stress grades, and species of lumber.
3. Indicate locations of permanent bracing required to prevent buckling of individual truss members due to design loads.
4. Indicate locations, sizes, and materials for permanent bracing required to prevent buckling of individual truss members due to design loads.
5. Indicate type, size, material, finish, design values, orientation, and location of metal connector plates.
6. Show splice details and bearing details.

C. Delegated Design Submittals: For metal-plate-connected wood trusses indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For metal connector-plate manufacturer and fabricator.

B. Material Certificates: For dimension lumber specified to comply with minimum specific gravity. Indicate species and grade selected for each use and specific gravity.

C. Product Certificates: For metal-plate-connected wood trusses, signed by officer of truss-fabricating firm.

D. Evaluation Reports: For the following, from ICC-ES:

1. Metal-plate connectors.
2. Metal truss accessories.

1.6 QUALITY ASSURANCE

A. Metal Connector-Plate Manufacturer Qualifications: A manufacturer that is a member of TPI and that complies with quality-control procedures in TPI 1 for manufacture of connector plates.

1. Manufacturer's responsibilities include providing professional engineering services needed to assume engineering responsibility.
2. Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.

B. Fabricator Qualifications: Shop that participates in a recognized quality-assurance program, complies with quality-control procedures in TPI 1, and involves third-party inspection by an independent testing and inspecting agency acceptable to Engineer and authorities having jurisdiction.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Handle and store trusses to comply with recommendations in SBCA BCSI, "Building Component Safety Information: Guide to Good Practice for Handling, Installing, Restraining, & Bracing Metal Plate Connected Wood Trusses."

1. Store trusses flat, off of ground, and adequately supported to prevent lateral bending.
2. Protect trusses from weather by covering with waterproof sheeting, securely anchored.
3. Provide for air circulation around stacks and under coverings.

B. Inspect trusses showing discoloration, corrosion, or other evidence of deterioration. Discard and replace trusses that are damaged or defective.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design metal-plate-connected wood trusses.

B. Structural Performance: Metal-plate-connected wood trusses are to be capable of withstanding design loads within limits and under conditions indicated. Comply with requirements in TPI 1 unless more stringent requirements are specified below.

1. Design Loads: As indicated.
2. Maximum Deflection under Design Loads:

    a. Roof Trusses: Vertical deflection of 1/240 of span.

C. Comply with applicable requirements and recommendations of TPI 1, TPI DSB, and SBCA BCSI.

D. Wood Structural Design Standard: Comply with applicable requirements in AF&PA's "National Design Specifications for Wood Construction" and its "Supplement.".

2.2 WOOD PRODUCTS

A. Lumber: DOC PS 20 and applicable rules of any rules-writing agency certified by the American Lumber Standard Committee (ALSC) Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive a stained or natural finish, omit grade stamp and provide certificates of grade compliance issued by grading agency.
3. Provide dressed lumber, S4S.
4. Provide dry lumber with 19 percent maximum moisture content at time of dressing.

B. Minimum Chord Size for Roof Trusses: 2 by 6 inches nominal for top chords 2 by 6 inches nominal for bottom chords 2 by 6 inches nominal for both top and bottom chords.

C. Minimum Specific Gravity for Top Chords: 0.50.

D. Permanent Bracing: Provide wood bracing that complies with requirements for miscellaneous lumber in Section 061000 "Rough Carpentry."

2.3 METAL CONNECTOR PLATES

A. Fabricate connector plates to comply with TPI 1.

B. Hot-Dip Galvanized-Steel Sheet: ASTM A653/A653M; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G60 coating designation; and not less than 0.036 inch thick.

1. Use for interior locations unless otherwise indicated.

C. Areas of high corrosion (urea or salt storage), alternative plate coatings should be required instead (TPI 1).

1. Epoxy-polyamide primer (SSPC-Paint 22).
2. Coal-Tar epoxy-polyamide black or dark red paint (SSPC-Paint 16).
3. Post-plate manufacture hot dip galvanizing per ASTM A153.

2.4 FASTENERS

A. Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Provide fasteners for use with metal framing anchors that comply with written recommendations of metal framing manufacturer.
2. Where trusses are exposed to weather, in ground contact, made from pressure-preservative treated wood, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M.

B. Nails, Brads, and Staples: ASTM F1667.

2.5 METAL FRAMING ANCHORS AND ACCESSORIES

A. Allowable design loads, as published by manufacturer, are to comply with or exceed those indicated. Manufacturer's published values are to be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors are to be punched for fasteners adequate to withstand same loads as framing anchors.

B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M, G60 coating designation.

1. Use for interior locations unless otherwise indicated.

2.6 FABRICATION

A. Cut truss members to accurate lengths, angles, and sizes to produce close-fitting joints.

B. Fabricate metal connector plates to sizes, configurations, thicknesses, and anchorage details required to withstand design loads for types of joint designs indicated.

C. Assemble truss members in design configuration indicated; use jigs or other means to ensure uniformity and accuracy of assembly, with joints closely fitted to comply with

tolerances in TPI 1. Position members to produce design camber indicated.

1. Fabricate wood trusses within manufacturing tolerances in TPI 1.

D. Connect truss members by metal connector plates located and securely embedded simultaneously in both sides of wood members by air or hydraulic press.

2.7 SOURCE QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform special inspections.

1. Provide special inspector with access to fabricator's documentation of detailed fabrication and quality-control procedures that provide a basis for inspection control of the workmanship and the fabricator's ability to conform to approved construction documents and referenced standards.
2. Provide special inspector with access to places where wood trusses are being fabricated to perform inspections.

B. Correct deficiencies in Work that special inspections indicate do not comply with the Contract Documents.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install wood trusses only after supporting construction is in place and is braced and secured.

B. If trusses are delivered to Project site in more than one piece, assemble trusses before installing.

C. Hoist trusses in place by lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.

D. Install and brace trusses according to TPI recommendations and as indicated.

E. Install trusses plumb, square, and true to line and securely fasten to supporting construction.

F. Space trusses as indicated; adjust and align trusses in location before permanently fastening.

G. Anchor trusses securely at bearing points; use metal truss tie-downs or floor truss hangers as applicable. Install fasteners through each fastener hole in metal framing anchors according to manufacturer's fastening schedules and written instructions.

H. Securely connect each truss ply required for forming built-up girder trusses.

1. Anchor trusses to girder trusses as indicated.

I. Install and fasten permanent bracing during truss erection and before construction loads are applied. Anchor ends of permanent bracing where terminating at walls or beams.

1. Install bracing to comply with Section 061000 "Rough Carpentry."
2. Install and fasten strongback bracing vertically against vertical web of parallel-chord floor trusses at centers indicated.

J. Install wood trusses within installation tolerances in TPI 1.

K. Do not alter trusses in field. Do not cut, drill, notch, or remove truss members.

L. Replace wood trusses that are damaged or do not comply with requirements.

1. Damaged trusses may be repaired according to truss repair details signed and sealed by the qualified professional engineer responsible for truss design, when approved by Engineer.

3.2 REPAIRS AND PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect wood trusses from weather. If, despite protection, wood trusses become wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

C. Repair damaged galvanized coatings on exposed surfaces in accordance with ASTM A780/A780M and manufacturer's written instructions.

3.3 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform special inspections to verify that temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.

END OF SECTION 061753

SECTION 061800 - GLUED-LAMINATED CONSTRUCTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Structural glued-laminated timber.
2. Timber connectors.
3. Miscellaneous Materials.
4. Fabrication.

B. Related Requirements:

1. Section 061000 "Rough Carpentry" for dimension lumber items associated with structural glued-laminated timber.
2. Section 061300 "Heavy Timber Construction" for framing using timbers.

1.2 DEFINITIONS

A. Structural Glued-Laminated (Glulam) Timber: An engineered, stress-rated timber product assembled from selected and prepared wood laminations bonded together with adhesives and with the grain of the laminations approximately parallel longitudinally.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include data on lumber, adhesives, fabrication, and protection.
2. For preservative-treated wood products. Include chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
3. For connectors. Include installation instructions.

1.4 INFORMATIONAL SUBMITTALS

A. Certificates of Conformance: Issued by a qualified testing and inspecting agency indicating that structural glued-laminated timber complies with requirements in ANSI A190.1.

B. Material Certificates: For preservative-treated wood products, from manufacturer. Indicate type of preservative used and net amount of preservative retained.

C. Research/Evaluation Reports: For structural glued-laminated timber and timber connectors, from ICC-ES.

1.5 DELIVERY, STORAGE, AND HANDLING

A. General: Comply with provisions in AITC 111.

B. Individually wrap members using plastic-coated paper covering with water-resistant seams.

PART 2 - PRODUCTS

2.1 STRUCTURAL GLUED-LAMINATED TIMBER

A. General: Provide structural glued-laminated timber that complies with ANSI A190.1 and ANSI 117 or research/evaluation reports acceptable to authorities having jurisdiction.

1. Factory mark each piece of structural glued-laminated timber with AITC Quality Mark or APA-EWS trademark. Place mark on surfaces that are not exposed in the completed Work.
2. Provide structural glued-laminated timber made with wet-use adhesive complying with ANSI A190.1.

B. Species and Grades for Structural Glued-Laminated Timber:

1. Any species that complies with structural properties indicated.

C. Species and Grades: For beams.

1. Species and Beam Stress Classification: Any species.
2. Lay-up: Balanced.

D. Species and Grades for Columns:

1. Species and Grade: NO.1 Southern yellow pine, 47.
2. Planed all sides.
3. Finger jointed, glued and nailed.
4. Preservation treated not less than 6 feet above the embedded ends with CCA to 0.8 retention.

E. Appearance Grade: Framing, complying with AITC 110.

2.2 TIMBER CONNECTORS

A. Materials: Unless otherwise indicated, fabricate from the following materials:

1. Structural-steel shapes, plates, and flat bars complying with ASTM A36/A36M.
2. Round steel bars complying with ASTM A575, Grade M 1020.
3. Hot-rolled steel sheet complying with ASTM A1011/A1011M, Structural Steel, Type SS, Grade 33.

B. Finish steel assemblies and fasteners with rust-inhibitive primer, 2-mil dry film

thickness.

C. Hot-dip galvanize steel assemblies and fasteners after fabrication to comply with ASTM A123/A123M or ASTM A153/A153M.

2.3 MISCELLANEOUS MATERIALS

A. End Sealer: Manufacturer's standard, transparent, colorless wood sealer that is effective in retarding the transmission of moisture at cross-grain cuts and is compatible with indicated finish.

B. Penetrating Sealer: Manufacturer's standard, transparent, penetrating wood sealer that is compatible with indicated finish.

2.4 FABRICATION

A. Shop fabricate for connections to greatest extent possible, including cutting to length and drilling bolt holes.

1. Dress exposed surfaces as needed to remove planning and surfacing marks.

B. Camber: Fabricate horizontal and inclined members of less than 1:1 slope with either

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates in areas to receive structural glued-laminated timber, with Installer present, for compliance with requirements, installation tolerances, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Erect structural glued-laminated timber true and plumb and with uniform, close-fitting joints. Provide temporary bracing to maintain lines and levels until permanent supporting members are in place.

1. Predrill holes and insert reinforcing bars as indicated.
2. Place posts on concrete block to provide uniform bearing centered in hole.
3. Fill hole with concrete: crown top to shed water.
4. Handle and temporarily support glued-laminated timber to prevent surface damage, compression, and other effects that might interfere with indicated finish.

B. Cutting: Avoid extra cutting after fabrication. Where field fitting is unavoidable, comply with requirements for shop fabrication.

C. Fit structural glued-laminated timber by cutting and restoring exposed surfaces to match specified surfacing.

1. Predrill for fasteners using timber connectors as templates.

3.3 ADJUSTING

A. Repair damaged surfaces after completing erection. Replace damaged structural glued-laminated timber if repairs are not approved by Engineer.

3.4 PROTECTION

A. Do not remove wrappings on individually wrapped members until they no longer serve a useful purpose, including protection from weather, sunlight, soiling, and damage from work of other trades.

1. Coordinate wrapping removal with finishing work. Retain wrapping where it can serve as a painting shield.
2. Slit underside of wrapping to prevent accumulation of moisture inside the wrapping.

END OF SECTION 061800

SECTION 133419 - METAL BUILDING SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal building systems.
2. Structural-steel framing.
3. Metal roof panels.
4. Metal wall panels.
5. Metal soffit panels.
6. Thermal insulation.
7. Personnel doors and frames.
8. Accessories.

B. Related Requirements:

1. Division 03 concrete Sections for anchor rod installation, concrete, reinforcement, and formwork requirements.
2. Section 083323 "Overhead Coiling Doors" for coiling vehicular doors in metal building systems.

1.2 DEFINITIONS

A. Terminology Standard: See MBMA's "Metal Building Systems Manual" for definitions of terms for metal building system construction not otherwise defined in this Section or in standards referenced by this Section.

1.3 COORDINATION

A. Coordinate sizes and locations of concrete foundations and casting of anchor-rod inserts into foundation walls and footings. Anchor rod installation, concrete, reinforcement, and formwork requirements are specified in Division 03 concrete

B. Coordinate metal panel assemblies with rain drainage work, flashing, trim, and construction of supports and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conferences: Conduct conferences at Project site.

1. Metal Building Systems Conference: Review methods and procedures related to metal building systems including, but not limited to, the following:

a. Condition of foundations and other preparatory work performed by other trades.
b. Structural load limitations.
c. Construction schedule. Verify availability of materials and erector's personnel, equipment, and facilities needed to make progress and avoid delays.
d. Required tests, inspections, and certifications.
e. Unfavorable weather and forecasted weather conditions and impact on construction schedule.

2. Metal Building Roof Panel Conference: Review methods and procedures related to metal roof panel assemblies including, but not limited to, the following:

a. Compliance with requirements for purlin and rafter conditions, including flatness and attachment to structural members.
b. Structural limitations of purlins and rafters during and after roofing.
c. Flashings, special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect metal roof panels.
d. Temporary protection requirements for metal roof panel assembly during and after installation.

3. Metal Building Wall Panel Conference: Review methods and procedures related to metal wall panel assemblies including, but not limited to, the following:

a. Compliance with requirements for support conditions, including alignment between and attachment to structural members.
b. Structural limitations of girts and columns during and after wall panel installation.
c. Flashings, special siding details, wall penetrations, openings, and condition of other construction that will affect metal wall panels.
d. Temporary protection requirements for metal wall panel assembly during and after installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: By manufacturer of metal building systems. Indicate components by others. Include full building plan, elevations, sections, details, and the following:

1. Anchor-Rod Plans: Submit anchor-rod plans and templates before foundation work begins. Include location, diameter, and minimum required projection of anchor rods required to attach metal building to foundation. Indicate column reactions at each location.
2. Structural-Framing Drawings: Indicate complete fabrication of primary and secondary framing; include provisions for openings. Indicate welds and bolted connections, distinguishing between shop and field applications. Include

transverse cross-sections.

a. Indicate provisions for attaching roof curbs.

3. Accessory Drawings: Include details of the following items, at a scale of not less than 1-1/2 inches per 12 inches (1:8):

a. Flashing and trim.

C. Samples for Initial Selection: Manufacturer's standard color sheets, showing full range of available colors for each type of exposed finish.

D. Samples for Verification: Actual sample of finished products for each type of exposed finish.

1. Flashing and Trim: Nominal 12 inches (300mm) long. Include fasteners and other exposed accessories.
2. Vapor-Retarder Facings: Minimum 6-inch- (150-mm-) square Samples.
3. Accessories: Samples for each type of accessory.

E. Delegated Design Submittals: For metal building systems, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.6 INFORMATIONAL SUBMITTALS

A. Letter of Design Certification: Signed and sealed by a qualified professional engineer. Include the following:

1. Name and location of Project.
2. Order number.
3. Name of manufacturer.
4. Name of Contractor.
5. Building dimensions including width, length, height, and roof slope.
6. Indicate compliance with AISC standards for hot-rolled steel and AISI standards for cold-rolled steel, including edition dates of each standard.
7. Governing building code and year of edition.
8. Design Loads: Include dead load, roof live load, collateral loads, roof snow load, deflection, wind loads/speeds and exposure, seismic design category or effective peak velocity-related acceleration/peak acceleration, and auxiliary loads (cranes).
9. Load Combinations: Indicate that loads were applied acting simultaneously with concentrated loads, in accordance with governing building code.
10. Building-Use Category: Indicate category of building use and its effect on load importance factors.

B. Welding certificates.

C. Material Test Reports: For each of the following products, by a qualified testing agency:

1. Structural steel including chemical and physical properties.
2. Bolts, nuts, and washers including mechanical properties and chemical analysis.
3. Tension-control, high-strength, and bolt-nut-washer assemblies.
4. Shop primers.
5. Nonshrink grout.

D. Source quality control reports.

E. Field quality control reports.

F. Sample Warranties: For special warranties.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For metal panel finishes and door hardware.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Accreditation: Manufacturer's facility accredited in accordance with IAS AC472.
2. Engineering Responsibility: Metal building system design and preparation of comprehensive engineering analysis and Shop Drawings by a professional engineer who is legally qualified to practice in state where Project is located and who is experienced in providing engineering services of the type indicated.

B. Erector Qualifications: An experienced erector who specializes in erecting and installing work similar in material, design, and extent to that indicated for this Project and who is acceptable to manufacturer.

C. Welding Qualifications: Qualify procedures and personnel in accordance with the following welding codes:

1. AWS D1.1/D1.1M.
2. AWS D1.3/D1.3M.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, sheets, panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.

B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.

D. Protect foam-plastic insulation as follows:

1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
2. Protect against ignition at all times. Do not deliver foam-plastic insulation materials to Project site before installation time.
3. Complete installation and concealment of foam-plastic materials as rapidly as possible in each area of construction.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with panel installation only when weather conditions permit metal panels to be installed in accordance with manufacturers' written installation instructions and warranty requirements.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain metal building system components, including primary and secondary framing and metal panel assemblies, from single source from single manufacturer.

B. Basis of Design: Nucor Building Systems, or approved equal.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design metal building system.

B. Structural Performance: Metal building systems to withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated in accordance with procedures in MBMA's "Metal Building Systems Manual":

1. Design Loads: As indicated on Drawings.
2. Deflection and Drift Limits:

a. Design metal building system assemblies to withstand serviceability design loads without exceeding deflections and drift limits recommended in AISC's "Design Guide No. 3: Serviceability Design Considerations for Steel Buildings."
b. Deflection to be no greater than the following:

1) Purlins and Rafters: Vertical deflection of 1/240 of the span.
2) Girts: Horizontal deflection of 1/180 of the span.
3) Design secondary-framing system to accommodate deflection of primary framing and construction tolerances, and to maintain clearances at openings.
4) Lateral Drift: Maximum of 1/200 of the building height.

C. Seismic Performance: Metal building system to withstand the effects of earthquake motions determined in accordance with ASCE/SEI 7.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

E. Fire Propagation Characteristics: Exterior wall assemblies containing foam plastics pass NFPA 285 fire test.

F. Structural Performance for Metal Panels: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing in accordance with ASTM E1592:

1. Wind Loads: As indicated on Drawings.

G. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.

1. Uplift Rating: UL 60.

2.3 METAL BUILDING SYSTEMS

A. System Description: Provide a complete, integrated set of mutually dependent components and assemblies that form a metal building system capable of withstanding structural and other loads, thermally induced movement, and exposure to weather without failure or infiltration of water into building interior.

1. Primary-Frame Type:

a. Rigid Clear Span: Solid-member, structural-framing system without interior columns.
b. Lean-to: Solid- or truss-member, structural-framing system, designed to be partially supported by another structure.

2. End-Wall Framing:

a. Manufacturer's standard, for buildings not required to be expandable, consisting of primary frame, capable of supporting one-half of a bay design load, and end-wall columns.
b. Engineer end walls to be expandable. Provide primary frame, capable of supporting full-bay design loads, and end-wall columns.

3. Secondary-Frame Type: Manufacturer's standard purlins and joists and exterior-framed (bypass) girts.
4. Eave Height: Manufacturer's standard height, as indicated by nominal height on Drawings.
5. Bay Spacing: As indicated on Drawings.

6. Roof Slope: As indicated on Drawings.

2.4 STRUCTURAL-STEEL FRAMING

A. Structural Steel: Comply with AISC 360.

B. Bolted Connections: Comply with RCSC's "Specification for Structural Joints Using High-Strength Bolts."

C. Cold-Formed Steel: Comply with AISI S100 for design requirements and allowable stresses.

D. Primary Framing: Manufacturer's standard primary-framing system, designed to withstand required loads and specified requirements. Primary framing includes transverse and lean-to frames; rafters, rake, and canopy beams; sidewall, intermediate, end-wall, and corner columns; and wind bracing.

1. General: Provide frames with attachment plates, bearing plates, and splice members. Factory drill for field-bolted assembly. Provide frame span and spacing indicated.

    a. Slight variations in span and spacing may be acceptable if necessary to comply with manufacturer's standard, as approved by Engineer.

2. Rigid Clear-Span Frames: I-shaped frame sections fabricated from shop-welded, built-up steel plates or structural-steel shapes. Interior columns are not permitted.
3. Long-Bay Frames: I-shaped frame sections fabricated from shop-welded, built-up steel plates or structural-steel shapes. Provide interior columns fabricated from round steel pipes or tubes, or shop-welded, built-up steel plates.
4. Frame Configuration: Single gable.
5. Exterior Column: Uniform depth or Tapered.
6. Rafter: Uniform depth or Tapered.

E. End-Wall Framing: Manufacturer's standard primary end-wall framing fabricated for field-bolted assembly to comply with the following:

1. End-Wall and Corner Columns: I-shaped sections fabricated from structural-steel shapes; shop-welded, built-up steel plates; or C-shaped, cold-formed, structural-steel sheet.
2. End-Wall Rafters: C-shaped, cold-formed, structural-steel sheet; or I-shaped sections fabricated from shop-welded, built-up steel plates or structural-steel shapes.

F. Secondary Framing: Manufacturer's standard secondary framing, including purlins, girts, eave struts, flange bracing, base members, gable angles, clips, headers, jambs, and other miscellaneous structural members. Unless otherwise indicated, fabricate framing from either cold-formed, structural-steel sheet or roll-formed, metallic-coated steel sheet, prepainted with coil coating, to comply with the following:

1. Purlins:

a. C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes; minimum 2-1/2-inch- (64-mm-) wide flanges.
b. Steel joists of depths indicated on Drawings.

1) Depth: 12 inches.

2. Girts: C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes. Form ends of Z-sections with stiffening lips angled 40 to 50 degrees from flange, with minimum 2-1/2-inch- (64-mm-) wide flanges.

a. Depth: 8 inches.

3. Eave Struts: Unequal-flange, C-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes; to provide adequate backup for metal panels.
4. Flange Bracing: Minimum 2-by-2-by-1/8-inch (51-by-51-by-3-mm) structural-steel angles or 1-inch- (25-mm-) diameter, cold-formed structural tubing to stiffen primary-frame flanges.
5. Sag Bracing: Minimum 1-by-1-by-1/8-inch (25-by-25-by-3-mm) structural-steel angles.
6. Base or Sill Angles: Manufacturer's standard base angle, minimum 3-by-2-inch (76-by-51-mm), fabricated from zinc-coated (galvanized) steel sheet.
7. Purlin and Girt Clips: Manufacturer's standard clips fabricated from steel sheet. Provide galvanized clips where clips are connected to galvanized framing members.
8. Framing for Openings: Channel shapes; fabricated from cold-formed, structural-steel sheet or structural-steel shapes. Frame head and jamb of door openings and head, jamb, and sill of other openings.
9. Miscellaneous Structural Members: Manufacturer's standard sections fabricated from cold-formed, structural-steel sheet; built-up steel plates; or zinc-coated (galvanized) steel sheet; designed to withstand required loads.

G. Canopy Framing: Manufacturer's standard structural-framing system, designed to withstand required loads; fabricated from shop-welded, built-up steel plates or structural-steel shapes. Provide frames with attachment plates and splice members, factory drilled for field-bolted assembly.

1. Type: Straight-beam, eave type.

H. Bracing: Provide adjustable wind bracing using any method as follows:

1. Rods: ASTM A36/A36M; ASTM A572/A572M, Grade 50 (345); or ASTM A529/A529M, Grade 50 (345); minimum 1/2-inch- (13-mm-) diameter steel; threaded full length or threaded a minimum of 6 inches (152 mm) at each end.
2. Angles: Fabricated from structural-steel shapes to match primary framing, of size required to withstand design loads.
3. Rigid Portal Frames: Fabricated from shop-welded, built-up steel plates or structural-steel shapes to match primary framing; of size required to withstand design loads.
4. Fixed-Base Columns: Fabricated from shop-welded, built-up steel plates or structural-steel shapes to match primary framing; of size required to withstand

design loads.

5. Diaphragm Action of Metal Panels: Design metal building to resist wind forces through diaphragm action of metal panels.

I. Anchor Rods: Headed anchor rods as indicated in Anchor Rod Plan for attachment of metal building to foundation.

J. Materials:

1. W-Shapes: ASTM A992/A992M; ASTM A572/A572M, Grade 50 or 55 (345 or 380); or ASTM A529/A529M, Grade 50 or 55 (345 or 380).
2. Channels, Angles, M-Shapes, and S-Shapes: ASTM A36/A36M; ASTM A572/A572M, Grade 50 or 55 (345 or 380); or ASTM A529/A529M, Grade 50 or 55 (345 or 380).
3. Plate and Bar: ASTM A36/A36M; ASTM A572/A572M, Grade 50 or 55 (345 or 380); or ASTM A529/A529M, Grade 50 or 55 (345 or 380).
4. Steel Pipe: ASTM A53/A53M, Type E or S, Grade B.
5. Cold-Formed Hollow Structural Sections: ASTM A500/A500M, Grade B or C, structural tubing.
6. Structural-Steel Sheet: Hot-rolled, ASTM A1011/A1011M, Structural Steel (SS), Grades 30 through 55 (205 through 380), or High-Strength Low-Alloy Steel (HSLAS) or High-Strength Low-Alloy Steel with Improved Formability (HSLAS-F), Grades 45 through 70 (310 through 480); or cold-rolled, ASTM A1008/A1008M, Structural Steel (SS), Grades 25 through 80 (170 through 550), or HSLAS, Grades 45 through 70 (310 through 480).
7. Metallic-Coated Steel Sheet: ASTM A653/A653M, SS, Grades 33 through 80 (230 through 550), or HSLAS or HSLAS-F, Grades 50 through 80 (340 through 550); with G60 (Z180) coating designation; mill phosphatized.
8. Metallic-Coated Steel Sheet Prepainted with Coil Coating: Steel sheet, metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A755/A755M.

    a. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, SS, Grades 33 through 80 (230 through 550), or HSLAS or HSLAS-F, Grades 50 through 80 (340 through 550); with G90 (Z275) coating designation.
    b. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A792/A792M, SS, Grade 50 or 80 (340 or 550); with Class AZ50 (AZM150) coating.

9. Structural Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy-hex steel structural bolts; ASTM A 563 heavy-hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers.

    a. Finish: Plain

10. Headed Anchor Rods: ASTM F1554, Grade 36.

    a. Configuration: Straight.
    b. Nuts: ASTM A563/A563M, heavy-hex carbon steel.
    c. Plate Washers: ASTM A36/A36M carbon steel.
    d. Washers: ASTM F436/F436M, hardened carbon steel.
    e. Finish: Plain.

11. Threaded Rods: ASTM A572/A572M, Grade 50 (345).

    a. Nuts: ASTM A563/A563M, hex carbon steel.
    b. Washers: ASTM F436/F436M, hardened carbon steel.
    c. Finish: Plain.

K. Finish: Factory primed. Apply specified primer immediately after cleaning and pretreating.

1. Clean and prepare in accordance with SSPC-SP2.
2. Coat with manufacturer's standard primer. Apply primer to primary and secondary framing to a minimum dry film thickness of 1 mil (0.025 mm).

    a. Prime secondary framing formed from uncoated steel sheet to a minimum dry film thickness of 0.5 mil (0.013 mm) on each side.

2.5 METAL ROOF PANELS

A. Standing-Seam, Trapezoidal-Rib, Metal Roof Panels : Formed with raised trapezoidal ribs at panel edges and intermediate stiffening ribs symmetrically spaced between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels and engaging opposite edge of adjacent panels.

1. Material: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.030-inch (0.76-mm) nominal uncoated steel thickness. Prepainted by the coil-coating process to comply with ASTM A755/A755M.

    a. Exterior Finish: Siliconized polyester.
    b. Color: As selected by Architect from manufacturer's full range.

2. Clips: Two-piece floating to accommodate thermal movement.
3. Joint Type: Mechanically seamed.
4. Panel Coverage: 24 inches (610 mm).
5. Panel Height: 3 inches (76 mm).
6. Uplift Rating: UL 60.

B. Finishes:

1. Exposed Coil-Coated Finish:

    a. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a minimum dry film thickness of 0.2 mil (0.005 mm) for primer and 0.8 mil (0.02 mm) for topcoat.

2. Concealed Finish: Match Exposed Finish.

2.6 METAL WALL PANELS

A. Exposed-Fastener, Tapered-Rib, Metal Wall Panels : Formed with raised, trapezoidal major ribs and intermediate stiffening ribs symmetrically spaced between major ribs; designed to be installed by lapping side edges of adjacent panels and mechanically

attaching panels to supports using exposed fasteners in side laps.

1. Material: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.030-inch (0.76-mm) nominal uncoated steel thickness. Prepainted by the coil-coating process to comply with ASTM A755/A755M.

    a. Exterior Finish: Siliconized polyester.
    b. Color: As selected by Architect from manufacturer's full range.

2. Major-Rib Spacing: 12 inches (305 mm) Insert dimension o.c.
3. Panel Coverage: 36 inches (914 mm).
4. Panel Height: 1.25 inches (32 mm).

B. Finishes:

1. Exposed Coil-Coated Finish:

    a. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a minimum dry film thickness of 0.2 mil (0.005 mm) for primer and 0.8 mil (0.02 mm) for topcoat.

2. Concealed Finish: Match Exposed Finish.

2.7 METAL SOFFIT PANELS

A. General: Provide factory-formed metal soffit panels designed to be installed by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fasteners in side laps. Include accessories required for weathertight installation.

B. Concealed-Fastener, Flush-Profile, Metal Soffit Panels : Formed with vertical panel edges and flush surface; with flush joint between panels; with 1-inch- (25-mm-) wide flange for attaching interior finish; designed to be installed by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fasteners in side laps.

1. Material: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.030-inch (0.76-mm) nominal uncoated steel thickness. Prepainted by the coil-coating process to comply with ASTM A755/A755M.

    a. Exterior Finish: Siliconized polyester.
    b. Color: As selected by Architect from manufacturer's full range.

2. Panel Coverage: 12 inches (305 mm).
3. Panel Height: 1 inch (25 mm).

2.8 THERMAL INSULATION

A. Faced Metal Building Insulation: ASTM C991, Type II, glass-fiber-blanket insulation; 0.5-lb/cu. ft. (8-kg/cu. m) density; 2-inch- (51-mm-) wide, continuous, vapor-tight edge tabs; with a flame-spread index of 25 or less.

B. Unfaced Metal Building Insulation: ASTM C991, Type I, or NAIMA 202, glass-fiber-blanket insulation; 0.5-lb/cu. ft. (8-kg/cu. m) density; 2-inch- (51-mm-) wide, continuous, vapor-tight edge tabs; with a flame-spread index of 25 or less.

C. Mineral-Fiber-Blanket Insulation: ASTM C665, type indicated below; consisting of fibers manufactured from glass, slag wool, or rock wool.

1. Nonreflective Faced: Type II (blankets with nonreflective membrane covering), Category 1 (membrane is a vapor retarder), Class A (membrane-faced surface with a flame-spread index of 25 or less).
2. Reflective Faced: Type III (blankets with reflective membrane covering), Category 1 (membrane is a vapor retarder), Class A (membrane-faced surface with a flame-spread index of 25 or less).
3. Unfaced: Type I (blankets without membrane covering), passing ASTM E136 for combustion characteristics.

D. Faced, Polyisocyanurate Board Insulation: ASTM C1289, Type I (foil facing), Class 2, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, based on tests performed on unfaced core. Provide units tested for interior exposure without an approved thermal barrier.

E. Retainer Strips: For securing insulation between supports, 0.025-inch (0.64-mm) nominal-thickness, formed, metallic-coated steel or PVC retainer clips colored to match insulation facing.

F. Vapor-Retarder Facing: ASTM C1136, with permeance not greater than 0.02 perm (1.15 ng/Pa x s x sq. m) when tested in accordance with ASTM E96/E96M, Desiccant Method.

1. Composition:

a. White metallized-polypropylene film facing, fiberglass scrim reinforcement, and kraft-paper backing.
b. Aluminum foil facing, elastomeric barrier coating, fiberglass scrim reinforcement, and kraft-paper backing.
c. White [polypropylene][vinyl] film facing, fiberglass scrim reinforcement, and metallized-polyester film backing.
d. White polypropylene film facing and fiberglass-polyester-blend fabric backing.

G. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.

2.9 ACCESSORIES

A. General: Provide accessories as standard with metal building system manufacturer and as specified. Fabricate and finish accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes. Comply with indicated profiles and with dimensional and structural requirements.

1. Form exposed sheet metal accessories that are without excessive oil-canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.

B. Roof Panel Accessories: Provide components required for a complete metal roof panel assembly including copings, fasciae, corner units, ridge closures, clips, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal roof panels unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same material as metal roof panels.

2. Clips: Manufacturer's standard, formed from stainless steel sheet, designed to withstand negative-load requirements.
3. Cleats: Manufacturer's standard, mechanically seamed cleats formed from stainless steel sheet or nylon-coated aluminum sheet.
4. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
5. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible closure strips; cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

C. Wall Panel Accessories: Provide components required for a complete metal wall panel assembly including copings, fasciae, mullions, sills, corner units, clips, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal wall panels unless otherwise indicated.

1. Closures: Provide closures at eaves and rakes, fabricated of same material as metal wall panels.

2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible closure strips; cut or premolded to match metal wall panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

D. Flashing and Trim: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.018-inch (0.46-mm) nominal uncoated steel thickness, prepainted with coil coating; finished to match adjacent metal panels.

1. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers.
2. Opening Trim: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.030-inch (0.76-mm) nominal uncoated steel thickness, prepainted with coil coating. Trim head and jamb of door openings, and head, jamb, and sill of other openings.

E. Roof Ventilators: Gravity type, complete with hardware, flashing, closures, and fittings.

1. Continuous or Sectional-Ridge Type: Factory-engineered and -fabricated, continuous unit; Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.018-inch (0.46-mm) nominal uncoated steel thickness, prepainted with coil coating; finished to match metal roof panels. Fabricated in minimum 10-ft.- (3-m-) long sections. Provide throat size and total length indicated, complete with side baffles, ventilator assembly, end caps, splice plates, and reinforcing diaphragms.

    a. Bird Screening: Galvanized steel, 1/2-inch- (13-mm-) square mesh, 0.041-inch (1.04-mm) wire; or aluminum, 1/2-inch- (13-mm-) square mesh, 0.063-inch (1.6-mm) wire.
    b. Throat Size: 9 inches (229 mm) or 12 inches (305 mm), as standard with manufacturer, and as required to comply with ventilation requirements.

F. Roof Curbs: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.048-inch (1.21-mm) nominal uncoated steel thickness prepainted with coil coating; finished to match metal roof panels; with welded top box and bottom skirt, and integral full-length cricket; capable of withstanding loads of size and height indicated.

1. Curb Subframing: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.060-inch (1.52-mm) nominal uncoated steel thickness, angle-, C-, or Z-shaped metallic-coated steel sheet.
2. Insulation: 1-inch- (25-mm-) thick, rigid type.

G. Pipe Flashing: Premolded, EPDM pipe collar with flexible aluminum ring bonded to base.

H. Materials:

1. Fasteners: Self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners designed to withstand design loads. Provide fasteners with heads matching color of materials being fastened by means of plastic caps or factory-applied coating.
2. Fasteners for Metal Roof Panels:

    a. Self-drilling or self-tapping, zinc-plated, hex-head carbon-steel screws, with a stainless steel cap or zinc-aluminum-alloy head and EPDM sealing washer.
    b. Self-drilling, Type 410 stainless steel or self-tapping, Type 304 stainless steel or zinc-alloy-steel hex washer head, with EPDM washer under heads of fasteners bearing on weather side of metal panels.

3. Corrosion-Resistant Coating: Cold-applied asphalt mastic, compounded for 15-mil (0.4-mm) dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.10 FABRICATION

A. General: Design components and field connections required for erection to permit easy assembly.

1. Mark each piece and part of the assembly to correspond with previously prepared erection drawings, diagrams, and instruction manuals.
2. Fabricate structural framing to produce clean, smooth cuts and bends. Punch holes of proper size, shape, and location. Members to be free of cracks, tears, and ruptures.

B. Tolerances: Comply with MBMA's "Metal Building Systems Manual" for fabrication and erection tolerances.

C. Primary Framing: Shop fabricate framing components to indicated size and section, with baseplates, bearing plates, stiffeners, and other items required for erection welded into place. Cut, form, punch, drill, and weld framing for bolted field assembly.

1. Make shop connections by welding or by using high-strength bolts.
2. Join flanges to webs of built-up members by a continuous, submerged arc-welding process.
3. Brace compression flange of primary framing with steel angles or cold-formed structural tubing between frame web and purlin web or girt web, so flange compressive strength is within allowable limits for any combination of loadings.
4. Weld clips to frames for attaching secondary framing if applicable, or punch for bolts.
5. Shop Priming: Prepare surfaces for shop priming in accordance with SSPC-SP 2. Shop prime primary framing with specified primer after fabrication.

D. Secondary Framing: Shop fabricate framing components to indicated size and section by roll forming or break forming, with baseplates, bearing plates, stiffeners, and other plates required for erection welded into place. Cut, form, punch, drill, and weld secondary framing for bolted field connections to primary framing.

1. Make shop connections by welding or by using non-high-strength bolts.
2. Shop Priming: Prepare uncoated surfaces for shop priming in accordance with SSPC-SP 2. Shop prime uncoated secondary framing with specified primer after fabrication.

E. Metal Panels: Fabricate and finish metal panels at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.

1. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of metal panel.

2.11 SOURCE QUALITY CONTROL

A. Special Inspection: Owner will engage a qualified special inspector to perform source quality control inspections and to submit reports.

1. Accredited Manufacturers: Special inspections will not be required if fabrication is performed by an IAS AC472-accredited manufacturer approved by authorities having jurisdiction to perform such Work without special inspection.

a. After fabrication, submit copy of certificate of compliance to authorities having jurisdiction, certifying that Work was performed in accordance with Contract requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with erector present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Before erection proceeds, survey elevations and locations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments to receive structural framing, with erector present, for compliance with requirements and metal building system manufacturer's tolerances.

1. Engage land surveyor to perform surveying.

C. Proceed with erection only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean and prepare surfaces to be painted in accordance with manufacturer's written instructions for each particular substrate condition.

B. Provide temporary shores, guys, braces, and other supports during erection to keep structural framing secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural framing, connections, and bracing are in place unless otherwise indicated.

3.3 ERECTION OF STRUCTURAL FRAMING

A. Erect metal building system in accordance with manufacturer's written instructions and erection drawings.

B. Do not field cut, drill, or alter structural members without written approval from metal building system manufacturer's professional engineer.

C. Set structural framing accurately in locations and to elevations indicated, in accordance with AISC specifications referenced in this Section. Maintain structural stability of frame during erection.

D. Base and Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.

1. Set plates for structural members on wedges, shims, or setting nuts as required.
2. Tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
3. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.

E. Align and adjust structural framing before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with framing. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure.
2. Make allowances for difference between temperature at time of erection and mean temperature when structure will be completed and in service.

F. Primary Framing and End Walls: Erect framing level, plumb, rigid, secure, and true to line. Level baseplates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use grout to obtain uniform bearing and to maintain a level base-line elevation. Moist-cure grout for not less than seven days after placement.

1. Make field connections using high-strength bolts installed in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt type and joint type specified.

    a. Joint Type: Snug tightened or pretensioned as required by manufacturer.

G. Secondary Framing: Erect framing level, plumb, rigid, secure, and true to line. Field bolt secondary framing to clips attached to primary framing.

1. Provide rake or gable purlins with tight-fitting closure channels and fasciae.
2. Locate and space wall girts to suit openings such as doors and windows.
3. Provide supplemental framing at entire perimeter of openings, including doors, windows, louvers, ventilators, and other penetrations of roof and walls.

H. Bracing: Install bracing in roof and sidewalls where indicated on erection drawings.

1. Tighten rod and cable bracing to avoid sag.
2. Locate interior end-bay bracing only where indicated.

I. Framing for Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical and electrical work. Securely attach to structural framing.

J. Erection Tolerances: Maintain erection tolerances of structural framing within AISC 303.

3.4 INSTALLATION OF THERMAL INSULATION

A. General: Install insulation concurrently with metal panel installation, in thickness indicated to cover entire surface, in accordance with manufacturer's written instructions.

1. Set vapor-retarder-faced units with vapor retarder toward warm side of construction unless otherwise indicated. Do not obstruct ventilation spaces except for firestopping.
2. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to the surrounding construction to ensure airtight installation.
3. Install factory-laminated, vapor-retarder-faced blankets straight and true in one-piece lengths, with both sets of facing tabs sealed, to provide a complete vapor retarder.
4. Install blankets straight and true in one-piece lengths. Install vapor retarder over insulation, with both sets of facing tabs sealed, to provide a complete vapor retarder.

B. Blanket Roof Insulation: Comply with the following installation method:

1. Two-Layers-between-Purlin-with-Spacer-Block Installation: Extend insulation and vapor retarder between purlins. Carry vapor-retarder-facing tabs up and over purlin, overlapping adjoining facing of next insulation course and maintaining continuity of retarder. Install layer of filler insulation over first layer to fill space between purlins formed by thermal spacer blocks. Hold in place with bands and crossbands below insulation.

    a. Thermal Spacer Blocks: Where metal roof panels attach directly to purlins, install thermal spacer blocks.

2. Retainer Strips: Install retainer strips at each longitudinal insulation joint, straight and taut, nesting with secondary framing to hold insulation in place.

C. Blanket Wall Insulation: Extend insulation and vapor retarder over and perpendicular to top flange of secondary framing. Hold in place by metal wall panels fastened to secondary framing.

1. Retainer Strips: Install retainer strips at each longitudinal insulation joint, straight and taut, nesting with secondary framing to hold insulation in place.
2. Sound-Absorption Insulation: Where sound-absorption requirement is indicated for metal liner panels, cover insulation with polyethylene film and provide inserts of wire mesh to form acoustical spacer grid.

3.5 INSTALLATION OF ACCESSORIES

A. General: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete metal roof panel assembly, including

trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.

2. Install components for a complete metal wall panel assembly, including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
3. Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by manufacturer.

B. Flashing and Trim: Comply with performance requirements and manufacturer's written installation instructions. Provide concealed fasteners where possible, and set units true to line and level. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

1. Install exposed flashing and trim that is without excessive oil-canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.
2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 ft. with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

3.6 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform field quality control special inspections and to submit reports.

B. Door Inspections:

1. Product will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

3.7 CLEANING AND PROTECTION

A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint in accordance with ASTM A780/A780M and manufacturer's written instructions.

B. Touchup Painting:

1. After erection, promptly clean, prepare, and prime or reprime field connections, rust spots, and abraded surfaces of prime-painted structural framing, bearing plates, and accessories.

a. Clean and prepare surfaces by SSPC-SP 2 or SSPC-SP 3.

b. Apply a compatible primer of same type as shop primer used on adjacent surfaces.

2. Cleaning and touchup painting are specified in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."

END OF SECTION 133419

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Floor angle guards.

1.2 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written instructions to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.3 ACTION SUBMITTALS

A. Product Data:

1. Floor angle guards.

B. Shop Drawings: Show fabrication and installation details.

1.4 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel in accordance with the following welding codes:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
3. AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."

PART 2 - PRODUCTS

2.1 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise

indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

B. Steel Plates, Shapes, and Bars: ASTM A36/A36M.

C. Stainless Steel Bars and Shapes: ASTM A276/A276M, Type 304.

2.2 FASTENERS

A. General: Unless otherwise indicated, provide Type 304 stainless steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B633 or ASTM F1941/F1941M, Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.

1. Provide stainless steel fasteners for fastening.

B. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A307, Grade A (ISO 898-1, Property Class 4.6); with hex nuts, ASTM A563 (ASTM A563M); and, where indicated, flat washers.

C. Stainless Steel Bolts and Nuts: Regular hexagon-head annealed stainless steel bolts, ASTM F593 (ISO 3506-1); with hex nuts, ASTM F594 (ASTM F836M); and, where indicated, flat washers; Alloy Group 1 (A1).

D. Anchor Bolts: ASTM F1554, Grade 36, of dimensions indicated; with nuts, ASTM A563 (ASTM A563M); and, where indicated, flat washers.

1. Hot-dip galvanize or provide mechanically deposited, zinc coating where item being fastened is indicated to be galvanized.

E. Post-Installed Anchors: Torque-controlled expansion anchors.

1. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 (A1) stainless steel bolts, ASTM F593 (ISO 3506-1), and nuts, ASTM F594 (ASTM F836M).

2.3 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work with accurate angles and surfaces and straight edges.

E. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing.

F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.

G. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

2.4 FLOOR ANGLE GUARDS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Ideal Shield
2. Ideal Warehouse Innovations, Inc.
3. Omega Industrial Safety

B. Source Limitations: Obtain items from single source from single manufacturer.

C. Fabricate floor angle guards from 3/8-inch- (9.5-mm-) thick by steel angles, of size indicated on drawings. Drill holes for anchor bolts at spacing per manufacturer’s standards.

D. Factory prime and paint.

1. Color: Safety Yellow

E.

2.5 GENERAL FINISH REQUIREMENTS

A. Finish metal fabrications after assembly.

B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.

E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

F. Corrosion Protection: Coat concealed surfaces of aluminum that come into contact with grout, concrete, masonry, wood, or dissimilar metals with the following:

1. Cast Aluminum: Heavy coat of bituminous paint.
2. Extruded Aluminum: Two coats of clear lacquer.

3.2 INSTALLATION OF FLOOR ANGLE GUARDS

A. Anchor floor angle guards to existing construction with expansion anchors.

1. Embed anchor bolts at least 4 inches (100 mm) in concrete.

3.3 REPAIRS

A. Touchup Painting:

1. Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

a. Apply by brush or spray to provide a minimum 2.0-mil (0.05-mm) dry film thickness.

END OF SECTION 055000

SECTION 074113.13 - FORMED METAL ROOF PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Exposed-fastener, lap-seam, metal roof panels for out buildings.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.

B. Shop Drawings:

1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
2. Accessories: Include details of the flashing, trim, and anchorage systems, at a scale of not less than 1-1/2 inches per 12 inches.

C. Samples for Initial Selection: For each type of metal panel indicated with factory-applied color finishes.

1. Include similar Samples of trim and accessories involving color selection.

D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:

1. Metal Panels: 12 inches long by actual panel width. Include fasteners, closures, and other metal panel accessories.

1.4 INFORMATIONAL SUBMITTALS

A. Sample Warranties: For special warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For metal panels to include in maintenance manuals.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.

B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.

D. Retain strippable protective covering on metal panels during installation.

1.7 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturers' written instructions and warranty requirements.

1.8 COORDINATION

A. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.

B. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.9 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

    a. Structural failures including rupturing, cracking, or puncturing.
    b. Deterioration of metals and other materials beyond normal weathering.

2. Warranty Period: One year from date of Substantial Completion.

B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Delta E units when tested according to ASTM D2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:

1. Wind Loads: As indicated on Drawings.
2. Other Design Loads: As indicated on Drawings.
3. Deflection Limits: For wind loads, no greater than 1/240 of the span.

B. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM E1680 at the following test-pressure difference:

1. Test-Pressure Difference: 6.24 lbf/sq. ft.

C. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E1646 at the following test-pressure difference:

1. Test-Pressure Difference: 6.24 lbf/sq. ft.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

2.2 EXPOSED-FASTENER, LAP-SEAM, METAL ROOF PANELS

A. Provide factory-formed metal roof panels designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using

exposed fasteners in side laps. Include accessories required for weathertight installation.

B. Tapered-Rib-Profile, Exposed-Fastener Metal Roof Panels: Formed with raised, trapezoidal major ribs and intermediate stiffening ribs symmetrically spaced between major ribs.

1. Basis-of-Design Product: Subject to compliance with requirements, provide MBCI PBR Panels or approved equal.
2. Metallic-Coated Steel Sheet: Zinc-coated (galvanized) steel sheet complying with ASTM A653/A653M, G90 coating designation, or aluminum-zinc alloy-coated steel sheet complying with ASTM A792/A792M, Class AZ50 coating designation; structural quality. Prepainted by the coil-coating process to comply with ASTM A755/A755M.

    a. Nominal Thickness: 0.034 inch (22ga).
    b. Exterior Finish: Silicone Polyester.
    c. Color: As selected by Architect from manufacturer's full range.

3. Major-Rib Spacing: 12 inches o.c.
4. Panel Coverage: 36 inches.
5. Panel Height: 1.25 inches.

2.3 MISCELLANEOUS MATERIALS

A. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.

1. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
2. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch-thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

B. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

C. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.

2.4 FABRICATION

A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

C. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
2. Seams: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
3. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
4. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.

    a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal panel manufacturer for application, but not less than thickness of metal being secured.

2.5 FINISHES

A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Steel Panels and Accessories:
1. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a dry film thickness of not less than 0.2 mil (0.005 mm) for primer and 0.8 mil (0.02 mm) for topcoat.
2. Concealed Finish: White or light-colored acrylic or polyester backer finish.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.

1. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.

B. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal panel manufacturer's written recommendations.

3.3 INSTALLATION OF METAL ROOF PANELS

A. Install metal panels according to manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise indicated. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Shim or otherwise plumb substrates receiving metal panels.
2. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air or water-resistive barriers and flashings that are concealed by metal panels are installed.
3. Install screw fasteners in predrilled holes.
4. Locate and space fastenings in uniform vertical and horizontal alignment.
5. Install flashing and trim as metal panel work proceeds.
6. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
7. Align bottoms of metal panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
8. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

B. Fasteners:

1. Steel Panels: Use stainless steel fasteners for surfaces exposed to the exterior; use galvanized-steel fasteners for surfaces exposed to the interior.

C. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal panel manufacturer.

D. Lap-Seam Metal Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.

1. Lap ribbed or fluted sheets one full rib. Apply panels and associated items true to line for neat and weathertight enclosure.
2. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of metal panels.
3. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
4. Install screw fasteners with power tools having controlled torque adjusted to compress washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
5. Flash and seal panels with weather closures at perimeter of all openings.
6. Watertight Installation:

    a. Apply a continuous ribbon of sealant or tape to seal lapped joints of metal panels, using sealant or tape as recommend by manufacturer on side laps of nesting-type panels and elsewhere as needed to make panels watertight.
    b. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
    c. At panel splices, nest panels with minimum 6-inch end lap, sealed with sealant and fastened together by interlocking clamping plates.

E. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete metal panel system including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by metal panel manufacturer; or, if not indicated, provide types recommended in writing by metal panel manufacturer.

F. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level. Install work with laps, joints, and seams that are permanently watertight.

1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and achieve waterproof performance.

2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

G. Roof Curbs: Install flashing around bases where they meet metal roof panels.

H. Pipe Flashing: Form flashing around pipe penetration and metal roof panels. Fasten and seal to metal roof panels as recommended by manufacturer.

3.4 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align metal panel units within installed tolerance of 1/4 inch in 20 feet on slope and location lines and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.5 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

B. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 074113.13

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes hollow-metal work.

1.3 DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.4 COORDINATION

A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, core descriptions, fire-resistance ratings and finishes.

B. Shop Drawings: Include the following:

1. Elevations of each door type.
2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of each different wall opening condition.
6. Details of anchorages, joints, field splices, and connections.
7. Details of accessories.
8. Details of removable frames.

C. Schedule: Provide a schedule of hollow-metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final Door Hardware Schedule.

1.6 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For each type of frame assembly, for tests performed by a qualified testing agency.

B. Oversize Construction Certification: For assemblies required to be fire rated and exceeding limitations of labeled assemblies.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow-metal work palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.

1. Provide additional protection to prevent damage to factory-finished units.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow-metal work vertically under cover at Project site with head up. Place on minimum 4-inch-high wood blocking. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Amweld International, LLC.
2. Ceco Door Products; an Assa Abloy Group company.
3. Curries Company; an Assa Abloy Group company.
4. Custom Metal Products.
5. Daybar.
6. Pioneer Industries, Inc.
7. Steelcraft; an Ingersoll-Rand company.

B. Source Limitations: Obtain hollow-metal work from single source from single manufacturer.

2.2 EXTERIOR HOLLOW-METAL DOORS AND FRAMES

A. Construct exterior doors and frames to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

B. Heavy-Duty Doors and Frames: SDI A250.8, Level 2..

1. Physical Performance: Level B according to SDI A250.4.
2. Doors:

    a. Type: As indicated in the Door and Frame Schedule.
    b. Thickness: 1-3/4 inches
    c. Face: Metallic-coated steel sheet, minimum thickness of 0.042 inch, with minimum A40 coating.
    a. Core: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane, polyisocyanurate, mineral-board, or vertical steel-stiffener core at manufacturer's discretion unless indicated otherwise.

3. Frames:

    a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch, with minimum A40 coating.
    b. Construction: Full profile welded.

4. Exposed Finish: Prime.

2.3 FRAME ANCHORS

A. Jamb Anchors:

1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.

B. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch-diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.

C. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch, and as follows:

1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

2.4 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.

D. Frame Anchors: ASTM A 879/A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

F. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.

G. Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.

2.5 FABRICATION

A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Hollow-Metal Doors:
1. Vertical Edges for Single-Acting Doors: Provide beveled or square edges at manufacturer's discretion.

C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
1. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
2. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
3. Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor; however, for slip-on drywall frames, provide anchor clips or countersunk holes at bottoms of jambs.
4. Jamb Anchors: Provide number and spacing of anchors as follows:

a. Masonry Type: Locate anchors not more than 16 inches from top and bottom of frame. Space anchors not more than 32 inches o.c., to match coursing, and as follows:

1) Two anchors per jamb up to 60 inches high.

2) Three anchors per jamb from 60 to 90 inches high.
3) Four anchors per jamb from 90 to 120 inches high.
4) Four anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.

b. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:

1) Three anchors per jamb up to 60 inches high.
2) Four anchors per jamb from 60 to 90 inches high.
3) Five anchors per jamb from 90 to 96 inches high.
4) Five anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.

c. Compression Type: Not less than two anchors in each frame.
d. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.

D. Fabricate concealed stiffeners and edge channels from either cold- or hot-rolled steel sheet.

E. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.

1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.

2.6 STEEL FINISHES

A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.

C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

A. General: Install hollow-metal work plumb, rigid, properly aligned, and securely fastened in place. Comply with Drawings and manufacturer's written instructions.

B. Hollow-Metal Frames: Install hollow-metal frames of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.

1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.

    a. At fire-rated openings, install frames according to NFPA 80.
    b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
    c. Install frames with removable stops located on secure side of opening.
    d. Remove temporary braces necessary for installation only after frames have been properly set and secured.
    e. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.

2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.

    a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.

3. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.

4. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:

    a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
    b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
    c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
    d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

C. Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.

1. Non-Fire-Rated Steel Doors:

    a. Between Door and Frame Jambs and Head: 1/8 inch plus or minus 1/32 inch.
    b. Between Edges of Pairs of Doors: 1/8 inch to 1/4 inch plus or minus 1/32 inch.
    c. At Bottom of Door: 5/8 inch plus or minus 1/32 inch.
    d. Between Door Face and Stop: 1/16 inch to 1/8 inch plus or minus 1/32 inch.

3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow-metal work immediately after installation.

C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

END OF SECTION 081113

SECTION 083323 - OVERHEAD COILING DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Service doors.

1.2 ACTION SUBMITTALS

A. Product Data: For each type and size of overhead coiling door and accessory.

1. Include construction details, material descriptions, dimensions of individual components, profiles for slats, and finishes.

B. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.

1. Include plans, elevations, sections, and mounting details.
2. Include details of equipment assemblies, and indicate dimensions, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include points of attachment and their corresponding static and dynamic loads imposed on structure.
4. For exterior components, include details of provisions for assembly expansion and contraction and for excluding and draining moisture to the exterior.

C. Samples for Initial Selection: Manufacturer's finish charts showing full range of colors and textures available for units with factory-applied finishes.

1. Include similar Samples of accessories involving color selection.

1.3 INFORMATIONAL SUBMITTALS

A. Sample Warranty: For special warranty.

1.4 CLOSEOUT SUBMITTALS

A. Special warranty.

B. Maintenance Data: For overhead coiling doors to include in maintenance manuals.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.

1.6 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of doors that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain overhead coiling doors from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Accessibility Standard: Comply with applicable provisions in ICC A117.1.

B. Structural Performance, Exterior Doors: Capable of withstanding the following design wind loads:

1. Design Wind Load: As indicated on Drawings.
2. Deflection Limits: Design overhead coiling doors to withstand design wind load without evidencing permanent deformation or disengagement of door components.

2.3 DOOR ASSEMBLY

A. Overhead Coiling Door: Service overhead coiling door formed with curtain of interlocking metal slats.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Overhead Door Corporation; Rolling Service Door Model 610 or comparable product by one of the following:

a. ACME Rolling Doors
b. Advanced Door Technologies
c. Alpine Overhead Doors, Inc
d. Clopay Building Products]
e. Cookson; a CornellCookson company
f. Cornell; a CornellCookson company

B. Operation Cycles: Door components and operators capable of operating for not less than 20,000 cycles. One operation cycle is complete when a door is opened from the closed position to the fully open position and returned to the closed position.

C. Door Curtain Material: Galvanized steel.

D. Door Curtain Slats: Curved profile slats of 1-7/8-inch (48-mm) center-to-center height.

E. Bottom Bar: Two angles, each not less than 1-1/2 by 1-1/2 by 1/8 inch (38 by 38 by 3 mm) thick; fabricated from aluminum extrusions and finished to match door.

F. Curtain Jamb Guides: Galvanized steel with exposed finish matching curtain slats.

G. Hood: Match curtain material and finish.

1. Shape: Round.
2. Mounting: Face of wall.

H. Locking Devices: Equip door with chain lock keeper.

I. Manual Door Operator: Chain-hoist operator.

J. Curtain Accessories: Equip door with weatherseals.

K. Door Finish:

1. Baked-Enamel or Powder-Coated Finish: Color as selected by Architect from manufacturer's full range.

2.4 DOOR CURTAIN MATERIALS AND CONSTRUCTION

A. Door Curtains: Fabricate overhead coiling-door curtain of interlocking metal slats, designed to withstand wind loading indicated, in a continuous length for width of door without splices. Unless otherwise indicated, provide slats of thickness and mechanical properties recommended by door manufacturer for performance, size, and type of door indicated, and as follows:

1. Steel Door Curtain Slats: Zinc-coated (galvanized), cold-rolled structural-steel sheet; complying with ASTM A653/A653M, with G90 (Z275) zinc coating; nominal sheet thickness (coated) of 0.033 inch (0.85 mm); and as required.

B. Curtain Jamb Guides: Manufacturer's standard angles or channels and angles of same material and finish as curtain slats unless otherwise indicated, with sufficient depth and strength to retain curtain, to allow curtain to operate smoothly, and to withstand loading. Slot bolt holes for guide adjustment. Provide removable stops on guides to prevent overtravel of curtain.

2.5 HOODS

A. General: Form sheet metal hood to entirely enclose coiled curtain and operating

mechanism at opening head. Contour to fit end brackets to which hood is attached. Roll and reinforce top and bottom edges for stiffness. Form closed ends for surface-mounted hoods and fascia for any portion of between-jamb mounting that projects beyond wall face. Equip hood with intermediate support brackets as required to prevent sagging.

1. Galvanized Steel: Nominal 0.028-inch- (0.71-mm-) thick, hot-dip galvanized-steel sheet with G90 (Z275) zinc coating, complying with ASTM A653/A653M.

2.6 LOCKING DEVICES

A. Chain Lock Keeper: Suitable for padlock.

2.7 CURTAIN ACCESSORIES

A. Weatherseals for Exterior Doors: Equip each exterior door with weather-stripping gaskets fitted to entire exterior perimeter of door for a weather-resistant installation unless otherwise indicated.

1. At door head, use 1/8-inch- (3-mm-) thick, replaceable, continuous-sheet baffle secured to inside of hood or field-installed on the header.

2.8 COUNTERBALANCE MECHANISM

A. General: Counterbalance doors by means of manufacturer's standard mechanism with an adjustable-tension, steel helical torsion spring mounted around a steel shaft and contained in a spring barrel connected to top of curtain with barrel rings. Use grease-sealed bearings or self-lubricating graphite bearings for rotating members.

B. Counterbalance Barrel: Fabricate spring barrel of manufacturer's standard hot-formed, structural-quality, seamless carbon-steel pipe, of sufficient diameter and wall thickness to support rolled-up curtain without distortion of slats and to limit barrel deflection to not more than 0.03 in./ft. (2.5 mm/m) of span under full load.

C. Counterbalance Spring: One or more oil-tempered, heat-treated steel helical torsion springs. Size springs to counterbalance weight of curtain, with uniform adjustment accessible from outside barrel. Secure ends of springs to barrel and shaft with cast-steel barrel plugs.

D. Torsion Rod for Counterbalance Shaft: Fabricate of manufacturer's standard cold-rolled steel, sized to hold fixed spring ends and carry torsional load.

E. Brackets: Manufacturer's standard mounting brackets of either cast iron or cold-rolled steel plate.

2.9 MANUAL DOOR OPERATORS

A. General: Equip door with manual door operator by door manufacturer.

B. Chain-Hoist Operator: Consisting of endless steel hand chain, chain-pocket wheel and guard, and gear-reduction unit with a maximum 25-lbf (111-N) force for door operation. Provide alloy-steel hand chain with chain holder secured to operator guide.

2.10 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM/NOMMA 500 for recommendations for applying and designating finishes.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.11 STEEL AND GALVANIZED-STEEL FINISHES

A. Factory Prime Finish: Manufacturer's standard primer, compatible with field-applied finish. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry film thickness.

B. Baked-Enamel or Powder-Coat Finish: Manufacturer's standard baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry film thickness.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates areas and conditions, with Installer present, for compliance with requirements for substrate construction and other conditions affecting performance of the Work.

B. Examine locations of electrical connections.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Install overhead coiling doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; according to manufacturer's written instructions and as specified.

B. Install overhead coiling doors, hoods, controls, and operators at the mounting locations indicated for each door.

C. Accessibility: Install overhead coiling doors, switches, and controls along accessible routes in compliance with the accessibility standard.

3.3 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and to furnish reports to Architect.

B. Perform the following tests and inspections:

1. Test door release, closing, and alarm operations when activated by smoke detector or building's fire-alarm system. Test manual operation of closed door. Reset door-closing mechanism after successful test.

C. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.

D. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.

3.4 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.

1. Complete installation and startup checks according to manufacturer's written instructions.
2. After electrical circuitry has been energized, operate doors to confirm proper motor rotation and door performance.
3. Test and adjust controls and safety devices. Replace damaged and malfunctioning controls and equipment.

3.5 ADJUSTING

A. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.

1. Adjust exterior doors and components to be weather resistant.

B. Lubricate bearings and sliding parts as recommended by manufacturer.

C. Adjust seals to provide tight fit around entire perimeter.

3.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain overhead coiling doors.

END OF SECTION 083323

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Hinges.
2. Mortise locks
3. Lock cylinders.
4. Operating trim.
5. Surface closers.
6. Door gasketing.
7. Thresholds.
8. Metal protective trim units.

B. Related Requirements:

1. Section 081113 "Hollow Metal Doors and Frames".
2. Section 083323 "Overhead Coiling Doors" for door hardware provided as part of coiling door assemblies.

1.2 COORDINATION

A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

B. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

C. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

D. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field-verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.3 ACTION SUBMITTALS

A. Product Data Submittals: For each type of product indicated.

B. Shop Drawings: For electrified door hardware.

1. Include diagrams for power, signal, and control wiring.

2. Include details of interface of electrified door hardware and building safety and security systems.

C. Samples: For each exposed product in each finish specified, in manufacturer's standard size.

1. Tag Samples with full product description to coordinate Samples with door hardware schedule.

D. Door Hardware Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant. Coordinate door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Submittal Sequence: Submit door hardware schedule concurrent with submissions of product data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
2. Format: Use same scheduling sequence and format and use same door numbers as in door hardware schedule in the Contract Documents.
3. Content: Include the following information:

a. Identification number, location, hand, fire rating, size, and material of each door and frame.
b. Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
c. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.

d. Description of electrified door hardware sequences of operation and interfaces with other building control systems.
e. Fastenings and other installation information.
f. Explanation of abbreviations, symbols, and designations contained in door hardware schedule.
g. Mounting locations for door hardware.
h. List of related door devices specified in other Sections for each door and frame.

E. Keying Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Certificates: For each type of electrified door hardware.

1. Certify that door hardware for use on each type and size of labeled fire-rated doors complies with listed fire-rated door assemblies.

C. Field quality-control reports.

D. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of door hardware to include in maintenance manuals.

B. Schedules: Final door hardware and keying schedule.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about door hardware and keying.

1. Warehousing Facilities: In Project's vicinity.
2. Scheduling Responsibility: Preparation of door hardware and keying schedule.

3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lockup for door hardware delivered to Project site.

B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

D. Deliver keys to Owner by registered mail or overnight package service.

1.8 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures, including excessive deflection, cracking, or breakage.

b. Faulty operation of doors and door hardware.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: Three years from date of Substantial Completion unless otherwise indicated below:

a. Electromagnetic and Delayed-Egress Locks: Five years from date of Substantial Completion.
b. Exit Devices: Two years from date of Substantial Completion.
c. Manual Closers: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain each type of door hardware from single manufacturer.

1. Provide electrified door hardware from same manufacturer as mechanical door hardware unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Rated Door Assemblies: Where fire-rated doors are indicated, provide door hardware complying with NFPA 80 that is listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure in accordance with A 252 or UL 10C.

B. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

D. Accessibility Requirements: For door hardware on doors in an accessible route, comply with ICC A117.1.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
2. Comply with the following maximum opening-force requirements:

a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
b. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.

4. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.
5. Adjust spring hinges so that, from an open position of 70 degrees, the door will take at least 1.5 seconds to move to the closed position.

2.3 HINGES

A. Hinges: ANSI/BHMA A156.1.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Baldwin Hardware Corporation.
b. Bommer Industries, Inc.
c. Cal-Royal Products, Inc.
d. Hager Companies.
e. IVES Hardware; an Ingersoll-Rand company.
f. Lawrence Hardware Inc.
g. McKinney Products Company; an ASSA ABLOY Group company.
h. PBB, Inc.
i. Stanley Commercial Hardware; Div. of The Stanley Works.

2.4 MECHANICAL LOCKS AND LATCHES

A. Lock Functions: As indicated in door hardware schedule.

B. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:

1. Mortise Locks: Minimum 3/4-inch (19-mm) latchbolt throw.

C. Lock Backset: 2-3/4 inches (70 mm) unless otherwise indicated.

D. Lock Trim:

1. Levers: Forged.
2. Escutcheons (Roses): Forged.
3. Dummy Trim: Match lever lock trim and escutcheons.

E. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Rabbet Front and Strike: Provide on locksets for rabbeted meeting stiles.

F. Mortise Locks: ANSI/BHMA A156.13, Operational Grade 1; stamped steel case with steel or brass parts; Series 1000.
   1. Manufacturers: Subject to compliance with requirements, match Owner's standard manufacturer at adjacent ARFF/SRE building.

2.5 LOCK CYLINDERS

A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver. Provide cylinder from same manufacturer of locking devices.

   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

      a. Arrow USA; an ASSA ABLOY Group company.
      b. ASSA, Inc.; An ASSA ABLOY Group Company.
      c. Best Access Systems; Div. of Stanley Security Solutions, Inc.
      d. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company.
      e. Falcon Lock; an Ingersoll-Rand company.
      f. Medeco Security Locks, Inc.; an ASSA ABLOY Group company.
      g. SARGENT Manufacturing Company; an ASSA ABLOY Group company.
      h. Schlage Commercial Lock Division; an Ingersoll-Rand company.
      i. Yale Security Inc.; an ASSA ABLOY Group company.

B. Standard Lock Cylinders: ANSI/BHMA A156.5, Grade 1 permanent cores; face finished to match lockset.

   1. Core Type: Match existing facility.

C. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.

D. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.

2.6 KEYING

A. Keying System: Factory registered, complying with guidelines in ANSI/BHMA A156.28, appendix. Provide one extra key blank for each lock. Incorporate decisions made in keying conference.

   1. Existing System:

      a. Master key or grand master key locks to Owner's existing system.
      b. Re-key Owner's existing master key system into new keying system.

   2. Keyed Alike: Key all cylinders to same change key.

B. Keys: Nickel silver.

1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:

    a. Notation: Information to be furnished by Owner.

2.7 OPERATING TRIM

A. Operating Trim: ANSI/BHMA A156.6; stainless steel unless otherwise indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Burns Manufacturing Incorporated.
    b. Don-Jo Mfg., Inc.
    c. Forms + Surfaces.
    d. Hager Companies.
    e. Hiawatha, Inc.
    f. IVES Hardware; an Ingersoll-Rand company.
    g. Rockwood Manufacturing Company.
    h. Trimco.

2.8 SURFACE CLOSERS

A. Surface Closers: ANSI/BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written instructions for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Arrow USA; an ASSA ABLOY Group company.
    b. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company.
    c. DORMA Architectural Hardware; Member of The DORMA Group North America.
    d. Dor-O-Matic; an Ingersoll-Rand company.
    e. K2 Commercial Hardware; a Black & Decker Corp. company.
    f. LCN Closers; an Ingersoll-Rand company.
    g. Norton Door Controls; an ASSA ABLOY Group company.
    h. Rixson Specialty Door Controls; an ASSA ABLOY Group company.
    i. SARGENT Manufacturing Company; an ASSA ABLOY Group company.
    j. Yale Security Inc.; an ASSA ABLOY Group company.

2.9 DOOR GASKETING

A. Door Gasketing: ANSI/BHMA A156.22; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Hager Companies.
b. M-D Building Products, Inc.
c. National Guard Products.
d. Pemko Manufacturing Co.; an ASSA ABLOY Group company.
e. Reese Enterprises, Inc.
f. Sealeze; a unit of Jason Incorporated.
g. Zero International.

B. Maximum Air Leakage: When tested in accordance with ASTM E283/E283M with tested pressure differential of 0.3 inch wg (75 Pa), as follows:

1. Smoke-Rated Gasketing: 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) of door opening.
2. Gasketing on Single Doors: 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) of door opening.
3. Gasketing on Double Doors: 0.50 cfm per ft. (0.000774 cu. m/s per m) of door opening.

C. Door Sweeps: Neoprene gasket material held in place by flat housing or flange, surface mounted to face of door with screws.

1. Housing or Flange Material: Aluminum

2.10 THRESHOLDS

A. Thresholds: ANSI/BHMA A156.21; fabricated to full width of opening indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Hager Companies.
b. M-D Building Products, Inc.
c. National Guard Products.
d. Pemko Manufacturing Co.; an ASSA ABLOY Group company.
e. Reese Enterprises, Inc.
f. Rixson Specialty Door Controls; an ASSA ABLOY Group company.
g. Sealeze; a unit of Jason Incorporated.
h. Zero International.

2.11 METAL PROTECTIVE TRIM UNITS

A. Metal Protective Trim Units: ANSI/BHMA A156.6; fabricated from 0.050-inch- (1.3-mm) thick stainless steel; with manufacturer's standard machine or self-tapping screw fasteners.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Allegion plc
b. Hager Companies
c. inpro Corporation
d. Rockwood Manufacturing Company; ASSA ABLOY Accessories and Door Controls Group, Inc.; ASSA ABLOY
e. Trimco

2.12 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rating labels and as otherwise approved by Architect.

1. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and ANSI/BHMA A156.18.

C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended; however, aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.

1. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
2. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.13 FINISHES

A. Provide finishes complying with ANSI/BHMA A156.18 as indicated in door hardware schedule.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Steel Doors and Frames: For surface-applied door hardware, drill and tap doors and frames in accorance with ANSI/SDI A250.6.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment

2. substrates as necessary for proper installation and operation.
3. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (760 mm) of door height, whichever is more stringent, unless

other equivalent means of support for door, such as spring hinges or pivots, are provided.

D. Lock Cylinders: Install construction cores to secure building and areas during construction period.

1. Replace construction cores with permanent cores as directed by Owner.

E. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with Architect.

1. Configuration: Provide least number of power supplies required to adequately serve doors with electrified door hardware.

F. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."

G. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

H. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

1. Do not notch perimeter gasketing to install other surface-applied hardware.

I. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

J. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 FIELD QUALITY CONTROL

A. Independent Architectural Hardware Consultant: Engage a qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

1. Independent Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

2. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 70 degrees and so that closing time complies with accessibility requirements of authorities having jurisdiction.
3. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.

3.6 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.7 DOOR HARDWARE SCHEDULE

A. As indicated on Drawings.

END OF SECTION 087100

SECTION 104416 - FIRE EXTINGUISHERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes portable, hand-carried fire extinguishers and mounting brackets for fire extinguishers.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product. Include rating and classification, material descriptions, dimensions of individual components and profiles, and finishes for fire extinguisher and mounting brackets.

1.3 INFORMATIONAL SUBMITTALS

A. Warranty: Sample of special warranty.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For fire extinguishers to include in maintenance manuals.

1.5 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace fire extinguishers that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure of hydrostatic test according to NFPA 10 when testing interval required by NFPA 10 is within the warranty period.
b. Faulty operation of valves or release levers.

2. Warranty Period: Six years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."

B. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

2.2 PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS

A. Fire Extinguishers: Type, size, and capacity for each mounting bracket indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Ansul; brand of Johnson Controls International plc, Building Solutions North America
b. Babcock-Davis
c. J. L. Industries, Inc.; Activar Construction Products Group, Inc.
d. Kidde; Carrier Global Corporation

2. Source Limitations: Obtain fire extinguishers from single source from single manufacturer.
3. Handles and Levers: Manufacturer's standard.
4. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B.

B. Multipurpose Dry-Chemical Type in Steel Container UL-rated 10-A:120-B:C, 20-lb nominal capacity, with monoammonium phosphate-based dry chemical in enameled-steel container.

2.3 MOUNTING BRACKETS

A. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated by Architect.

1. Identify bracket-mounted fire extinguishers with the words "FIRE EXTINGUISHER" in red letter decals applied to mounting surface.

a. Orientation: Vertical.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine fire extinguishers for proper charging and tagging.

1. Remove and replace damaged, defective, or undercharged fire extinguishers.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install fire extinguishers and mounting brackets in locations indicated and in compliance with requirements of authorities having jurisdiction.

B. Mounting Brackets: Fasten mounting brackets to surfaces, square and plumb, at locations indicated.

1. Mounting Height: Top of fire extinguisher to be at 42 inches above finished floor.

END OF SECTION 104416

SECTION 260501 - COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Electrical equipment coordination and installation.
2. Grout.
3. Common electrical installation requirements.

1.3 SUBMITTALS

A. Not Required.

1.4 COORDINATION

A. Coordinate arrangement, mounting, and support of electrical equipment:

1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
3. To allow right of way for piping and conduit installed at required slope.
4. So connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.

B. Coordinate installation of required supporting devices in cast-in-place concrete, masonry walls, and other structural components as they are constructed.

C. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed.

PART 2 - PRODUCTS

2.1 Not Used.

PART 3 - EXECUTION

3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

A. Comply with NECA 1.

B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.

C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.

D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.

E. Right of Way: Give to piping systems installed at a required slope.

3.2 FIRESTOPPING

A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly.

END OF SECTION 260051

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Copper building wire rated 600 V or less.
2. Connectors, splices, and terminations rated 600 V and less.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 COPPER BUILDING WIRE

A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cerro Wire LLC.
2. General Cable; Prysmian Group North America.
3. Okonite Company (The).
4. Southwire Company, LLC.

C. Standards:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

2. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

D. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.

E. Conductor Insulation:
1. Type THHN and Type THWN-2: Comply with UL 83.

2. Type XHHW-2: Comply with UL 44.

2.2 CONNECTORS AND SPLICES

A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. 3M Electrical Products.
2. Ideal Industries, Inc.
3. O-Z/Gedney; brand of Emerson Electric Co., Automation Solutions, Appleton Group.

C. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.

1. Material: Copper.
2. Type: One hole with long barrels.
3. Termination: Compression.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders:

1. Copper; solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Branch Circuits:

1. Copper, Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Service Entrance: Type XHHW-2, single conductors in raceway.

B. Exposed Branch Circuits, Including in Crawlspaces: Type THHN/THWN-2, single conductors in raceway.

C. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN/THWN-2, single conductors in raceway.

D. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type XHHW-2, single conductors in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.

B. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.

C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips that will not damage cables or raceway.

E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

F. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."

3.4 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inch of slack.

3.5 IDENTIFICATION

A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes grounding and bonding systems and equipment.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

2.2 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Stranded Conductors: ASTM B8.
2. Tinned Conductors: ASTM B33.
3. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
4. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inch (41 mm) wide and 1/16 inch (1.6 mm) thick.

C. Grounding Bus: Predrilled rectangular bars of annealed copper, 1/4 by 4 inch (6.3 by 100 mm) in cross section, with 9/32-inch (7.14 mm) holes spaced 1-1/8 inch (28 mm) apart. Stand-off insulators for mounting must comply with UL 891 for use in switchboards, 600 V and must be Lexan or PVC, impulse tested at 5000 V.

2.3 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

C. Beam Clamps: Mechanical type, terminal, ground wire access from four directions, with dual, tin-plated or silicon bronze bolts.

D. Cable-to-Cable Connectors: Exothermic.

E. Conduit Hubs: Mechanical type, terminal with threaded hub.

F. Ground Rod Clamps: Exothermic.

G. Water Pipe Clamps:

1. U-bolt type with malleable-iron clamp and copper ground connector.

2.4 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel; 3/4 inch by 10 ft. (19 mm by 3 m).

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install stranded conductors unless otherwise indicated.

B. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
2. Underground Connections: Welded connectors.
3. Connections to Structural Steel: Welded connectors.

3.2 GROUNDING AT THE SERVICE

A. Equipment grounding conductors and grounding electrode conductors must be connected to the ground bus. Install a main bonding jumper between the neutral and ground buses.

3.3 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:

1. Feeders and branch circuits.
2. Lighting circuits.
3. Receptacle circuits.
4. Single-phase motor and appliance branch circuits.
5. Three-phase motor and appliance branch circuits.
6. Flexible raceway runs.

C. Water Heater, Heat-Tracing, and Antifrost Heating Cables: Install a separate insulated equipment grounding conductor to each electric water heater and heat-tracing cable. Bond conductor to heater units, piping, connected equipment, and components.

3.4 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Rods: Drive rods until tops are 2 inch (50 mm) below finished floor or final grade unless otherwise indicated.

1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.

C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
3. Use exothermic-welded connectors for outdoor locations.

D. Grounding and Bonding for Piping:

1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use a bolted clamp connector. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.

3.5 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal. Make tests at ground rods before any conductors are connected.

    a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
    b. Perform tests by fall-of-potential method according to IEEE 81.

B. Grounding system will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

D. Report measured ground resistances that exceed the following values:

1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 5 ohms.

E. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer promptly and include recommendations to reduce ground resistance.

END OF SECTION 260526

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Steel slotted support systems.
2. Conduit and cable support devices.
3. Mounting, anchoring, and attachment components, including mechanical expansion anchors, concrete inserts, clamps, through bolts, toggle bolts, and hanger rods.
4. Fabricated metal equipment support assemblies.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Signed and sealed by a qualified professional engineer. For fabrication and installation details for electrical hangers and support systems.

1. Hangers. Include product data for components.
2. Slotted support systems.
3. Equipment supports.

C. Delegated Design Submittals: For hangers and supports for electrical systems.

1. Include design calculations and details of hangers.

1.3 INFORMATIONAL SUBMITTALS

A. Welding certificates.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified structural professional engineer to design hanger and support system.

B. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame Rating: Class 1.
2. Self-extinguishing according to ASTM D635.

2.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Preformed steel channels and angles with minimum 13/32 inch diameter holes at a maximum of 8 inch on center in at least one surface.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. CADDY; brand of nVent Electrical plc.
    b. Cooper B-line; brand of Eaton, Electrical Sector.
    c. Unistrut; Atkore International.

2. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
3. Material for Channel, Fittings, and Accessories: Galvanized steel.

4. Channel Width: Selected for applicable load criteria.

5. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.

B. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

C. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

    a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

        1) Cooper B-line; brand of Eaton, Electrical Sector.
        2) Hilti, Inc.
        3) ITW Ramset/Red Head; Illinois Tool Works, Inc.

2. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
3. Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are suitable for attached structural element.
4. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM F3125/F3125M, Grade A325.
5. Toggle Bolts: All steel springhead type.
6. Hanger Rods: Threaded steel.

2.3 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

A. Description: Welded or bolted structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

B. Materials: Comply with requirements in Section 055000 "Metal Fabrications" for steel shapes and plates.

PART 3 - EXECUTION

3.1 SELECTION

A. Comply with the following standards for selection and installation of hangers and supports, except where requirements on Drawings or in this Section are stricter:

1. NECA NEIS 101

B. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping materials and installation for penetrations through fire-rated walls, ceilings, and assemblies.

C. Comply with requirements for raceways specified in Section 260533.13 "Conduits for Electrical Systems."

D. Comply with requirements for boxes specified in Section 260533.16 "Boxes and Covers for Electrical Systems."

E. Maximum Support Spacing and Minimum Hanger Rod Size for Raceways: Space supports for EMT and ERMC as required by NFPA 70. Minimum rod size must be 1/4 inch in diameter.

F. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

1. Secure raceways and cables to these supports with single-bolt conduit clamps using spring friction action for retention in support channel.

3.2 INSTALLATION OF SUPPORTS

A. Comply with NECA NEIS 101 for installation requirements except as specified in this article.

B. Raceway Support Methods: In addition to methods described in NECA NEIS 1, [EMT andERMC may be supported by openings through structure members, in accordance with NFPA 70.

C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination must be weight of supported components plus 200 lb.

D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.

3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners.

5. To Steel: Beam clamps (MSS SP-58, Type 19, 21, 23, 25, or 27), complying with MSS SP-69.
6. To Light Steel: Sheet metal screws.
7. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.

E. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

B. Field Welding: Comply with AWS D1.1/D1.1M. Submit welding certificates.

END OF SECTION 260529

SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal conduits and fittings.
2. Surface raceways.
3. Boxes, enclosures, and cabinets.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, and attachment details.

PART 2 - PRODUCTS

2.1 METAL CONDUITS AND FITTINGS

A. Metal Conduit:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. AFC Cable Systems; a part of Atkore International.
b. Allied Tube & Conduit; a part of Atkore International.
c. O-Z/Gedney; a brand of Emerson Industrial Automation.
d. Thomas & Betts Corporation; A Member of the ABB Group.
e. Wheatland Tube Company.

2. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
3. GRC: Comply with ANSI C80.1 and UL 6.
4. ERMC-S-PVC: Complying with NEMA RN 1.

5. EMT: Comply with ANSI C80.3 and UL 797.

6. FMC: Comply with UL 1; zinc-coated steel or aluminum.
7. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.

B. Metal Fittings: Comply with NEMA FB 1 and UL 514B.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following.

    a. AFC Cable Systems; a part of Atkore International.
    b. Allied Tube & Conduit; a part of Atkore International.
    c. O-Z/Gedney; a brand of Emerson Industrial Automation.
    d. Thomas & Betts Corporation; A Member of the ABB Group.
    e. Wheatland Tube Company.

2. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
3. Fittings, General: Listed and labeled for type of conduit, location, and use.
4. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 1203 and NFPA 70.
5. Fittings for EMT:

    a. Material: Steel.
    b. Type: compression.

6. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.

C. Joint Compound for GRC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.2 BOXES, ENCLOSURES, AND CABINETS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Crouse-Hinds, an Eaton business.
2. EGS/Appleton Electric.
3. Hoffman; a brand of Pentair Equipment Protection.
4. Hubbell Incorporated; Wiring Device-Kellems.
5. O-Z/Gedney; a brand of Emerson Industrial Automation.
6. RACO; Hubbell.
7. Spring City Electrical Manufacturing Company.
8. Thomas & Betts Corporation; A Member of the ABB Group.

B. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations and corrosive locations shall be listed for intended use.

C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.

D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.

E. Nonmetallic Outlet Boxes, Devices Boxes, Rings and Covers:
   1. Regulatory Requirements: List and labeled in accordance with NFPA 70 and marked for intended location and use.
   2. Listed Criteria: UL CCN QCMZ; Including UL 514C.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below unless otherwise indicated:

   1. Exposed Conduit: GRC.
   2. Concealed Conduit, Aboveground: GRC.
   3. Underground Conduit: Refer to drawing details..

   4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
   5. Boxes and Enclosures, Aboveground: NEMA 250,Type 4.

B. Indoors: Apply raceway products as specified below unless otherwise indicated.

   1. Exposed, Not Subject to Physical Damage: EMT.
      .
   2. Exposed and Subject to Physical Damage: GRC. Raceway locations include the following:

      a. Loading dock.
      b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
      c. Mechanical rooms.

   3. Concealed in Ceilings and Interior Walls and Partitions: EMT**.**
   4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
   5. Damp or Wet Locations: GRC.
   6. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4 stainless steel in institutional and commercial kitchens and damp or wet locations.

C. Minimum Raceway Size: 1/2-inch trade size.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

   1. Rigid Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
   2. EMT: Use steel compression fittings. Comply with NEMA FB 2.10.
   3. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.

E. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.

3.2 INSTALLATION

A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.

B. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.

C. Do not install raceways or electrical items on any "explosion-relief" walls or rotating equipment.

D. Do not fasten conduits onto the bottom side of a metal deck roof.

E. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

F. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.

G. Arrange stub-ups so curved portions of bends are not visible above finished slab.

H. Install no more than the equivalent of three 90-degree bends in any conduit run except for communication or control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction.

I. Make bends in raceway using large-radius preformed ells. Field bending shall be according to NFPA 70 minimum radii requirements. Use only equipment specifically designed for material and size involved.

J. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.

K. Support conduit within 12 inches of enclosures to which attached.

L. Raceways Embedded in Slabs:

1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure raceways to reinforcement at maximum 10-foot intervals.
2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
3. Arrange raceways to keep a minimum of 1 inch of concrete cover in all directions.
4. Do not embed threadless fittings in concrete unless specifically approved by Architect for each specific location.

5. Change from ENT to GRC before rising above floor.

M. Stub-ups to Above Recessed Ceilings:

1. Use EMT or RMC for raceways.
2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.

N. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.

O. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.

P. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.

Q. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.

R. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces.

S. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where an underground service raceway enters a building or structure.
3. Conduit extending from interior to exterior of building.
4. Conduit extending into pressurized duct and equipment.
5. Conduit extending into pressurized zones that are automatically controlled to maintain different pressure set points.
6. Where otherwise required by NFPA 70.

T. Expansion-Joint Fittings:

25 feet.

1. Install type and quantity of fittings that accommodate temperature change listed for each of the following locations:

   a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
   b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.
   c. Indoor Spaces Connected with Outdoors without Physical Separation: 125 deg F temperature change.
   d. Uninsulated Attics: 135 deg F temperature change.

2. Install expansion fittings at all locations where conduits cross building or structure expansion joints.

3. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.

U. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches of flexible conduit for recessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

1. Use LFMC in damp or wet locations.

V. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to bottom of box unless otherwise indicated.

W. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a raintight connection between the box and cover plate or the supported equipment and box.

X. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.

Y. Locate boxes so that cover or plate will not span different building finishes.

Z. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.

AA. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

3.3 PROTECTION

A. Protect coatings, finishes, and cabinets from damage and deterioration.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
2. Repair damage to paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Labels.
2. Tapes and stencils.
3. Tags.
4. Signs.
5. Cable ties.
6. Miscellaneous identification products.

1.2 ACTION SUBMITTALS

A. Product Data:

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for electrical identification products.

B. Identification Schedule: For each piece of electrical equipment and electrical system components to be index of nomenclature for electrical equipment and system components used in identification signs and labels. Use same designations indicated on Drawings.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with ASME A13.1.

B. Comply with 29 CFR 1910.144 for color identification of hazards; 29 CFR 1910.145 for danger, caution, warning, and safety instruction signs and tags; and the following:

C. Signs, labels, and tags required for personnel safety must comply with the following standards:

1. Safety Colors: NEMA Z535.1.
2. Facility Safety Signs: NEMA Z535.2.
3. Safety Symbols: NEMA Z535.3.
4. Product Safety Signs and Labels: NEMA Z535.4.
5. Safety Tags and Barricade Tapes for Temporary Hazards: NEMA Z535.5.

D. Comply with NFPA 70Erequirements for arc-flash warning labels.

E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, must comply with UL 969.

F. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 COLOR AND LEGEND REQUIREMENTS

A. Raceways and Cables Carrying Circuits at 1000 V or Less:

1. Black letters on orange field>.
2. Legend: Indicate voltage.

B. Color-Coding for Phase- and Voltage-Level] Identification, 1000 V or Less: Use colors listed below for ungrounded service, feeder, and branch-circuit conductors.

1. Color must be factory applied or field applied for sizes larger than 8 AWG if authorities having jurisdiction permit.
2. Colors for 208Y/120 V Circuits:

a. Phase A: Black.
b. Phase B: Red.
c. Phase C: Blue.

3. Color for Neutral: White.
4. Color for Equipment Grounds: Green.

C. Warning Label Colors:

1. Identify system voltage with black letters on orange background.

D. Warning labels and signs must include, but are not limited to, the following legends:

1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."

2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 3 FEET MINIMUM."

E. Equipment Identification Labels:

1. Black letters on white field.

2.3 LABELS

A. Vinyl Wraparound Labels: Preprinted, flexible labels laminated with clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Brady Corporation.
b. HellermannTyton.
c. LEM Products Inc.
d. Marking Services Inc.
e. Panduit Corp.
f. emedco.

B. Self-Adhesive Wraparound Labels: Write-on, 3 mil thick, vinyl flexible label with acrylic pressure-sensitive adhesive.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Brady Corporation.
b. Brother International Corporation.
c. Ideal Industries, Inc.
d. Marking Services Inc.
e. Panduit Corp.
f. emedco.

2. Self-Lamination: Clear; UV-, weather- and chemical-resistant; self-laminating, protective shield over legend. Labels sized such that clear shield overlaps entire printed legend.
3. Marker for Labels:

a. Permanent, waterproof, black ink marker recommended by tag manufacturer.
b. Machine-printed, permanent, waterproof, black ink recommended by printer manufacturer.

C. Self-Adhesive Labels: Vinyl, thermal, transfer-printed, 3 mil thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for intended use and location.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Brady Corporation.
b. Brother International Corporation.
c. HellermannTyton.
d. Ideal Industries, Inc.
e. Panduit Corp.

2. Minimum Nominal Size:

a. 1-1/2 by 6 inch for raceway and conductors.
b. 3-1/2 by 5 inch for equipment.
c. As required by authorities having jurisdiction.

2.4 TAPES AND STENCILS

A. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Brady Corporation.
b. Carlton Industries, LP.
c. HellermannTyton.
d. Ideal Industries, Inc.
e. Panduit Corp.

B. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; not less than 3 mil thick by 1 to 2 inch wide; compounded for outdoor use.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Brady Corporation.
b. Carlton Industries, LP.
c. Marking Services Inc.
d. emedco.

C. Underground-Line Warning Tape:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Brady Corporation.
b. Ideal Industries, Inc.
c. LEM Products Inc.
d. Marking Services Inc.

2. Tape:

a. Recommended by manufacturer for method of installation and suitable to identify and locate underground electrical and communications utility lines.
b. Printing on tape must be permanent and may not be damaged by burial operations.
c. Tape material and ink must be chemically inert and not be subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.

3. Color and Printing:

a. Comply with APWA Uniform Color Code using NEMA Z535.1 safety colors.
b. Inscriptions for Red Tapes: "CAUTION BURIED ELECTRIC LINE BELOW".
c. Inscriptions for Orange Tapes: "CAUTION BURIED COMMUNICATION LINE BELOW".

4. Tape:

    a. Detectable three-layer laminate, consisting of printed pigmented polyolefin film, solid aluminum-foil core, and clear protective film that allows inspection of continuity of conductive core; bright colored, continuous-printed on one side with inscription of utility**,** compounded for direct-burial service.
    b. Width: 3 inch.
    c. Overall Thickness: 5 mil.
    d. Foil Core Thickness: 0.35 mil.
    e. Weight: 28 lb/1000 sq. ft.
    f. Tensile in accordance with ASTM D882: 70 lbf and 4600 psi.

2.5 TAGS

A. Write-on Tags:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Brady Corporation.
    b. Carlton Industries, LP.
    c. LEM Products Inc.
    d. Pipemarker.com; Brimar Industries, Inc.
    e. Seton Identification Products; a Brady Corporation company.

2. Polyester Tags: 0.015 inch thick, with corrosion-resistant grommet and cable tie for attachment.
3. Marker for Tags:

    a. Permanent, waterproof, black ink marker recommended by tag manufacturer.
    b. Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.6 SIGNS

A. Laminated Acrylic or Melamine Plastic Signs:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Brady Corporation.
    b. Carlton Industries, LP.
    c. Marking Services Inc.
    d. emedco.

2. Engraved legend.
3. Thickness:

    a. For signs up to 20 sq. inch, minimum 1/16 inch thick.

b. For signs larger than 20 sq. inch, 1/8 inch thick.

c. Engraved legend with black letters on white face.
d. Self-adhesive.
e. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.7 CABLE TIES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. HellermannTyton.
2. Ideal Industries, Inc.
3. Marking Services Inc.
4. Panduit Corp.

B. General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.

1. Minimum Width: 3/16 inch.
2. Tensile Strength at 73 deg F in accordance with ASTM D638: 12,000 psi.
3. Temperature Range: Minus 40 to plus 185 deg F.
4. Color: Black, except where used for color-coding.

C. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.

1. Minimum Width: 3/16 inch.
2. Tensile Strength at 73 deg F in accordance with ASTM D638: 12,000 psi.
3. Temperature Range: Minus 40 to plus 185 deg F.
4. Color: Black.

D. Plenum-Rated Cable Ties: Self-extinguishing, UV stabilized, one piece, and self-locking.

1. Minimum Width: 3/16 inch.
2. Tensile Strength at 73 deg F in accordance with ASTM D638: 7000 psi.
3. UL 94 Flame Rating: 94V-0.
4. Temperature Range: Minus 50 to plus 284 deg F.
5. Color: Black.

2.8 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Fasteners for Labels and Signs: Self-tapping, stainless steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 PREPARATION

A. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

3.2 INSTALLATION

A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.

B. Install identifying devices before installing acoustical ceilings and similar concealment.

C. Verify identity of item before installing identification products.

D. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.

E. Apply identification devices to surfaces that require finish after completing finish work.

F. Install signs with approved legend to facilitate proper identification, operation, and maintenance of electrical systems and connected items.

G. System Identification for Raceways and Cables under 1000 V: Identification must completely encircle cable or conduit. Place identification of two-color markings in contact, side by side.

1. Secure tight to surface of conductor, cable, or raceway.

H. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.

I. Emergency Operating Instruction Signs: Install instruction signs with white legend on red background with minimum 3/8 inch high letters for emergency instructions at equipment used for power transfer.

J. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from floor.

K. Accessible Fittings for Raceways: Identify cover of junction and pull box of the following systems with wiring system legend and system voltage. System legends must be as follows:

1. "EMERGENCY POWER."
2. "POWER."

L. Vinyl Wraparound Labels:

1. Secure tight to surface of raceway or cable at location with high visibility and accessibility.
2. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to location and substrate.

M. Self-Adhesive Wraparound Labels: Secure tight to surface at location with high visibility and accessibility.

N. Self-Adhesive Labels:

1. Install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
2. Unless otherwise indicated, provide single line of text with 1/2 inch high letters on 1-1/2 inch high label; where two lines of text are required, use labels 2 inch high.

O. Heat-Shrink, Preprinted Tubes: Secure tight to surface at location with high visibility and accessibility.

P. Marker Tapes: Secure tight to surface at location with high visibility and accessibility.

Q. Self-Adhesive Vinyl Tape: Secure tight to surface at location with high visibility and accessibility.

1. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for minimum distance of 6 inch where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding.

R. Underground Line Warning Tape:

1. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 6 to 8 inch below finished grade. Use multiple tapes where width of multiple lines installed in common trench or concrete envelope exceeds 16 inch overall.

2. Limit use of underground-line warning tape to direct-buried cables.
3. Install underground-line warning tape for direct-buried cables and cables in raceways.

S. Write-on Tags:

1. Place in location with high visibility and accessibility.
2. Secure using cable ties.

T. Baked-Enamel Signs:

1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.
2. Unless otherwise indicated, provide single line of text with 1/2 inch high letters on minimum 1-1/2 inch high sign; where two lines of text are required, use signs minimum 2 inch high.

U. Metal-Backed Butyrate Signs:

1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.
2. Unless otherwise indicated, provide single line of text with 1/2 inch high letters on 1-1/2 inch high sign; where two lines of text are required, use labels 2 inch high.

V. Laminated Acrylic or Melamine Plastic Signs:

1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.
2. Unless otherwise indicated, provide single line of text with 1/2 inch high letters on 1-1/2 inch high sign; where two lines of text are required, use labels 2 inch high.

W. Cable Ties: General purpose, for attaching tags, except as listed below:

1. Outdoors: UV-stabilized nylon.
2. In Spaces Handling Environmental Air: Plenum rated.

3.3 IDENTIFICATION SCHEDULE

A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.

B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.

C. Accessible Raceways and Metal-Clad Cables, 1000 V or Less, for Service, Feeder, and Branch Circuits, More Than 30 A and 120 V to Ground: Identify with self-adhesive raceway labels.

1. Locate identification at changes in direction, at penetrations of walls and floors, at 50 ft maximum intervals in straight runs, and at 25 ft maximum intervals in congested areas.

D. Accessible Fittings for Raceways and Cables within Buildings: Identify cover of junction and pull box of the following systems with self-adhesive labels containing wiring system legend and system voltage. System legends must be as follows:

1. "EMERGENCY POWER."
2. "POWER."
3. "UPS."

E. Power-Circuit Conductor Identification, 1000 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use self-adhesive vinyl tape to identify phase.

1. Locate identification at changes in direction, at penetrations of walls and floors, at 50 ft maximum intervals in straight runs, and at 25 ft maximum intervals in congested areas.

F. Control-Circuit Conductor Identification: For conductors and cables in pull and junction boxes, manholes, and handholes, use self-adhesive labels with conductor or cable designation, origin, and destination.

G. Control-Circuit Conductor Termination Identification: For identification at terminations, provide self-adhesive labels with conductor designation.

H. Locations of Underground Lines: Underground-line warning tape for power, lighting, communication, and control wiring and optical-fiber cable.

I. Instructional Signs: Self-adhesive labels, including color code for grounded and ungrounded conductors.

J. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive labels.

1. Apply to exterior of door, cover, or other access.
2. For equipment with multiple power or control sources, apply to door or cover of equipment, including, but not limited to, the following:

    a. Power-transfer switches.
    b. Controls with external control power connections.

K. Arc Flash Warning Labeling: Self-adhesive labels.

L. Operating Instruction Signs: Self-adhesive labels.

M. Emergency Operating Instruction Signs: Self-adhesive labels with white legend on red background with minimum 3/8 inch high letters for emergency instructions at equipment used for power transfer.

N. Equipment Identification Labels:

1. Indoor Equipment: Laminated acrylic or melamine plastic sign.
2. Outdoor Equipment: Laminated acrylic or melamine sign.

END OF SECTION 260553

SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Power panelboards.
2. Lighting and appliance branch-circuit panelboards.
3. Disconnecting and overcurrent protective devices.

1.2 ACTION SUBMITTALS

A. Product Data:

1. Power panelboards.
2. Lighting and appliance branch-circuit panelboards.
3. Disconnecting and overcurrent protective devices.
4. Include materials, switching and overcurrent protective devices, SPDs, accessories, and components indicated.
5. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard and related equipment.

1. Include dimensioned plans, elevations, sections, and details.
2. Show tabulations of installed devices with nameplates, conductor termination sizes, equipment features, and ratings.
3. Detail enclosure types including mounting and anchorage, environmental protection, knockouts, corner treatments, covers and doors, gaskets, hinges, and locks.
4. Detail bus configuration, current, and voltage ratings.
5. Short-circuit current rating of panelboards and overcurrent protective devices. Panelboards shall be fully rated.

6. Include evidence of listing, by qualified electrical testing laboratory recognized by authorities having jurisdiction, for SPD as installed in panelboard.

C. Field Quality-Control Submittals:

1. Field quality-control reports.

1.3 CLOSEOUT SUBMITTALS

A. Warranty documentation.

1.4 WARRANTY

A. Special Installer Extended Warranty: Installer warrants that fabricated and installed panelboards perform in accordance with specified requirements and agrees to repair or replace components or products that fail to perform as specified within extended-warranty period.

1. Extended-Warranty Period: Two years from date of Substantial Completion; full coverage for labor, materials, and equipment.

PART 2 - PRODUCTS

2.1 PANELBOARDS COMMON REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled in accordance with NFPA 70, by qualified electrical testing agency recognized by authorities having jurisdiction, and marked for intended location and application.

B. Comply with NEMA PB 1.

C. Comply with NFPA 70.

D. Enclosures: Surface-mounted, dead-front cabinets. Refer to Panelboard Schedules on Drawings.

1. Height: Panel shall be compatible with the stainless steel enclosure. Refer to drawings.

2. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover. Trims must cover live parts and may have no exposed hardware.

E. Phase, Neutral, and Ground Buses:

1. Material: Tin-plated aluminum for panelboards up to 400 A.

F. Conductor Connectors: Suitable for use with conductor material and sizes.

1. Material: Tin-plated aluminum for panelboards up to 400 A.
2. Main and Neutral Lugs: Compression type, with lug on neutral bar for each pole in panelboard.
3. Ground Lugs and Bus-Configured Terminators: Compression type, with lug on bar for each pole in panelboard.

G. Quality-Control Label: Panelboards must be labeled, by qualified electrical testing laboratory recognized by authorities having jurisdiction, for use as service equipment with one or more main service disconnecting and overcurrent protective devices. Panelboards must have meter enclosures, wiring, connections, and other provisions for utility metering. Coordinate with utility company for exact requirements.

H. Future Devices: Panelboards must have mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.

I. Panelboard Short-Circuit Current Rating:

1. Fully rated to interrupt symmetrical short-circuit current available at terminals. Assembly listed, by qualified electrical testing laboratory recognized by authorities having jurisdiction, for 100 percent interrupting capacity.

J. Surge Suppression: Factory installed as integral part of indicated panelboards, complying with UL 1449 SPD Type 1.

2.2 POWER PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton.
2. Siemens Industry, Inc., Energy Management Division.
3. Square D; Schneider Electric USA.

B. Listing Criteria: NEMA PB 1, distribution type.

C. Doors: Secured with vault-type latch with tumbler lock; keyed alike.

1. For doors more than 36 inch high, provide two latches, keyed alike.

D. Mains: Refer to Panelboard Schedule on Drawings..

E. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes 125 A and Smaller: Bolt-on circuit breakers.

F. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes Larger than 125 A: Bolt-on circuit breakers.

2.3 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton.
2. Siemens Industry, Inc., Energy Management Division.
3. Square D; Schneider Electric USA.

B. Listing Criteria: NEMA PB 1, lighting and appliance branch-circuit type.

C. Mains: Circuit breaker or lugs only. Refer to the Panelboard Schedule on the Drawings.

D. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

E. Doors: Door-in-door construction with concealed hinges; secured with flush latch with tumbler lock; keyed alike.

2.4 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton.
2. Siemens Industry, Inc., Energy Management Division.
3. Square D; Schneider Electric USA.

B. MCCB: Comply with UL 489, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers:

a. Inverse time-current element for low-level overloads.
b. Instantaneous magnetic trip element for short circuits.
c. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

2. Adjustable Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.

3. GFCI Circuit Breakers: Single- and double-pole configurations with Class A ground-fault protection (6 mA trip).
4. MCCB Features and Accessories:

a. Standard frame sizes, trip ratings, and number of poles.
b. Breaker handle indicates tripped status.
c. UL listed for reverse connection without restrictive line or load ratings.

d. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
e. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and HID lighting circuits.

f. Handle Clamp: Loose attachment, for holding circuit-breaker handle in on position.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with manufacturer's published instructions.

B. Reference Standards:

1. Panelboards: Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NEMA PB 1.1.
2. Consult Architect for resolution of conflicting requirements.

C. Special Techniques:

1. Mount panelboard cabinet plumb and rigid without distortion of box.
2. Install overcurrent protective devices and controllers not already factory installed.

    a. Set field-adjustable, circuit-breaker trip ranges.

3. Make grounding connections and bond neutral for services and separately derived systems to ground. Make connections to grounding electrodes, separate grounds for isolated ground bars, and connections to separate ground bars.
4. Install filler plates in unused spaces.

3.2 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; install warning signs complying with requirements in Section 260553 "Identification for Electrical Systems."

B. Panelboard Nameplates: Label each panelboard with nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

C. Device Nameplates: Label each branch circuit device in power panelboards with nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

D. Install warning signs complying with requirements in Section 260553 "Identification for Electrical Systems" identifying source of remote circuit.

E. Panelboard Label: Manufacturer's name and trademark, voltage, amperage, number of phases, and number of poles must be located on interior of panelboard door.

F. Breaker Labels: Faceplate must list current rating, UL and IEC certification standards, and AIC rating.

G. Circuit Directory:

1. Provide computer-generated circuit directory mounted inside panelboard door with transparent plastic protective cover.

    a. Circuit directory must identify specific purpose with detail sufficient to distinguish it from other circuits.

2. Create directory to indicate installed circuit loads; incorporate Owner's final room designations. Obtain approval before installing. Handwritten directories are not acceptable. Install directory inside panelboard door.

END OF SECTION 262416

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SECTION 262726 - WIRING DEVICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Standard-grade receptacles, 125 V, 20 A.
2. GFCI receptacles, 125 V, 20 A.
3. Toggle switches, 120/277 V, 20 A.
4. Wall plates.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: Upon request for architect, provide one for each type of device and wall plate specified, in each color specified.

1.3 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

PART 2 - PRODUCTS

2.1 GENERAL WIRING-DEVICE REQUIREMENTS

A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

B. Comply with NFPA 70.

C. RoHS compliant.

D. Comply with NEMA WD 1.

E. Device Color:

1. Wiring Devices Connected to Normal Power System: As selected by Architect unless otherwise indicated or required by NFPA 70 or device listing.

2. SPD Devices: Blue.
3. Isolated-Ground Receptacles: As specified above, with orange triangle on face.

F. Wall Plate Color: For plastic covers, match device color.

G. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

H. Weather-Resistant Duplex Receptacle, 125 V, 20 A:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Eaton (Arrow Hart).
    b. Hubbell Incorporated; Wiring Device-Kellems.
    c. Leviton Manufacturing Co., Inc.
    d. Pass & Seymour/Legrand (Pass & Seymour).

2. Description: Two pole, three wire, and self-grounding. Integral shutters that operate only when a plug is inserted in the receptacle. Square face.
3. Configuration: NEMA WD 6, Configuration 5-20R.
4. Standards: Comply with UL 498.

5. Marking: Listed and labeled as complying with NFPA 70, "Receptacles in Damp or Wet Locations" Article.

6. Marking: Listed and labeled as complying with NFPA 70, "Tamper-Resistant Receptacles" and "Receptacles in Damp or Wet Locations" articles.

2.2 GFCI RECEPTACLES, 125 V, 20 A

A. Duplex GFCI Receptacles, 125 V, 20 A
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Eaton (Arrow Hart).
    b. Hubbell Incorporated; Wiring Device-Kellems.
    c. Leviton Manufacturing Co., Inc.
    d. Pass & Seymour/Legrand (Pass & Seymour).
2. Description: Integral GFCI with "Test" and "Reset" buttons and LED indicator light. Two pole, three wire, and self-grounding.
3. Configuration: NEMA WD 6, Configuration 5-20R.
4. Type: Feed through.
5. Standards: Comply with UL 498, UL 943 Class A, and FS W-C-596.

2.3 TOGGLE SWITCHES, 120/277 V, 20 A

A. Single-Pole Switches, 120/277 V, 20 A:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Eaton (Arrow Hart).
    b. Hubbell Incorporated; Wiring Device-Kellems.

c. Leviton Manufacturing Co., Inc.
d. Pass & Seymour/Legrand (Pass & Seymour).

2. Standards: Comply with UL 20 and FS W-S-896.

B. Three-Way Switches, 120/277 V, 20 A:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Eaton (Arrow Hart).
b. Hubbell Incorporated; Wiring Device-Kellems.
c. Leviton Manufacturing Co., Inc.
d. Pass & Seymour/Legrand (Pass & Seymour).

2. Comply with UL 20 and FS W-S-896.

2.4 WALL PLATES

A. Single Source: Obtain wall plates from same manufacturer of wiring devices.

B. Single and combination types shall match corresponding wiring devices.

1. Plate-Securing Screws: Metal with head color to match plate finish.

2. Material for Finished Spaces: [Smooth, high-impact thermoplastic] [0.035-inch-thick, satin-finished, Type 302 stainless steel].
3. Material for Unfinished Spaces: Galvanized steel

C. Wet-Location, Weatherproof, While-in-Use Cover Plates: NEMA 250, complying with Type 3R, weather-resistant, thermoplastic] with lockable cover.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.

B. Coordination with Other Trades:

1. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
2. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
3. Install wiring devices after all wall preparation, including painting, is complete.

C. Device Installation:

1. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.

2. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.

D. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles down, and on horizontally mounted receptacles to the left.

E. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

F. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multi-gang wall plates.

3.2 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Test Instruments: Use instruments that comply with UL 1436.
2. Test Instrument for Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.

B. Tests for Receptacles:

1. Line Voltage: Acceptable range is 105 to 132 V.

C. Wiring device will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

END OF SECTION 262726

SECTION 265119 - LED INTERIOR LIGHTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes interior LED luminaires:

1. Refer to the Luminaire Schedule on the Drawings for descriptions..

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of luminaire.

B. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.5 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications:

1. Luminaire manufacturer's laboratory that is accredited under the NVLAP for Energy Efficient Lighting Products.

2. Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.7, accredited under the NVLAP for Energy Efficient Lighting Products, and complying with the applicable IES testing standards.

B. Provide luminaires from a single manufacturer for each luminaire type.

1.6 WARRANTY

A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.

B. Warranty Period: Five year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Ambient Temperature: 41 to 104 deg F.

1. Relative Humidity: Zero to 95 percent.

B. Altitude: Sea level to 1000 feet.

2.2 LUMINAIRE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps. Locate labels where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.

1. Label shall include the following lamp characteristics:

a. "USE ONLY" and include specific lamp type.

b. CCT and CRI.

C. Recessed luminaires shall comply with NEMA LE 4.

D. NRTL Compliance: Luminaires for hazardous locations shall be listed and labeled for indicated class and division of hazard by an NRTL.

E. FM Global Compliance: Luminaires for hazardous locations shall be listed and labeled for indicated class and division of hazard by FM Global.

F. California Title 24 compliant.

2.3 MATERIALS

A. Metal Parts:

1. Free of burrs and sharp corners and edges.
2. Sheet metal components shall be steel unless otherwise indicated.
3. Form and support to prevent warping and sagging.

B. Steel:

1. ASTM A36/A36M for carbon structural steel.
2. ASTM A568/A568M for sheet steel.

C. Stainless Steel:

1. 1. Manufacturer's standard grade.
2. 2. Manufacturer's standard type, ASTM A240/240M.

D. Galvanized Steel: ASTM A653/A653M.

E. Aluminum: ASTM B209.

2.4 METAL FINISHES

A. Variations in finishes are unacceptable in the same piece. Variations in finishes of adjoining components are acceptable if they are within the range of approved Samples and if they can be and are assembled or installed to minimize contrast.

2.5 LUMINAIRE SUPPORT

A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for channel and angle iron supports and nonmetallic channel and angle supports.

B. Wires: ASTM A641/A641M, Class 3, soft temper, zinc-coated steel, 12 gage.

C. Rod Hangers: 3/16-inch minimum diameter, cadmium-plated, threaded steel rod.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

B. Install luminaires level, plumb, and square with ceilings and walls unless otherwise indicated.

C. Install lamps in each luminaire.

D. Supports:

1. Sized and rated for luminaire weight.
2. Able to maintain luminaire position after cleaning.
3. Provide support for luminaire without causing deflection of ceiling or wall.
4. Luminaire-mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight and a vertical force of 400 percent of luminaire weight.

E. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables" for wiring connections.

3.2 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

3.3 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.

B. Luminaire will be considered defective if it does not pass operation tests and inspections.

C. Prepare test and inspection reports.

END OF SECTION 265119