PROJECT MANUAL
MONROE-WOODBURY CENTRAL SCHOOL DISTRICT
2023 BOND: NMES

278 Route 32, Central Valley, NY 10917

Monroe, New York - 10917

VOLUME 1 - DIVISIONS 0 - 14

ENGINEERING FIRM AUTHORIZATION NO.: 0021419
CPL PROJECT NO.: R23.15292.00
DOCUMENT ISSUE DATE: ,October 23 2026
NEW YORK STATE EDUCATION DEPARTMENT PROJECT CONTROL NUMBER(S):
North Main Elementary School: 44-12-01-06-0-002-012

DESIGN PROFESSIONAL'S CERTIFICATION:
The undersigned certifies that "the design of this project conforms to all applicable provisions of the New York State Uniform Fire Prevention and Building Code, the New York State Energy Conservation Code and the Building Standards of the New York State Education Department." Furthermore, "No new asbestos containing building materials (ACBM) shall be used in construction" and "work will involve known or suspected (ACBM), as evidenced by bulk or destruct testing, and will be done in accordance with Industrial Code Rule #56".

ALTERATION WARNING STATEMENT:
It is a violation of the New York State Education Law and the Commissioner's regulations for any person, unless acting under the direction of a licensed Architect, Engineer or Land Surveyor, to alter an item in any way. If an item bearing the seal of an Architect, Engineer or Land Surveyor is altered, the altering party shall affix to the item, their seal and the notation " ALTERED BY ", followed by their signature and the date of such alteration, and a specific description of the alteration.

ARCHITECT / ENGINEER

CPL

2875 Route 35, Suite 7S-1,
Katonah, NY 10536
PHONE: 914-276-0777
www.cplteam.com

CONSTRUCTION MANAGER

The Palombo Group

22 Noxon Street, Poughkeepsie, NY 12601
(845) 332-0202
www.thepalombogroup.com

OWNER

Monroe-Woodbury Central School District

Central Valley, NY 10917

(845) 460-6200
https://www.mw.k12.ny.us

CPL
ARCHITECTURE
ENGINEERING
PLANNING
CPLteam.com

This page intentionally left blank

CPL
ARCHITECTURE
ENGINEERING
PLANNING
CPLteam.com

SECTION 000110
TABLE OF CONTENTS

PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 00 -- PROCUREMENT AND CONTRACTING REQUIREMENTS

000100 - PROJECT MANUAL COVER
000110 - TABLE OF CONTENTS
000115 - LIST OF DRAWING SHEETS
001113 - ADVERTISEMENT FOR BIDS
002000 - INSTRUCTIONS TO BIDDERS (AIA A701-2018)
002600 - PROCUREMENT SUBSTITUTION PROCEDURES
003119 - EXISTING CONDITION INFORMATION
003126 - EXISTING HAZARDOUS MATERIAL INFORMATION
004000 - FORM OF PROPOSAL - GENERAL CONSTRUCTION
004001 - FORM OF PROPOSAL - ROOF CONSTRUCTION
004002 - FORM OF PROPOSAL - MECHANICAL AND PLUMBING CONSTRUCTION
004003 - FORM OF PROPOSAL - ELECTRICAL CONSTRUCTION
004004 - FORM OF PROPOSAL - ABATEMENT CONSTRUCTION
004500 - QUALIFICATION STATEMENT
005100 - A132-2019 AGREEMENT (CMA)
006000 - PROJECT FORMS AND RELATED DOCUMENTS
007100 - a232 - 2019 - GENERAL CONDITIONS (CMA)
007343 - WAGE RATE REQUIREMENTS
007349 - LABOR STABILIZATION

TECHNICAL SPECIFICATIONS

DIVISION 01 -- GENERAL REQUIREMENTS

012100 - ALLOWANCES
012200 - UNIT PRICES
012300 - ALTERNATES
012500 - SUBSTITUTION PROCEDURES
012519 - EQUIVALENT PROCEDURES
012600 - CONTRACT MODIFICATION PROCEDURES
012900 - PAYMENT PROCEDURES
013100 - PROJECT MANAGEMENT AND COORDINATION
013200 - CONSTRUCTION PROGRESS DOCUMENTATION
013300 - SUBMITTAL PROCEDURES
014000 - QUALITY REQUIREMENTS
014119 - REGULATORY REQUIREMENTS (NYS EDUCATION DEPARTMENT)
014200 - REFERENCES

014529 - ASBESTOS TESTING LABORATORY SERVICES (NYS)
014533 - CODE-REQUIRED SPECIAL INSPECTIONS AND PROCEDURES
015001 - TEMPORARY FACILITIES & CONTROLS - MULTIPLE PRIME CONTRACTS
016000 - PRODUCT REQUIREMENTS
017300 - EXECUTION
017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
017700 - CLOSEOUT PROCEDURES
017823 - OPERATION AND MAINTENANCE DATA
017839 - PROJECT RECORD DOCUMENTS
017900 - DEMONSTRATION AND TRAINING

DIVISION 02 -- EXISTING CONDITIONS
024100 - Demolition
028000 - Asbestos Abatement

DIVISION 03 -- CONCRETE
030100 - Maintenance of Cast-in-Place Concrete
033000 - Cast-in-Place Concrete

DIVISION 04 -- MASONRY
040100 - Maintenance of Masonry
042000 - Unit Masonry

DIVISION 05 -- METALS
051200 - Structural Steel Framing
055000 - Metal Fabrications
055133 - Metal Ladders
055213 - Pipe and Tube Railings

DIVISION 06 -- WOOD, PLASTICS, AND COMPOSITES
061000 - Rough Carpentry

DIVISION 07 -- THERMAL AND MOISTURE PROTECTION
070150.19 - Preparation for Re-Roofing
072100 - Thermal Insulation
073113 - Asphalt Shingles
074113 - Metal Roof Panels
074213 - Metal Wall Panels
074633.10 - Plastic Soffit Panels

075323 - Ethylene-Propylene-Diene-Monomer Roofing (EPDM)
076200 - Sheet Metal Flashing and Trim
077100 - Roof Specialties
077200 - Roof Accessories
078400 - Firestopping
079200 - Joint Sealants

DIVISION 08 -- OPENINGS

081213 - Hollow Metal Frames
081416 - Flush Wood Doors
081613 - Fiberglass Doors and Frames
083100 - Access Doors and Panels
085113 - Aluminum Windows
087100 - Door Hardware
088000 - Glazing

DIVISION 09 -- FINISHES

092116 - Gypsum Board Assemblies
092216 - Non-Structural Metal Framing
095100 - Acoustical Ceilings
096500 - Resilient Flooring
099000 - Painting and Coating

DIVISIONS 10 -21 (NOT USED)

VOLUME 2

000102 - Project Manual Cover - Volume 2
000115 - Table of Contents

DIVISION 22 -- PLUMBING

220500 - Common Work Results for Plumbing
220517 - Sleeves and Sleeve Seals for Plumbing Piping
220523 - General-Duty Valves for Plumbing Piping
220529 - Hangers and Supports for Plumbing Piping and Equipment
220553 - Identification for Plumbing Piping and Equipment

220719 - Plumbing Piping Insulation
221005 - Plumbing Piping
221006 - Plumbing Piping Specialties
221114 - Facility Natural-Gas Piping
223000 - Plumbing Equipment
224000 - Plumbing Fixtures

DIVISION 23 -- HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

230000 - General Provisions for Mechanical Work
230002 - Mechanical and Electrical Coordination
230130.51 - HVAC Air-Distribution System Cleaning
230513 - Common Motor Requirements for HVAC Equipment - CPL
230516 - Expansion Fittings and Loops for HVAC Piping
230517 - Sleeves and Sleeve Seals for HVAC Piping - CPL
230519 - Meters & Gauges for HVAC Piping - CPL
230523 - General-Duty Valves for HVAC Piping - CPL
230529 - Hangers and Supports for HVAC Piping and Equipment - CPL
230550 - Wind Restraint for HVAC Systems
230553 - Identification for HVAC Piping and Equipment - CPL
230593 - Testing, Adjusting, and Balancing for HVAC - CPL
230713 - Duct Insulation
230719 - HVAC Piping Insulation
230800 - Commissioning of HVAC
230913 - Instrumentation and Control Devices for HVAC
230923 - Direct-Digital Control System for HVAC
230934 - Variable-Frequency Motor Controllers - CPL
231123 - Facility Natural-Gas Piping
232113 - Hydronic Piping
232114 - Hydronic Specialties
232123 - Hydronic Pumps
232300 - Refrigerant Piping
232500 - HVAC Water Treatment
233100 - HVAC Ducts and Casings
233300 - Air Duct Accessories
233423 - HVAC Power Ventilators
233600 - Air Terminal Units
233700 - Air Outlets and Inlets
235100 - Flues - Condensing Boilers
235216 - Condensing Boilers

235100 - Breechings, Chimneys, and Stacks
236313 - Air Cooled Refrigerant Condensers
236423 - Scroll Water Chillers
237313 - Modular Indoor Central-Station Air-Handling Units
237416 - Packaged Rooftop Air-Conditioning Units
238200 - Convection Heating and Cooling Units
238216 - Air Coils
238236 - Finned-Tube Radiation Heaters
238413 - Humidifiers

DIVISION 25 -- INTEGRATED AUTOMATION (NOT USED)

DIVISION 26 -- ELECTRICAL
260010 - General Provisions for Electrical Work
260505 - Selective Demolition for Electrical
260519 - Low-Voltage Electrical Power Conductors and Cables
260526 - Grounding and Bonding for Electrical Systems
260529 - Hangers and Supports for Electrical Systems
260533.13 - Conduit for Electrical Systems
260533.16 - Boxes for Electrical Systems
260553 - Identification for Electrical Systems
260573 - Power System Studies
260583 - Wiring Connections
260923 - Lighting Control Devices
262300 - Low-Voltage Switchgear
262416 - Panelboards
262726 - Wiring Devices
262813 - Fuses
262816.13 - Enclosed Circuit Breakers
262816.16 - Enclosed Switches
264300 - Surge Protective Devices
265100 - Interior Lighting

DIVISION 27 -- COMMUNICATIONS
270310 - Communication Cabling Work - General
270315 - Communication Cabling Special Requirements
270350 - Testing Report Summary
270528 - Raceways
271000 - Structured Cabling

271400 - Fiber-Optic Cable and Equipment
271500 - Horizontal Cabling
275116 - Public Address System and Clock Systems

DIVISION 28 -- ELECTRONIC SAFETY AND SECURITY

280153 - Conductors and Cables for Electronic Safety and Security
284600 - EST4 Voice Evacuation Fire Alarm System

DIVISION 31 -- EARTHWORK

310519 - Geosynthetics for Earthwork
311000 - Site Clearing
312200 - Grading
312316 - Excavation
312316.13 - Trenching
312316.26 - Rock Removal
312319 - Dewatering
312323 - Fill
312500 - Erosion and Sedimentation Control
313700 - Riprap
315000 - Excavation Support and Protection

DIVISION 32 -- EXTERIOR IMPROVEMENTS

321123 - Aggregate Base Courses
321216 - Asphalt Paving
321313 - Concrete Paving
321623 - Sidewalks
321723 - Pavement Markings
323113 - Chain Link Fences and Gates
325990 - Restoration of Surfaces
329219 - Seeding

DIVISION 33 -- UTILITIES

330561 - Concrete Manholes
334100 - Subdrainage
334211 - Stormwater Gravity Piping
334230 - Stormwater Drains
334600 - Stormwater Management

END OF SECTION 000110

SECTION 000115
LIST OF DRAWING SHEETS

NORTH MAIN ELEMENTARY SCHOOL

GENERAL

NMES/G000	COVER
NMES/G001	DRAWING LIST AND ABBREVIATIONS
NMES/U001	OVERALL LIFE SAFETY BASEMENT PLAN
NMES/U002	OVERALL LIFE SAFETY FIRST FLOOR PLAN
NMES/U003	OVERALL LIFE SAFETY SECOND LEVEL PLAN
NMES/U004	OVERALL LIFE SAFETY ROOF PLAN

CIVIL

NMES/C100	EXISTING CONDITIONS PLAN
NMES/C101	DEMOLITION PLAN
NMES/C102	DEMOLITION PLAN
NMES/C201	SITE PLAN
NMES/C202	SITE PLAN
NMES/C203	SITE PLAN
NMES/C001	CIVIL NOTES
NMES/C300	DETAIL SHEET 1
NMES/C301	DETAIL SHEET 2
NMES/C302	DETAIL SHEET 3
NMES/C303	DETAIL SHEET 4

ARCHITECTURAL

NMES/A100	BASEMENT DEMO PLAN
NMES/A101	FIRST FLOOR DEMO PLAN - AREA A
NMES/A102	FIRST FLOOR DEMO PLAN - AREA B
NMES/A103	FIRST FLOOR DEMO PLAN - AREA C
NMES/A104	SECOND FLOOR DEMO PLAN
NMES/A105	ROOF DEMO PLAN
NMES/A200	BASEMENT NEW WORK PLAN
NMES/A201	FIRST FLOOR NEW WORK PLAN - AREA A
NMES/A202	FIRST FLOOR NEW WORK PLAN - AREA B
NMES/A203	FIRST FLOOR NEW WORK PLAN - AREA C
NMES/A204	SECOND FLOOR NEW WORK PLAN
NMES/A205	ROOF NEW WORK PLAN
NMES/A400	WALL TYPES
NMES/A600	BASEMENT LEVEL RCP
NMES/A601	FIRST FLOOR RCP - AREA A
NMES/A602	FIRST FLOOR RCP - AREA B
NMES/A603	FIRST FLOOR RCP - AREA C
NMES/A604	SECOND FLOOR RCP
NMES/A800	TYPICAL ROOF DETAILS

ARCHITECTURAL

NMES/A810	CEILING DETAILS
NMES/A900	DOOR PANELS, FRAME TYPES & SCHEDULES

STRUCTURAL

GEN/S202	RTU FRAMING PLAN
GEN/S900	STRUCTURAL NOTES & TYPICAL NOTES

HVAC

NMES/H000	HVAC SYMBOLS LEGEND AND CONTRACTOR NOTES
NMES/H100C	BASEMENT MECHANICAL DEMOLITION - AREA C
NMES/H101A	FIRST FLOOR MECHANICAL DEMOLITION PLAN - AREA A
NMES/H101B	FIRST FLOOR MECHANICAL DEMOLITION PLAN - AREA B
NMES/H101C	FIRST FLOOR MECHANICAL DEMOLITION PLAN - AREA C
NMES/H102C	SECOND FLOOR MECHANICAL DEMOLITION PLAN - AREA C
NMES/H103A	ROOF MECHANICAL DEMOLITION PLAN - AREA A
NMES/H103B	ROOF MECHANICAL DEMOLITION PLAN - AREA B
NMES/H103C	ROOF MECHANICAL DEMOLITION PLAN - AREA C
NMES/H200C	BASEMENT MECHANICAL DUCTWORK PLAN - AREA A
NMES/H201A	FIRST FLOOR MECHANICAL DUCTWORK PLAN - AREA B
NMES/H201B	FIRST FLOOR MECHANICAL DUCTWORK PLAN - AREA B
NMES/H201C	FIRST FLOOR MECHANICAL DUCTWORK PLAN - AREA C
NMES/H202C	SECOND FLOOR MECHANICAL DUCTWORK PLAN -AREA C
NMES/H203A	ROOF MECHANICAL NEW WORK PLAN - AREA A
NMES/H203B	ROOF MECHANICAL NEW WORK PLAN - AREA B
NMES/H203C	ROOF MECHANICAL NEW WORK PLAN - AREAC
NMES/H300C	BASEMENT MECHANICAL PIPING PLAN - AREA C
NMES/H301A	FIRST FLOOR MECHANICAL PIPING PLAN - AREA A
NMES/H301B	FIRST FLOOR MECHANICAL PIPING PLAN - AREA B
NMES/H301C	FIRST FLOOR MECHANICAL PIPING PLAN - AREA C
NMES/H302C	SECOND FLOOR MECHANICAL PIPING PLAN - AREA C
NMES/H500	BOILER AND CHILLER PIPING AND CONTROL SCHEMATIC
NMES/H501	CONTROL SCHEMATICS
NMES/H502	CONTROL SCHEMATICS
NMES/H503	CONTROL SCHEMATICS
NMES/H700C.1	BOILER ROOM LARGE SCALE DEMOLITION PLANS AREA C
NMES/H700C.2	BOILER ROOM LARGE SCALE NEW WORK PLANS - AREA C
NMES/H700C.3	CHILLER LARGE SCALE PIPING PLAN
NMES/H701A	FIRST FLOOR MECHANICAL DUCTWORK PLAN - AREA C LARGE SCALE
NMES/H800	DETAILS
NMES/H801	DETAILS
NMES/H802	DETAILS
NMES/H900	HVAC EQUIPMENT SCHEDULES
NMES/H901	HVAC EQUIPMENT SCHEDULES

HVAC

NMES/H902	HVAC EQUIPMENT SCHEDULES
NMES/H903	HVAC EQUIPMENT SCHEDULES
NMES/H904	HVAC VENTILATIONS SCHEDULE
NMES/H905	HVAC VENTILATIONS SCHEDULE

PLUMBING

NMES/P203A	ROOF PLUMBING NEW WORK PLAN - AREA A
NMES/P203B	ROOF PLUMBING NEW WORK PLAN - AREA B
NMES/P203C	ROOF PLUMBING NEW WORK PLAN - AREA C
NMES/P700C.1	BOILER ROOM LARGE SCALE DEMOLITION PLANS - AREA C
NMES/P700C.2	BOILER ROOM LARGE SCALE NEW WORK PLANS - AREA C

ELECTRICAL

NMES/E001	SINGLE LINE DIAGRAM
NMES/E002	ELECTRICAL DEMOLITION SITE PLAN
NMES/E003	ELECTRICAL NEW WORK SITE PLAN
NMES/E100	BASEMENT ELECTRICAL DEMOLITION PLAN
NMES/E101	FIRST FLOOR ELECTRICAL DEMOLITION PLAN - AREA A
NMES/E102	FIRST FLOOR ELECTRICAL DEMOLITION PLAN - AREA B
NMES/E103	FIRST FLOOR ELECTRICAL DEMOLITION PLAN - AREA C
NMES/E104	SECOND FLOOR ELECTRICAL DEMOLITION PLAN - AREA C
NMES/E105	ROOF ELECTRICAL DEMOLITION PLAN
NMES/E110	BASEMENT SYSTEMS DEMOLITION PLAN
NMES/E111	FIRST FLOOR SYSTEMS DEMOLITION PLAN - AREA A
NMES/E112	FIRST FLOOR SYSTEMS DEMOLITION PLAN - AREA B
NMES/E113	FIRST FLOOR SYSTEMS DEMOLITION PLAN - AREA C
NMES/E114	SECOND FLOOR SYSTEMS DEMOLITION PLAN - AREA C
NMES/E200	BASEMENT ELECTRICAL NEW WORK PLAN
NMES/E201	FIRST FLOOR ELECTRICAL NEW WORK PLAN - AREA A
NMES/E202	FIRST FLOOR ELECTRICAL NEW WORK PLAN - AREA B
NMES/E203	FIRST FLOOR ELECTRICAL NEW WORK PLAN - AREA C
NMES/E204	SECOND FLOOR ELECTRICAL NEW WORK PLAN
NMES/E205	ROOF ELECTRICAL NEW WORK PLAN
NMES/E300	BASEMENT LIGHTING PLAN
NMES/E301	FIRST FLOOR LIGHTING PLAN - AREA A
NMES/E302	FIRST FLOOR LIGHTING PLAN - AREA B
NMES/E303	FIRST FLOOR LIGHTING PLAN - AREA C
NMES/E304	SECOND FLOOR LIGHTING PLAN
NMES/E400	BASEMENT FLOOR FIRE ALARM NEW WORK PLAN
NMES/E401	FIRST FLOOR FIRE ALARM NEW WORK PLAN - AREA A
NMES/E402	FIRST FLOOR FIRE ALARM NEW WORK PLAN - AREA B
NMES/E403	FIRST FLOOR FIRE ALARM NEW WORK PLAN - AREA C
NMES/E404	SECOND FLOOR FIRE ALARM NEW WORK PLAN - AREA C
NMES/E405	ROOF FIRE ALARM NEW WORK PLAN
NMES/E500	BASEMENT SYSTEMS NEW WORK PLAN

ELECTRICAL

NMES/E501	FIRST FLOOR SYSTEMS NEW WORK PLAN - AREA A
NMES/E502	FIRST FLOOR SYSTEMS NEW WORK PLAN - AREA B
NMES/E503	FIRST FLOOR SYSTEMS NEW WORK PLAN - AREA C
NMES/E504	SECOND FLOOR SYSTEMS NEW WORK PLAN - AREA C
NMES/E900	ELECTRICAL SCHEDULES
NMES/E901	ELECTRICAL SCHEDULES
NMES/E902	ELECTRICAL SCHEDULES
NMES/E903	ELECTRICAL SCHEDULES

END OF SECTION 000115

SECTION 001113
ADVERTISEMENT FOR BIDS

THE MONROE-WOODBURY CENTRAL SCHOOL DISTRICT INVITES BIDS FOR "2023 BOND - NORTH MAIN ELEMENTARY SCHOOL PROJECT.

2.01 THE PROJECT INFORMATION

A. Project Identification: Monroe Woodbury CSD - 2023 BOND: NORTH MAIN ELEMENTARY SCHOOL
   1. Project Location (s)
      a. North Main Elementary School
         212 N Main St, Monroe, NY 10950

B. Owner: MONROE-WOODBURY CSD 278 Route 32, Central Valley, NY 10917
   1. Owner's Representative:
      a. Patrick Cahill, Assistant Superintendent for Business and Management Services
      b. Phone: 845-460-6200

C. Architect/Engineer: CPL Architects, Engineers, Landscape Architect and Surveyor, D.P.C. dba CPL 2875 Route 35, Suite 7S-1, Katonah, NY 10536

D. Construction Manager: The Palombo Group, 22 Noxon Street, Poughkeepsie, NY 12601
   1. Construction Manager's Representative:
      a. Scott Buttler, SButler@thepalombogroup.com
      b. Phone: 845-332-0202

E. Project description: the project involves building improvements, including but not limited to: Roof repair and replacement, repairs to masonry, concrete and terra cotta exterior construction, sitework, replacement of fire alarm/public address/clock systems, replacement of existing boiler, electrical upgrades, and interior alterations as detailed in the Contract Documents.

F. Construction Contract (s): Bids will be received for the following work:
   1. Multiple Contract Project consisting of the following prime contracts:
      a. Contract 1: Hazardous Materials Removal Work
      b. Contract 2: General Construction Work
      c. Contract 3: Mechanical/Plumbing Work
      d. Contract 4: Roofing Work
      e. Contract 5: Electrical Work

2.02 BID SUBMITTAL AND OPENING

A. Owner will receive sealed lump sum bids until the bid time(s) and date(s) at the location given below. Owner will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:
   1. Bid Dates: Thursday, November 19, 2026
   2. Bid Time: 2:00 pm EST
   3. Location: Monroe-Woodbury Central School District, 278 Route 32, Central Valley, NY 10917

B. Bids will be thereafter publicly opened.

2.03 BID SECURITY

A. Bid security shall be submitted with each bid in an amount not less than five percent (5%) of the base bid in the form and subject to the conditions provided in the "Instructions to Bidders"

2.04 PREBID MEETING

A. A Pre-Bid Meeting/walk-through for this Project will be held on November 2nd at 4:00 pm EST at North Main Elementary School, 212 N. Main St, Monroe, NY. Attendance by bidders is strongly recommended, but not required, for submitting a bid. Prospective bidders may visit the sites during business hours by appointment by contacting Scott Buttler at The Palombo Group (845-332-0202).

2.05 DOCUMENTS

A. The Contract Documents may be examined at the Office of the Architect, (CPL, 2875 Route 35, Katonah NY 10536) however the Hard Copy Contract Documents may only be obtained thru the Office of Biddy c/o Long Island Blueprint, 179 New York Ave. Huntington, NY 11743 (631-271-7033) beginning on 10/23/26. Complete digital sets of Contract Documents shall be obtained online (with a free user account) as a download for a nonrefundable fee of One-Hundred ($100.00) Dollars at the following website: (Westchester.cplteamplanroom.com) or projects.biddyhq.com.

B. Optionally, in lieu of digital copies, hard copies may be obtained directly from Biddy upon a deposit of One-Hundred ($100.00) Dollars for each complete set. Checks for deposits shall be made payable to the (Monroe-Woodbury CSD) and may be uncertified. All bid addenda will be transmitted to registered plan holders via email and will be available at the above referenced websites. Any bidder requiring documents to be shipped shall make arrangements with the printer and pay for all packaging and shipping costs.

C. Plan holders who have obtained hard copies of the bid documents will need to make the determination if hard copies of the addenda are required for their use, and coordinate directly with the printer for hard copies of addenda to be issued. There will be no charge for registered plan holders to obtain hard copies of the bid addenda.

2.06 BIDDER'S QUALIFICATIONS

A. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder to obtain insurance and bonds required for the Work.

2.07 NOTIFICATION

A. Attention of the Bidder is particularly called to the following:
   1. The Owner's sales tax exemption.
   2. The requirements as to conditions of employment to be observed.
   3. The minimum wage rates to be paid under the contract.
   4. The requirements pertaining to certification of Non-Collusion in preparation of proposals submitted for this Project.
   5. The New York State Department of Labor Contractor Registry.
   6. This project will be governed by a Project Labor Agreement.

B. In addition, the Bidding Documents contain detailed requirements for the qualification of Bidders. These include, among other things: rigid bonding and insurance requirements; financial statements; bank references; lists of lawsuits, arbitrations, or other proceeding in which the bidder has been named as a party; a statement of surety's intent to issue Performance and Payment Bonds, and a description of other projects of similar size and scope completed by the bidder.

C. Bids shall be prepared as set forth in "Instructions to Bidders", enclosed in sealed envelope bearing on its face the name and address of the Bidder and the title of the Work to which the bid enclosed relates.

D. No bidder may withdraw their bid within forty-five (45) days after date of bid opening.

2.08 TIME OF COMPLETION

A. Successful bidder shall begin the Work upon receipt of the Notice to Proceed and shall complete the Work within the Contract Time.

2.09 AWARD OF BIDS

A. The Monroe-Woodbury Central School District hereby reserves the right to waive any informalities and reject any, or all, Bids or to accept the one that, in its judgement, will be in the best interest of the Monroe-Woodbury CSD.

B. The Owner further reserves its right to disqualify Bidders for any material failure to comply with the "Instructions to Bidders".

END OF SECTION 001113

This page intentionally left blank

SECTION 002000
INSTRUCTIONS TO BIDDERS

PART 1 GENERAL

1.01 SUMMARY

A. Attached is AIA Document A701-2018, Instructions to Bidders.
   1. AIA Document A701-2018 defines the conditions affecting award of contract and procedures with which Bidders must comply.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 002000

This page intentionally left blank

SECTION 002600
PROCUREMENT SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 DEFINITIONS

A. Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids.

B. Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted after Contract award. See Section 012500 - Substitution Procedures, for conditions under which Substitution Requests will be considered after Contract award.

C. Equivalent Products: For products proposed as an Equivalent to the specified product. Prior to award of contract use the form located in Section 012519 - Equivalents, after award of bid and prior to executing contract.

1.02 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.03 PROCUREMENT SUBSTITUTIONS

A. Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.

B. Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise requests will be returned without action:
   1. Extensive revisions to the Contract Documents are not required.
   2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
   3. The request is fully documented and properly submitted.

1.04 SUBMITTALS

A. Procurement Substitution Request: Submit to Architect. Procurement Substitution Request must be made in writing by **PRIME CONTRACT BIDDER ONLY**, in compliance with the following requirements:
   1. Requests for substitution of materials and equipment will be considered if received no later than (10) ten days prior to date of bid opening.
   2. Submittal Format: Submit electronic copies of each written Procurement Substitution Request, using form bound in section 006000 of this project manual.
   3. Submittal Format: Submit Procurement Substitution Request, using format provided on Project Web site.

a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and drawing numbers.
b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:
    1) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
    2) Copies of current, independent third-party test data of salient product or system characteristics.
    3) Samples where applicable or when requested by Architect.
    4) Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
    5) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    6) Research reports, where applicable, evidencing compliance with building code in effect for Project, from Building Code of New York State.
    7) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, which will become necessary to accommodate the proposed substitute.
c. Provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.
d. Bidder, in submitting the Procurement Substitution Request, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the Procurement Substitution Request.

B. Architect's Action:
    1. Architect may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. Architect will notify all bidders of acceptance of the proposed substitute by means of an Addendum to the Procurement and Contracting Documents.

C. Architect's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

PART 2 PRODUCTS - (NOT USED).

PART 3 EXECUTION – (NOT USED).

END OF SECTION 002600

SECTION 004000
FORM OF PROPOSAL - GENERAL CONSTRUCTION

DATED: _____

Bid from: Name: _____
Address: _____
_____
_____
Phone No.: _____
Fax No.: _____

Bid to: Monroe-Woodbury Central School District
278 Route 32
Central Valley, NY 10917

Bid for: 2023 BOND: NORTH MAIN ELEMENTARY SCHOOL
GENERAL CONSTRUCTION

BASE BID

We have examined and fully understand the requirements and intent of the Bidding and Contract Documents and all subsequent addenda as listed below, and propose to provide all materials, plant, labor, supplies, equipment, transportation and other facilities necessary ,or proper for, or incidental to the Work, to complete all Work in strict accord with the Contract Documents and as assigned in the Multiple Contract Summary for the base bid lump sum of:

Total Lump Sum Base Bid (in numbers): $ _____

Total Lump Sum Base Bid (in words): _____

_____

ADDENDA RECEIVED

Any addenda issued by the Architect, mailed or delivered, to the undersigned prior to the Bid opening date shall become part of the Contract Documents. The Bidder shall enter on this list any addenda issued after this Form of Proposal has been received and shall fill in the addenda number and date.

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

BID GUARANTEE

The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within ten (10) days after a written Notice of Award, if offered within forty-five (45) days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5 %) of the Base Bid.

In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

TIME OF COMPLETION

It is agreed by the undersigned that after receipt of a Notice of Award and a consummation of a Contract Agreement in accord with the terms of the Contract Documents, he or she will start work within ten (10) consecutive calendar days of the notice to proceed and fully complete the work as indicated in the Contract Documents.

ALLOWANCES

The Bidder acknowledges that all Allowances, pursuant to their Contract, have been included in the Base Bid. Should the following allowance(s) exceed ,or be less than, the cost of selected items, the difference in cost shall be added to, or credited to, the Owner's Contract. Refer to Specification Section 012100 "Allowances" for description of each allowance.

	Allowance Amount:
General CONSTRUCTION; GC-1	$250,000.00

ALTERNATE BIDS

A. Enter a whole dollar amount, even if it is zero ($ 0), for each Alternate Bid. Circle either "ADD to" or "DEDUCT from" for each Alternate Bid. If neither is circled, "DEDUCT from" will be assumed. Do not leave any Alternate Bid amount blank. If any Alternate Bid amount is left blank, it will be assumed the Bidder will provide that Alternate Bid for no change, neither increase to nor decrease from, the Base Bid amount.

B. **GENERAL CONSTRUCTION**

Alternate Bid No. GC-1; Lower Playground Drainage
ADD to | the base bid a total sum of:
(in numbers) $ _____
(in words) _____

Alternate Bid No. GC-2; Fiber and Power Line to Lower Playground
ADD to | the base bid a total sum of:
(in numbers) $ _____
(in words) _____

Alternate Bid No. GC-3; New Enlarged Louver Openings at Unit Ventilators
ADD to | the base bid a total sum of:
(in numbers) $ _____
(in words) _____

BID SECURITY

Bid Security in the form of a Certified or Cashier's Check or a Bid Bond in the form required by the Contract Documents is attached to, and made a part of, this Proposal.

NEW YORK STATE DEPARTMENT OF LABOR CONTRACTOR REGISTRY

Pursuant to New York State Department of Labor requirements, Contractor to submit with the bid, a copy of their Contractor Certificate of Registration which is attached to, and made part of, this Proposal.

IRAN DIVESTMENT ACT CERTIFICATION

Contractor to submit with the bid, Iran Divestment Act Certification which hereto is made a part of this Form of Proposal and is attached at the end of this Form of Proposal.

EXECUTIVE ORDER NO. 16 - PROHIBITING STATE AGENCIES AND AUTHORITIES FROM CONTRACTING WITH BUSINESSES CONDUCTNG BUSINESS IN RUSSIA

Contractor to submit with the bid, Certification under Executive Order No. 16: prohibiting State Agencies and Authorities from Contracting with Businesses Conducting Business in Russia, which hereto is made a part of this Form of Proposal and is attached at the end of this Form of Proposal.

REPRESENTATIONS

By submitting this Proposal, the Bidder represents and certifies to the Owner and the Architect that:

1. It has examined the Contract Documents, the site of the proposed Work, is familiar with the local conditions at the place where the Work is to be performed and fully comprehends the requirements and intent of the plans and specifications for this Project in accordance with the drawings, specifications and other Contract Documents prepared by CPL, the Owners Consultant, for this Project.
2. It has examined and reviewed, where applicable, all information and data in the Contract Documents related to existing underground facilities at or contiguous to the site. Bidder shall require of the Owner or Architect no further investigations, explorations, tests or reports with respect to such underground facilities in order for the Bidder to perform the Work of the Proposal within the Contract Time and in accordance with the Contract Documents.
3. It has given notice to the Architect, as required by the Contract Documents of any and all discrepancies it has discovered and accepts the resolution of those discrepancies offered by the Architect.
4. Pursuant to New York State General Municipal Law section 103-d, 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:
    a. The prices in this bid have been arrived at independently without collusion, 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;
    b. 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 be knowingly disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or competitor; and
    c. No attempt has been made or will be made by bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.
5. The proposal is based upon the materials, equipment and systems required by the Contract Documents, without exception, unless otherwise set forth in this Proposal in detail.

CHANGE ORDERS

We propose and agree that the above lump sum shall be adjusted for changes in the Contract Work not included in unit prices by addition of the following costs:

1. Profit and overhead as permitted in the GENERAL CONDITIONS.

NON-COLLUSIVE BIDDING CERTIFICATION

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that 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.

ACCEPTANCE

When this Proposal is accepted, the undersigned agrees to enter into a Contract with the Owner as provided in the Form of Agreement.

AFFIRMS

The undersigned affirms and agrees that this Proposal is a firm one which remains in effect and will be irrevocable for a period of forty-five (45) days after opening of Bids.

TYPE OF BUSINESS

The undersigned hereby represents that it is a [ ] Corporation, [ ] Partnership, [ ] Individual. If a Corporation, then the undersigned further represents that it is duly qualified as a Corporation under the laws of New York State and it is authorized to do business in this State.

PLACE OF BUSINESS

The following is the name and address of the person to whom all notices required in connection with this Proposal may be telephoned, mailed, or delivered.

Name of Contact Person:	
Name of Business or Firm:	
Address:	
Address:	
Telephone:	Fax:
Email Address:	
FEIN: Federal Employer Identification No.:	

EXECUTION OF CONTRACT

When written Notice of Acceptance of the Proposal is mailed or delivered to the undersigned within forty-five (45) days after the opening of Bids, or anytime thereafter should the Proposal not be withdrawn, the undersigned, within ten (10) days, will execute the Form of Agreement with the Owner.

ASBESTOS

The bidder certifies that no asbestos or asbestos-containing materials will be incorporated into the Work of this Contract.

AUTHORIZED SIGNATURES FOR PROPOSALS

Signature:	
Name:	
	(Typed or Printed)
Title:	
Firm:	
	(Legal Name of Person, Single Proprietorship, Partnership, or Corporation)
Date:	

(if Corporation, provide seal above)

IRAN DIVESTMENT ACT CERTIFICATION

By submission of this bid, (DL & AV Equip 1315), or by assuming the responsibility of a Contract awarded hereunder, each bidder and each person signing on behalf of any bidders, 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/contractor/assignee is not on the "Entities Determined To Be Non-Responsive Bidders/Offerers Pursuant to The New York State Iran Divestment Act of 2012" list created pursuant to paragraph (b) subdivision 3 of section 165-a of the New York State Finance Law and posted on the OGS website at www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf and further certifies that it will not utilize on such Contract any subcontractor that is identified on the Prohibited Entities List. Additionally, Bidder/Contractor is advised that should it seek to renew or extend a Contract awarded in response to the solicitation, it must provide the same certification at the time the Contract is renewed or extended. (See Article 10 in the Instructions to Bidders.)

NAME OF COMPANY: _____

(Individual or Legal Name of Firm or Corporation)

MAILING ADDRESS: _____

CITY/STATE/ZIP CODE: _____

BY: _____

(Signature of Representative of Firm or Corporation)

NAME: _____ TITLE: _____

Please Print *Please Print*

DATED: _____

SWORN to before me this

_____ day of _____ 20 ___

Notary Public: _____

SEXUAL HARASSMENT POLICY/TRAINING AFFIRMATION

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 its employees.

Contractor Information:

Name of Contractor: _____

Address: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Contractor Website: _____

_____ _____ _____

(Signature of Contractor) *(Title)* *(Date)*

GENDER-BASED VIOLENCE AND WORKPLACE POLICY AFFIRMATION

Pursuant to NYS State Finance Law §139-M, by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing gender-based violence and the workplace and has provided such policy to all of its employees, directors and board members. Such policy shall, at a minimum, meet the requirements of subdivision 11 of section five hundred seventy-five of the executive law.

Contractor Information:

Name of Contractor: _____

Address: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Contractor Website: _____

_____ _____ _____

(Signature of Contractor) *(Title)* *(Date)*

CERTIFICATION UNDER EXECUTIVE ORDER NO. 16

Executive Order No 16 provides that "all Affected State Entities are directed to refrain from entering into any new contract or renewing any existing contract with an entity conducting business operations in Russia."

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

As defined in Executive Order No. 6, an "entity conducting business operations in Russia" means an institution or company, wherever located, conducting any commercial activity in Russia or transacting business with the Russian Government or with commercial entities headquartered in Russia or with their principal place of business in Russia in the form of contracting, sales, purchasing, investment, or any business partnership.

Is Vendor an entity conducting business operations in Russia, as defined above? Please answer by checking one of the following.

_____ 1. No, Vendor does not conduct business operations in Russia within the meaning of Executive Order No. 16.

_____ 2.a. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but has taken steps to wind down business operations in Russia or is in the process of winding down business operations in Russia. (Please provide a detailed description of the wind down process and a schedule for completion.)

_____ 2.b. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but only to the extent necessary to provide vital health and safety services within Russia or to comply with federal law, regulations, executive orders, or directives. (Please provide a detailed description of the services being provided or the relevant laws, regulations, etc.)

_____ 3. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16.

The undersigned certifies under penalties of perjury that they are knowledgeable about the Vendor's business and operations and that the answer provided herein is true to the best of their knowledge and belief.

Vendor Name: _____

(legal entity)

By: _____

(signature)

Name: _____

Title: _____

Date: _____

END OF SECTION 004000

SECTION 004001
FORM OF PROPOSAL - ROOF CONSTRUCTION

DATED: _____

Bid from: Name: _____
Address: _____
_____
_____
Phone No.: _____
Fax No.: _____

Bid to: Monroe-Woodbury Central School District
278 Route 32
Central Valley, NY 10917

Bid for: 2023 BOND: NORTH MAIN ELEMENTARY SCHOOL
[ ] ROOF CONSTRUCTION (RC)

BASE BID

We have examined and fully understand the requirements and intent of the Bidding and Contract Documents and all subsequent addenda as listed below, and propose to provide all materials, plant, labor, supplies, equipment, transportation and other facilities necessary ,or proper for, or incidental to the Work, to complete all Work in strict accord with the Contract Documents and as assigned in the Multiple Contract Summary for the base bid lump sum of:

Total Lump Sum Base Bid (in numbers): $ _____

Total Lump Sum Base Bid (in words): _____

_____

ADDENDA RECEIVED

Any addenda issued by the Architect, mailed or delivered, to the undersigned prior to the Bid opening date shall become part of the Contract Documents. The Bidder shall enter on this list any addenda issued after this Form of Proposal has been received and shall fill in the addenda number and date.

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

BID GUARANTEE

The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within ten (10) days after a written Notice of Award, if offered within forty-five (45) days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5 %) of the Base Bid.

In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

TIME OF COMPLETION

It is agreed by the undersigned that after receipt of a Notice of Award and a consummation of a Contract Agreement in accord with the terms of the Contract Documents, he or she will start work within ten (10) consecutive calendar days of the notice to proceed and fully complete the work as indicated in the Contract Documents.

ALLOWANCES

The Bidder acknowledges that all Allowances, pursuant to their Contract, have been included in the Base Bid. Should the following allowance(s) exceed ,or be less than, the cost of selected items, the difference in cost shall be added to, or credited to, the Owner's Contract. Refer to Specification Section 012100 "Allowances" for description of each allowance.

	Allowance Amount:
Roofing Work , RC-1	$150,000

ALTERNATE BIDS

A. Enter a whole dollar amount, even if it is zero ($ 0), for each Alternate Bid. Circle either "ADD to" or "DEDUCT from" for each Alternate Bid. If neither is circled, "DEDUCT from" will be assumed. Do not leave any Alternate Bid amount blank. If any Alternate Bid amount is left blank, it will be assumed the Bidder will provide that Alternate Bid for no change, neither increase to nor decrease from, the Base Bid amount.

B. **GENERAL CONSTRUCTION**

Alternate Bid No. 1; < manually enter description of alternate >

(in numbers) $ _____

(in words) _____

BID SECURITY

Bid Security in the form of a Certified or Cashier's Check or a Bid Bond in the form required by the Contract Documents is attached to, and made a part of, this Proposal.

NEW YORK STATE DEPARTMENT OF LABOR CONTRACTOR REGISTRY

Pursuant to New York State Department of Labor requirements, Contractor to submit with the bid, a copy of their Contractor Certificate of Registration which is attached to, and made part of, this Proposal.

IRAN DIVESTMENT ACT CERTIFICATION

Contractor to submit with the bid, Iran Divestment Act Certification which hereto is made a part of this Form of Proposal and is attached at the end of this Form of Proposal.

EXECUTIVE ORDER NO. 16 - PROHIBITING STATE AGENCIES AND AUTHORITIES FROM CONTRACTING WITH BUSINESSES CONDUCTNG BUSINESS IN RUSSIA

Contractor to submit with the bid, Certification under Executive Order No. 16: prohibiting State Agencies and Authorities from Contracting with Businesses Conducting Business in Russia, which hereto is made a part of this Form of Proposal and is attached at the end of this Form of Proposal.

REPRESENTATIONS

By submitting this Proposal, the Bidder represents and certifies to the Owner and the Architect that:

1. It has examined the Contract Documents, the site of the proposed Work, is familiar with the local conditions at the place where the Work is to be performed and fully comprehends the requirements and intent of the plans and specifications for this Project in accordance with the drawings, specifications and other Contract Documents prepared by CPL, the Owners Consultant, for this Project.
2. It has examined and reviewed, where applicable, all information and data in the Contract Documents related to existing underground facilities at or contiguous to the site. Bidder shall require of the Owner or Architect no further investigations, explorations, tests or reports with respect to such underground facilities in order for the Bidder to perform the Work of the Proposal within the Contract Time and in accordance with the Contract Documents.
3. It has given notice to the Architect, as required by the Contract Documents of any and all discrepancies it has discovered and accepts the resolution of those discrepancies offered by the Architect.
4. Pursuant to New York State General Municipal Law section 103-d, 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:
    a. The prices in this bid have been arrived at independently without collusion, 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;
    b. 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 be knowingly disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or competitor; and
    c. No attempt has been made or will be made by bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.
5. The proposal is based upon the materials, equipment and systems required by the Contract Documents, without exception, unless otherwise set forth in this Proposal in detail.

CHANGE ORDERS

We propose and agree that the above lump sum shall be adjusted for changes in the Contract Work not included in unit prices by addition of the following costs:

1. Profit and overhead as permitted in the GENERAL CONDITIONS.

NON-COLLUSIVE BIDDING CERTIFICATION

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that 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.

ACCEPTANCE

When this Proposal is accepted, the undersigned agrees to enter into a Contract with the Owner as provided in the Form of Agreement.

AFFIRMS

The undersigned affirms and agrees that this Proposal is a firm one which remains in effect and will be irrevocable for a period of forty-five (45) days after opening of Bids.

TYPE OF BUSINESS

The undersigned hereby represents that it is a [ ] Corporation, [ ] Partnership, [ ] Individual. If a Corporation, then the undersigned further represents that it is duly qualified as a Corporation under the laws of New York State and it is authorized to do business in this State.

PLACE OF BUSINESS

The following is the name and address of the person to whom all notices required in connection with this Proposal may be telephoned, mailed, or delivered.

Name of Contact Person:	
Name of Business or Firm:	
Address:	
Address:	
Telephone:	Fax:
Email Address:	
FEIN: Federal Employer Identification No.:	

EXECUTION OF CONTRACT

When written Notice of Acceptance of the Proposal is mailed or delivered to the undersigned within forty-five (45) days after the opening of Bids, or anytime thereafter should the Proposal not be withdrawn, the undersigned, within ten (10) days, will execute the Form of Agreement with the Owner.

ASBESTOS

The bidder certifies that no asbestos or asbestos-containing materials will be incorporated into the Work of this Contract.

AUTHORIZED SIGNATURES FOR PROPOSALS

Signature:	
Name:	
	(Typed or Printed)
Title:	
Firm:	
	(Legal Name of Person, Single Proprietorship, Partnership, or Corporation)
Date:	

(if Corporation, provide seal above)

IRAN DIVESTMENT ACT CERTIFICATION

By submission of this bid, (DL & AV Equip 1315), or by assuming the responsibility of a Contract awarded hereunder, each bidder and each person signing on behalf of any bidders, 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/contractor/assignee is not on the “Entities Determined To Be Non-Responsive Bidders/Offerers Pursuant to The New York State Iran Divestment Act of 2012” list created pursuant to paragraph (b) subdivision 3 of section 165-a of the New York State Finance Law and posted on the OGS website at www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf and further certifies that it will not utilize on such Contract any subcontractor that is identified on the Prohibited Entities List. Additionally, Bidder/Contractor is advised that should it seek to renew or extend a Contract awarded in response to the solicitation, it must provide the same certification at the time the Contract is renewed or extended. (See Article 10 in the Instructions to Bidders.)

NAME OF COMPANY: _____

(Individual or Legal Name of Firm or Corporation)

MAILING ADDRESS: _____

CITY/STATE/ZIP CODE: _____

BY: _____

(Signature of Representative of Firm or Corporation)

NAME: _____ TITLE: _____

Please Print *Please Print*

DATED: _____

SWORN to before me this

_____ day of _____ 20 ___

Notary Public: _____

SEXUAL HARASSMENT POLICY/TRAINING AFFIRMATION

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 its employees.

Contractor Information:

Name of Contractor: _____

Address: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Contractor Website: _____

_____ _____ _____

(Signature of Contractor) *(Title)* *(Date)*

GENDER-BASED VIOLENCE AND WORKPLACE POLICY AFFIRMATION

Pursuant to NYS State Finance Law §139-M, by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing gender-based violence and the workplace and has provided such policy to all of its employees, directors and board members. Such policy shall, at a minimum, meet the requirements of subdivision 11 of section five hundred seventy-five of the executive law.

Contractor Information:

Name of Contractor: _____

Address: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Contractor Website: _____

_____ _____ _____

(Signature of Contractor) *(Title)* *(Date)*

CERTIFICATION UNDER EXECUTIVE ORDER NO. 16

Executive Order No 16 provides that "all Affected State Entities are directed to refrain from entering into any new contract or renewing any existing contract with an entity conducting business operations in Russia."

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

As defined in Executive Order No. 6, an "entity conducting business operations in Russia" means an institution or company, wherever located, conducting any commercial activity in Russia or transacting business with the Russian Government or with commercial entities headquartered in Russia or with their principal place of business in Russia in the form of contracting, sales, purchasing, investment, or any business partnership.

Is Vendor an entity conducting business operations in Russia, as defined above? Please answer by checking one of the following.

_____ 1. No, Vendor does not conduct business operations in Russia within the meaning of Executive Order No. 16.

_____ 2.a. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but has taken steps to wind down business operations in Russia or is in the process of winding down business operations in Russia. (Please provide a detailed description of the wind down process and a schedule for completion.)

_____ 2.b. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but only to the extent necessary to provide vital health and safety services within Russia or to comply with federal law, regulations, executive orders, or directives. (Please provide a detailed description of the services being provided or the relevant laws, regulations, etc.)

_____ 3. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16.

The undersigned certifies under penalties of perjury that they are knowledgeable about the Vendor's business and operations and that the answer provided herein is true to the best of their knowledge and belief.

Vendor Name: _____

(legal entity)

By: _____

(signature)

Name: _____

Title: _____

Date: _____

END OF SECTION 004001

SECTION 004002
FORM OF PROPOSAL - MECHANICAL & PLUMBING CONSTRUCTION

DATED: _____

Bid from: Name: _____
Address: _____
_____
_____
Phone No.: _____
Fax No.: _____

Bid to: Monroe-Woodbury Central School District
278 Route 32
Central Valley, NY 10917

Bid for: 2023 BOND: NORTH MAIN ELEMENTARY SCHOOL
MECHANICAL (HVAC) AND PLUMBING CONSTRUCTION

BASE BID

We have examined and fully understand the requirements and intent of the Bidding and Contract Documents and all subsequent addenda as listed below, and propose to provide all materials, plant, labor, supplies, equipment, transportation and other facilities necessary ,or proper for, or incidental to the Work, to complete all Work in strict accord with the Contract Documents and as assigned in the Multiple Contract Summary for the base bid lump sum of:

Total Lump Sum Base Bid (in numbers): $ _____

Total Lump Sum Base Bid (in words): _____

_____

ADDENDA RECEIVED

Any addenda issued by the Architect, mailed or delivered, to the undersigned prior to the Bid opening date shall become part of the Contract Documents. The Bidder shall enter on this list any addenda issued after this Form of Proposal has been received and shall fill in the addenda number and date.

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

BID GUARANTEE

The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within ten (10) days after a written Notice of Award, if offered within forty-five (45) days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5 %) of the Base Bid.

In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

TIME OF COMPLETION

It is agreed by the undersigned that after receipt of a Notice of Award and a consummation of a Contract Agreement in accord with the terms of the Contract Documents, he or she will start work within ten (10) consecutive calendar days of the notice to proceed and fully complete the work as indicated in the Contract Documents.

ALLOWANCES

The Bidder acknowledges that all Allowances, pursuant to their Contract, have been included in the Base Bid. Should the following allowance(s) exceed ,or be less than, the cost of selected items, the difference in cost shall be added to, or credited to, the Owner's Contract. Refer to Specification Section 012100 "Allowances" for description of each allowance.

	Allowance Amount:
Mechanical & Plumbing Construction; MPC-1	$250,000.00

ALTERNATE BIDS

Enter a whole dollar amount, even if it is zero ($ 0), for each Alternate Bid. Circle either "ADD to" or "DEDUCT from" for each Alternate Bid. If neither is circled, "DEDUCT from" will be assumed. Do not leave any Alternate Bid amount blank. If any Alternate Bid amount is left blank, it will be assumed the Bidder will provide that Alternate Bid for no change, neither increase to nor decrease from, the Base Bid amount.

Alternate Bid No. MPC-1; New Enlarged Louver Openings at Unit Ventilators
ADD to the base bid a total sum of:
(in numbers) $ _____
(in words) _____

Alternate Bid No. MPC-2; Clean Existing Ductwork
ADD to the base bid a total sum of:
(in numbers) $ _____
(in words) _____

Alternate Bid No. MPC-3; Abandon and Seal Existing Steam Pipes Above Ceilings
DEDUCT from the base bid a total sum of:
(in numbers) $ _____
(in words) _____

Alternate Bid No. MPC-4; New Split System HVAC for Kitchen
ADD to the base bid a total sum of:
(in numbers) $ _____
(in words) _____

BID SECURITY

Bid Security in the form of a Certified or Cashier's Check or a Bid Bond in the form required by the Contract Documents is attached to, and made a part of, this Proposal.

NEW YORK STATE DEPARTMENT OF LABOR CONTRACTOR REGISTRY

Pursuant to New York State Department of Labor requirements, Contractor to submit with the bid, a copy of their Contractor Certificate of Registration which is attached to, and made part of, this Proposal.

IRAN DIVESTMENT ACT CERTIFICATION

Contractor to submit with the bid, Iran Divestment Act Certification which hereto is made a part of this Form of Proposal and is attached at the end of this Form of Proposal.

EXECUTIVE ORDER NO. 16 - PROHIBITING STATE AGENCIES AND AUTHORITIES FROM CONTRACTING WITH BUSINESSES CONDUCTING BUSINESS IN RUSSIA

Contractor to submit with the bid, Certification under Executive Order No. 16: prohibiting State Agencies and Authorities from Contracting with Businesses Conducting Business in Russia, which hereto is made a part of this Form of Proposal and is attached at the end of this Form of Proposal.

REPRESENTATIONS

By submitting this Proposal, the Bidder represents and certifies to the Owner and the Architect that:

1. It has examined the Contract Documents, the site of the proposed Work, is familiar with the local conditions at the place where the Work is to be performed and fully comprehends the requirements and intent of the plans and specifications for this Project in accordance with the drawings, specifications and other Contract Documents prepared by CPL, the Owners Consultant, for this Project.
2. It has examined and reviewed, where applicable, all information and data in the Contract Documents related to existing underground facilities at or contiguous to the site. Bidder shall require of the Owner or Architect no further investigations, explorations, tests or reports with respect to such underground facilities in order for the Bidder to perform the Work of the Proposal within the Contract Time and in accordance with the Contract Documents.
3. It has given notice to the Architect, as required by the Contract Documents of any and all discrepancies it has discovered and accepts the resolution of those discrepancies offered by the Architect.
4. Pursuant to New York State General Municipal Law section 103-d, 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:

a. The prices in this bid have been arrived at independently without collusion, 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;
b. 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 be knowingly disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or competitor; and
c. No attempt has been made or will be made by bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

5. The proposal is based upon the materials, equipment and systems required by the Contract Documents, without exception, unless otherwise set forth in this Proposal in detail.

CHANGE ORDERS

We propose and agree that the above lump sum shall be adjusted for changes in the Contract Work not included in unit prices by addition of the following costs:

1. Profit and overhead as permitted in the GENERAL CONDITIONS.

NON-COLLUSIVE BIDDING CERTIFICATION

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that 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.

ACCEPTANCE

When this Proposal is accepted, the undersigned agrees to enter into a Contract with the Owner as provided in the Form of Agreement.

AFFIRMS

The undersigned affirms and agrees that this Proposal is a firm one which remains in effect and will be irrevocable for a period of forty-five (45) days after opening of Bids.

TYPE OF BUSINESS

The undersigned hereby represents that it is a [ ] Corporation, [ ] Partnership, [ ] Individual. If a Corporation, then the undersigned further represents that it is duly qualified as a Corporation under the laws of New York State and it is authorized to do business in this State.

PLACE OF BUSINESS

The following is the name and address of the person to whom all notices required in connection with this Proposal may be telephoned, mailed, or delivered.

Name of Contact Person:	
Name of Business or Firm:	
Address:	
Address:	
Telephone:	Fax:
Email Address:	
FEIN: Federal Employer Identification No.:	

EXECUTION OF CONTRACT

When written Notice of Acceptance of the Proposal is mailed or delivered to the undersigned within forty-five (45) days after the opening of Bids, or anytime thereafter should the Proposal not be withdrawn, the undersigned, within ten (10) days, will execute the Form of Agreement with the Owner.

ASBESTOS

The bidder certifies that no asbestos or asbestos-containing materials will be incorporated into the Work of this Contract.

AUTHORIZED SIGNATURES FOR PROPOSALS

Signature:	
Name:	
	(Typed or Printed)
Title:	
Firm:	
	(Legal Name of Person, Single Proprietorship, Partnership, or Corporation)
Date:	

(if Corporation, provide seal above)

IRAN DIVESTMENT ACT CERTIFICATION

By submission of this bid, (DL & AV Equip 1315), or by assuming the responsibility of a Contract awarded hereunder, each bidder and each person signing on behalf of any bidders, 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/contractor/assignee is not on the "Entities Determined To Be Non-Responsive Bidders/Offerers Pursuant to The New York State Iran Divestment Act of 2012" list created pursuant to paragraph (b) subdivision 3 of section 165-a of the New York State Finance Law and posted on the OGS website at www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf and further certifies that it will not utilize on such Contract any subcontractor that is identified on the Prohibited Entities List. Additionally, Bidder/Contractor is advised that should it seek to renew or extend a Contract awarded in response to the solicitation, it must provide the same certification at the time the Contract is renewed or extended. (See Article 10 in the Instructions to Bidders.)

NAME OF COMPANY: _____

(Individual or Legal Name of Firm or Corporation)

MAILING ADDRESS: _____

CITY/STATE/ZIP CODE: _____

BY: _____

(Signature of Representative of Firm or Corporation)

NAME: _____ TITLE: _____

Please Print *Please Print*

DATED: _____

SWORN to before me this

_____ day of _____ 20 ___

Notary Public: _____

SEXUAL HARASSMENT POLICY/TRAINING AFFIRMATION

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 its employees.

Contractor Information:

Name of Contractor: _____

Address: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Contractor Website: _____

_____ _____ _____

(Signature of Contractor) *(Title)* *(Date)*

GENDER-BASED VIOLENCE AND WORKPLACE POLICY AFFIRMATION

Pursuant to NYS State Finance Law §139-M, by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing gender-based violence and the workplace and has provided such policy to all of its employees, directors and board members. Such policy shall, at a minimum, meet the requirements of subdivision 11 of section five hundred seventy-five of the executive law.

Contractor Information:

Name of Contractor: _____

Address: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Contractor Website: _____

_____ _____ _____

(Signature of Contractor) *(Title)* *(Date)*

CERTIFICATION UNDER EXECUTIVE ORDER NO. 16

Executive Order No 16 provides that "all Affected State Entities are directed to refrain from entering into any new contract or renewing any existing contract with an entity conducting business operations in Russia."

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

As defined in Executive Order No. 6, an "entity conducting business operations in Russia" means an institution or company, wherever located, conducting any commercial activity in Russia or transacting business with the Russian Government or with commercial entities headquartered in Russia or with their principal place of business in Russia in the form of contracting, sales, purchasing, investment, or any business partnership.

Is Vendor an entity conducting business operations in Russia, as defined above? Please answer by checking one of the following.

_____ 1. No, Vendor does not conduct business operations in Russia within the meaning of Executive Order No. 16.

_____ 2.a. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but has taken steps to wind down business operations in Russia or is in the process of winding down business operations in Russia. (Please provide a detailed description of the wind down process and a schedule for completion.)

_____ 2.b. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but only to the extent necessary to provide vital health and safety services within Russia or to comply with federal law, regulations, executive orders, or directives. (Please provide a detailed description of the services being provided or the relevant laws, regulations, etc.)

_____ 3. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16.

The undersigned certifies under penalties of perjury that they are knowledgeable about the Vendor's business and operations and that the answer provided herein is true to the best of their knowledge and belief.

Vendor Name: _____

(legal entity)

By: _____

(signature

Name: _____

Title:_____

Date: _____

END OF SECTION 004002

SECTION 004003
FORM OF PROPOSAL - ELECTRICAL CONSTRUCTION

DATED: _____

Bid from: Name: _____
Address: _____
_____
_____
Phone No.: _____
Fax No.: _____

Bid to: Monroe-Woodbury Central School District
278 Route 32
Central Valley, NY 10917

Bid for: 2023 BOND: NORTH MAIN ELEMENTARY SCHOOL
ELECTRICAL CONSTRUCTION (EC)

BASE BID

We have examined and fully understand the requirements and intent of the Bidding and Contract Documents and all subsequent addenda as listed below, and propose to provide all materials, plant, labor, supplies, equipment, transportation and other facilities necessary ,or proper for, or incidental to the Work, to complete all Work in strict accord with the Contract Documents and as assigned in the Multiple Contract Summary for the base bid lump sum of:

Total Lump Sum Base Bid (in numbers): $ _____

Total Lump Sum Base Bid (in words): _____

_____

ADDENDA RECEIVED

Any addenda issued by the Architect, mailed or delivered, to the undersigned prior to the Bid opening date shall become part of the Contract Documents. The Bidder shall enter on this list any addenda issued after this Form of Proposal has been received and shall fill in the addenda number and date.

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

BID GUARANTEE

The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within ten (10) days after a written Notice of Award, if offered within forty-five (45) days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5 %) of the Base Bid.

In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

TIME OF COMPLETION

It is agreed by the undersigned that after receipt of a Notice of Award and a consummation of a Contract Agreement in accord with the terms of the Contract Documents, he or she will start work within ten (10) consecutive calendar days of the notice to proceed and fully complete the work as indicated in the Contract Documents.

ALLOWANCES

The Bidder acknowledges that all Allowances, pursuant to their Contract, have been included in the Base Bid. Should the following allowance(s) exceed ,or be less than, the cost of selected items, the difference in cost shall be added to, or credited to, the Owner's Contract. Refer to Specification Section 012100 "Allowances" for description of each allowance.

	Allowance Amount:
Electrical Construction; EC-1	$100,000.00

ALTERNATE BIDS

Enter a whole dollar amount, even if it is zero ($ 0), for each Alternate Bid. Circle either "ADD to" or "DEDUCT from" for each Alternate Bid. If neither is circled, "DEDUCT from" will be assumed. Do not leave any Alternate Bid amount blank. If any Alternate Bid amount is left blank, it will be assumed the Bidder will provide that Alternate Bid for no change, neither increase to nor decrease from, the Base Bid amount.

Alternate Bid No. EC-1; Fiber and Power Line to Lower Playground
ADD to | the base bid a total sum of:
(in numbers) $ _____
(in words) _____

Alternate Bid No. EC-2; New Split System HVAC for Kitchen
ADD to | the base bid a total sum of:
(in numbers) $ _____
(in words) _____

BID SECURITY

Bid Security in the form of a Certified or Cashier's Check or a Bid Bond in the form required by the Contract Documents is attached to, and made a part of, this Proposal.

NEW YORK STATE DEPARTMENT OF LABOR CONTRACTOR REGISTRY

Pursuant to New York State Department of Labor requirements, Contractor to submit with the bid, a copy of their Contractor Certificate of Registration which is attached to, and made part of, this Proposal.

IRAN DIVESTMENT ACT CERTIFICATION

Contractor to submit with the bid, Iran Divestment Act Certification which hereto is made a part of this Form of Proposal and is attached at the end of this Form of Proposal.

EXECUTIVE ORDER NO. 16 - PROHIBITING STATE AGENCIES AND AUTHORITIES FROM CONTRACTING WITH BUSINESSES CONDUCTING BUSINESS IN RUSSIA

Contractor to submit with the bid, Certification under Executive Order No. 16: prohibiting State Agencies and Authorities from Contracting with Businesses Conducting Business in Russia, which hereto is made a part of this Form of Proposal and is attached at the end of this Form of Proposal.

REPRESENTATIONS

By submitting this Proposal, the Bidder represents and certifies to the Owner and the Architect that:

1. It has examined the Contract Documents, the site of the proposed Work, is familiar with the local conditions at the place where the Work is to be performed and fully comprehends the requirements and intent of the plans and specifications for this Project in accordance with the drawings, specifications and other Contract Documents prepared by CPL, the Owners Consultant, for this Project.
2. It has examined and reviewed, where applicable, all information and data in the Contract Documents related to existing underground facilities at or contiguous to the site. Bidder shall require of the Owner or Architect no further investigations, explorations, tests or reports with respect to such underground facilities in order for the Bidder to perform the Work of the Proposal within the Contract Time and in accordance with the Contract Documents.
3. It has given notice to the Architect, as required by the Contract Documents of any and all discrepancies it has discovered and accepts the resolution of those discrepancies offered by the Architect.
4. Pursuant to New York State General Municipal Law section 103-d, 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:
    a. The prices in this bid have been arrived at independently without collusion, 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;
    b. 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 be knowingly disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or competitor; and
    c. No attempt has been made or will be made by bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.
5. The proposal is based upon the materials, equipment and systems required by the Contract Documents, without exception, unless otherwise set forth in this Proposal in detail.

CHANGE ORDERS

We propose and agree that the above lump sum shall be adjusted for changes in the Contract Work not included in unit prices by addition of the following costs:

1. Profit and overhead as permitted in the GENERAL CONDITIONS.

NON-COLLUSIVE BIDDING CERTIFICATION

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that 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.

ACCEPTANCE

When this Proposal is accepted, the undersigned agrees to enter into a Contract with the Owner as provided in the Form of Agreement.

AFFIRMS

The undersigned affirms and agrees that this Proposal is a firm one which remains in effect and will be irrevocable for a period of forty-five (45) days after opening of Bids.

TYPE OF BUSINESS

The undersigned hereby represents that it is a [ ] Corporation, [ ] Partnership, [ ] Individual. If a Corporation, then the undersigned further represents that it is duly qualified as a Corporation under the laws of New York State and it is authorized to do business in this State.

PLACE OF BUSINESS

The following is the name and address of the person to whom all notices required in connection with this Proposal may be telephoned, mailed, or delivered.

Name of Contact Person:	
Name of Business or Firm:	
Address:	
Address:	
Telephone:	Fax:
Email Address:	
FEIN: Federal Employer Identification No.:	

EXECUTION OF CONTRACT

When written Notice of Acceptance of the Proposal is mailed or delivered to the undersigned within forty-five (45) days after the opening of Bids, or anytime thereafter should the Proposal not be withdrawn, the undersigned, within ten (10) days, will execute the Form of Agreement with the Owner.

ASBESTOS

The bidder certifies that no asbestos or asbestos-containing materials will be incorporated into the Work of this Contract.

AUTHORIZED SIGNATURES FOR PROPOSALS

Signature:	
Name:	
	(Typed or Printed)
Title:	
Firm:	
	(Legal Name of Person, Single Proprietorship, Partnership, or Corporation)
Date:	

(if Corporation, provide seal above)

IRAN DIVESTMENT ACT CERTIFICATION

By submission of this bid, (DL & AV Equip 1315), or by assuming the responsibility of a Contract awarded hereunder, each bidder and each person signing on behalf of any bidders, 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/contractor/assignee is not on the "Entities Determined To Be Non-Responsive Bidders/Offerers Pursuant to The New York State Iran Divestment Act of 2012" list created pursuant to paragraph (b) subdivision 3 of section 165-a of the New York State Finance Law and posted on the OGS website at www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf and further certifies that it will not utilize on such Contract any subcontractor that is identified on the Prohibited Entities List. Additionally, Bidder/Contractor is advised that should it seek to renew or extend a Contract awarded in response to the solicitation, it must provide the same certification at the time the Contract is renewed or extended. (See Article 10 in the Instructions to Bidders.)

NAME OF COMPANY: _____

(Individual or Legal Name of Firm or Corporation)

MAILING ADDRESS: _____

CITY/STATE/ZIP CODE: _____

BY: _____

(Signature of Representative of Firm or Corporation)

NAME: _____ TITLE: _____

Please Print *Please Print*

DATED: _____

SWORN to before me this

_____ day of _____ 20 ___

Notary Public: _____

SEXUAL HARASSMENT POLICY/TRAINING AFFIRMATION

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 its employees.

Contractor Information:

Name of Contractor: _____

Address: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Contractor Website: _____

_____ _____ _____

(Signature of Contractor) *(Title)* *(Date)*

GENDER-BASED VIOLENCE AND WORKPLACE POLICY AFFIRMATION

Pursuant to NYS State Finance Law §139-M, by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing gender-based violence and the workplace and has provided such policy to all of its employees, directors and board members. Such policy shall, at a minimum, meet the requirements of subdivision 11 of section five hundred seventy-five of the executive law.

Contractor Information:

Name of Contractor: _____

Address: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Contractor Website: _____

_____ _____ _____

(Signature of Contractor) *(Title)* *(Date)*

CERTIFICATION UNDER EXECUTIVE ORDER NO. 16

Executive Order No 16 provides that "all Affected State Entities are directed to refrain from entering into any new contract or renewing any existing contract with an entity conducting business operations in Russia."

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

As defined in Executive Order No. 6, an "entity conducting business operations in Russia" means an institution or company, wherever located, conducting any commercial activity in Russia or transacting business with the Russian Government or with commercial entities headquartered in Russia or with their principal place of business in Russia in the form of contracting, sales, purchasing, investment, or any business partnership.

Is Vendor an entity conducting business operations in Russia, as defined above? Please answer by checking one of the following.

_____ 1. No, Vendor does not conduct business operations in Russia within the meaning of Executive Order No. 16.

_____ 2.a. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but has taken steps to wind down business operations in Russia or is in the process of winding down business operations in Russia. (Please provide a detailed description of the wind down process and a schedule for completion.)

_____ 2.b. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but only to the extent necessary to provide vital health and safety services within Russia or to comply with federal law, regulations, executive orders, or directives. (Please provide a detailed description of the services being provided or the relevant laws, regulations, etc.)

_____ 3. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16.

The undersigned certifies under penalties of perjury that they are knowledgeable about the Vendor's business and operations and that the answer provided herein is true to the best of their knowledge and belief.

Vendor Name: _____

(legal entity)

By: _____

(signature)

Name: _____

Title: _____

Date: _____

END OF SECTION 004003

This page intentionally left blank

SECTION 004004
FORM OF PROPOSAL - ABATEMENT CONSTRUCTION

DATED: _____

Bid from: Name: _____
Address: _____
_____
_____
Phone No.: _____
Fax No.: _____

Bid to: Monroe-Woodbury Central School District
278 Route 32
Central Valley, NY 10917

Bid for: 2023 BOND: NORTH MAIN ELEMENTARY SCHOOL
ABATEMENT WORK (AC-1)

BASE BID

We have examined and fully understand the requirements and intent of the Bidding and Contract Documents and all subsequent addenda as listed below, and propose to provide all materials, plant, labor, supplies, equipment, transportation and other facilities necessary ,or proper for, or incidental to the Work, to complete all Work in strict accord with the Contract Documents and as assigned in the Multiple Contract Summary for the base bid lump sum of:

Total Lump Sum Base Bid (in numbers): $ _____

Total Lump Sum Base Bid (in words): _____

_____

ADDENDA RECEIVED

Any addenda issued by the Architect, mailed or delivered, to the undersigned prior to the Bid opening date shall become part of the Contract Documents. The Bidder shall enter on this list any addenda issued after this Form of Proposal has been received and shall fill in the addenda number and date.

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

BID GUARANTEE

The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within ten (10) days after a written Notice of Award, if offered within forty-five (45) days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5 %) of the Base Bid.

In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

TIME OF COMPLETION

It is agreed by the undersigned that after receipt of a Notice of Award and a consummation of a Contract Agreement in accord with the terms of the Contract Documents, he or she will start work within ten (10) consecutive calendar days of the notice to proceed and fully complete the work as indicated in the Contract Documents.

ALLOWANCES

The Bidder acknowledges that all Allowances, pursuant to their Contract, have been included in the Base Bid. Should the following allowance(s) exceed ,or be less than, the cost of selected items, the difference in cost shall be added to, or credited to, the Owner's Contract. Refer to Specification Section 012100 "Allowances" for description of each allowance.

	Allowance Amount:
Abatement Work AC-1	$200,000

BID SECURITY

Bid Security in the form of a Certified or Cashier's Check or a Bid Bond in the form required by the Contract Documents is attached to, and made a part of, this Proposal.

NEW YORK STATE DEPARTMENT OF LABOR CONTRACTOR REGISTRY

Pursuant to New York State Department of Labor requirements, Contractor to submit with the bid, a copy of their Contractor Certificate of Registration which is attached to, and made part of, this Proposal.

IRAN DIVESTMENT ACT CERTIFICATION

Contractor to submit with the bid, Iran Divestment Act Certification which hereto is made a part of this Form of Proposal and is attached at the end of this Form of Proposal.

EXECUTIVE ORDER NO. 16 - PROHIBITING STATE AGENCIES AND AUTHORITIES FROM CONTRACTING WITH BUSINESSES CONDUCTING BUSINESS IN RUSSIA

Contractor to submit with the bid, Certification under Executive Order No. 16: prohibiting State Agencies and Authorities from Contracting with Businesses Conducting Business in Russia, which hereto is made a part of this Form of Proposal and is attached at the end of this Form of Proposal.

REPRESENTATIONS

By submitting this Proposal, the Bidder represents and certifies to the Owner and the Architect that:

1. It has examined the Contract Documents, the site of the proposed Work, is familiar with the local conditions at the place where the Work is to be performed and fully comprehends the requirements and intent of the plans and specifications for this Project in accordance with the drawings, specifications and other Contract Documents prepared by CPL, the Owners Consultant, for this Project.
2. It has examined and reviewed, where applicable, all information and data in the Contract Documents related to existing underground facilities at or contiguous to the site. Bidder shall require of the Owner or Architect no further investigations, explorations, tests or reports with respect to such underground facilities in order for the Bidder to perform the Work of the Proposal within the Contract Time and in accordance with the Contract Documents.
3. It has given notice to the Architect, as required by the Contract Documents of any and all discrepancies it has discovered and accepts the resolution of those discrepancies offered by the Architect.
4. Pursuant to New York State General Municipal Law section 103-d, 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:
   a. The prices in this bid have been arrived at independently without collusion, 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;
   b. 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 be knowingly disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or competitor; and
   c. No attempt has been made or will be made by bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.
5. The proposal is based upon the materials, equipment and systems required by the Contract Documents, without exception, unless otherwise set forth in this Proposal in detail.

CHANGE ORDERS

We propose and agree that the above lump sum shall be adjusted for changes in the Contract Work not included in unit prices by addition of the following costs:

1. Profit and overhead as permitted in the GENERAL CONDITIONS.

NON-COLLUSIVE BIDDING CERTIFICATION

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that 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.

ACCEPTANCE

When this Proposal is accepted, the undersigned agrees to enter into a Contract with the Owner as provided in the Form of Agreement.

AFFIRMS

The undersigned affirms and agrees that this Proposal is a firm one which remains in effect and will be irrevocable for a period of forty-five (45) days after opening of Bids.

TYPE OF BUSINESS

The undersigned hereby represents that it is a [ ] Corporation, [ ] Partnership, [ ] Individual. If a Corporation, then the undersigned further represents that it is duly qualified as a Corporation under the laws of New York State and it is authorized to do business in this State.

PLACE OF BUSINESS

The following is the name and address of the person to whom all notices required in connection with this Proposal may be telephoned, mailed, or delivered.

Name of Contact Person:	
Name of Business or Firm:	
Address:	
Address:	
Telephone:	Fax:
Email Address:	
FEIN: Federal Employer Identification No.:	

EXECUTION OF CONTRACT

When written Notice of Acceptance of the Proposal is mailed or delivered to the undersigned within forty-five (45) days after the opening of Bids, or anytime thereafter should the Proposal not be withdrawn, the undersigned, within ten (10) days, will execute the Form of Agreement with the Owner.

ASBESTOS

The bidder certifies that no asbestos or asbestos-containing materials will be incorporated into the Work of this Contract.

AUTHORIZED SIGNATURES FOR PROPOSALS

Signature:	
Name:	
	(Typed or Printed)
Title:	
Firm:	
	(Legal Name of Person, Single Proprietorship, Partnership, or Corporation)

Date:	

(if Corporation, provide seal above)

IRAN DIVESTMENT ACT CERTIFICATION

By submission of this bid, (DL & AV Equip 1315), or by assuming the responsibility of a Contract awarded hereunder, each bidder and each person signing on behalf of any bidders, 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/contractor/assignee is not on the "Entities Determined To Be Non-Responsive Bidders/Offerers Pursuant to The New York State Iran Divestment Act of 2012" list created pursuant to paragraph (b) subdivision 3 of section 165-a of the New York State Finance Law and posted on the OGS website at www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf and further certifies that it will not utilize on such Contract any subcontractor that is identified on the Prohibited Entities List. Additionally, Bidder/Contractor is advised that should it seek to renew or extend a Contract awarded in response to the solicitation, it must provide the same certification at the time the Contract is renewed or extended. (See Article 10 in the Instructions to Bidders.)

NAME OF COMPANY: _____

(Individual or Legal Name of Firm or Corporation)

MAILING ADDRESS: _____

CITY/STATE/ZIP CODE: _____

BY: _____

(Signature of Representative of Firm or Corporation)

NAME: _____ TITLE: _____

Please Print *Please Print*

DATED: _____

SWORN to before me this

_____ day of _____ 20 ___

Notary Public: _____

SEXUAL HARASSMENT POLICY/TRAINING AFFIRMATION

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 its employees.

Contractor Information:

Name of Contractor: _____

Address: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Contractor Website: _____

_____ _____ _____

(Signature of Contractor) *(Title)* *(Date)*

GENDER-BASED VIOLENCE AND WORKPLACE POLICY AFFIRMATION

Pursuant to NYS State Finance Law §139-M, by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing gender-based violence and the workplace and has provided such policy to all of its employees, directors and board members. Such policy shall, at a minimum, meet the requirements of subdivision 11 of section five hundred seventy-five of the executive law.

Contractor Information:

Name of Contractor: _____

Address: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Contractor Website: _____

_____ _____ _____

(Signature of Contractor) *(Title)* *(Date)*

CERTIFICATION UNDER EXECUTIVE ORDER NO. 16

Executive Order No 16 provides that "all Affected State Entities are directed to refrain from entering into any new contract or renewing any existing contract with an entity conducting business operations in Russia."

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

As defined in Executive Order No. 6, an "entity conducting business operations in Russia" means an institution or company, wherever located, conducting any commercial activity in Russia or transacting business with the Russian Government or with commercial entities headquartered in Russia or with their principal place of business in Russia in the form of contracting, sales, purchasing, investment, or any business partnership.

Is Vendor an entity conducting business operations in Russia, as defined above? Please answer by checking one of the following.

_____ 1. No, Vendor does not conduct business operations in Russia within the meaning of Executive Order No. 16.

_____ 2.a. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but has taken steps to wind down business operations in Russia or is in the process of winding down business operations in Russia. (Please provide a detailed description of the wind down process and a schedule for completion.

_____ 2.b. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but only to the extent necessary to provide vital health and safety services within Russia or to comply with federal law, regulations, executive orders, or directives. (Please provide a detailed description of the services being provided or the relevant laws, regulations, etc.)

_____ 3. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16.

The undersigned certifies under penalties of perjury that they are knowledgeable about the Vendor's business and operations and that the answer provided herein is true to the best of their knowledge and belief.

Vendor Name: _____

(legal entity)

By: _____

(signature)

Name: _____

Title: _____

Date: _____

END OF SECTION 004004

SECTION 004500
QUALIFICATION STATEMENT

PROJECT NO. R25.17556

MONROE-WOODBURY CENTRAL SCHOOL DISTRICT

Name of Bidder: _____

Federal Employer's Identification No. (FEIN): _____

STATEMENT OF BIDDER'S QUALIFICATIONS

CONTRACT FOR (Circle one): GC, MC, PC, EC, AC

NOTARIZED AND SUBMITTED BY 3 LOW BIDDERS WITHIN

72 HOURS UPON REQUEST BY ARCHITECT OR CONSTRUCTION MANAGER

All questions must be answered, and the data given must be clear and comprehensive. If necessary, questions may be answered on separate attached sheet.

1. Name of Bidder
2. Permanent main office address
3. When organized
4. If a corporation, where incorporated
5. How many years have you been engaged in the contracting business under your present firm or trade name?
6. Contracts on hand: (Schedule these, showing amount of each contract and the appropriate anticipated dates of completion.)
7. General character of work performed by your company
8. Has any construction contract to which you have been a party been terminated by the OWNER; have you ever terminated work on a project prior to its completion for any reason; has any surety which issued a performance bond on your behalf ever completed the work in its own name or financed such completion on your behalf; has any surety expended any monies in connection with a contract for which they furnished a bond on your behalf? If the answer to any portion of this question is “yes”, please furnish details of all such occurrences including name of owner, architect or Architect, and surety, and name and date of project.
9. Has any officer, partner, member or manager of your organization ever been an officer, partner, member or manager of another organization that had any construction contract terminated by the OWNER; terminated work on a project prior to its completion for any reason; had any surety which issued a performance bond complete the work in its own name or financed such completion; or had any surety expend any monies in connection with a contract for which they furnished a bond? If the answer to any portion of this question is “yes”, please furnish details of all such occurrences including name of owner, architect or Architect, and surety, and name and date of project.
10. List your experience in work similar to this project.
11. List the background and experience of the principal members of your organization, including officers.
12. List name of project, owner, architect or Architect, contract amount, percent complete and scheduled completion of the major construction projects your organization has in process on this date.
13. List name of project, owner, architect or Architect, contract amount, date of completion and percent of work with own forces of the major projects of the same general nature as this project which your organization has completed in the past five (5) years.
14. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by the Owner?

15. List name, address and telephone number of a reference for each project listed under items 12 and 13 above.
16. List names and construction experience of the principal individuals of our organization.
17. List the states and categories of construction in which your organization is legally qualified to do business.
18. List name, address and telephone number of an individual who represents each of the following and whom OWNER may contact for a financial reference:
    a.
    One Surety:

    Two banks:

    Three major material suppliers:

19. Attach a financial statement, prepared on an accrual basis, in a form which clearly indicates assets, liabilities and net worth.

    Date of financial statement: _____
    a.
    Name of firm preparing statement: _____
    b.
20. The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by the Owner in verification of the recitals comprising this Statement of Bidder's Qualifications and that the answers to the foregoing questions and all statements therein contained are true and correct.
21.

Dated _____ this _____ date of _____, 20____.

_____
(Name of Bidder)

By:

Title:

State of _____)
County of _____) ss.

_____ being duly sworn deposes and says that he is
_____ of _____
(Name of Organization)
and that the answers to the foregoing questions and all statements therin contained are true and correct.

Subscribed and sworn to before me
this _____ day of _____, 20____.
My commission expires _____, 20____.

BIDDERS STATEMENT

I am _____

(Name)

of _____

(Firm or Corporation)

The Bidder making the Bid for Construction of the above named Project, certifies that I or my authorized representative has personally inspected the job site. The Bidder has relied on its own knowledge and review and interpretation of the Bidding Documents and all relevant plans and specifications, boring logs and other data in submitting his bid and not on any representation made by the Owner, Architect, or any other person, with respect to the character, quality or quantities of Work to be performed, or materials or equipment to be furnished. Bidder acknowledges that any quantities are an estimate only so that Bidder agrees not to seek additional compensation or request an adjustment in any unit price as a result of any variation in quantities or unforeseen site conditions encountered for any reason whatsoever. The Bidder represents that it has reviewed and accepts the applicable Project schedule and all revisions thereto. The Bidder agrees and understands that any such project schedule is incorporated by reference in the Contract Documents and further acknowledges that its failure to adhere to any such project schedule will expose Owner to severe financial hardship. Accordingly, Bidder agrees to exonerate, indemnify and hold Owner harmless from and against any and all losses, damages (including claims made by other Contractors performing Work at the Project) and claims arising out of Bidder's failure to adhere to any project schedule or any modifications, updates or revisions thereto. The Bidder's failure to adhere to and maintain the project schedule, including any revisions thereto, shall be grounds for termination.

By: _____

(Signature of Bidder)

_____

(Title or Position)

_____

(Seal if Bidder is a Corporation)

_____

(Printed or Typed Name of Bidder)

PERFORMANCE BOND INFORMATION FORM

City/Town/Village _____

School District _____

Construction Contract Number _____

Name of Contract _____

Name of Contractor _____

Address _____

_____

Entity Issuing Security Bond _____

Address _____

_____

Bonding Agent _____

Address _____

_____

Amount of Bid _____

Duration of Bond From _____ To _____

Bond Identification Number _____

END OF SECTION 004500

SECTION 005100
AGREEMENT FORM

PART 1 GENERAL

1.01 SUMMARY

A. The following is the "Standard Form of Agreement Between Owner and Contractor Stipulated Sum, Construction Manager as Adviser Edition", AIA Document A132 - 2019, which is bound with this Section. AIA Document A132 – 2019 is a standard form of agreement between Owner and Contractor for use on projects where the basis of payment is a stipulated sum (fixed price), and where, in addition to the Contractor and the Architect, a Construction Manager assists the Owner in an advisory capacity during design, bidding, and construction. The document has been prepared for use with A232 – 2019 , General Conditions of the Contract for Construction, Construction Manager as Adviser Edition. This integrated set of documents is for use on projects where the Construction Manager only serves in the capacity of an adviser to the Owner, rather than as constructor.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 005100

This page intentionally left blank

SECTION 006000 - PROJECT FORMS AND RELATED DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section lists the project forms used for administration of the project as well as documents used for administration and logistics

1.2 FORMS

A. The following forms are contained within the conditions of the contract section:
1. FRONT END SUBMISSION LOG
2. PROJECT REQUEST FOR INFORMATION (RFI) FORM
3. SUBCONTRACTOR LIST
4. ALLOWANCE DISBURSEMENT FORM
5. SUBSTITUTION REQUEST FORM
6. SUBMITTAL COVER
7. INFORMATION BULLETIN
8. ELECTRONIC DOCUMENT TRANSFER AGREEMENT

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PROCEDURES

A. **Front End Submission Log**: This document is a checklist of the required submissions. Refer to Bidding Requirements, Section entitled “Instructions to Bidders” and Division 1, Specification Section entitled “SUBMITTAL PROCEDURES” for submission procedures.

B. **Project Request For Information (RFI) Form**: This form is to be used for information requests. The forms are filled out by any party to the contract and sent to the Architect/Engineer. The Architect/Engineer shall number RFI before processing.

C. **Subcontractor List**: This document is to be used identify subcontractors. The forms are filled out by each Prime Contractor for all proposed subcontractors and sent to the Architect/Engineer in accordance with. Division 1, section entitled “SUBMITTAL PROCEDURES”

D. **Allowance Disbursement Form**: the Architect/Engineer shall issue this document after all parties have agreed to the conditions of change to be charged to the Allowance Amount in accordance with Division 1, section entitled “ALLOWANCES”, if required.

E. **Substitution Request Form**: This document is to be used for a Contractor to propose substitutions. The forms are filled out by each Prime Contractor and sent to the Architect/Engineer in accordance with. Division 1, section entitled “SUBMITTAL PROCEDURES” and “PRODUCT REQUIREMENTS”.

F. **Submittal Cover**: This document is to be used for submittal submissions. The forms are filled out by each Prime Contractor and sent to the Architect/Engineer in accordance with. Division 1, section entitled “SUBMITTAL PROCEDURES”

G. **Information Bulletin:** The Architect/Engineer shall issue this document for 3 actions.

1. PROPOSAL REQUEST: A quotations for changes in the Contract Sum and / or proposed modifications to the Contract Documents

2. SUPPLEMENTAL INSTRUCTIONS: Instructions for changes to the Contract Documents without additional cost or time

3. CONSTRUCTION CHANGE DIRECTIVE: A directive to immediately proceed with changes to the work of the contract and to submit final cost for inclusion into a Change Order

END OF SECTION 006000

FRONT END SUBMISSION LOG

MONROE-WOODBURY CENTRAL SCHOOL DISTRICT

NORTH MAIN ELEMENTARY SCHOOL – R23.15292.00

Contractor Name: _____

SUBMISSIONS

Submission	Date Submitted	Date Approved	Remarks
Contract:			
Schedule of Values:			
Bonds:			
Insurance:			
Workers Compensation:			
Automobile Insurance:			
Safety Program:			
Schedule:			
Submittal Schedule:			
Emergency Contact:			
Substitution List:			
Subcontractor List:			
Project Manager:			
Superintendent:			

This log is to be used by the contractor to monitor and complete the required front-end submissions.

THIS PAGE DELIBERATELY LEFT BLANK

REQUEST FOR INFORMATION

RFI #:
Date:

MONROE-WOODBURY CENTRAL SCHOOL DISTRICT
NORTH MAIN ELEMENTARY SCHOOL – r23.15292.00

Contractor Name: _____

To: _____ Firm: _____

From: _____

WE REQUEST YOUR ATTENTION (OR CONFIRMATION) REGARDING THE FOLLOWING:

Subject: _____

_____

Location: _____

_____

Information is Requested By: _____

MESSAGE: _____

Contractors Name: _____

By: _____ Date: _____

THIS PAGE DELIBERATELY LEFT BLANK

SUBCONTRACTOR LIST

MONROE-WOODBURY CENTRAL SCHOOL DISTRICT
NORTH MAIN ELEMENTARY SCHOOL – r23.15292.00

To: **CPL**
26 IBM Rd.
Poughkeepsie, NY 12601

From: (Contractor) _____

Contractors No.: _____

Contract For: _____

List Subcontractors proposed for use on this Project as required by the Construction Documents. Attach supplemental sheets if necessary.

Section No.: _____ Section Title: _____
Firm Name: _____ Contact: _____
Address: _____

Section No.: _____ Section Title: _____
Firm Name: _____ Contact: _____
Address: _____

Section No.: _____ Section Title: _____
Firm Name: _____ Contact: _____
Address: _____

Section No.: _____ Section Title: _____
Firm Name: _____ Contact: _____
Address: _____

Section No.: Section Title:

☐ Attachment(s)

Signed by: _____ Date: _____

Copies: ☐ **Owner** ☐ **Consultants** ☐ File
☐ ☐ ☐

ALLOWANCE DISBURSEMENT AUTHORIZATION

Owner _____
Architect/Engineer _____
Contractor _____
Field _____
Other _____
Other _____

MONROE-WOODBURY CENTRAL SCHOOL DISTRICT

NORTH MAIN ELEMENTARY SCHOOL – R23.15292.00

Allowance Disbursement No. _____ Initiation Date: _____

Contract For: _____

_____

To Contractor: _____

_____

Contract Date: _____

Not valid until signed by Owner, Architect/Engineer, [Construction Manager] and Contractor.

The Original Contract Allowance _____

Net Allowance Disbursements previously authorized _____

Charges to Contract Allowance as a result of this authorization

Current Contract Allowance Balance including this authorization _____

Owner: _____

Architect/Engineer: _____
(CPL)

Contractor:

THIS PAGE DELIBERATELY LEFT BLANK

SUBSTITUTION REQUEST FORM

MONROE-WOODBURY CENTRAL SCHOOL DISTRICT

NORTH MAIN ELEMENTARY SCHOOL – R23.15292.00

To:
CPL
26 IBM Road
Poughkeepsie, NY 12601

From:
(Contractor) _____

Re: _____ Substitution Request Number: _____

Contract For: _____

Specification Title: _____ Description: _____

Section Number: _____ Page: _____ Part/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Installer: Address: Phone:

History: ☐ New product ☐ 2-5 years old ☐ 5-10 yrs old ☐ More than 10 years old

Differences between proposed substitution and specified product: _____

☐ Point-by-point comparative data attached

Reason for not providing specified item: _____

Similar Installation:

Project: _____ Architect/Engineer: _____

Contractor: _____ Owner: _____

_____ Date Installed: _____

Proposed substitution affects other parts of Work:

☐ No

☐ Yes, explain _____

Savings to Owner for accepting substitution: _____ ($ _____)

Proposed substitution changes Contract Time: ☐ Yes; explain ☐ No ☐ Yes [Add] [Deduct] _____ days

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted By: _____

Signed By: _____

Firm: _____

Address _____

_____

_____

Phone: _____

Attachments: _____

_____

_____

REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01330.

☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01330.

☐ Substitution rejected - Use specified materials.

☐ Substitution Request received too late - Use specified materials.

Signed By: _____ Date: _____

Additional Comments: ☐ Contractor ☐ Subcontractor ☐ Supplier ☐ Manufacturer ☐ Architect/Engineer ☐ _____

_____

_____

_____

_____

SUBMITTAL COVER

(Attach to each submittal)

Submittal No. Contractor only

Contractor: _____

Address: _____

_____

_____

Phone / Fax: ( ) _____ ( ) _____

Architect Project Number: R23.15292.00

Contractors Number:

Project Name: Monroe-Woodbury CSD
North Main Elementary

Date returned: _____

TYPE OF SUBMITTAL
(Check one)

☐ Product Data ☐ Color Selection ☐ O&M Manual

☐ Shop Drawings ☐ Sample ☐ Record Document

☐ Other

SUBSTITUTION ☐ **YES** ☐ **NO**
See General Conditions

DATE OF SUBMITTAL: _____

RESUBMITTED: _____

NUMBER OF ATTACHED: _____

PRODUCT IDENTIFICATION

Specification Section No.: _____

Contract Dwg. No.: _____

Product Name: _____

Part/Paragraph: _____

Detail Reference: _____

Manufacturer: _____

CONTRACTOR APPROVAL

Identify that this submittal has been reviewed and approved by the Contractor in accordance with the General Conditions

By: _____ Date: _____

Deviation from Contract Documents:

Contractor Comments:

FOR USE BY CPL **SUBMITTAL**

☐ No Exception Taken ☐ Revise & Resubmit

☐ Furnish as Corrected ☐ Rejected

Corrections or comments made on the shop drawings during this review do not relieve the Contractor from compliance with the requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe satisfactory manner.

CPL

Date:_____ By: _____

Architect's Comments:

RECEIVED STAMP

INFORMATION BULLETIN

PROJECT: North Main Elementary School

INFORMATION BULLETIN NO.:

DATE:

OWNER: Monroe-Woodbury CSD

ARCHITECT'S PROJECT NO.: R23.15292.00

CONTRACTOR:

CONTRACT NO.:

CONTRACT DATE:

DESCRIPTION:

ATTACHMENT(S):

A C T I O N

☐ 1. *PROPOSAL REQUEST:* Submit an itemized quotation for changes in the Contract Sum and/or time required to implement the above proposed modifications to the Contract Documents. This is not authorization to proceed with the work.

☐ 2. *SUPPLEMENTAL INSTRUCTIONS:* Implement the above instructions without change to the Contract Sum and/or Time. Prior to proceeding, indicate acceptance below and return one copy to the Architect.

☐ 3. *CONSTRUCTION CHANGE DIRECTIVE:* Proceed with the above described changes to the Contract Documents immediately. Submit final costs and/or change in Contract Time for inclusion in a subsequent Change Order.

Methods: ☐Lump Sum ☐Unit Price ☐Time & Material Not-to-Exceed

Change in Contract Sum of _____

Change in Contract Time of _____ days

ISSUED:	ACCEPTED:	AUTHORIZED:
BY:_____	BY:_____	BY:_____
Architect Date	Owner Date	Contractor Date
Required for Actions 1,2,3	Required for Action 3	Required for Actions 2,3

☐ Owner ☐ Architect ☐ Structural ☐ Civil
☐ Contractor ☐ Field ☐ Mechanical/Electrical ☐ Other (Roofing)

THIS PAGE DELIBERATELY LEFT BLANK

ELECTRONIC DOCUMENT TRANSFER AGREEMENT

DATE:		**PROJECT #:**	R23.15292.00
PROJECT NAME	North Main Elementary School	**CLIENT / LOCATION**	
COMPANY REQUESTING AND RECEIVING FILES:		**PERSON REQUESTING:**	
DESCRIPTION OF FILES:		**REASON FOR FILES:**	

1. The requested electronic file(s) (the "Files") remain the property of and are owned by CPL.
2. The Files are not Contract Documents. The use of the Files to alter or revise the scope of work is not permitted.
3. CPL makes no warranties or guarantees that the Files represent or reflect the complete scope of work and/or as-built condition, and CPL assumes no responsibility for data files supplied in electronic format. Such data is provided as a courtesy only.
4. The Company requesting the Files and users of the Files accept full responsibility for verifying the accuracy and completeness of the Files.
5. Files in Revit/Building Information Model format: Unless express written consent of CPL is given through the implementation of a Project Building Information Modeling Protocol Form (AIA® Document G202™ or similar); the information contained within the Files was compiled for the purposes of creating the contract documents and are graphic representations of approximate locations of materials. Therefore, information contained within these files should not be assumed to be accurate and users of the Files accept full responsibility for verifying the accuracy and completeness of the Files with field conditions and the contract documents.
6. Shop drawings shall not be based on reproduction of the contract documents or standard printed data. This includes reproductions of the Files, unless express written consent is given of CPL through the implementation of a Project Building Information Modeling Protocol Form.
7. The Company requesting the Files agrees to defend, indemnify and hold harmless CPL, its officers, employees, consultants, and agents from any claims or damages arising from the use of the Files.
8. In the event that any of the Files contain electronic copies of drawings with permits or professional seals, the Company requesting the Files shall immediately notify CPL and destroy such Files.
9. No use shall be made of the Files for any purpose other than that for which they were originally intended without the express written consent of CPL.
10. No retransmission of the Files in any form to third parties is permitted unless authorized in writing by CPL.
11. The handling fee for the time and effort it will take CPL to deliver the requested Files is $150.00. Under no circumstances shall delivery of the Files be considered a sale by CPL.

Having read and understood the terms set forth in paragraphs 1-11 above, and in consideration of CPL providing electronic files, the undersigned agrees to be bound by these terms.

_____ _____

Signature of Authorized Representative Date

_____

Print Name and Title

The requested electronic files will only be released upon CPL's receipt of a signed Electronic Document Transfer Agreement by a duly authorized representative of the company requesting and receiving the files. CPL reserves the right to deny any request for copies of electronic files.

THIS PAGE DELIBERATELY LEFT BLANK

SECTION 007100
GENERAL CONDITIONS

PART 1 GENERAL

1.01 SUMMARY

A. The following are the "General Conditions of the Contract for Construction, Construction Manager – Advisor Edition". AIA Document A232-2019, is bound with this Section. AIA Document A232-2019 sets forth the rights, responsibilities, and relationships of the Owner, Contractor, Architect and Construction Manager.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 007100

This page intentionally left blank

SECTION 007343
WAGE RATE REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. Wage rates shall apply as shown in the Prevailing Wage Schedule prepared by the New York State Department of labor for this project (the Prevailing Wage Case Number (PRC#) assigned to this project is 2024015109. The Schedule can be viewed at the following website:

B. https://apps.labor.ny.gov/wpp/showFindProject.do?method=showIt

C. The Contractor shall be responsible for completing one copy of Notice of Contract Award (Form PW-16). Upon completion of the form, the Contractor shall submit the form to the Architect. Architect will forward a copy to the New York State Department of Labor.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 007343

This page intentionally left blank

SECTION 007349
LABOR STABILIZATION AGREEMENT

PART 1 GENERAL

1.01 SUMMARY

A. Attached is the Project Labor Agreement for this Project.

1.02 RELATED REQUIREMENTS

A. Section 011000 - MULTIPLE CONTRACT SUMMARY

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 007349

PROJECT LABOR AGREEMENT FOR MONROE-WOODBURY CENTRAL SCHOOL DISTRICT CAPITAL IMPROVEMENT PROJECT

By and between Monroe-Woodbury Central School District, The Palumbo Group and The Hudson Valley Building and Construction Trades Council.

PROJECT LABOR AGREEMENT

PREAMBLE

WHEREAS, MONROE WOODBURY CENTRAL SCHOOL DISTRICT desires to provide for the cost efficient, safe, quality, and timely completion of the MONROE WOODBURY CENTRAL SCHOOL DISTRICT CAPITAL IMPROVEMENT PROJECTS in a manner designed to afford the lowest reasonable costs to the MONROE WOODBURY CENTRAL SCHOOL DISTRICT, and the advancement of permissible statutory objectives;

WHEREAS, MONROE WOODBURY CENTRAL SCHOOL DISTRICT engaged Arace & Company, ("Arace") to undertake a study of which a copy is on file with MONROE WOODBURY CENTRAL SCHOOL DISTRICT of whether the use of a Project Labor Agreement will best serve MONROE WOODBURY CENTRAL SCHOOL DISTRICT interest in obtaining the best work at the lowest possible price, preventing favoritism, fraud and corruption, and other considerations such as the impact of delay, the possibility of cost saving advantages, and any local history of labor unrest; and

WHEREAS, the Arace's Project Labor Agreement Feasibility Study (the "Study") concluded that use of a Project Labor Agreement would provide MONROE WOODBURY CENTRAL SCHOOL DISTRICT with measurable economic benefits and would promote MONROE WOODBURY CENTRAL SCHOOL DISTRICT's interest in obtaining the best work at the lowest prices as well as preventing favoritism, fraud and corruption; and

WHEREAS, MONROE WOODBURY CENTRAL SCHOOL DISTRICT has carefully reviewed and considered the Study and determined, among other things, that MONROE WOODBURY CENTRAL SCHOOL DISTRICT's interest in obtaining the best work at the lowest possible price, preventing favoritism, fraud and corruption, preventing the impact of delay owing to labor unrest, obtaining cost savings advantages, and gaining measurable management flexibility and benefits are best met by requiring a Project Labor Agreement and, therefore, directs that a Project Labor Agreement be made part of the Project; and

WHEREAS, this Project Labor Agreement will foster the achievement of these goals, inter alia, by:

(1) expediting the construction process and otherwise minimizing the disruption to the project;

(2) avoiding the costly delays of potential strikes, slowdowns, and walkouts arising from work disputes and promoting labor harmony and peace for the duration of the project;

(3) standardizing the terms and conditions governing the employment of labor on the project;

(4) permitting flexibility in work scheduling where necessary at affordable pay rates;

(5) permitting adjustments to work rules and staffing requirements from those which otherwise might apply;

(6) providing comprehensive and standardized mechanisms for the settlement of work disputes, including those relating to jurisdiction;

(7) promoting work opportunities for those within the surrounding areas.

(8) ensuring a reliable source of skilled and experienced labor;

(9) promoting and creating work opportunities on this project for former and future MONROE WOODBURY CENTRAL SCHOOL DISTRICT graduates.

WHEREAS, MONROE WOODBURY CENTRAL SCHOOL DISTRICT, has, through independent investigation and analysis, determined the likelihood of substantial cost savings to the Project will result from the application of this Agreement; and

WHEREAS, the Hudson Valley Building & Construction Trades Council, and its affiliated Local Unions and their members, desire to provide for stability, security and work opportunities which are afforded by a Project Labor Agreement; and others; and

WHEREAS, the Parties desire to maximize project safety conditions for both workers and others;

NOW, THEREFORE, the Parties enter into this Agreement:

I. ARTICLE 1 - PARTIES TO THE AGREEMENT

SECTION 1.1 PARTIES TO THE AGREEMENT

This is a Project Labor Agreement ("Agreement") entered into for all Project construction, as defined herein, as part of the MONROE WOODBURY CENTRAL SCHOOL DISTRICT CAPITAL IMPROVEMENT PROJECTS (as defined below) between (1) MONROE WOODBURY CENTRAL SCHOOL DISTRICT (2) the Palumbo Group as Construction Managers (3) Hudson Valley Building and Construction Trades Council ("Council") on behalf of itself and its affiliated Local Unions ("Local Unions"); and the signatory Local Unions on behalf of themselves and their members.

II. ARTICLE 2 - GENERAL CONDITIONS SECTION

SECTION 2.1 DEFINITIONS

Throughout this Agreement:

(A) **"Contractor(s)"** means any contractor and subcontractors of whatever tier engaged in Project Work within the scope of this Agreement as defined in Article 3, subject to exclusions defined in Section 3.3; 20.3 and 20.4.

(B) **"Council"** means the Hudson Valley Building & Construction Trades Council, AFL-CIO.

(C) **"Local Union(s)"** means the Local Unions signatory to this Agreement, individually and collectively.

(D) **"Owner"** means MONROE WOODBURY CENTRAL SCHOOL DISTRICT.

(E) **"Owner's Representative"** means any Construction Manager or other individual or entity designated by the Owner to enter into this Agreement or otherwise act on its behalf.

(F) **"The Project"** means the work to be performed in connection with all construction associated with the MONROE WOODBURY CENTRAL SCHOOL DISTRICT CAPITAL IMPROVEMENT PROJECTS as more fully set forth in Article 3, Section 3.1, subject to exclusions defined in Sections 3.3, 20.3 and 20.4.

(G) **"Project Work"** means the work covered by this Agreement and fully defined in Article 3, Section 3.1, subject to exclusions defined in Section 3.3; 20.3 and 20.4.

(H) **"Schedule A"** means and refers to collective bargaining agreements of affiliated Local Unions.

(I) **"Union Parties"** and **"Unions"** means the Hudson Valley Building & Construction Trades Council, AFL-CIO and the signatory Local Unions to this Agreement, individually and collectively.

SECTION 2.2 CONDITIONS FOR AGREEMENT TO BECOME EFFECTIVE

This Agreement shall not become effective unless each of the following conditions are met: (1) the Agreement is signed by the Council and the Local Unions having jurisdiction over the Project Work; (2) the Agreement is approved by the NYS Building & Construction Trades Council (NYSBCTC); (3) the Agreement is approved by the NABTU; (4) the Agreement is authorized by the Owner and signed by the Owner or the Construction Manager (CM).

SECTION 2.3 ENTITIES BOUND & ADMINISTRATION OF AGREEMENT

This Agreement shall be binding on all signatory Unions and their affiliates and all Contractors performing Project Work as defined in Article 3, subject to exceptions in Sections 3.3, 20.3 and 20.4. The Contractors shall include in any subcontract that they let for performance during the term of this Agreement a requirement that their Subcontractors, of whatever tier, become bound by this Agreement with respect to that subcontracted Project Work performed within the scope of Article 3, and require that each Subcontractor, of whatever tier, sign a Letter of Assent (Schedule B). This Agreement shall be administered by the Designee named by the Owner pursuant to Schedule C.

SECTION 2.4 SUPREMACY CLAUSE

This Agreement, together with the local Collective Bargaining Agreements appended hereto and referred to herein as "Schedule A" represents the complete understanding with respect to the Project and supersedes any national agreement, local agreement, or other collective bargaining agreement of any type which would otherwise apply to Project Work, in whole or in part except that, to the NTL Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, the UA/IBEW Joint National Agreement for Instrument and Control Systems Technicians, and the National Agreement of the International Union of Elevator Constructors (the "National Agreements"), those National Agreements shall apply, except that when Contractor is also a signatory to an agreement listed in Schedule A hereof, Articles 7, 9, and 10 of this Agreement shall prevail over the applicable National Agreement and any Schedule A agreement . Where a subject covered by the provisions of this Agreement is also covered by a Schedule A agreement, the provisions of this Agreement shall prevail. If this Agreement is silent on any matter addressed in the applicable Schedule A agreement, the Schedule A agreement shall govern. It is understood that by virtue of having become bound by this Project Labor Agreement, the Contractors will not be obligated to sign any other local, area, or national agreement.

SECTION 2.5 LIABILITY

The liability of any Contractor and the liability of any Union under this Agreement shall be several and not joint. The Contractors, and Subcontractors shall not be liable for any violations of this Agreement by any other Contractor or Subcontractor; and the Council and Local Unions shall not be liable for any violations of this Agreement by any other Union. Notwithstanding the above, every signatory to the Agreement further acknowledges that it will be liable for its own breach, partial breach or otherwise, whether related or not to the breach of another signatory.

SECTION 2.6 THE BID SPECIFICATIONS

The Owner shall require in its bid specifications for all Project Work within the scope of Article 3 that all successful bidders and their Subcontractors of whatever tier (unless otherwise excepted under this Agreement) become bound by this Agreement. Every Contractor shall require its Subcontractors, of whatever tier, to execute the Letter of Assent in Schedule B and to become bound by this Agreement.

SECTION 2.7 AVAILABILITY AND APPLICABILITY TO ALL SUCCESSFUL BIDDERS

This Agreement shall be binding on all signatory Unions and their affiliates, and all Contractors, Unions and/or non-Unions performing Project Work, unless otherwise excepted under this Agreement. Unless expressly provided for in this Agreement, this Agreement shall not apply to the work of any Contractor which is performed at any location other than the site of Project Work.

III. III. ARTICLE 3 - SCOPE OF THE AGREEMENT

SECTION 3.1 PROJECT WORK

This Agreement shall only apply to Project Work expressly designated by Owner in its bid specifications as work performed pursuant to the MONROE WOODBURY CENTRAL SCHOOL DISTRICT CAPITAL IMPROVEMENT PROJECTS in various locations as defined below in this Article. Covered Program Work will be designated in bid specifications as "Monroe Woodbury School District Capital Improvement Projects Work."

Without restricting the Owner's right to designate, or not designate, work as Monroe Woodbury School District Capital Improvement Projects Work, the parties understand that generally included within covered Project Work will be, unless otherwise excepted under Sections 3.3, 20.3 or 20.4, all sitework, utilities, demolition, environmental work, MEP's and all construction performed on-site (the site of each component will be as defined by the limits of work contained in the bid specifications for that component), at the following locations:

CENTRAL VALLEY ELEMENTARY SCHOOL

- **This project is a renovation building wide. Scope includes roof replacement, exterior façade repairs, interior ceiling replacement, lighting and fire alarm upgrades, replacement of public address system and classroom clocks, electrical panel and switchgear replacement. Install new full-building chiller and cooling system along with replacing the steam boiler, UVs and other misc. mechanical equipment. Hazardous material removal associated with installation of the above systems**

- **Installation of new athletic lighting at the softball field and replacement of the tennis court**

HIGH SCHOOL

- **This project is the replacement of the building fire alarm system along with the public address and classroom clock systems**

- **Installation of new concession building with public restroom facilities**

MIDDLE SCHOOL

- **This project is the replacement of the roof and roof and the building fire alarm system.**

- **Several tech classrooms will be renovated, and the main building switchgear will be replaced.**

NORTH MAIN ELEMENTARY SCHOOL

- **This project is a renovation building wide. Scope includes roof replacement and subsequent site work to support drainage, exterior façade repairs, interior ceiling replacement, lighting and fire alarm upgrades, replacement of public address system and classroom clocks, electrical panel and switchgear replacement.**

- **Install new full building chiller and cooling system along with replacing the steam boiler, UVs and other misc. mechanical equipment.**

- **Hallways will receive new walls and classroom doors. Hazardous material removal associated with installation of the above systems**

PINE TREE ELEMENTARY SCHOOL

- **This project is a renovation building wide. Scope includes roof replacement, exterior façade repairs, interior ceiling replacement, lighting and fire alarm upgrades, replacement of electrical panel and switchgear replacement.**

- **Install new full building chiller and cooling system along with replacing the steam boiler, UVs and other misc. mechanical equipment.**

- **Hazardous material removal associated with installation of the above systems**

SAPPHIRE ELEMENTARY SCHOOL

- **This project is the replacement of the building fire alarm system and main building electrical panel replacement**

SMITH CLOVE ELEMENTARY SCHOOL

- **This project is the replacement of the building fire alarm system and main building switchgear replacement**

To the extent there is any conflict between the above general description and the Owner's express designation of work (or the absence of any designation) in its bid specifications as "Monroe Woodbury School District Capital Improvement Projects Work," the Owner's express designation (or absence of designation) shall be controlling and determinative of whether work is Project Work within the Scope of this Agreement. Work not receiving the Owner's designation as Monroe Woodbury School District Capital Improvement Projects Work in its bid specification is not covered Project Work under this Agreement.

SECTION 3.2 TIME LIMITATIONS

A. To be covered by this Agreement, Project Work must be awarded after the effective date of this Agreement.

B. This Agreement shall expire upon completion and acceptance of Project Work by the Owner. Except as may be provided in this Agreement or any addendum to this Agreement, any phase, portion, section, system or segment of Project Work shall be deemed complete when such phase, portion, section, system or segment has been turned over to Owner by Contractors and such phase, portion, section, system or segment has been accepted as established by a letter of acceptance from Owner for the beneficial use of that phase, portion, section, system or segment. As phases, portions, sections, systems, or segments of the Project are inspected, tested, and accepted by Owner, the Agreement shall have no further force or effect on such items,

systems, or areas, except when the Contractor is directed to engage in repairs or modifications required by the Contractor's contract with Owner for the Project Work.

C. This Agreement may be extended by written mutual agreement of the parties.

SECTION 3.3 EXCLUDED EMPLOYEES

Notwithstanding the provisions of Section 3.1 of this Article, the following person/entities are not subject to the provisions of this Agreement even though performing work on or in connection with the Project:

A. Superintendents, supervisors (excluding general and forepersons specifically covered by a craft's Schedule A), engineers, inspectors and testers, quality control/assurance personnel, timekeepers, mail carriers, clerks, office workers, messengers,, guards employed by Owner, technicians, non-manual employees, and all professional, engineering (except field surveyors), administrative and management persons;

B. Employees of the Project Owner;

C. Employees and entities engaged in off-site manufacture, modifications, repairs, maintenance, or painting, handling or fabrication of project components, materials, equipment, or machinery except for any local deliveries of materials such as fill, construction debris removal, ready mix, asphalt, concrete and other aggregates which shall be covered under this Agreement.

D. Employees of the Construction Manager, except that performing manual, onsite construction labor who will be covered by this Agreement.

E. Employees engaged in onsite equipment warranty work;

F. Employees engaged in geophysical testing (whether land or water) other than boring for core samples;

G. Employees engaged in laboratory or specialty testing or inspections, unless ordinarily done by a member of a Trade Union;

H. Employees engaged in ancillary Project Work performed by third parties such as electric utilities, gas utilities, telephone companies, and railroads. Utility work provided by gas, electric, and cable companies, which is not performed by utility company employees, shall be subject to the terms of this Agreement.

IV. ARTICLE 4 - UNION RECOGNITION AND EMPLOYMENT

SECTION 4.1 PRE-HIRE RECOGNITION

The Contractors recognize the signatory Unions as the sole and exclusive bargaining representatives of all craft employees who are performing Project Work within the scope of Article 3 of this Agreement.

SECTION 4.2 UNION REFERRAL

A. The Contractors agree to hire craft employees for Project Work covered by this Agreement through the job referral systems and hiring halls established in the Local Unions' area collective bargaining agreements (attached as Schedule A to this Agreement), where those referrals meet the qualifications set forth in items 1, 2, and 4 of subparagraph B. The Unions agree to provide such craft employees (including apprentices) to all Contractors on a non-discriminatory basis. Notwithstanding this, Contractors shall have sole right to determine the competency of all referrals; the number of employees required; and the selection of employees for layoff (subject to Article 5, Section 5.3). In the event that a Local Union is unable to fill any request for qualified employees within a 48-hour period after such requisition is made by a Contractor (Saturdays, Sundays and holidays excepted), a Contractor may employ qualified applicants from any other available source. In the event that the Local Union does not have a job referral system, the Contractor shall give the Local Union first preference to refer applicants, subject to the other provisions of this Article. The Contractor shall notify the Local Union of craft employees hired for Project Work within its jurisdiction from any source other than referral by the Union. The Local Unions will cooperate with Contractor requests for minority, women, or economically disadvantaged referrals to meet the goals of Article 4, Section 4.4. These workers may be delivered under a "Direct Entry" designation or by use of a Department of Labor waiver.

B. A Contractor may request by name, and the Local Union will honor, referral of persons who have applied to the Local Union for Project Work and who meet the following qualifications:

(1) Possess any license required by New York State law for the Project Work to be performed;

(2) Have worked a total of at least 1000 hours in the construction craft during the prior two years, and

(3) Were on the Contractor's active payroll for at least 60 out of the 180 calendar days prior to the contract award.

(4) Have the ability to safely perform the basic functions of the applicable trade.

(5) Have not committed a felony or misdemeanor, or other violation that would render such person unfit to work on County property.

C. No more than twelve and a half (12.5%) per centum of the employees covered by this Agreement, per Contractor by craft, shall be hired through the provisions of

Paragraph B of this section (any fraction shall be rounded to the next highest whole number). Craft forepersons and/or general forepersons shall be included in these twelve and a half (12.5%) percent. If requested by the appropriate Union, a Contractor utilizing this provision for by- name referrals shall furnish the Union with a written certification that the individuals requested for referral meet the requirements of (1) - (5) above.

D. The Local Unions shall exert their utmost efforts to recruit sufficient numbers of skilled craft workers to fulfill the manpower requirements of the Contractor. When a Contractor of any tier is contracted to perform Project Work and such Contractor is not signatory to a Schedule A agreement (not including signatory through this Agreement) and the Union cannot provide ample labor to support the construction schedule or project, then the Contractor shall hire outside the Union hiring halls and the Contractor shall, at their discretion, replace the non-Union or non-dispatched employee when notified by the Union that labor has become available through the Union. The Contractor shall use other employees affiliated with the Council before hiring except, where specifically addressed in this Agreement if those employees from the other Unions have the required trade skills to perform the Project Work. Those hired through this provision shall be laid off before those of an affiliated Union.

E. Notwithstanding the foregoing, MONROE WOODBURY CENTRAL SCHOOL DISTRICT or a representative of, shall have the sole discretion to request that a person be removed from working on this Project.

SECTION 4.3 NON-DISCRIMINATION IN REFERRALS

A. The Local Unions represent that their hiring halls and referral systems shall be operated in a non-discriminatory manner and in full compliance with all applicable federal, state and local laws and regulations which require equal employment opportunities. Referrals shall not be affected in any way by the rules, regulations, bylaws, constitutional provisions or any other aspects or obligations of Union membership, policies, or requirements and shall be subject to such other conditions as are established in this Article. No employment applicant shall be discriminated against by any referral system or hiring hall because of the applicant's Union membership, or lack thereof.

SECTION 4.4 WORKFORCE DIVERSITY UTILIZATION

The Unions recognize and acknowledge that workforce diversity of minorities and women are employment goals consistent with our values of fair play. The Local Unions agree and will strive to utilize their best efforts to provide qualified minority and female applicants.

SECTION 4.5 CROSS AND QUALIFIED REFERRALS

The Local Unions shall not knowingly refer to a Contractor an employee then employed by another Contractor working under this Agreement. The Local Unions shall exert their utmost

efforts to recruit sufficient numbers of skilled and qualified crafts employees to fulfill the requirements of each Contractor.

SECTION 4.6 UNION DUES

Nothing in this Agreement requires employees to join a Union or pay dues or fees to a Union as a condition of working on the Project. This Agreement is not, however, intended to supersede independent requirements in applicable Local Union Agreements as to Contractors that are otherwise signatory to those Agreements in relation to employees of such Contractors performing Project Work.

V. ARTICLE 5 - UNION REPRESENTATION

SECTION 5.1 LOCAL UNION REPRESENTATIVE

Each Local Union signatory to this Agreement shall be entitled to designate a representative and/or Business Manager who shall be afforded access to the Project site only during times when Project Work is being conducted.

SECTION 5.2 STEWARDS

A. Each Local Union shall have the right to designate from among those referred to the Project a working journey person as a Steward or Lead Engineer and one alternate per shift, and shall notify the Construction Manager of the identity of the designated Steward or Lead Engineer (and alternate) prior to the assumption of such duties. Stewards or Lead Engineer shall not exercise supervisory functions and shall receive the rate of pay for their craft classifications. There will be no nonworking Stewards or Lead Engineer on the Project.

B. In addition to his/her work as an employee, the Steward or Lead Engineer shall have the right to receive complaints or grievances and to discuss and assist in their adjustment with the Contractor's appropriate supervisor; such activities, however, are not to interfere with the Steward's work unless an emergency situation exists. Each Steward or Lead Engineer shall be concerned with the employees of the Steward's Contractor and, if applicable, Subcontractors of that Contractor, but not with the employees of any other Contractor. The Contractor will not discriminate against the Steward or Lead Engineer in the proper performance of Union duties.

C. Requirements for stewards or lead engineer shall be as per the applicable Schedule A agreement.

D. Where multiple projects or more than one general contractor is performing work at the same time, the construction manager may employ the laborer steward or another craft steward.

SECTION 5.3 LAYOFF OF A STEWARD

Contractors agree to notify the appropriate Union 24 hours prior to the layoff of a Steward or Lead Engineer, except in cases of discipline or discharge for just cause. If a Steward is protected against layoff by a Schedule A agreement, such provisions shall be recognized to the extent the Steward or Lead Engineer possesses the necessary qualifications to perform the Project Work required. In any case in which a Steward or Lead Engineer is discharged or disciplined for just cause, the Local Union involved shall be notified immediately by the Contractor.

SECTION 5.4 UNION STANDARDS

A. The Council and its affiliates have a legitimate interest in preventing the undermining of the work opportunities and standards gained through collective bargaining and desire to preserve and protect work opportunities for its members.

B. MONROE WOODBURY CENTRAL SCHOOL DISTRICT , while recognizing this interest, must maintain its ability to utilize the services of off-site fabricators and those entities involved in deliveries of construction materials, except those materials included m Section 3.3, when not covered under New York State Labor Law 220.

C. While the scope of the Agreement is limited to Project Work as defined and subject to exceptions herein, Contractors should, whenever economically feasible, make reasonable efforts to use Union signatory vendors, which includes, but not limited to, UA Yellow Label and SMW Blue Label products for off-site assemblies or fabrications.

D. This Section does not refer to construction material normally purchased pre-assembled or manufactured, it references Project Work normally and historically done on-site or in Local Union fabrications shops.

E. If any dispute should arise with respect to this Section, the Contractors agree to install any off-site assemblies or fabricated items regardless of the source. The parties shall endeavor to settle such dispute in the Labor Management forum or appropriate sub-committee before a grievance is filed under Article 9.

VI. ARTICLE 6 - MANAGEMENT RIGHTS

SECTION 6.1 RESERVATION OF RIGHTS

Except as expressly limited by a specific provision of this Agreement, Contractors retain full and exclusive authority for the management of their operations including, but not limited to: the right to direct the Project Work force, including determination as to the number to be hired and the qualifications therefore; the promotion, transfer, layoff of its employees; or the discipline or discharge for just cause of its employees; the assignment and schedule of Project Work; the promulgation of reasonable Project Work rules; require compliance with the directives of the MONROE WOODBURY CENTRAL SCHOOL DISTRICT and Polumbo Group including standard restrictions related to security and access to the site that are equally applicable to MONROE WOODBURY CENTRAL SCHOOL DISTRICT employees, guests, or vendors and the requirement, timing and number of employees to be utilized for overtime Project Work.

Nothing contained herein shall be construed so as to allow direction of an Employee to perform Project Work outside the jurisdiction of that Employee's Labor Union affiliation, if any. No rules, customs, or practices which limit or restrict productivity or efficiency of the individual (as determined by the Contractor) and/or joint working efforts with other employees shall be permitted or observed.

SECTION 6.2 MATERIALS, METHODS & EQUIPMENT

A. There shall be no limitation or restriction upon the Owner's choice of materials, techniques, methods, technology or design, or, regardless of source or location, upon the use and installation of equipment, machinery, package units, pre-cast, prefabricated, pre-finished, or pre-assembled materials, tools, or other labor-saving devices. Contractors may, without restriction, install or use materials, supplies or equipment regardless of their source. The on-site installation or application of such items shall be performed by the craft having jurisdiction over such Project Work pursuant to an applicable collective bargaining agreement; provided, however, it is recognized that other personnel having special qualifications may participate, in a supervisory capacity, in the installation, check-off or testing of specialized or unusual equipment or facilities as designated by the Contractor.

VII. ARTICLE 7 - WORK STOPPAGES AND LOCKOUTS SECTION

SECTION 7.1 NO STRIKES-NO LOCK OUT

There shall be no strikes, sympathy strikes, picketing, work stoppages, slowdowns, demonstrations, or other disruptive activity on Project Work site for any reason by any signatory to this Agreement. There shall be no Union or concerted or employee activity which disrupts or interferes with the Project Work. In addition, failure of any Union or employee to cross any picket line established by any Union, signatory or non-signatory to this Agreement, or the picket or demonstration line of any other organization, at or in proximity to a Project Work site where the failure to cross disrupts or interferes with the operation of Project Work is a violation of this Article. Should any employee breach this provision, the Local Unions will use their best efforts to immediately end the breach and return all employees to work. There shall be no lockout by any signatory to this Agreement.

SECTION 7.2 DISCHARGE FOR VIOLATION

A Contractor may discharge any employee violating Section 7.1, above, and any such employee will not be eligible thereafter for referral under this Agreement for a period of 100 working days.

SECTION 7.3 NOTIFICATION

If a Contractor contends that any Union has violated this Article, it shall notify the Council of such fact, with copies of the notification to the Local Union involved. The Council and Local Union shall instruct, order, and otherwise use their best efforts to cause the employee(s) to immediately cease and desist from any violation of this Article. The Council shall

not be liable for the unauthorized acts of a Local Union or its members. Similarly, a Local Union and its members shall not be liable for any unauthorized acts of its members, the Council, or another Local Union.

SECTION 7.4 EXPEDITED ARBITRATION

Any Contractor or Union alleging a violation of Section 7.1 of this Article or Section 8.3(D)(2) of Article 8 may utilize the expedited procedure set forth below (in lieu of, or in addition to, any actions at law or equity) that may be brought.

A. A party invoking this procedure shall notify J. Selchick, M. Scheinman and J. Pierson, who shall alternate as Arbitrator under this expedited arbitration procedure. If the Arbitrator next on the list is not available to hear the matter within 24 hours of notice, the next Arbitrator on the list shall be called. Copies of such notification will be simultaneously sent to all parties (the alleged violator, the Council, the Local Union, the Contractor, and the Owner).

B. The Arbitrator shall hold a hearing within 48 hours of receiving the notice invoking the procedure if it is contended that the violation still exists. The Arbitrator shall provide at least 24 hours' notice (excluding Sundays and holidays) to all parties as to time and place of the hearing.

C. All notices pursuant to this Article must be delivered to all parties (Local Union, Council, Contractor, alleged violator, and Owner) and may be provided by telephone, telegraph, hand delivery, fax, email, or confirmed overnight delivery. The hearing may be held on any day including Saturdays or Sundays. The hearing shall be completed in one session which shall not exceed 8 hours duration (no more than 4 hours being allowed to either side to present their case and conduct their cross examination) unless otherwise agreed. A failure of any party to attend the hearing shall not delay the hearing of evidence by those present or the issuance of an award by the Arbitrator.

D. (i) Section 7.1 hearings:

The sole issue at the hearing shall be whether a violation of Section 7.1 occurred. If a violation is found to have occurred, the Arbitrator shall issue a Cease-and-Desist Award restraining such violation and serve copies on all parties. The Arbitrator shall have no authority to consider any matter in justification, explanation or mitigation of such violation or to award damages (any damages issue is reserved solely for court proceedings, if any). The Award shall be issued in writing within 3 hours after the close of the hearing, and may be issued without an Opinion. If any involved party desires an Opinion, one shall be issued within 15 calendar days, but its issuance shall not delay compliance with, or enforcement of, the Award.

(ii) Section 8.3(D)(2) hearings:

The sole issue at the hearing shall be whether a violation of Section 8.3(D)(ii) occurred. If a violation is found to have occurred, it shall be prima facie evidence of intentional mis-assignment, and the Arbitrator shall issue an immediate stop-work order with respect to the Project Work involved and reassign the Project Work as necessary. The Arbitrator is also authorized to (a) award damages or back pay in order to make the aggrieved trade whole, and (b) remove the offending Contractor from the job in egregious situations.

E. An Award issued under this procedure may be enforced by any court of competent jurisdiction upon the filing of this Agreement together with the Award. Notice of the filing of such enforcement proceedings shall be given to all parties. In any court proceeding to obtain a temporary or preliminary order enforcing the Arbitrator's Award as issued under this expedited procedure, the involved Union and Contractor waive their right to a hearing and agree that such proceeding may be commenced by order to show cause. Such agreement does not waive any party's right to participate in a hearing for a final court order of enforcement or in any contempt proceeding.

F. Any rights created by statute or law governing arbitration proceedings which are inconsistent with the procedure set forth in this Article, or which interfere with compliance thereto, are hereby waived by the Contractors and Unions to whom they accrue.

G. The fees and expenses of the Arbitrator shall be equally divided between the involved Contractor and Union.

SECTION 7.5 ARBITRATION OF DISCHARGES FOR VIOLATION

Procedures contained in Article 9 shall not be applicable to any alleged violation of this Article, with the single exception that an employee discharged for violation of Section 7.1, above, may have recourse to the procedures of Article 9 to determine only if the employee did, in fact, violate the provisions of Section 7.1 of this Article; but not for the purpose of modifying the discipline imposed where a violation is found to have occurred.

VIII. ARTICLE 8 - LABOR MANAGEMENT COMMITTEE

SECTION 8.1 SUBJECTS

The Project Labor Management Committee ("Committee") will meet as established by the Committee to: 1) promote harmonious relations among the Contractors and Unions; 2) enhance safety awareness, cost effectiveness and productivity of construction operations; 3) protect the public interest; 4) discuss matters relating to staffing and scheduling with safety and productivity as considerations; 5) review Affirmative Action and equal employment opportunity matters pertaining to the Project, if any and increase work opportunity within the County for County residents, and former or future MONROE WOODBURY CENTRAL SCHOOL DISTRICT graduates.

SECTION 8.2 COMPOSITION

The Committee shall be jointly chaired by a designee of the Owner and the Council. It may include representatives of the Local Unions and Contractors involved in the issues being discussed. The Committee may conduct business through mutually agreed upon sub-committees.

SECTION 8.3 PRE-JOB CONFERENCE

A. So that the start and continuation of Project Work may progress without interruption, the Committee shall require each Contractor and Subcontractor of whatever tier to conduct a pre-job conference with the Council prior to commencing work. The Construction Manager or General Contractor shall be advised in advance of such conferences and may participate if they wish. This pre-job conference with the Council is in addition to any pre-job/pre-construction conferences required by the Project Contract Documents.

B. The purpose of the pre-job conference with the Council shall be for the parties to gain an understanding of each Contractor's proposed work assignments, the standard work day and work week, the number of employees to be employed, the method of referral, the applicable wage rates and fringe benefit contributions and any other matters in accordance with this Agreement.

C. Proposed Trade Assignments. In conjunction with the pre-job conference with the Council required by this Section, each Contractor shall fill out the attached Schedule E- Proposed Trade Assignments identifying all Subcontractors and indicating what trades will be used to perform the Project Work. This form shall be submitted to the Council at least fourteen (14) days in advance of the commencement of Project Work. If any Local Union(s) objects to or disagrees with the Proposed Trade Assignment of either the Contractor or Subcontractor, the Local Union will state its objection within three (3) days of the submission of the Proposed Trade Assignments and there shall be a good faith discussion among the Contractor or Subcontractor and the objecting Local Union and other affected Unions to resolve the matter. If no resolution is reached, any involved Local Union may submit their objection position in writing, together with support documentation, within seven (7) calendar days of the submission of the Proposed Trade Assignments to the Contractor or Subcontractor with a copy to all affected Local Unions. Failure of any objecting Local Union and/or other affected Unions to timely object or submit such objection positions in writing waives any objection to the Proposed Trade Assignments. The Contractor or Subcontractor will review all submitted supporting documentation regarding the Proposed Trade Assignments and will submit to the Construction Manager, the Council, and all affected Local Unions a "Final Trade Assignment" letter within fourteen (14) days calendar days of the pre-job meeting at which the Proposed Trade Assignments were made.

D. Disputes and Violations.

(1) Unresolved disputes concerning trade assignments shall be handled in accordance with Section 10.1, 10.2, and 10.3 of Article 10 in accordance with the National Plan for Settlement of Jurisdictional Dispute in the Construction

Industry established by the Building and Construction Trades Department, incorporated by reference in Schedule D, provided however, that disputes concerning intra-trade assignments (assignments between trades within the same International Union) will be determined by the applicable International Union.

(2) Contractor's failure to conduct a pre-job conference with the Council, failure to include all required parties in a pre-job conference with the Council, or failure to adhere to agreed-upon Schedule E trade assignments is a violation of this Agreement and prima facie evidence of intentional mis-assignment. Alleged violations of this provision shall be considered a lock-out and subject to the expedited arbitration procedures of Article 7, Section 7.4.

(3) All remaining unresolved issues shall be subject to the provisions of Article 9.

IX. ARTICLE 9 - GRIEVANCE & ARBITRATION PROCEDURE

SECTION 9.1 CLOSE COOPERATION

The Contractors, Unions, and employees, collectively and individually, realize the importance to all parties to maintain continuous and uninterrupted performance of Project Work and agree to resolve disputes in accordance with the grievance-arbitration provisions set forth in this Article.

SECTION 9.2 PROCEDURE

Any question, dispute or claim arising during the term of this Agreement involving the interpretation or application of this Agreement (other than jurisdictional disputes and alleged violations of Section 7.1, and Section 8.3(D)(2)), shall be considered a grievance and shall be resolved pursuant to the following procedure.

Step 1:

A. When any employee covered by this Agreement feels aggrieved by a claimed violation of this Agreement, the employee shall give notice of the claimed violation to the Local Union representative or job steward, who shall notify the Project Work site representative of the involved Contractor and the Construction Manager. To be timely, such notice must be in writing given within 7 calendar days after the act, occurrence or event giving rise to the grievance. Strict compliance with this 7-day notice is a condition precedent to proceeding with such grievance. The Local Union representative or the job steward shall meet with the Project Work site representative of the involved Contractor and the Construction Manager and endeavor to adjust the matter within 7 calendar days after timely notice has been given. The representative of the involved Contractor shall keep the minutes of the meeting and shall respond to the Union representative in writing, with copy to the Construction Manager, within twenty-four (24) hours after the conclusion of the meeting. If they fail to resolve the matter within the prescribed period, the grieving party, may, within 7 calendar

days thereafter, pursue Step 2 of the grievance procedure by serving the involved Contractor with written copies of the grievance setting forth a description of the claimed violation, the date on which the grievance occurred, and the provisions of the Agreement alleged to have been violated. Grievances and disputes settled at Step 1 are non-precedential except as to the specific Local Union, employee and Contractor directly involved, unless the settlement is accepted in writing by the Labor-Management Committee as creating a precedent with respect to Project Work.

B. Should any signatory to this Agreement have a dispute, excepting jurisdictional disputes and alleged violations of Section 7.1 or Section 8.3(D)(i) or (ii) with any other signatory to this Agreement and, if after conferring, a settlement is not reached within 7 calendar days, the dispute may be reduced to writing and the grieving party may proceed to Step 2 in the same manner as outlined in subparagraph (a) for the adjustment of employee grievances.

Step 2:

Upon timely receiving a written grievance, the involved Contractor shall notify and schedule a meeting with the Business Manager of the involved Local Union, the Council, and the Construction Manager, and their respective representatives, for the purpose of arriving at a satisfactory settlement. Such meeting shall be held within 7 calendar days of the involved Contractor's receipt of the written grievance. Meeting minutes shall be kept by the Contractor with copies to the parties within twenty-four (24) hours.

Step 3:

A. If the grievance shall have been submitted but not resolved in Step 2, any of the participating Step 2 entities may, within 21 calendar days after the initial Step 2 meeting, submit the grievance in writing (copies to other participants, including the Construction Manager) along with copies of the minutes from Step 1 and Step 2, to the acting Arbitrator under this procedure alternating between J. Selchick, M. Scheinman and J. Pierson. The Labor Arbitration Rules of the American Arbitration Association shall govern the conduct of the arbitration hearing, at which all Step 2 participants shall be parties. The decision of the Arbitrator shall be final and binding on the involved Contractor, Local Union, and employees, and the fees and expenses of such arbitrations shall be borne equally by the involved Contractor and Local Union.

B. Failure of the grieving party to adhere to the time limits set forth in this Article shall render the grievance null and void. These time limits may be extended only by written consent of the Construction Manager, the involved Contractor, and the involved Local Union at the particular step where the extension is agreed upon. The Arbitrator shall have authority to make decisions only on the issues presented to him and shall not have the authority to change, add to, delete or modify any provision of this Agreement.

X. ARTICLE 10 - JURISDICTIONAL DISPUTES

SECTION 10.1 ASSIGNMENT

The assignment of Project Work shall be solely the responsibility of the Contractor performing the Project Work involved, subject to the pre-job conference with the Council and the procedures set forth in Section 8.3(C), and such Project Work assignments shall be in accordance with the National Plan for the Settlement of Jurisdictional Disputes in the Construction Industry ("National Plan"), incorporated by reference into Schedule D, or any successor Plan approved by the Building & Construction Trades Department, AFL-CIO

SECTION 10.2 PROCEDURE FOR SETTLEMENT OF JURISDICTIONAL DISPUTES

All jurisdictional disputes involving Project Work shall be settled according to the National Plan, provided however, that disputes concerning intra-trade assignments (assignments between trades within the same International Union) will be determined by the applicable International Union.

SECTION 10.3 NO DISRUPTIONS

There will be no strikes, work stoppages, or slowdowns, arising out of any jurisdictional dispute. Pending the resolution of the dispute, the Project Work shall continue uninterrupted and as assigned by each Contractor. No jurisdictional dispute shall excuse a violation of Article 7.

SECTION 10.4 AWARD

Any jurisdictional award pursuant to this Article shall be final and binding on the disputing Unions and the involved Contractor on this Project only and may be enforced in any court of competent jurisdiction. Such award or resolution shall not establish a precedent on any other construction work not covered by this Agreement.

SECTION 10.5. LIMITATIONS

Awards made under this Article shall determine only to whom the disputed Project Work belongs. The deciding person or group hereunder shall have no authority to (a) assign Project Work to a double crew, that is, to more employees than the minimum required by the Contractor to perform the Project Work involved; (b) assign work to employees who are not qualified to perform the work involved; or (c) assign Project Work being performed by non-Union employees to Union employees. This provision does not prohibit the establishment, with the agreement of the involved Contractor, of composite crews where more than one (1) employee is needed for the job.

XI. XI. ARTICLE 11 - WAGES AND BENEFITS

SECTION 11.1 CLASSIFICATION AND HOURLY RATE

All employees covered by this Agreement shall be classified in accordance with the work performed and paid the wage rates applicable for those classifications as required by New York

State Labor Law Section 220 ("Section 220"). The term "straight time" in this Agreement shall mean the hourly wage rate applicable for those classifications as required by the applicable Section 220 prevailing wage determination.

SECTION 11.2 EMPLOYEE BENEFITS

A. Unless expressly provided differently in this Agreement, Contractors agree to pay employee benefits/supplements on behalf of all of their employees covered by this Agreement in the amounts required by the applicable Section 220 schedule in effect. Except as provided herein, the Contractors agree that such payments shall be made to those established jointly trusteed employee benefit funds designated in the applicable Schedule A agreement, and in the amounts so designated, to the extent such payments are required by and satisfy the Section 220 obligation. Bona fide jointly trusteed fringe benefit plans established or negotiated through collective bargaining during the life of this Agreement may be added if they similarly fall within Section 220. Contractors not otherwise contractually bound to do so, shall not be required to contribute to non-Section 220 benefits, trusts or plans; however, this provision does not relieve Contractors which are signatory to local collective bargaining agreements with any Local Union from complying with the benefit requirements for all funds contained in those collective bargaining agreements.

B. Notwithstanding Section 1 1.2(A):

(1) Contractors who designate employees pursuant to Article 4 may satisfy the above benefits obligation with respect to those employees by: (1) providing those employees with coverage under their private benefit plans for health, welfare, pension, annuity and 401(k); or (2) paying the full amount of such benefit to the employee in employees' wages. The total benefit payments to be made on behalf of each such employee must equal the total Section 220 benefit/supplement amount. If the Contractor's contribution into the private benefit plan for the above funds is less than the amount required by Section 220, the difference must be paid to the employee in cash. Payments of other benefits covered under Section 220 shall be paid to the respective Unions on behalf of each employee.

(2) This same option shall apply with respect to any other employee who is referred to the Contractor through the hiring hall process provided such employee was previously employed by the Contractor and was a participant in a bona fide private benefit plan maintained by the Contractor which satisfies the requirements of Section 220.

(3) The option for a private plan equivalent supplement shall not apply to contributions into Joint Apprentice Training Committee (JATC), or similar apprentice funds designated in the applicable Schedule A agreement, if the Contractor does not have an apprentice training program approved by the Department of Labor (However, all Contractors with contracts for this Project in excess of $500,000 must participate in apprenticeship training programs pursuant to New York State Labor Law §222(2)(e)). Upon request by the Council, any

Contractor providing coverage under this provision will provide the Council with documentation of benefit payments made to individual employees during the term of their employment on the Project.

(4) Contractors who exercise the option under Section 11.2(B) of this Article to pay into their own private benefit plans rather than the applicable jointly trusteed funds designated in the applicable Schedule A agreement shall be responsible for and guarantee employee benefit/supplement payments and shall indemnify and hold harmless the jointly trusteed funds designated in the applicable Schedule A agreement against any and all benefit/ supplement claims by its employees.

C. Contractors who contribute to jointly trusteed funds under this Section agree to be bound by the written terms of the legally-established jointly trusteed Trust agreements specifying the detailed basis on which payments are to be paid into, and benefits paid out of, such trust funds but only with regard to Project Work done and only for those employees for whom this Agreement requires such benefit payments. Notwithstanding the foregoing, a Contractor's liability shall be at all times limited to the amount of contributions required to be made to the Trust Funds.

D. Each Contractor shall be responsible for and guarantee the payment of all required fringe benefits on the Project. The Local Unions and/or the Council shall notify the Construction Manager within 120 hours excluding weekends whenever a Contractor or Subcontractor fails to make a required benefit payment and such delinquency remain outstanding after 30 days. Notification must be in writing and may be by email. If written notice of such a delinquency is received by the Construction Manager within that 120-hour period it shall withhold from any funds due to the delinquent Contractor the amount of that delinquency, up to the total amount due, until any dispute regarding the delinquency has been resolved. The Construction Manager shall have no other obligation with respect to contributions owed by any Contractor (or its Subcontractor); but that each Contractor shall continue to be obligated with respect to contributions based on Project Work done by that respective Contractor. If notice of a delinquency is not received by the Construction Manager within the required time periods, Owner shall have no basis upon which to withhold, with respect to that delinquency, any part of a payment which is otherwise due. Construction Manager shall require Contractors to submit proof of benefit payment with pay request.

XII. ARTICLE 12 - HOURS OF WORK, PREMIUM PAYMENTS, SHIFTS AND HOLIDAYS

SECTION 12.1 WORK WEEK AND WORK DAY

A. Unless otherwise provided for in this Agreement, the standard work week shall be five days, Monday through Friday, eight hours per day plus a 1/2 hour unpaid lunch period each day. The starting time for the standard work week shall start at

either 6:00 a.m., 6:30 a.m., 7:00 a.m., 7:30 a.m. or 8:00 a.m. Multiple starting times shall be allowed.

B. Four-tens: notwithstanding any other provision of the Agreement, when working a four-day work week, the work shall consist of 4 days, Monday through Thursday, ten hours per day plus a 1/2 hour unpaid lunch period at the straight time rate. The starting time for four-tens shall be 6:00 a.m. 6:30 a.m. 7:00 a.m. A three-day minimal notice shall be required for four-tens to the respective involved Unions.

C. On a 5-day work week, Saturday may be used as a make-up day at straight time to fulfill the 40-hour work week due to inclement weather. On a 4-day work week, Friday may be used as a make-up day at straight time to fulfill the 40-hour work week. Make-up days shall be scheduled for a minimum of 8 hours, except in the case of inclement weather in which Section 12.5 shall apply. This minimum shall also apply when more than one shift or multiple shifts are worked.

D. The changing of the regular starting time, except in the case of overtime and the switch from a 5- day and 4-day work weeks shall be a 4-week minimum.

SECTION 12.2 OVERTIME

Overtime pay for hours outside of the standard work week and work day, defined in Section 12.1, and all work on Saturdays shall be paid at time and one half the hourly rate and benefits will be paid on straight time. All work on Sundays shall be paid at two times the hourly rate and benefits will be paid at straight time.

SECTION 12.3 SHIFTS

A. Flexible Schedules - Scheduling of shift work, including Saturday and Sunday work, shall be within the discretion of the Contractor in order to meet Project Work schedules and existing Project Work conditions. Shifts must have prior approval of the Construction Manager and Owner and must be scheduled with not less than three work days' notice to the Local Union.

B. Second and/or Third Shifts - Saturday and/or Sunday Work.

The second shift shall start between 3 p.m. and 6 p.m. and the third shift shall start between 11 p.m. and 2 a.m. Shift differentials shall be straight time plus fifty percent (50%) of the applicable Schedule A agreement shift differential. No other premium or payments for such work shall be required unless such work is in excess of 40 hours during the week. There shall be no reduction in hours worked on a second and/or third shift, except that when 3 shifts are working together, the length of one or more shifts can be reduced to accommodate a 24-hour day and only actual hours worked will be paid. Work performed on Saturdays or Sundays shall be paid as provided in the applicable Schedule A Agreement.

C. To clarify above, Schedule A Shift Differential designated percentage rates vary according to each trade's prevailing Collective Bargaining Agreement. Shift work as part of this Project Labor Agreement is 50% of the designated percentage of the shift percentages of each trade, for example if a trade's shift differential is 15% it would be 7.5%.

SECTION 12.4 HOLIDAYS

A. Schedule - There shall be seven (7) recognized holidays:

- New Year's Day,
- President's Day,
- Memorial Day
- Fourth of July
- Labor Day
- Thanksgiving Day
- Christmas Day

All said holidays shall be observed on the dates designated by New York State Law. In the absence of such designation, they shall be observed on the calendar date, except that holidays which occur on Sunday shall be observed on the following Monday and holidays which occur on a Saturday shall be observed on the previous Friday.

B. Payment-Regular holiday pay, if any, for work performed on a recognized holiday shall be in accordance with the applicable Schedule A agreement. There will be no benefits paid on holidays unless worked.

C. Exclusivity - No holidays other than those listed in Section 12.4 shall be recognized or observed in relation to holiday pay and benefits.

SECTION 12.5 REPORTING PAY

A. When on a five-day work week, employees who report to the work location pursuant to a regular schedule and who are not provided with work for whatever reason, shall receive two (2) hours reporting pay, four (4) hours if work starts and eight (8) hours pay if work occurs after the 4th hour except in the case of inclement weather in which hours worked after the four hours shall be paid and when on a four-day work week with a 10-hour day, (3), (4), (5) and (10) shall apply as per the same terms above.

B. When an employee who has completed his or her scheduled shift and has left the Project site is "called out" to perform special work of a casual, incidental, or

irregular nature, the employee shall receive pay for actual hours worked at applicable straight time or overtime rates in accordance with this Agreement, but no less than a minimum guarantee of two (2) hours at the employee's straight time rate.

C. When an employee leaves the job or work location of their own volition, is discharged for cause, or is not working as a result of the Contractor's invocation of Section 12.8 below, he or she shall be paid only for the actual time worked.

D. There shall be no pay for time not actually worked except as specifically set forth in this Article 12 and where an applicable Schedule A agreement applies to Forepersons, Stewards and Lead Engineer in reference to pay.

SECTION 12.6 PAYMENT OF WAGES

A. Payday: Payment shall be made by check, drawn on a New York bank with branches located within commuting distance of the job site. Paychecks shall be issued by the Contractor at the job site by 3:00 p.m. on Thursdays. In the event that the following Friday is a bank holiday, paychecks shall be issued on Wednesday of that week. Not more than one week's wages shall be held back in any pay period. Paycheck stubs shall contain the name and business address of the Contractor, together with an itemization of deductions from gross wages.

B. Termination: Employees who are laid off or discharged for cause shall be paid in full for that which is due them at the time of termination. The Contractor shall also provide the employee with a written statement setting forth the date of layoff or discharge.

SECTION 12.7 INJURY/DISABILITY

An employee who, after commencing Project Work, suffers a work-related injury or disability while performing Project Work duties, shall receive no less than eight (8) hours wages for that day. Further, the employee shall be rehired at such time as the employee is able to return to duties provided there is still Project Work available for which the employee is qualified and able to perform.

SECTION 12.8 EMERGENCY WORK SUSPENSION

A Contractor may, if considered necessary for the protection of life, property, and/or safety of employees or others, suspend all or a portion of Project Work. In such instances, employees shall be paid for actual time worked; provided however, that when a Contractor requests that employees remain at the job site available for Project Work, employees shall be paid for "stand- by" time at their hourly rate of pay.

XIII. ARTICLE 13 - APPRENTICESHIP & HELMETS TO HARDHATS

SECTION 13.1 APPRENTICE RATIOS

Recognizing the need to maintain continuing supportive programs designed to develop adequate numbers of competent workers in the construction industry and to provide craft entry opportunities for minorities, women, and economically-disadvantaged non-minority males, Contractors will employ apprentices in their respective crafts to perform such Project Work as is within their capabilities and that is customarily performed by the craft in which they are indentured. Contractors may utilize apprentices and such other appropriate classifications as are contained in the applicable Schedule A agreement in a ratio of not less than twenty-five percent (25%) of the work force by craft (without regard to whether a lesser ratio is set forth in the applicable Schedule A agreement), unless the applicable Schedule A agreement provides for a higher percentage. The first person assigned to the job shall be a Journeyman. The second person assigned may be an apprentice. Subsequent assignments shall be Journeymen until the applicable ratio is achieved. This assignment shall be repeated until staffing needs are satisfied. Apprentices and such other classifications as are appropriate will be employed in a manner consistent with the provisions of the applicable Schedule A agreement.

SECTION 13.2 NYS DEPARTMENT OF LABOR- APPRENTICESHIP

To assist the Contractors in attaining a maximum effort on this Project, the Unions agree to work in close cooperation with, and accept monitoring by, the New York State Department of Labor to ensure that minorities and women are afforded every opportunity to participate in apprenticeship programs that result in the placement of apprentices on this Project.

SECTION 13.3 NEW YORK HELMETS TO HARDHATS

The Contractors and the Unions desire to facilitate the entry into the building and construction trades of veterans who are interested in careers in the building and construction industry. The Contractors and the Unions agree to utilize the services of the Center for Military Recruitment, Assessment and Veterans Employment (the "Center") and the Center's "New York Helmets to Hardhats" program as a resource for preliminary orientation and assessment of construction aptitude; referral to apprenticeship programs or hiring halls; counseling and mentoring; and support networks, employment opportunities, and other needs as identified by the parties.

The Unions and the Contractors agree to work with the Center to create and maintain an integrated database of veterans interested in working on the Project as well as information about apprenticeship and employment opportunities related to this Project. To the extent permitted by law, the Unions will give credit to such veterans for bona fide, provable past experience.

SECTION 13.4 PARTICIPATION GOALS (MBE, WBE, SDVOB, LABOR SURPLUS AREA)

A. MONROE WOODBURY CENTRAL SCHOOL DISTRICT , Construction Manager, Contractors, the Hudson Valley Building and Construction Trades Council and its affiliated Unions are committed to meeting federal and New York State Participation Goals, if any are applicable to the Project, and shall be in alignment with the current goals or standards set for by federal or New York State requirements for Minority Business Enterprises (MBE), Woman Owned Business Enterprise (WBE), Service-Disabled Veteran Owned Business (SVDOB), and federal Labor Surplus Area requirements, to ensure participation on the project

by MBE, WBE and SVDOB firms and job-seekers from federal Labor Surplus Areas while maintaining fiscal responsibility.

B. Outreach by the Construction Manager, Contractors, Hudson Valley Building and Construction Trades and affiliated Unions and contractor associations to ensure participation goals of NYS Certified MBE, WBE and SDVOB firms and Labor Surplus Area recruitment are met will be required through the project.

XIV. ARTICLE 14 - NO DISCRIMINATION

SECTION 14.1 COOPERATIVE EFFORTS

The Contractors and Unions agree that they shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, marital status, age, Union or non-Union status, real or perceived sexual orientation or any other status protected by law, in any manner prohibited by law or regulation. It is recognized that special procedures may be established by Contractors and Local Unions and the New York State Department of Labor for the training and employment of persons who have not previously qualified to be employed on construction projects of the type covered by this Agreement. The parties to this Agreement shall assist in such programs and agree to use their best efforts to ensure that the goals for female and minority employment are met on this Project. Nothing in this section shall be grieveable.

SECTION 14.2 LANGUAGE OF AGREEMENT

The use of the masculine or feminine gender in this Agreement shall be construed as including all genders.

XV. ARTICLE 15 - GENERAL TERMS SECTION 15.1 PROJECT RULES

SECTION 15.1 PROJECT RULES

A. MONROE WOODBURY CENTRAL SCHOOL DISTRICT, the Construction Manager and Contractors may establish from time to time such reasonable Project rules as are necessary for the good order of the Project. These rules shall be outlined at the pre-job conference with the Council, detailed in the contract documents, approved by the President of the Council, posted at the Project site, and may be amended thereafter as necessary.

B. Security Protocols - The Construction Manager with Owner's approval and in their sole discretion, will determine security protocols for the entire Project Site. Strict compliance by all Contractors and subcontractors of all tiers and their respective personnel with security procedures, protocols, and directives issued by these entities or its delegated, is required at all times.

SECTION 15.2 TOOLS OF THE TRADE

The welding/cutting torch and chain fall are tools of the trade having jurisdiction over the Project Work performed. Employees using these tools shall perform any of the Project Work of the trade. There shall be no restrictions on the emergency use of any tools or equipment by any qualified employee or on the use of any tools or equipment for the performance of Project Work within the employee's jurisdiction.

SECTION 15.3 SUPERVISION

Employees or other personnel shall work under the supervision of the craft foreperson or general foreperson for the applicable hiring or subcontracting Contractor

SECTION 15.4 FULL WORKDAY

A. Employees shall be at their Project Work area at the starting time established by the Contractor.

B. The signatories to this Agreement reaffirm their policy of a fair day's work for a fair day's wage.

XVI. ARTICLE 16 - SAFETY PROTECTION OF PERSON AND PROPERTY

SECTION 16.1 SAFETY REQUIREMENTS

Each Contractor will ensure that applicable OSHA and New York State mandated safety requirements are at all times maintained on the Project and the employees and Unions agree to cooperate fully with these efforts. Employees must perform their Project Work at all times in a safe manner and protect themselves and the property of the Contractor from injury or harm. Failure to do so may be grounds for discipline, including discharge. Prevention of accidents at the site is the responsibility of the Contractors, its employees, subcontractors and suppliers, persons, and entities at the Project Site. The Contractors shall establish their own safety programs implementing safety measures, policies, and standards conforming to those required or recommended by governmental and quasi-governmental authorities having jurisdiction.

The Construction Manager is not responsible for identifying unsafe practices, nor for failure to stop the Contractors' unsafe practices; and the Construction Manager's failure to stop the Contractors' unsafe practices shall not relieve the Contractors of the responsibility therefore.

SECTION 16.2 CONTRACTOR RULES

Employees covered by this Agreement shall at all times be bound by the reasonable safety, security, and visitor rules as established by the Owner. Such rules will be referenced in the Contract Documents and may be distributed to Contractors for further distribution to personnel and/or posted in conspicuous places throughout the Project.

SECTION 16.3 INSPECTIONS

The Contractors, Owner, Architect/Engineer, and Construction Manager retain the right to inspect incoming shipments of equipment, apparatus, machinery, and construction materials of every kind.

XVII. ARTICLE 17 - TEMPORARY SERVICES

Temporary light, power, cooling, ventilation and other services shall only be required on the specific request of a Contractor and when requested shall be assigned in accordance with the Contract Documents. Temporary coverage may be provided by the supplying Contractor's employees already working under this Agreement during regular work hours. The supplying Contractor will determine the need for temporary coverage requirements during non-work hours. For safety reasons, temporary light and power panels will only be accessed by employees of the Contractor responsible for supplying the temporary light and power panels. Coverage requirements shall not require a standby employee who is not performing Project Work. There shall be no stacking of trades on temporary services. In the event temporary services are claimed by multiple trades, the matter shall be resolved pursuant to Article 10.

XVIII. ARTICLE 18 - SAVINGS AND SEPARABILITY

SECTION 18.1 THIS AGREEMENT

In the event that the application of any provision of this Agreement is enjoined, on either an interlocutory or permanent basis, or is otherwise determined to be in violation of law, the provision involved (and/or its application to a particular part of the Project, as necessary) shall be rendered, temporarily or permanently, null and void, but the remainder of the Agreement shall remain in full force and effect to the extent allowed by law. In the event a court of competent jurisdiction finds any portion of the Agreement to be invalid, the parties will immediately enter into negotiations concerning the substance affected by such decision for the purpose of achieving conformity with the court determination and the intent of the parties hereto for contracts to be let in the future.

SECTION 18.2 NON-WAIVER

Nothing in this Agreement is intended to be or shall be construed as a waiver by any

Union(s) of any prevailing wage determination or schedule that is applicable to their trade for any public work that has been or may be performed in the future on any work outside the scope of this Agreement. Nothing contained in this Agreement is intended to be or shall be construed as a waiver by any Union(s) of any more favorable term or condition of employment that may be contained in any collective bargaining agreement applicable to work outside the scope of this Agreement.

XIX. ARTICLE 19 - FUTURE CHANGES IN SCHEDULE A AREA CONTRACTS

SECTION 19.1 CHANGES TO AREA CONTRACTS

Each Schedule A agreement incorporated by reference into this Agreement by Schedule A shall continue in full force and effect until the Contractor and/or Union parties to the area collective bargaining agreements which are the basis for the applicable Schedule A agreement, notify the Owner and Construction Manager in writing of the agreed upon changes in the Schedule A agreement which is applicable to the Project, and their effective dates. Such changes shall only be effective to the extent consistent with this Agreement. Any disagreement between signatories to this Agreement over the incorporation into Schedule A of provisions agreed upon in the renegotiation of area collective bargaining agreements shall be resolved in accordance with the procedure set forth in Article 9 of this Agreement.

SECTION 19.2 LABOR DISPUTES DURING AREA CONTRACT NEGOTIATIONS

The Unions agree that there shall be no strikes, work stoppages, sympathy actions, picketing, slowdowns or other disruptive activity or other violations of Article 7 affecting the Project by any Local Union involved in the renegotiation of area local collective bargaining agreements, nor shall there be any lock-out on this Project affecting a Local Union during the course of such renegotiations.

XX. ARTICLE 20 - PROJECT SPECIFIC

SECTION 20.1 WORKERS COMPENSATION ADR

At the written option of the Contractor and with the written approval of the Hudson Valley Building Trades Council, all Local Unions, Contractors and subcontractors working on this Project agree to be bound by the Collectively Bargained Workers Compensation Alternative Dispute Resolution Agreement (ADR Agreement), incorporated by reference into Schedule F to this Agreement, and to the ADR program set forth therein, by and between the Construction Industry Council of Westchester and the Hudson Valley, Inc., and the Building and Construction Trades Council of Westchester and Putnam County, New York, entered into on January 26, 2007, as amended.

SECTION 20.2 HUDSON VALLEY BUILDING AND CONSTRUCTION TRADES LABOR MANAGEMENT ALLIANCE

If not prohibited by law, to the parties to this Agreement, the parties agree to participate in the Hudson Valley Building and Construction Trades Labor Management Alliance.

SECTION 20.3 CLEAN UP

A clean work site results in a safe and more productive job site. All cleanup during construction shall be performed by the trade having jurisdiction for cleanup in accordance with the Project Contract Documents. The Owner will ensure a clean and safe workplace. The Owner or Construction Manager may back charge Contractors accordingly if clean up becomes unsatisfactory.

Once construction is complete and a building, section or floor is turned over to a professional cleaning company for final cleaning, including but not limited to, windows and floor

prep, up to 33.3% of the Employees may be a direct employee of the cleaning company. Those direct employees shall be exempt from this Agreement.

SECTION 20.4 FURNITURE, FIXTURES AND EQUIPMENT (FFE) & EXCLUDED WORK

Project work related to furniture, fixtures, and equipment that is free standing and requires no onsite assembly and is not fastened, mounted, anchored, hardwired or hard piped to any part of the building structure or surface by glue, screws, nails, mechanical fastener or by any other means is excluded from this agreement. Accordingly, for avoidance of doubt, all unloading, handling, assembly, installation and clean up of all furniture, fixture, and equipment which requires fastening, mounting, anchoring, hardwiring or hard piped to any part of the building structure or surface by glue, nails, screws, mechanical fasteners, wire, pipe or by other means, or requires any onsite assembly shall be included project work under this agreement.

When the owner or construction manager directs or contracts excluded work under this Section (20.4) to be performed this Agreement shall apply.

EXCLUDED WORK SHALL INCLUDE:

The installation of all data cabling and components, security/fire alarm systems, control systems, lighting systems for the softball field and tennis courts, audio visual equipment including all associated "low voltage" electrical connections is excluded. It is noted that the installation of all conduits, piping or wiring within the walls, floors and ceilings is included within the work of this agreement. A pre-job meeting between the vendors, electrical contractor, construction manager and IBEW shall be scheduled prior to any work related to the excluded work above begins. Movable partitions motorized and non-motorized are also excluded.

For the sake of clarity only, the parties acknowledge and agree that Project Work and any other work bid and awarded prior to September 20, 2025 shall be excluded work under this Agreement.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed and effective as of the _____ day of September 2023.

FOR THE HUDSON VALLEY BUILDING AND CONSTRUCTION TRADES COUNCIL:

By: _____

L. Todd Diorio, President

MONROE WOODBURY CENTRAL SCHOOL DISTRICT:

By: _____

Patrick Cahill, Assistant Superintendent for Business and Management Services

FOR CONSTRUCTION MANAGER:

By: _____

Luis Rodriguez, President, the Palombo Group

FOR LOCAL UNIONS:

International Union of Bricklayers and Allied Craftworkers Local NO. 1:

Signed: Michael D Clifford Title: Field Rep

Email: mclifford@bac1ny.com Phone: 845-522-4561

International Brotherhood of Boilermakers, Iron Ships Builders, Blacksmiths, Forgers Helpers District NO. 5:

Signed: _____ Title: _____

Email: _____ Phone: _____

Bricklayers and Allied Crafts, Tile, Marble & Terrazzo Union of New York & New Jersey Local NO. 7:

Signed: Ramon Melendez Title: Field Representative

Email: RMelendez@bacflocal7.com Phone: (917)-734-7506

~~Bricklayers~~ **Untied Union of Roofers, Waterproofers and Allied Workers Local NO. 8:**

Signed: BM Wilmer Title: BA

Email: WWILMER@ROOFERS8.ORG Phone: 646 294 1510

District Council NO. 9, International Unio. of Painters and Allied Trades, A.F.L.-C.I.O.:

Signed: _____ Title: _____

Email: _____ Phone: _____

Laborers International Union of N.A. Local 17:

Signed: Dario Title: Business Manager

Email: DIORIOJ@HOTMAIL Phone: 914-474-6220

FOR LOCAL UNIONS:

International Union of Bricklayers and Allied Craftworkers Local NO. 1:

Signed: Michael J Clifford Title: Field Rep

Email: mclifford@bac1ny.org Phone: 845-522-4561

International Brotherhood of Boilermakers, Iron Ships Builders, Blacksmiths, Forgers Helpers District NO. 5:

Signed: Thomas F. Ryan Title: BM-ST

Email: BoilermakersLocal5@verizon.net Phone: (516)326-2500

Bricklayers and Allied Crafts, Tile, Marble & Terrazzo Union of New York & New Jersey Local NO. 7:

Signed: Ramon Title: Field Representative

Email: RMelendez@bacilocal17.com Phone: (917)-734-7506

~~Bricklayers~~ Untied Union of Roofers, Waterproofers and Allied Workers Local NO. 8:

Signed: BM Title: BA

Email: wwilmot@roofers8.org Phone: 646 294 1510

District Council NO. 9, International Unio. of Painters and Allied Trades, A.F.L.-C.I.O.:

Signed: _____ Title: _____

Email: _____ Phone: _____

Laborers International Union of N.A. Local 17:

Signed: Diorio Title: Business Manager

Email: DIORIOJ@HOTMAIL Phone: 914-474-6220

International Association of Sheet Metal, Air, Rail and Transportation Workers (SMART) Local NO. 38:

Signed: James Nester Title: Business Agent

Email: Unionoffice@SMART38.ORG Phone: 203-994-0394

International Association of HBAT and Frost Insulators and Allied Workers Local NO. 91:

Signed: TL LL Title: Business Manager

Email: AWL91@INSULATORS.ORG Phone: (914) 788-0500

International Union of Elevators (IUEC) Local NO. 138:

Signed: _____ Title: _____

Email: _____ Phone: _____

O.P.C.M.I.A. Plasters Union Local NO. 262:

Signed: [signature] Title: NEDC Business Manager

Email: mrendina@noedc.org Phone: 917-578-6374

North Atlantic States Regional Council of Carpenters Local NO. 279:

Signed: Scott J Smith Title: Business Manager

Email: ssmith@nasrcc.org Phone: 845-263-7516

International Brotherhood of Electrical Workers Local NO. 363:

Signed: Sam Fratto Title: Business Manager

Email: sfratto@ibewlu363.org Phone: 845-783-3500

Plumbers, Steamfitters & Service Technicians Local NO. 373:

Signed: Thomas Gandolfini Title: Business Manager

Email: t.gandolfini@ua373.com Phone: 845-206-7564

International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers Local NO. 417:

Signed: Matthew P. Stoddard Title: B.M.

Email: matts417@verizon.net Phone: (845) 629-1185

International Brotherhood of Teamsters Local Union NO. 445:

Signed: David Moldonado Title: Secretary Treasurer

Email: Dmoldonado@teamsters union 445.org Phone: 845-541-4850

Road Sprinkler Fitters Union Local NO. 669:

Signed: On behalf of Business Mgr Title: Business Agent

Email: Shaun.Gauge.669@gmail.com Phone: 845-485-6437

United Cement Masons Local NO. 780:

Signed: Title: Business/Admin Agent

Email: Mredina@nycdc.org Phone: 917-578-6379

New York City District Carpenters Local NO. 740 & Local NO. 2287:

Signed: _____ Title: _____

Email: _____ Phone: _____

International Union of Operating Engineers Local NO. 825:

Signed: C Wood Title: Business Representative

Email: CWood@iuoe825.org Phone: 908-347-0502

Henry@Local137.com

Business Representative
(917)-502-0156

Plumbers, Steamfitters & Service Technicians Local NO. 373:

Signed: Thomas Gandolfini Title: Business Manager

Email: t.gandolfini@va373.com Phone: 845-206-7564

International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers Local NO. 417:

Signed: Matthew P. Stoddard Title: B.M.

Email: matts417@verizon.net Phone: (845)629-1185

International Brotherhood of Teamsters Local Union NO. 445:

Signed: David Mulderrig Title: Secretary Treasurer

Email: Dave@teamsters union 445.org Phone: 845-541-4860

Road Sprinkler Fitters Union Local NO. 669:

Signed: On behalf of Business Mgr. Title: Business Agent

Email: Shaun.gauge.669@gmail.com Phone: 845-485-6437

United Cement Masons Local NO. 780:

Signed: Title: Business/Mem Agent

Email: Mfeerick@uweac.org Phone: 917-578-6379

New York City District Carpenters Local NO. 740 & Local NO. 2287:

Signed: Title: Executive Secretary-Treasurer

Email: Regionaldistrictcouncil Phone: 212-366-7586

corp

FOR LOCAL UNIONS:

International Union of Bricklayers and Allied Craftworkers Local NO. 1:

Signed: Michael D Clifford Title: Field Rep

Email: mclifford@bac1ny.org Phone: 845-522-4561

International Brotherhood of Boilermakers, Iron Ships Builders, Blacksmiths, Forgers Helpers District NO. 5:

Signed: _____ Title: _____

Email: _____ Phone: _____

Bricklayers and Allied Crafts, Tile, Marble & Terrazzo Union of New York & New Jersey Local NO. 7:

Signed: Ramon Title: Field Representative

Email: RMelendez@bacilocal7.com Phone: (917)-734-7506

~~Bricklayers~~ **Untied Union of Roofers, Waterproofers and Allied Workers Local NO. 8:**

Signed: BM Title: BA

Email: WWILMOT@ROOFERS8.ORG Phone: 646 294 1510

District Council NO. 9, International Unio. of Painters and Allied Trades, A.F.L.-C.I.O.:

Signed: Title: BM/ST

Email: jazzopardi@dc9.net Phone: 10/09/2025

Laborers International Union of N.A. Local 17:

Signed: Title: Business Manager

Email: DIORIOJ@HOTMAIL Phone: 914-474-6220

SECTION 012100
ALLOWANCES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.
   1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to the Contractor. If necessary, additional requirements will be issued by Change Order.

B. Types of allowances include the following:
   1. Contingency allowances.

1.02 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Architect from the designated supplier.

1.03 ACTION SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

1.04 INFORMATIONAL SUBMITTALS

A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.05 COORDINATION

A. Coordinate allowance items with other portions of the Work.

1.06 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit, for work ordered by Owner under the contingency allowance is included in the Contract Sum and is not part of the Allowance.

C. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.01 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.02 GENERAL CONSTRUCTION SCHEDULE OF ALLOWANCES

A. GC-1: Contingency Allowance: Include in the Base Bid an Allowance of $250,000 for use according to the Owners instructions."
   1. Contractor overhead and profit is provided in the Base Bid.

3.03 ROOF CONSTRUCTION SCHEDULE OF ALLOWANCES

A. RC-1: Contingency Allowance: Include in the Base Bid an Allowance of $ 150,000 for use according to the Owners instructions."
   1. Contractor overhead and profit is provided in the Base Bid.

3.04 MECHANICAL AND PLUMBING CONSTRUCTION SCHEDULE OF ALLOWANCES

A. MPC-1: Contingency Allowance: Include in the Base Bid an Allowance of $250,000 for use according to the Owners instructions."
   1. Contractor overhead and profit is provided in the Base Bid.

3.05 ELECTRICAL CONSTRUCTION SCHEDULE OF ALLOWANCES

A. EC-1: Contingency Allowance: Include in the Base Bid an Allowance of $100,000 for use according to the Owners instructions."
   1. Contractor overhead and profit is provided in the Base Bid.

3.06 ABATEMENT CONSTRUCTION SCHEDULE OF ALLOWANCES

A. AC-1: Contingency Allowance: Include in the Base Bid an Allowance of $200,000 for use according to the Owners instructions."
   1. Contractor overhead and profit is provided in the Base Bid.

END OF SECTION 012100

SECTION 012200
UNIT PRICES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Sections:
   1. Section 012600 - Contract Modification Procedures: Procedures for submitting and handling Change Orders.
   2. Section 012100 - Allowances: Procedures for using Unit Prices with Allowances.

1.02 DEFINITIONS

A. Unit price is a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.03 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Measurement and Payment: Refer to individual Specification Sections indicated in the “Schedule of Unit Prices” for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 SCHEDULE OF UNIT PRICES

A. GENERAL CONSTRUCTION
   1. Unit Price No. GC- 1: Brick Replacement
      a. Description: Provide all labor, material and equipment necessary to replace brick - Match existing brick and mortar color.
      b. Unit of Measurement: Square Feet.
   2. Unit Price No. GC-2: Repointing Brick.
      a. Description: Provide all labor, material and equipment necessary to Repoint brick.
      b. Unit of Measurement: Square Feet
   3. Unit Price No. GC-3: Interior Painting
      a. Description: Provide all labor, material and equipment to provide a level 4 finish on interior walls.
      b. Unit of Measurement: Square Feet

4. Unit Price No. GC-4: VCT
    a. Description: Provide all labor, material and equipment necessary to provide and install VCT,
    b. Unit of Measurement: Square Feet
5. Unit Price No. GC-5: Non ACM Plaster
    a. Description: Provide all labor, material and equipment necessary to remove Non ACM Plaster.
    b. Unit of Measurement: Square Feet
6. Unit Price No. GC-6: ACT
    a. Description: Provide all labor, material and equipment necessary to provide and install ACT
    b. Unit of Measurement: Square Feet
7. Unit Price No. GC-7: Lintel Replacement
    a. Description: Provide all labor, material and equipment necessary to remove, provide and install Lintel.
    b. Unit of Measurement: Linear Feet
8. Unit Price No. GC-8: Gypsum Wall Board
    a. Description: Provide all labor, material and equipment necessary to install new 5/8" Type X Gypsum Wallboard
    b. Unit of Measurement: Square Feet

B. ROOF CONSTRUCTION
1. Unit Price No. RC-1: Rigid Insulation
    a. Description: Provide all labor, material and equipment necessary to provide and install Rigid Insulation.
    b. Unit of Measurement: 20 Square Feet
2. Unit Price No. RC-2: Taper Insulation
    a. Description: Provide all labor, material and equipment necessary to provide and install Taper insulation.
    b. Unit of Measurement: 20 Square Feet
3. Unit Price No. RC-3: Wood Blocking
    a. Description: Provide all labor, material and equipment necessary to provide and install wood blocking..
    b. Unit of Measurement: Linear Feet
4. Unit Price No. RC-4a: Wood Plank Deck Infill
    a. Description: Provide all labor, material and equipment necessary to provide and install wood deck infill.
    b. Unit of Measurement: Square Feet
5. Unit Price No. RC-4b: Gypsum Deck Infill
    a. Description: Provide all labor, material and equipment necessary to provide and install gypsum deck infill.
    b. Unit of Measurement: Square Feet
6. Unit Price No. RC-5: Removal of wet insulation/Roof Replacement
    a. Description: Provide all labor, material and equipment necessary to remove existing roof covering and wet insulation and provide and install new roof infill.
    b. Unit of Measurement: Square Feet

C. MECHANICAL AND PLUMBING CONSTRUCTION
1. Unit Price No. MPC-1: Installation of Copper piping 1.25" less.
    a. Description: Provide all labor, material and equipment necessary to provide and install piping.

b. Unit of Measurement: Linear Feet of piping

2. Unit Price No. MPC-2: Installation of copper piping 1.5”-2.5
   a. Description: Provide all labor, material and equipment necessary to provide and install piping.
   b. Unit of Measurement: Linear Feet
3. Unit Price No. MPC-3: Installation of Black piping 3"-4".
   a. Description: Provide all labor, material and equipment necessary to provide and install black piping.
   b. Unit of Measurement: Linear Feet
4. Unit Price No. MPC-4: Installation of Black piping 5"-6".
   a. Description: Provide all labor, material and equipment necessary to provide and install black piping.
   b. Unit of Measurement: Linear Feet
5. Unit Price No. MPC-5: Insulation 1.25" less
   a. Description: Provide all labor, material and equipment necessary to provide and install insulation.
   b. Unit of Measurement: Linear Feet
6. Unit Price No. MPC-6: Insulation 1.5"-2"
   a. Description: Provide all labor, material and equipment necessary to provide and install insulation.
   b. Unit of Measurement: Linear Feet
7. Unit Price No. MPC-7: Insulation 3"-4"
   a. Description: Provide all labor, material and equipment necessary to provide and install insulation.
   b. Unit of Measurement: Linear Feet
8. Unit Price No. MPC-8: Insulation 5"-6"
   a. Description: Provide all labor, material and equipment necessary to provide and install insulation.
   b. Unit of Measurement: Linear Feet

D. ABATEMENT CONTRACTOR

1. Unit Price No. AC-1: Abatement of Asbestos containing Ceiling.
   a. Description: Provide all labor, materials, and equipment necessary, including tents for ceiling abatement.
   b. Unit of Measurement:Square Feet
2. Unit Price No. AC-2: Abatement of Asbestos containing VCT.
   a. Description: Provide all labor, materials and equipment necessary, including tents to remove VCT.
   b. Unit of Measurement: Square Feet
3. Unit Price No. AC-3: Abatement of Asbestos containing insulation
   a. Description: Provide all labor, materials and equipment necessary, including tents to remove insulation in previously contained areas.
      1) Unit of Measurement: Linear Foot
4. Unit Price No. AC-4: Elbow Removal
   a. Description: Provide all labor, materials and equipment necessary, including tents to remove Elbows in previously contained areas.
      1) Unit of Measurement: Each

END OF SECTION 012200

This page intentionally left blank

SECTION 012300
ALTERNATES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.02 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
   1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
   2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.03 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
   1. Include as part of each alternate miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.01 SCHEDULE OF ALTERNATES

A. GENERAL CONSTRUCTION
   1. Alternate No. GC -1: Lower Playground Drainage
      a. Base Bid: No work for playground drainage.
      b. Alternate: Install new Playground drainage as indicated on the drawings and as specified in Division 31 32 and 33.
   2. Alternate No. GC -2: Fiber and Power Line to Lower Playground.
      a. Base Bid: No work for playground Fiber and Power.
      b. Alternate: Provide clearing and grubbing for new overhead fiber installation as indicated on the drawings and as specified in Division 31 32 and 33.
   3. Alternate No. GC -3: New Enlarged Louver Openings at Unit Ventilators
      a. Base Bid: No change to existing openings for louvers.

b. Alternate: Enlarge openings for louvers at Unit Ventilators as indicated on Drawings and per specifications.

B. MECHANICAL CONSTRUCTION
1. Alternate No. MPC -1: New.Enlarged Louver Openings at Unit Ventilators.
a. Base Bid: No change to existing openings for louvers.
b. Alternate: Coordinate work with enlarged openings for louvers at Unit Ventilators as indicated on Drawings and per specifications.
2. Alternate No. MPC -2: Clean Existing Ductwork.
a. Base Bid: No work.
b. Alternate: Clean ductwork as indicated on Drawings and Specifications
3. Alternate No. MPC -3: Abandon and Seal existing Steam Pipes Above Ceilings.
a. Base Bid: Remove steam piping to the extent indicated on drawings.
b. Alternate: Abandon steam piping in place and seal above ceilings as indicated on Drawings and in specifications.
4. Alternate No. MPC -4**:** New Split System HVAC for Kitchen
a. Base Bid: No work.
b. Alternate: Provide and install new split system HVAC at Kitchen as indicated on Drawings and in Specifications.

C. ELECTRICAL CONSTRUCTION
1. Alternate No. EC -1**:** Fiber and Power Line to Lower Playground
a. Base Bid: No power or fiber provided to playground..
b. Alternate: Provide power and fiber from within building down to playground. Provide utility poles and equipment as indicated on Drawings and as specified in Project Manual**.**
2. Alternate No. EC -2**:** New Split System HVAC for Kitchen
a. Base Bid: No new split system HVAC for Kitchen..
b. Alternate: Provide conduit and wire to new split HVAC system in Kitchen as indicated on Drawings and as specified in Division 26**.**

END OF SECTION 012300

SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 GENERAL

A. Should the Contractor desire to substitute other articles, materials, apparatus, products or processes than those specified or approved as equal, the Contractor shall apply to the Architect in writing for approval of such substitution. It should be noted that the bid shall not be based on a substituted article, material, apparatus, product or process. With the application shall be furnished such information as required by the Architect to demonstrate that the article, material, apparatus, product or process he wishes to use is the equivalent of that specified in quality, finish, design, efficiency and durability and has been elsewhere demonstrated to be equally serviceable for the purpose for which it is intended. The Contractor shall set forth the reasons for desiring to make the substitution and shall further state what difference, if any, will be made in the construction schedule and the contract price for such substitution should it be accepted; it being the intent hereunder that any savings shall accrue to the benefit of the Owner.

B. The Architect shall reject any such desired substitution as not being specifically named in the contract, or if he shall determine that the adjustment in price in favor of the Owner is insufficient, the Contractor shall immediately proceed to furnish the designated article, material, apparatus, product or process.

C. Request for substitutes shall conform to the requirements of this Article.

D. Requests for substitutions shall, include full information concerning differences in cost, and any savings in cost resulting from such substitutions shall be passed on to the Owner.

E. Requests for utilization of substitutes will be reviewed during the course of the project. The impact on the project and the timeliness of submission will be of key consideration.

F. The approval of utilization of a substitute is subject to the sole and final discretion of the Architect.

1.02 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Sections:
   1. Division 01 Section "Alternates" for products selected under an alternate.
   2. Division 01 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
   3. Division 01 Section “Submittals” for submittal procedures.
   4. Divisions 02 through 49 Sections for specific requirements and limitations for substitutions.

1.03 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
   1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
   2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

B. Substitute Items (Or Equal): If in Architect/Engineer's sole discretion, an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item it will be considered a proposed substitute item.

1.04 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
   1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:Substitution Request Form: Use the Substitution Request Form bound into section 006000 of this Project Manual.
      a. Statement indicating why specified product or fabrication, or installation cannot be provided, if applicable.
      b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
      c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
      d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
      e. Samples, where applicable or requested.
      f. Certificates and qualification data, where applicable or requested.
      g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
      h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
      i. Research reports evidencing compliance with current building code in effect for Project, from Building Code of New York State.
      j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
      k. Cost information, including a proposal of change, if any, in the Contract Sum.
      l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
      m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
      n. See additional requirements in Article 2.3 DETAILED SUBSTITUTION REVIEW PROCEDURES.
   2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within (5) five days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within (10) ten days of receipt of request, or (5) five days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.05 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

PART 2 PRODUCTS

2.01 SUBSTITUTION PROCEDURES (GENERAL)

A. Conditions: After the 'Notice of Award" and prior to the Contractor entering into a Formal Contract with the Owner, the Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
   1. Requested substitution is consistent with the Contract Documents and will produce indicated results.
   2. Substitution results in substantial cost savings to the Owner or substantial performance improvements.
   3. Substitution request is fully documented and properly submitted.
   4. Requested substitution will not adversely affect Contractor's construction schedule.
   5. Requested substitution has received necessary approvals of authorities having jurisdiction.
   6. Requested substitution is compatible with other portions of the Work.
   7. Requested substitution has been coordinated with other portions of the Work.
   8. Requested substitution provides specified warranty.
   9. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
   10. The substitution is submitted in compliance with Article 2.3 DETAILED SUBSTITUTION REVIEW PROCEDURES.

B. If the Contractor does not present 'Substitutions" in the time frame noted above any future requests to substitute products will not be considered, unless the substitution is for cause.

C. Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

2.02 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than (20) twenty days prior to time required for preparation and review of related submittals.
   1. Architect will consider Contractor's request for substitution when the following conditions are present.
      a. The specified product is not available
      b. The specified product cannot be delivered in the time frame required under the Project Schedule.
   2. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Architect will consider requests for substitution if received prior to award of contract and based on the following:
1. The proposed product substitution will result in a significant cost savings to the Owner.
2. The proposed product has substantial performance improvements.
3. The proposed product can be provided much earlier in the schedule enhancing the project completion date.
4. The proposed product warranty is superior to the specified item.

2.03 DETAILED SUBSTITUTION REVIEW PROCEDURES

A. The Architect in addition to the requirements listed above will require compliance with the following requirements and procedures.
1. Requests for approval of substitutions will be received and considered from Prime Contractors only and not from manufacturers, suppliers, Subcontractors, or other third parties.
2. If the materials and equipment submitted are offered as substitutions to the Contract Documents or approved equal, the Contractor shall advise the Owner and the Architect of the requested substitutions and comply with the requirements hereinafter specified in this Article.
3. Where the acceptability of substitution is conditioned upon a record of and the proposed substitution does not fulfill this requirement, the Architect, at the Architect’s sole discretion, may accept the substitution if the Contractor provides a bond or cash deposit which guarantees replacement at no cost to the Owner for any failure occurring within a specified time. The substitution item must meet all other technical requirements contained in the Specification.
4. The Contractor shall furnish such information as required by the Architect to demonstrate that the equal article, material, apparatus, product or process is the equivalent of that specified in quality, finish, design, efficiency and durability and has been elsewhere demonstrated to be equally serviceable for the purpose for which it is intended and/or that it offers substantial benefits to the Owner in saving of time and/or cost. The Contractor shall set forth the reasons for desiring to make this substitution.
5. Contractor shall submit:
a. For each proposed request for approved substitute sufficient details, complete descriptive literature and performance data together with samples of the materials, where feasible, to enable the Architect to determine if the proposed request for approval should be granted, including manufacturer's brand or trade names, model numbers, description of specification of item, performance data, test reports, samples, history of service, and other data as applicable.
b. Certified tests, where applicable, by an independent laboratory attesting to the performance of the substitute.

c. A list of installations where the proposed substitute equipment or materials is performing under similar conditions as specified.
d. A list of installations where the proposed substitute equipment or materials is performing under similar conditions as specified.

6. Where the approval of a substitute requires revision or redesign of any part of Work, including that of other Contracts, all such revision and redesign, and all new drawings and details required therefore, shall be provided by the Contractor at its own cost and expense, and shall be subject to the approval of the Architect.
7. In the event that the Architect is required to provide additional services, then the Architect's charges for such additional services shall be paid by the Contractor to the Owner.
8. Any modifications in the Work required under other contracts to accommodate the changed design will be incorporated in the appropriate contracts and any resulting increases in contract prices will be charged to the Contractor by the Owner who initiated the changed design.
9. In all cases, the Architect shall be the judge as to whether a proposed substitute is to be approved. The Contractor shall be bound by the Architect’s decision. No substitute items shall be used in the Work without written approval of the Architect.
10. In making request for approval of substitute, Contractor represents that:
    a. Contractor has investigated proposed substitute and determined that it is equal to or superior in all respects to the product, manufacturer or method specified or offers other specified advantages to the Owner.
    b. Contractor will provide the same or better warranties or bonds for proposed substitute as for product, manufacturer or method specified.
    c. Contractor waives all claims for additional costs or extension of time related to proposed substitute that subsequently may become apparent.
    d. Contractor shall have and make no claim for an extension of time or for damages by reason of the time taken by the Architect in considering a substitute proposed by the Contractor or by reason of failure of the Architect to approve a substitute proposed by the Contractor. Any delays arising out of consideration, approval, or utilization of a substitute shall be the sole responsibility of the Contractor requesting the substitute and it shall arrange its operations to make up the time lost.
11. Proposed substitute will not be accepted if:
    a. Acceptance will require substantial revision of Contract Documents.
    b. Acceptance will substantially change design concepts or Technical Specifications.
    c. Acceptance will delay completion of the Work, or the Work of other Contractors.
    d. If the Substitute item is not accompanied by formal request for approval of substitute from Contractor.
12. The Architect reserves the right to disapprove, for aesthetic reasons, any material or equipment on the basis of design or color considerations alone, without prejudice to the quality of the material or equipment, if the manufacturer cannot meet the required colors or design.
13. All requests for approval of substitutes of materials or other changes from the contract requirements shall be accompanied by an itemized list of all other items affected by such substitution or change. The Architect shall have the right, if such is not done, to rescind any approvals for substitutions and to order such Work removed and replaced with Work conforming to the specified requirements of the contract, all at the Contractor's expense, or to assess all additional costs resulting from the substitution to the Contractor.
14. Approval of a substitute will not relieve Contractor from the requirement to submit Shop Drawings or any of the provisions of the Contract Documents.

15. In the event that the Architect is required to provide additional services as a result of a request for approval of a substitute results in changes by the Contractor in dimension, weight, power requirements, etc., of the equipment and accessories furnished, or as a result of Contractor's errors, omissions or failure to conform to the requirements of the Contract Documents or if the Architect is required to examine and evaluate any changes proposed by the Contractor solely for the convenience of the Contractor, or for evaluation of deviations from Contract Documents, then the Architect's charges in connection with such additional services shall be paid by the Contractor.
16. Structural design shown on the Drawings is based upon the configuration of and maximum loading for major items of equipment as indicated on the Drawings and as specified. If the substituted equipment furnished differs from said features, the Contractor shall pay to the Owner all costs of redesign and for any construction changes required to accommodate the equipment furnished, including the Architect's charges in connection therewith.

B. The Contractor shall respond to required submittals with complete information and with a degree of accuracy to achieve approvals within two (2) submissions. All costs to the Architect involved with subsequent submissions of Shop Drawings, Samples or other items requiring approval, will be paid by the Contractor to the Owner, by deducting such costs from payments due for Work completed. In the event an approved item is requested by the Contractor to be changed or substituted for, all costs involved in the reviewing and approval process will likewise be back charged to the Contractor unless determined by the Architect that the need for such substitution and/or deviation from Contract Documents is beyond the control of the Contractor.

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION 012500

SECTION 012519
EQUIVALENT PROCEDURES

PART 1 GENERAL

1.01 SUMMARY:

A. Requirements set forth herein pertain to products specified in divisions included in project manual.

1.02 DEFINITIONS:

A. For the purpose of this contract, the words "similar", "equal to", "or equal", "equivalent" and such other words of similar content and meaning, shall be deemed to mean similar and equal to one of named and/or specified products.

B. For the purpose of bidding documents, the word "products" shall be deemed to include the words "articles", "materials", "items", "equipment" and "methods". Whenever in contract documents one or more products are specified, words "similar, equivalent, and equal to" shall be deemed inserted.

1.03 EQUIVALENTS:

A. Where, in these specifications or on drawings, certain kinds, types, brands, or manufacturers of materials are named, they shall be regarded as the required standard of quality. Where two or more are named these are presumed to be equal, and Contractor may select one of those items.

B. If Contractor desires to use any kind, type, brand, or manufacturer of material other than those named in specification, he or she may submit the request for approval to the Architect well in advance of the bid date.

C. Requests for approval of proposed equivalents will be received by Architect only from a Prime Contractor.

D. If the Architect approves a proposed equivalent prior to receipt of Bids, such approval will be set forth in an Addendum.

E. After the bid opening the apparent low bidder or bidders will be notified by the Architect or Owner and shall submit to the Architect in writing, within (10) ten calendar days what equivalent kind, type, brand, or manufacture is included in bid in lieu of specified items. No equivalents will be considered after this submission.

F. Contractor shall have burden of proving, at Contractor’s own cost and expense, to satisfaction of Owner/Architect, that proposed product is similar and equal to named product. In making such determination Owner/Architect will be sole judge of objective and appearance criteria that proposed product must meet in order for it to be approved.
   1. Supporting data on equivalency is responsibility of bidder. For each equivalent to base specification, included in products list, submit information describing in specific detail -
      a. Wherein it differs from quality and performance required by base specification.
      b. Changes required in other elements of work because of equivalent.
      c. Effect on construction schedule.
      d. Any required license fees or royalties.
      e. Availability of maintenance service, and source of replacement materials.
      f. Such other information as may be required by Owner.

G. Owner, through Architect, shall be judge of acceptability of proposed equivalents. Risk of whether bid equivalents will be accepted is borne by Contractor.

1.04 CONTRACTOR'S REPRESENTATION:

A. Submission of an equivalent product and/or material constitutes a representation that Contractor:
   1. Has investigated proposed product and determined it is equal to or superior in all respects to that specified.
   2. Will provide same warranties or bonds for equivalent as for product specified.
   3. Will coordinate installation of an accepted equivalent into work and make such other changes as may be required to make work complete in all respects.
   4. Waives all claims for additional costs, under his responsibility, which may subsequently become apparent.
   5. Will provide, at own cost and expense, any different quantity and/or arrangement of ductwork, piping, wiring, conduit or any part of work from that specified, detailed or indicated in Contract Documents if required for proper installation of an approved equivalent.
   6. Will provide, at own cost and expense, all such revision and redesign and all new drawings and details required by Architect for approval if proposed equivalent product requires a revision or redesign of any part of work covered by this contract.
   7. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:
      a. Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
      b. Copies of current, independent third-party test data of salient product or system characteristics.
      c. Samples where applicable or when requested by Architect.
      d. Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
      e. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
      f. Research reports, where applicable, evidencing compliance with building code in effect for Project, from Building Code of New York State.
      g. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, which will become necessary to accommodate the proposed substitute.
   8. Provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.
   9. Bidder, in submitting the Procurement Substitution Request, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the Procurement Substitution Request.

1.05 EQUIVALENT CERTIFICATION:

A. Contractor must sign the “Equivalent Certification Form” following this specification section and deliver it to the Architect along with a complete list of proposed equivalents within ten (10) calendar days after notification from the Architect or Owner. This is mandatory and must be done prior to award of contracts.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

EQUIVALENT CERTIFICATION FORM

Project Name: _____

Project Address: _____

Project No.: _____

REVIEWED MATERIAL:

AIA A701-2018 Instructions to Bidders

AIA A201-2017 or A232(CMa) General Conditions of the Contract

Specification Section: 012519 - Equivalents

Specification Section: 012500 - Substitution Procedures

Specification Section: 016000 - Product Requirements

CHECK THE FOLLOWING THAT APPLIES:

_____ No equivalents are proposed.

_____ Proposed equivalents are attached with supporting data as per Section 012519.

ALL EQUIVALENTS ARE HEREBY PRESENTED TO ARCHITECT AND OWNER FOR APPROVAL. NO FUTURE EQUIVALENTS WILL BE CONSIDERED.

Contractor Signature: _____

Printed Name of Contractor: _____

Date: _____

Signature of Reviewer: _____

Printed Name of Reviewer: _____

Approved as Noted Date: _____

SECTION 012600
CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

B. Related Sections:
   1. Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.02 NO COST CHANGES IN THE WORK

A. Architect will issue through the Construction Manager, supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on the Information Bulletin form bound in section 006000 of this Project Manual.

1.03 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue through the Construction Manager, a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
   1. Proposal Requests issued by Construction Manager are not instructions either to stop work in progress or to execute the proposed change.
   2. Within time specified in Proposal Request or (10) ten days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
      a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
      b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
      c. Include costs of labor and supervision directly attributable to the change.
      d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship.

B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
   1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
   2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
   3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
   4. Include costs of labor and supervision directly attributable to the change.
   5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times.

6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

1.04 ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, base each Change Order proposal on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
   1. Include installation costs in purchase amount only where indicated as part of the allowance.
   2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
   3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
   4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the Purchase Order amount or Contractor's handling, labor, installation, overhead, and profit. Submit claims within (5) five days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. Owner will reject claims submitted later than (5) five days after such authorization.
   1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
   2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

1.05 ADMINISTRATIVE CHANGE ORDERS

A. Adjustment from Allowances: Refer to Division 01 Section "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

B. Adjustments from Unit Prices: Refer to Division 01 Section "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit price work.

1.06 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Architect will issue through the Construction Manager, a Change Order for signatures of Owner and Contractor on AIA Document G701 - Change Order.

1.07 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue through the Construction Manager, a Construction Change Directive on the Information Bulletin form bound ins section 006000 of this Project Manual.
   1. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

a. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

2. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
   a. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION 012600

This page intentionally left blank

SECTION 012900
PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Sections:
   1. Division 01 Section "Allowances" for requirements governing the handling and processing of allowances.
   2. Division 01 Section "Unit Prices" for requirements governing the use of unit prices.
   3. Division 01 Section "Contract Modification Procedures" for procedures for handling changes to the Contract.
   4. Division 01 Section "Construction Progress Documentation" for requirements governing the preparation and submittal of the Contractor's construction schedule.
   5. Division 01 Section "Submittal Procedures" for requirements governing the preparation and submittal of the submittal schedule.

1.02 SCHEDULE OF VALUES

A. Schedule of Values: Furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

B. Coordination: Correlate line items in the schedule of values with other required administrative forms and schedules, including the following:
   1. Application for Payment forms AIA G702 and G703 with continuation sheets.
   2. Submittal schedule.
   3. Submit the schedule of values to Architect through Construction Manager at earliest possible date but no later than (7) seven days before the date scheduled for submittal of initial Applications for Payment.

C. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the schedule of values.
   1. Identification: Include the following Project identification on the schedule of values:
      a. Project name and location.
      b. Name of Architect and Construction Manager.
      c. Architect's project number.
      d. Contractor's name and address.
      e. Date of submittal.
   2. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
      a. Related Specification Section or Division.
      b. Description of the Work.
      c. Change Orders (numbers) that affect value.
      d. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
         1) Labor.
         2) Materials.
         3) Equipment.
   3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports.
   4. The following line items must be included on the continuation sheet.
      a. Project Bonds and Insurances.

b. Mobilization.
c. Shop Drawings.
d. Project Meetings.
e. Temporary Heat (where applicable).
f. Progress Cleaning.
g. Lawn and Tree Watering (where applicable to establish new lawns and trees).
h. Punch List.
i. Final Cleaning.
j. Close Out documents and Warranties.

5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
6. Submit draft of AIA Document G703 Continuation Sheets.
7. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
   a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.03 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and Construction Manager and paid for by Owner.
   1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: Submit Application for Payment to Architect by the last day of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
   1. Submit draft copy of Application for Payment (5) five days prior to due date for review by Architect. (Work to be projected out to the end of the pay period).

C. Application for Payment Forms: Use AIA Documents G702 and G703 as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Construction Manager will return incomplete applications without action.
   1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
   2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
   3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
   4. The OWNER shall retain (5%) five percent of the amount due on each Application for both the work completed and materials stored. The OWNER reserves the right to retain a greater percentage in the event the CONTRACTOR fails to make satisfactory progress or in the event there is other specific cause for greater withholding.

E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
   1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
   2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.

F. Provide copies of payroll records (including subcontractors) that are signed and notarized, documenting compliance with prevailing wage requirements.
   1. Per New York State Workman's Compensation Board, copies of all payroll records for all out of state contractors shall be retained on the worksite for inspection is required by the New York State Deptartment of Labor.

G. Transmittal: Submit (4) four signed and notarized original copies of each Application for Payment to Construction Manager by a method ensuring receipt. One copy shall include waivers of lien and similar attachments if required.

H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
   1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
   2. When an application shows completion of an item, submit conditional final or full waivers.
   3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
   4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.

I. Initial Application for Payment: Administrative actions and submittals that must precede submittal of first Application for Payment include the following:
   1. List of Substitutions
   2. Contract or Notice to Proceed.
   3. Performance and Payment bonds.
   4. Liability, Auto, and Umbrella Insurance
   5. Worker Compensation certificates
   6. Proposed schedule of values for approval.

J. Initial Application for Payment: Administrative actions and submittals that must coincide with submittal of first Application for Payment include the following:
   1. Approved Schedule of values.
   2. List of subcontractors.
   3. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor. Products list (preliminary if not final).
   4. Submittal schedule (preliminary if not final).
   5. Emergency Contacts List.
   6. Certified Payroll.
   7. List of Contractor's staff assignments.
   8. List of Contractor's principal consultants.
   9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
   10. Minutes or report of preconstruction conference.

K. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
   1. Administrative actions and submittals that shall precede or coincide with this application include:
      a. Occupancy permits and similar approvals.
      b. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion.
      c. Record Drawings and Specifications.
      d. Operations and Maintenance Manuals.
      e. Maintenance Instructions and Training.
      f. Start-up performance reports.
      g. Test/adjust/balance records.
      h. Warranties (guarantees) and maintenance agreements.
      i. Final cleaning.
      j. Change-over information related to Owner's occupancy, use, operation and maintenance.
      k. Application for reduction of retainage and consent of surety.
      l. Advice on shifting insurance coverages.
   2. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
   3. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

L. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
   1. Ensure that incomplete Work is not accepted and will be completed without undue delay.
   2. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
   3. Evidence of completion of Project closeout requirements.
   4. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
   5. Updated final statement, accounting for final changes to the Contract Sum.
   6. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
   7. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
   8. AIA Document G707, "Consent of Surety to Final Payment."
   9. Evidence that all claims have been settled.
   10. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
   11. Removal of temporary facilities and services.
   12. Removal of surplus materials, rubbish, and similar elements.
   13. Certified property survey.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION 012900

SECTION 013100
PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
   1. General project coordination procedures.
   2. Administrative and supervisory personnel.
   3. Coordination drawings.
   4. Requests for Information (RFIs).
   5. Project meetings.

B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

C. Related Requirements:
   1. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
   2. Division 01 Section " Summary" for Project Information and phasing requirements
   3. Division 01 Section "Multiple Contract Summary" for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
   4. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
   5. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
   6. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.02 DEFINITIONS

A. RFI: Request from Owner, Architect, or Contractor seeking information from each other during construction.

1.03 INFORMATIONAL SUBMITTALS

A. Use the Architect's Autodesk Construction Cloud (ACC) when uploading Submittals.

B. Subcontractor List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use Subcontractor List form bound into 006000 of this Project Manual. Include the following information in tabular form:
   1. Name, address, and telephone number of entity performing subcontract or supplying products.
   2. Number and title of related Specification Section(s) covered by subcontract.
   3. Drawing number and detail references, as appropriate, covered by subcontract.
   4. Pursuant to New York State Department of Labor requirements, submit a copy of the Contractor(s), Contractor Certificate of Registration prior to **any** work being performed.

C. Key Personnel Names: Within (15) fifteen days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

D. Emergency Telephone Numbers: Each Contractor shall, at the Contractor's own expense, furnish to the Architect, an emergency phone number list for 24-hour, emergency, contact during the entire construction period. Include numbers for office phones, mobile phones, and pagers as applicable.

1.04 COORDINATION

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
   1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
   2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
   3. Make adequate provisions to accommodate items scheduled for later installation.

B. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations, included in different Sections that depend on each other for proper installation, connection, and operation.
   1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
   2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
   3. Make adequate provisions to accommodate items scheduled for later installation.

C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
   1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
   1. Preparation of Contractor's construction schedule.
   2. Preparation of the schedule of values.
   3. Installation and removal of temporary facilities and controls.
   4. Delivery and processing of submittals.
   5. Progress meetings.
   6. Preinstallation conferences.
   7. Project closeout activities.
   8. Startup and adjustment of systems.
   9. Project closeout activities.

E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1.05 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings in accordance with requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
   1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
      a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
      b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
      c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
      d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
      e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
      f. Indicate required installation sequences.
      g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:
   1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire protection, fire alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work. Provide required information for work sequence to interface with the installation work.
   2. Plenum Space: Indicate sub framing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
   3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire protection, fire alarm, and electrical equipment.
   4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
   5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
   6. Mechanical and Plumbing Work: Show the following:

a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
c. Fire-rated enclosures around ductwork.

7. Electrical Work: Show the following:
   a. Runs of vertical and horizontal conduit 1-1/4 inch diameter and larger.
   b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire alarm locations.
   c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
   d. Location of pull boxes and junction boxes, dimensioned from column center lines.
8. Fire Protection System: Show the following:
   a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
9. Review areas for required access and indicate the need for access doors for access to shutoffs, electrical boxes, etc.
10. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are the Contractor's responsibility. If the Architect determines that the coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, the Architect will so inform the Contractor, who shall make changes as directed and resubmit.
    a. Failure to provide the required coordination drawings as required by this specification section may result in withholding a portion of the Contractor payment requests until such coordination drawings are received.
11. Coordination Drawing Prints: Prepare and submit coordination drawing prints in accordance with requirements of Division 01 Section "Submittal Procedures."

C. Architect's Digital Data Files:
1. Document Transfer Agreement - For Projects where Architect’s work files are not a deliverable: The Contractor shall execute an Electronic Document Transfer Agreement for all electronic transfers of files, other than PDFs. The contractor must provide acknowledgement, accept the information regarding drawings, ownership and Limitations of Liability. Electronic Document Transfer Agreement form is bound in section 006000 of this Project Manual.
   a. The following CAD files will by furnished for each appropriate discipline:
      1) Floor plans.
      2) Reflected ceiling plans.

1.06 KEY PERSONNEL

A. Key Personnel Names: Within (5) five days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and email addresses. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
1. Post copies of list in project meeting room, or temporary office, and by field telephone.

1.07 REQUESTS FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit to the Architect, an RFI in the form specified.

1. Do not submit an RFI if information is readily available in the contract documents. Verify by contacting and questioning the Architect prior to submitting an RFI.
   a. Architect will return with no response, any RFI where information is available to the contractor and is indicated in the Contract Documents.
2. Architect will return RFI's submitted to Architect by other entities controlled by Contractor with no response.
3. Coordinate and submit RFI's in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
2. Project number.
3. Name of Contractor.
4. Name of Architect.
5. RFI number, numbered sequentially.
6. RFI subject.
7. Specification Section number and title and related paragraphs, as appropriate.
8. Drawing number and detail references, as appropriate.
9. Field dimensions and conditions, as appropriate.
10. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
11. Contractor's signature.
12. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI’s sent without the required content information will not be considered a formal RFI and will be returned to the Contractor without comment or response.

D. RFI Forms: Use Request For Information form bound in section 006000 of this Project Manual.

E. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow (7) seven working days for Architect's response for each RFI. RFI's received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following RFI's will be refused without action:
   a. Requests for approval of submittals.
   b. Requests for approval of substitutions.
   c. Requests for information already indicated in the Contract Documents.
   d. Requests for adjustments in the Contract Time or the Contract Sum.
   e. Requests for interpretation of Architect's actions on submittals.
   f. Incomplete RFI's or inaccurately prepared RFI's.
2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
3. Architect's action on RFI's that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit a Change Proposal according to Division 01 Section "Contract Modification Procedures."
   a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within (10) ten days of receipt of the RFI response.

1.08 ARCHITECT'S WEBSITE

A. The contractor will use Autodesk Construction Cloud (ACC) for Submittals, Shop Drawings and RFI's. Project Web site shall include the following functions:
   1. Project directory.
   2. Project correspondence.
   3. Meeting minutes.
   4. Contract modifications forms and logs.
   5. RFI forms and logs.
   6. Task and issue management.
   7. Photo documentation.
   8. Schedule and calendar management.
   9. Submittals forms and logs.
   10. Payment application forms.
   11. Drawing and specification document hosting, viewing, and updating.
   12. Online document collaboration.
   13. Reminder and tracking functions.
   14. Archiving functions.

1.09 PROJECT MEETINGS

A. General: Construction Manager will schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

B. Preconstruction Conference: Construction Manager will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than (15) fifteen days after execution of the Agreement.
   1. Conduct the conference to review responsibilities and personnel assignments.
   2. Attendees: Authorized representatives of Owner, Architect, Architect's Consultants, and Construction Manager; Contractors and their superintendents; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to decide matters relating to the Work.
   3. Agenda: Discuss items of significance that could affect progress, including the following:
      a. Tentative construction schedule.
      b. Phasing.
      c. Critical work sequencing and long-lead items.
      d. Designation of key personnel and their duties.
      e. Sub-Contractors and their responsibilities.
      f. Coordination among all contractors.
      g. All insurance requirements in force.
      h. Procedures for project communications.
      i. Procedures for processing field decisions and Change Orders.
      j. Procedures for RFI's using Autodesk Construction Cloud (ACC).
      k. Testing and inspecting reqiurements.
      l. Procedures for processing Applications for Payment.
      m. Distribution of the Contract Documents.
      n. Schedule of Values.
      o. Schedule of submittals, including submittal log.
      p. Submittal procedures using Autodesk Construction Cloud (ACC).

q. Preparation and updating of record documents.
r. Use of the premises.
s. Work restrictions.
t. Working hours.
u. Owner's occupancy requirements and restrictions.
v. Responsibility for temporary facilities and controls.
w. Procedures for moisture and mold control.
x. Procedures for disruptions and shutdowns.
y. Construction waste management and recycling.
z. Use of Site and parking availability.
aa. Field office, work, and storage areas.
bb. Equipment deliveries and priorities.
cc. Safety and first aid procedures.
dd. Security.
ee. Progress cleaning.

4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Construction Manager shall conduct a preinstallation conference at Project site, unless otherwise indicated, before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in, or affected by, the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise all parties involved of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
a. Contract Documents.
b. Options.
c. Related RFI's.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Review of mockups.
i. Possible conflicts.
j. Compatibility problems.
k. Time schedules.
l. Weather limitations.
m. Manufacturer's written recommendations.
n. Warranty requirements.
o. Compatibility of materials.
p. Acceptability of substrates.
q. Temporary facilities and controls.
r. Space and access limitations.
s. Regulations of authorities having jurisdiction.
t. Testing and inspecting requirements.
u. Installation procedures.
v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.

y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: The entity recording meeting minutes shall distribute them to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: Construction Manager will conduct progress meetings at regular intervals.
1. Coordinate dates of meetings with preparation of payment requests.
2. Required Attendees: In addition to representatives of Owner, Architect, and Construction Manager, each Prime contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to decide matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
   a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
      1) Review schedule for next period.
   b. Review present and future needs of each entity present, including the following:
      1) Interface requirements.
      2) Sequence of operations.
      3) Status of submittals.
      4) Deliveries.
      5) Off-site fabrication.
      6) Access.
      7) Site utilization.
      8) Temporary facilities and controls.
      9) Progress cleaning.
      10) Status of correction of deficient items.
      11) Field observations.
      12) Status of RFI's.
      13) Status of proposal requests.
      14) Pending changes.
      15) Status of Change Orders.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
   a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

E. Coordination Meetings: Construction Manager will conduct Project coordination meetings at weekly intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

1. Attendees: In addition to representatives of Owner, Architect, and Construction Manager, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
    c. Review present and future needs of each contractor present, including the following:
        1) Interface requirements.
        2) Sequence of operations.
        3) Status of submittals.
        4) Deliveries.
        5) Off-site fabrication.
        6) Access.
        7) Site utilization.
        8) Temporary facilities and controls.
        9) Work hours.
        10) Hazards and risks.
        11) Progress cleaning.
        12) Quality and work standards.
        13) Change Orders.
3. Reporting: Entitiy recording meeting minutes shall distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

F. Project Closeout Meeting: Construction Manager will schedule and conduct a Project Closeout Meeting, at a time convenient to Owner and Architect, but no later than (30) thirty days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Required Attendees: Authorized representatives of Owner, Architect, and Construction Manager; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
    a. Preparation and completion of Contractor's punch list.
    b. Responsibility for removing temporary facilities and controls.
    c. Owner's partial occupancy requirements.
    d. Coordination of separate contracts for owner related work prior to occupancy.
    e. Installation of Owner's furniture, fixtures, and equipment.
    f. Requirements for preparing operations and maintenance data.

g. Requirements for the Submittal of written warranties.
h. Requirements for demonstration and training.
i. Requirements for submission of record documents, record specifications and record submittals.
j. Responsibility and schedule for final cleaning
k. Procedures for processing Applications for Payment at Substantial Completion and for final payment.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 013100

SECTION 013200
CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
   1. Start-up construction schedule.
   2. Contractor's construction schedule.
   3. Daily construction reports.
   4. Field condition reports.
   5. Special reports.

B. Related Sections:
   1. Division 01 Section "Multiple Contract Summary" for preparing a combined Contractor's Construction Schedule.
   2. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
   3. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.02 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format(s):
   1. Electronic PDF files.

B. Start-up construction schedule.

C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

D. Daily Construction Reports: Submit at weekly intervals.

E. Field Condition Reports: Submit at time of discovery of differing conditions.

F. Special Reports: Submit at time of unusual event.

1.03 QUALITY ASSURANCE

A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination". Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
   1. Review software limitations and content and format for reports.
   2. Verify availability of qualified personnel needed to develop and update schedule.
   3. Review delivery dates for Owner-furnished products.
   4. Review schedule for work of Owner's separate contracts.
   5. Review time required for review of submittals and resubmittals.
   6. Review requirements for tests and inspections by independent testing and inspecting agencies.
   7. Review time required for completion and startup procedures.
   8. Review and finalize list of construction activities to be included in schedule.
   9. Review submittal requirements and procedures.
   10. Review procedures for updating schedule.

1.04 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
   1. Secure time commitments for performing critical elements of the Work from entities involved.
   2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 PRODUCTS

2.01 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for commencement of the Work to date of Substantial Completion.
   1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
   1. Activity Duration: Define activities and days
   2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than (60) sixty days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
   3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
   4. Startup and Testing Time: Include not less than (15) fifteen days for startup and testing.
   5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
   6. Punch List and Final Completion: Include not more than (30) thirty days for punch list and final completion.

C. Schedule Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule and show how the sequence of the Work is affected.
   1. Phasing: Arrange list of activities on schedule by phase.
   2. Work under More Than One Contract: Include a separate activity for each contract.
   3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
   4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary". Delivery dates indicated stipulate the earliest possible delivery date.
   5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary". Delivery dates indicated stipulate the earliest possible delivery date.
   6. Work Restrictions: Show the effect of the following items on the schedule:
      a. Coordination with existing construction.
      b. Limitations of continued occupancies.
      c. Uninterruptible services.
      d. Partial occupancy before Substantial Completion.
      e. Use of premises restrictions.

f. Provisions for future construction.
g. Seasonal variations.
h. Environmental control.

7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
   a. Submittals.
   b. Purchases.
   c. Mockups.
   d. Sample testing.
   e. Deliveries.
   f. Installation.
   g. Tests and inspections.
   h. Adjusting.
   i. Startup and placement into final use and operation.
8. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
   a. Structural completion.
   b. Permanent space enclosure.
   c. Completion of mechanical installation.
   d. Completion of electrical installation.
   e. Substantial Completion.

D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed and Substantial Completion.

E. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
   1. Unresolved issues.
   2. Unanswered RFI's.
   3. Rejected or unreturned submittals.
   4. Notations on returned submittals.

F. Recovery Schedule: When periodic update indicates the Work is (14) fourteen or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.

G. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

2.02 START-UP CONSTRUCTION SCHEDULE

A. Bar-Chart Schedule: Submit start-up horizontal bar-chart-type construction schedule within (7) seven days of date established for approval. Schedule to start from the Notice of Award.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first (90) ninety days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.03 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

A. Gantt-Chart Schedule: From the approved Bar Chart Schedule submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's construction schedule within (30) thirty days Base schedule on the approved startup construction schedule and additional information received since the start of Project.

2.04 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
   1. List of Prime contractors at Project site.
   2. List of subcontractors at Project site.
   3. Approximate count of personnel at Project site.
   4. Equipment at Project site.
   5. Material deliveries.
   6. High and low temperatures and general weather conditions, including presence of rain or snow.
   7. Accidents.
   8. Meetings and significant decisions.
   9. Unusual events (refer to special reports).
   10. Stoppages, delays, shortages, and losses.
   11. Meter readings and similar recordings.
   12. Emergency procedures.
   13. Orders and requests of authorities having jurisdiction.
   14. Change Orders received and implemented.
   15. Construction Change Directives received and implemented.
   16. Services connected and disconnected.
   17. Equipment or system tests and startups.
   18. Partial completions and occupancies.
   19. Substantial Completions authorized.

B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.05 SPECIAL REPORTS

A. General: Submit special reports directly to Owner within (1) one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 EXECUTION

3.01 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
   1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
   2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
   3. As the Work progresses, indicate final completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Owner, Architect, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
   1. Post copies in Project meeting rooms and temporary field offices.
   2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200 013200

This page intentionally left blank

SECTION 013300
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. This specification describes the procedures for submission of submittals and shop drawings using the Architect's Autodesk Construction Cloud.
   1. The Contractor will be required to use the Architect's Autodesk Construction Cloud for the transfer of Submittals, Shop Drawings and RFI's. There will be **no exceptions** to this requirement. The contractor will be given a login and password free of charge. For more information follow the procedure below.
      a. Information and instructions for use are available for review by the Contractor by contacting CPL. The Contractor is to provide an email address for the file to be sent. A PDF file will be emailed to the requesting contractor.

C. Related Requirements:
   1. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
   2. Section 012900 - Payment Procedures, for submitting Applications for Payment and the schedule of values.
   3. Section 013100 - Project Management and Coordination, for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
   4. Section 013200 - Construction Progress Documentation, for submitting schedules and reports, including Contractor's construction schedule.
   5. Section 014000 - Quality Requirements, for submitting test and inspection reports, and schedule of tests and inspections.
   6. Section 017700 - Closeout Procedures, for submitting closeout submittals and maintenance material submittals.
   7. Section 017823 - Operation and Maintenance Data, for submitting operation and maintenance manuals.
   8. Section 017839 - Project Record Documents, for submitting record Drawings, record Specifications, and record Product Data.
   9. Section 017900 - Demonstration and Training, for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.02 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals".

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals".

C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.03 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
   1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file of certificate, signed and sealed by the responsible design professional, licensed in the state of project location, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
   1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.04 SUBMITTAL GENERAL ADMINISTRATIVE REQUIREMENTS

A. The Contractor shall prepare a Submittal Log containing the information required to be submitted under the Submittal article from each respective Specification Section. With each item listed the Contractor shall provide anticipated dates for submission to the Architect. The Architect will review and accept or request that corrections be made for subsequent acceptance. This acceptance will constitute an approval for the submittal, shop drawings and sample submissions to commence. **No Submittals or Shop Drawings will be reviewed by the Architect until an approved Submittal Schedule is in place.**

B. The contractor shall prepare expected submittals in Autodesk Construction Cloud that correspond to all submittals listed on the submittal schedule at the time of submission of the submittal log. These expected submittals are to follow the naming conventions laid out in article “1.5 Submittal Schedule” and “1.6 Submittal Identification” of this specification section.

C. The Contractor is responsible for all costs for creating electronic files for the submittal process. The Architect will not provide this service.
   1. The Submittal Cover Sheet, located in Specification Section 006000 Project Forms, shall be used for all Submittals.
      a. An electronic form of the submittal cover is available upon request from the Architect.
   2. The Submittal Cover sheet when scanned to a PDF shall be the first page viewed in the individual file.
      a. Each product submitted within a specification section shall have a Submittal Cover sheet attached. Combined submittals with one cover page will not be accepted
      b. Each Submittal Cover sheet shall be filled in completely. **Files that are sent with the Submittal Cover Sheet missing or not filled in correctly will not be reviewed**. The Architect will send a notice that the submittal is missing information. If the Contractor fails to correct or provide the proper submittal within (15) fifteen days, notice will be provided, and the submittal will be REJECTED.
   3. The Contractor(s) will be provided with a link to upload files to the Autodesk Construction Cloud. The site address and a “log in” will be provided to the Contractor(s) free of charge.
   4. A read-only Record Submittal Log and RFI Log will be available from the Autodesk Construction Cloud for the Contractor's reference in checking the status of the submittals and shop drawings.

D. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittals of different types of submittals from related sections for parts of the work so processing will not be delayed because of need to review submittals concurrently for coordination.
    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received. Delays associated with the above are not the Architects responsibility and rests solely with the Contractor.

E. Architect's Digital Data Files:
1. Architect will not furnish Contractor with digital drawings for the preparation of shop drawings.

1.05 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
1. Submit a preliminary, if not final, Submittal Schedule for approval a minimum of (15) fifteen days after award of contract. Failure to submit a submittal schedule within the required time frame will result in the refusal by the Architect to review any submittals. Delays associated with failure to receive the Submittal Schedule are not the Architect's responsibility and rest solely with the Contractor.

B. The information is required to be submitted under the Submittal article from each respective Specification Section. With each item listed, the Contractor shall provide anticipated dates for submission to the Architect. The Architect will review and accept or request that corrections be made for subsequent acceptance. This acceptance will constitute a review for the submittal, shop drawings and sample submissions may commence. No Submittals or Shop Drawings will be reviewed by the Architect until an approved Submittal Schedule is in place.
1. The Submittal Schedule shall be coordinated with the overall Project Schedule to ensure that submittals are submitted and reviewed so as not to delay the Project Schedule.
2. The Architect will not be responsible for ensuring that all required Shop Drawings, Product Data, Samples or similar submittals that are required to be submitted and reviewed under the Contract Documents are submitted by the Contractor. Submissions of Shop Drawings, Product Data, Samples or similar submittals are the Contractor’s sole responsibility. Delays associated with the Contractor’s failure to provide the required submittals are the Contractor's responsibility.
3. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
4. Initial Submittal Schedule: Submit concurrently with startup construction schedule. Include submittals required during the first (30) thirty days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
5. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.
    a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.

6. Format: Arrange the following information in a tabular format:
    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal Category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.
    g. Scheduled dates for purchasing.
    h. Scheduled date of fabrication.
    i. Scheduled dates for installation.

1.06 SUBMITTAL IDENTIFICATION

A. Submittal Cover Sheet: Attach one cover sheet for each product, shop drawing or sample. **DO NOT** combine submittals together with one cover sheet for multiple items. They will not be reviewed.

B. Submittal Information: Include the following information in each submittal. Use the submittal cover form found in specification section 006000 Project Forms. An electronic form can be sent to the contractor upon request.
    1. Contractor, Address, Phone/fax and or Email
    2. Contractors Submittal Number.
    3. Architects Project Number (if not filled in by the Architect).
    4. Project Name (if not filled in by the Architect).
    5. Type of submittal being sent (select box).
    6. Product Identification including the following: Provide one submittal cover sheet for each product within a specification section.
        a. Specification Section Number.
        b. Contract Drawing Number.
        c. Product Name.
        d. Specification Reference: Part/Paragraph.
        e. Detail Reference.
        f. Manufacturer.
    7. Contractors Approval: The contractor must acknowledge that they have reviewed the submittal for conformance with the Contract Documents and must sign and date the approval.
    8. Deviation from the Contract Documents: Where the submittal may not meet all of the requirements of the specified item. The contractor must indicate how the submitted item differs from the specified item.
    9. Contractor Comments: Any additional comments by the contractor should be indicated in this space. (Provide an attachment sheet for any other information required that will not fit on the cover sheet).

C. Deviations and Additional Information: On each individual submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information, revisions, line by line comparison and other information requested by Architect. Indicate by highlighting on each submittal or noting on attached separate sheet. Identify options requiring selection by Architect.

D. File Naming for uploading to Autodesk Construction Cloud: Each submittal or shop drawing file uploaded to the project on the Autodesk Construction Cloud, shall have in the file name, the specification section number followed by the submittal number, the submittal abbreviation and the specification section name. For re-submissions an R1 would be added following submittal number. The file name must include the following information:

Example:

Spec Section	Submittal No.	Submittal Abbr	Specification Name
081416	001	PD	Flush Wood Doors

File to Read: 081416-001 PD - Flush Wood Doors

Re-submission to Read: 081416-001-R1 PD - Flush Wood Doors

Submittal Abbreviations required to be used in the file name on submittals are as follows:

CD - Coordination Drawings

CERT - Certification(s)

CLC - Calculations

DD - Design Data

EJ - Engineer's Judgement

LEED - LEED or PD/LEED

O&M - Operations and Maintenance Manuals

PD - Product Data

PHOTO - Photo

QD - Qualification Data

RPT - Report

SAMP - Sample

SCH - Schedule

SEL - Make A Selection

SD - Shop Drawing(s)

STDY - Study

TR - Test Results

WAR - Warranty

E. When uploading submittals or RFI's to the Autodesk Construction Cloud, complete the online transmittal. The information required is derived from the Contractor's submittal cover sheet or RFI. Instructions for using the Autodesk Construction Cloud are available from CPL. These instructions can be emailed to the contractor.

1.07 SUBMITTAL DATA AND TESTING REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment. Each product within a specification section shall have a separate submittal cover.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.

2. Mark each copy of each submittal to show which products and options are applicable. Send full submittals for each product. Partial submittals will not be reviewed until all required submittal information is received. The Architect will not be responsible for project delays due to the Contractor's failure to submit the required submittal information in a complete package.
3. Include the following information, as applicable:
   a. Manufacturer's catalog cuts.
   b. Manufacturer's product specifications.
   c. Standard color charts.
   d. Statement of compliance with specified referenced standards.
   e. Testing by recognized testing agency.
   f. Application of testing agency labels and seals.
   g. Notation of coordination requirements.
   h. Availability and delivery time information.
4. For equipment, include the following in addition to the above, as applicable:
   a. Wiring diagrams that show factory-installed wiring.
   b. Printed performance curves.
   c. Operational range diagrams.
   d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
5. Submit Product Data before Shop Drawings, and before or concurrently with Samples.

B. Shop Drawings: Prepare project-specific information for each shop drawing. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
   a. Identification of products.
   b. Schedules.
   c. Compliance with specified standards.
   d. Notation of coordination requirements.
   e. Notation of dimensions established by field measurement.
   f. Relationship and attachment to adjoining construction clearly indicated.
   g. Description any conflicts with other trades.
   h. Seal and signature of professional engineer if specified.

C. Samples: Submit Samples for review of type, color, pattern, and texture for a check of these characteristics with other materials.
1. Transmit Samples that contain multiple, related components, such as accessories together in one submittal package. If samples are delivered with product data, only the samples will be reviewed. The Product Data must be uploaded to the Autodesk Construction Cloud. A duplicate submittal cover sheet is to be uploaded to the Autodesk Construction Cloud as a record of sample delivery.
   a. The Product Data is to be loaded concurrent with the delivery of samples. Samples may be delivered/given to the Architect. In the remarks column of the transmittal place "given to the Architect".
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
   a. Project name and submittal number.
   b. Generic description of Sample.
   c. Product name and name of manufacturer.
   d. Sample source.
   e. Number and title of applicable Specification Section.

f. Specification paragraph number and generic name of each item.
g. In addition to all hard copy and physical samples submitted, duplicate digital submittal is to be produced for review, record and tracking purposes through Autodesk Construction Cloud. Include same information as above as well as a high resolution, color, digital image of all samples with labeled information clearly visible for each physical sample.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units, showing the full range of colors, textures, and patterns available.
   a. Number of Samples: Submit (1) one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
   a. Number of Samples: Submit (3) three sets of Samples. Architect will retain (2) two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.
      1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least (3) three sets of paired units that show approximate limits of variations.

D. Information requirements for each submittal: Where submittal is requiring Schedules, Product Data, Qualification Data, Design Data, Certificates and Tests use the following protocol.
   1. Schedules: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
   2. Product Data: Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
      a. Manufacturer and product name, and model number if applicable.
      b. Number and name of room or space.
      c. Location within room or space.
   3. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

4. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
5. Certificates:
    a. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
    b. Insert definition of Contractor certificates here if required by individual Specification Sections. See the Evaluations.
    c. Installer Certificates: Submit written statements on manufacturer's letterhead, certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
    d. Manufacturer Certificates: Submit written statements on manufacturer's letterhead, certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
    e. Material Certificates: Submit written statements on manufacturer's letterhead, certifying that material complies with requirements in the Contract Documents.
    f. Product Certificates: Submit written statements on manufacturer's letterhead, certifying that product complies with requirements in the Contract Documents.
    g. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1/B2.1M on AWS forms. Include names of firms and personnel certified.
    h. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
    i. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
    j. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
    k. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
6. Test and Research Reports:
    a. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for substrate preparation and primers required.
    b. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
    c. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
    d. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

e. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
f. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
1) Name of evaluation organization.
2) Date of evaluation.
3) Time period when report is in effect.
4) Product and manufacturers' names.
5) Description of product.
6) Test procedures and results.
7) Limitations of use.

E. Submit the following submittals: Within (15) fifteen days of contract award.
1. Submittal Schedule including dates of anticipated review and approval.
a. No submittals will be reviewed without an approved Submittal Schedule in place.
2. Subcontractor List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
a. Name, address, telephone number and email address of entities performing subcontract or supplying products.
b. Number and title of related Specification Section(s) covered by subcontract.
3. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation".
4. Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures".

F. Submit with in the first (30) thirty days after Contract Award
1. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014329 "Special Inspections".
2. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
3. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

G. Submit Field Test Reports during construction within (15) fifteen days of the testing date and as follows:
1. Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

H. Submit a minimum (30) thirty days prior to Project Closeout:
1. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures".
2. Maintenance Data: Comply with requirements specified in Division 01 Section 017823 "Operation and Maintenance Data".

1.08 SUBMITTAL PROCESSING

A. Processing Time: Allow time for submittal review, including time for re-submittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.

B. The architect will not be responsible for project delays due to the contractor’s failure to submit the required submittal information in time to allow for review based on the stipulated review time and to meet the project schedule.

C. Initial Review: Allow (10) ten Business days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.

D. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.

E. Re-submittal Review: Allow (10) ten Business days for review of each re-submittal.

F. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow (21) twenty-one Business days for initial review of each submittal.

G. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow (15) fifteen Business days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.

H. Where submittal are required to be approved that are part of an assembly or for items such as finishes where color selections are required. The submittal will be retained until all of the information related to these systems and color selections is provided and accepted.

I. Products with multiple submittals may be held until all necessary information has been submitted for architect to make a complete review. Submittals dependent on coordinating information from related or dependent products; or products with critical interface with other products may be held until all information is submitted for architect to make a complete review and coordinate all required information. EXAMPLE: door frames will not be reviewed without door hardware.

J. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
   1. Note date and content of previous submittal.
   2. Note date and content of revision in label or title block, and clearly indicate extent of revision.
   3. Resubmit submittals until they are marked with reviewed notation from Architect's action stamp.

K. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

1.09 SUBMITTAL PROCEDURES

A. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

B. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

C. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

D. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

E. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

F. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

G. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

H. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

I. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
   1. Name of evaluation organization.
   2. Date of evaluation.
   3. Time period when report is in effect.
   4. Product and manufacturers' names.
   5. Description of product.
   6. Test procedures and results.
   7. Limitations of use.

J. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements".

K. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

L. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

M. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

N. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data".

O. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

1.10 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Contractors Approval: Provide Contractor's approval signature and date on the Submittal Cover sheet certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1.11 ARCHITECT'S ACTION

A. Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will respond to each submittal indicating one of the following actions required:
   1. NO EXCEPTIONS TAKEN (NET): Architect takes no exception to the submittal. This part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
   2. FURNISH AS CORRECTED (FAC): No exceptions taken except what is identified by the Architect. The part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance. Furnish any additional related information as requested.
   3. REVISE AND RESUBMIT (RAR): Revise the submittal based on the Architects comments and resubmit the submittal. Do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
      a. Do not permit submittals marked “Revise and Resubmit” to be used at the Project Site, or elsewhere where Work is in progress.
   4. REJECTED (REJ): The submittal is rejected. See Architects comments on why submittal was rejected.
      a. Submittal has not been reviewed by the Contractor and so noted.
      b. Submittal has been prepared without due regard for information called for or logically implied by the Contract Documents.
      c. Information is not sufficiently complete or accurate to verify that work represented is in accordance with the Contract Documents.
      d. Do not permit submittals marked “Rejected” to be used at the Project Site, or elsewhere where Work is in progress.
   5. NO ACTION TAKEN (NAT): The submittal is not required and will not be reviewed.

B. Submittals by Autodesk Construction Cloud: Architect will indicate, on Autodesk Construction Cloud, the appropriate action.

C. Informational Submittals: Architect will review each submittal and will not return it or will return it if it does not comply with requirements. The Architect's action will be noted in the Autodesk Construction Cloud.

D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect. The Architect's action will be noted in the Autodesk Construction Cloud and noted as a partial review until a full submittal can be received.

E. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for re-submittal without review.

F. Submittals not required by the Contract Documents will not be reviewed and will receive no action.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 013300

This page intentionally left blank

SECTION 014000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
   1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
   2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
   3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, and Construction Manager or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections:
   1. Division 01 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
   2. Division 01 Section “Code-Required Special Inspections and Procedures” for tests and inspections ordered by the Owner.
   3. Divisions 02 through 49 Sections for specific test and inspection requirements.

1.02 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect or Construction Manager.

C. Preconstruction Testing: Tests and inspections performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

E. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
   1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade or trades.

I. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of (5) five Projects similar in nature, size, and extent of this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.03 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
   1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Statement: Submit a statement signed and sealed by the responsible design professional, licensed in the State of New York, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.04 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.05 INFORMATIONAL SUBMITTALS

A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems.
   1. Seismic-force resisting system, designated seismic system, or component listed in the designated seismic system quality assurance plan prepared by the Architect.
   2. Main wind-force resisting system or a wind-resisting component listed in the wind-force-resisting system quality assurance plan prepared by the Architect.

B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

C. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
   1. Specification Section number and title.
   2. Entity responsible for performing tests and inspections.
   3. Description of test and inspection.
   4. Identification of applicable standards.
   5. Identification of test and inspection methods.
   6. Number of tests and inspections required.
   7. Time schedule or time span for tests and inspections.
   8. Requirements for obtaining samples.
   9. Unique characteristics of each quality-control service.

1.06 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
   1. Date of issue.
   2. Project title and number.
   3. Name, address, and telephone number of testing agency.
   4. Dates and locations of samples and tests or inspections.
   5. Names of individuals making tests and inspections.
   6. Description of the Work and test and inspection method.
   7. Identification of product and Specification Section.
   8. Complete test or inspection data.
   9. Test and inspection results and an interpretation of test results.
   10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
   11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
   12. Name and signature of laboratory inspector.
   13. Recommendations on retesting and re-inspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
   1. Name, address, and telephone number of technical representative making report.
   2. Statement on condition of substrates and their acceptability for installation of product.
   3. Statement that products at Project site comply with requirements.
   4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
   5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
   6. Statement whether conditions, products, and installation will affect warranty.
   7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
   1. Name, address, and telephone number of factory-authorized service representative making report.
   2. Statement that equipment complies with requirements.
   3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
   4. Statement whether conditions, products, and installation will affect warranty.

5. Other required items indicated in individual Specification Sections.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.07 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm with (5) five years' experience in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm with (5) five years’ experience in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual with (5) five years' experience in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
   1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
   1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
   2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
   1. Contractor responsibilities include the following:
      a. Provide test specimens representative of proposed products and construction.

b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
f. When testing is complete, remove test specimens, assemblies, mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.08 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
2. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
6. Notify testing agencies at least (24) twenty four hours in advance of time when Work that requires testing or inspecting will be performed.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures".

D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

E. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.

F. Testing Agency Responsibilities: Cooperate with Architect, Construction Manager, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
   1. Notify Architect, Construction Manager, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
   2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
   3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
   4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
   5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
   6. Do not perform any duties of Contractor.

G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
   1. Access to the Work.
   2. Incidental labor and facilities necessary to facilitate tests and inspections.
   3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
   4. Facilities for storage and field curing of test samples.
   5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
   6. Security and protection for samples and for testing and inspecting equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
   1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.09 QUALITY-CONTROL PLAN

A. Contractor's Quality-Control Plan, The Contractor shall submit quality-control plan within (10) ten days of Notice of Award, and not less than (5) five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities and to coordinate Owner's quality-assurance and quality-control activities. Coordinate with Contractor's Construction Schedule.

B. Quality-Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
   1. Project quality-control manager may also serve as Project Superintendent.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
   1. Contractor-performed tests and inspections, including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.
   2. Special inspections required by authorities having jurisdiction and indicated on the Statement of Special Inspections.
   3. Owner-performed tests and inspections indicated in the Contract Documents.

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring the Work into compliance with standards of workmanship established by Contract requirements and approved mockups.

F. Monitoring and Documentation: Maintain testing and inspection reports, including log of approved and rejected results. Include Work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming Work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.10 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of the Owner and as follows:
   1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
   2. Notifying Architect, Construction Manager, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
   3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect, with a copy to Contractor, and to Authorities having Jurisdiction.
   4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
   5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
   6. Retesting and re-inspecting corrected work.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.01 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:
   1. Date test or inspection was conducted.
   2. Description of the Work tested or inspected.
   3. Date test or inspection results were transmitted to Architect.
   4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's and Construction Manager's reference during normal working hours.

3.02 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
   1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution".

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014119
REGULATORY REQUIREMENTS - NYS EDUCATION DEPARTMENT

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
   1. “Uniform Safety Standards for School Construction and Maintenance Projects” for maintaining a Certificate of Occupancy during construction.

1.02 REFERENCES

A. Section 155.5 of the Regulations of the New York State Commissioner of Education “Uniform Safety Standards for School Construction and Maintenance Projects”.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.01 GENERAL REQUIREMENT

A. The occupied portion of any school building shall always comply with the minimum requirements necessary to maintain a certificate of occupancy.

3.02 HAZARDOUS BUILDING MATERIALS

A. Surfaces that will be disturbed during renovation or demolition have been tested for lead and asbestos. Results of the testing are available, upon request, from the Owner.

3.03 GENERAL SAFETY AND SECURITY STANDARDS FOR CONSTRUCTION

A. General safety and security standards for construction projects include the following:
   1. All construction materials shall be stored in a safe and secure manner.
   2. Fences around construction supplies or debris shall be maintained.
   3. Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry.
   4. During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry.
   5. Workers shall be required to wear photo-identification badges at all times for identification and security purposes while working at occupied sites.

3.04 SEPARATION OF CONSTRUCTION AREAS FROM OCCUPIED AREAS

A. Construction areas which are under the control of a contractor and therefore not occupied by district staff or students shall be separated from occupied areas. Provisions shall be made to prevent the passage of dust and contaminants into occupied parts of the building. Periodic inspection and repairs of the containment barriers must be made to prevent exposure to dust or contaminants. Gypsum board must be used in exit ways or other areas that require fire rated separation. Heavy duty plastic sheeting may be used only for a vapor, fine dust or air infiltration barrier, and shall not be used to separate occupied spaces from construction areas.
   1. A specific stairwell and/or elevator should be assigned for construction worker use during work hours. In general, workers may not use corridors, stairs or elevators designated for students or school staff.
   2. Large amounts of debris must be removed by using enclosed chutes or a similar sealed system. There shall be no movement of debris through halls of occupied spaces of the building. No material shall be dropped or thrown outside the walls of the building.

3. All occupied parts of the building affected by renovation activity shall be cleaned at the close of each workday. School buildings occupied during a construction project shall maintain required health, safety and educational capabilities at all times that classes are in session."

3.05 MAINTAINING EXITING DURING CONSTRUCTION

A. The Contractor will prepare a plan detailing how exiting required by the applicable building code will be maintained during construction. The plan shall indicate temporary construction required to isolate construction equipment, materials, people, dust, fumes, odors, and noise during the construction period. Temporary construction details shall meet code-required fire ratings for separation and corridor enclosure. At a minimum, required exits, temporary stairs, ramps, exit signs, and door hardware shall be provided at all times.

3.06 MAINTAINING VENTILATION DURING CONSTRUCTION

A. The Contractor will prepare a plan detailing how adequate ventilation will be maintained during construction. The plan shall indicate ductwork that must be rerouted, disconnected, or capped in order to prevent contaminants from the construction area from entering the occupied areas of the building. The plan shall also indicate how required ventilation to occupied spaces affected by the construction will be maintained during the project.

3.07 NOISE ABATEMENT DURING CONSTRUCTION

A. Construction and maintenance operations shall not produce noise in excess of 60 dba in occupied spaces or shall be scheduled for times when the building or affected building spaces are not occupied or acoustical abatement measures shall be taken

B. Noise level measurements (dba) shall be taken with a type 2 sound level meter in the occupied space in a location closest to the source of noise.

C. Each prime contractor shall have a type 2 sound level meter available on the project site at all times for use by the architect/engineer for the entire duration of the construction project.

3.08 CONTROL OF CHEMICAL FUMES, GASES AND OTHER CONTAMINANTS DURING CONSTRUCTION

A. The contractor shall be responsible for the control of chemical fumes, gases, and other contaminates produced by, including but not limited to, welding, gasoline or diesel engines, roofing, paving, or painting, to ensure they do not enter occupied portions of the building or air intakes.
   1. Contractors shall provide a plan indicating how and where welding, gasoline engine, roofing, paving, painting or other fumes will be exhausted from the work site. Contractors shall provide all temporary means to assure that fresh air intakes do not draw in such fumes.
   2. If any portion of the work will generate toxic gases that cannot be contained in an isolated area, the work shall be done when school classes and programs are not in session. The contractor shall include costs associated with this requirement in his bid. The building shall be properly ventilated and, the material shall be given proper time, as recommended by the manufacturer, to cure “off-gas” before re-occupancy.
   3. The contractor shall maintain all manufacturers’ Material Safety Data Sheets (MSDS) at the site for all products used in the project. Copies of the MSDS sheets shall be given to the Architect and to the School District. MSDS sheets shall be provided to anyone who requests them.

3.09 CONTROL OF OFF-GASSING DURING CONSTRUCTION

A. The contractor shall be responsible to ensure that activities and materials which result in "off-gassing" of volatile organic compounds such as glues, paints, furniture, carpeting, wall covering, drapery, etc. are scheduled, cured or ventilated in accordance with manufacturers recommendations before a space can be occupied.
   1. Contractor shall provide, in their schedules for work of the construction, proper time for “off-gassing” or volatile organic compounds introduced during construction before occupancy is allowed. Specific attention is warranted for activities including glues, adhesives, paint, furniture, carpeting, wall coverings, and drapery. Manufacturers shall be contacted to obtain information regarding appropriate temperatures and times needed to cure or ventilate the product during use and before safe occupancy of the space can be assured. The contractor shall include the above-mentioned information and shall clearly highlight the information, as part of the shop drawing submittal.
   2. Building materials or furnishings which “off-gas” chemical fumes, gases, or other contaminants shall be aired out in a well ventilated heated warehouse before it is brought to the project for installation or, the manufacturer’s recommended “off-gassing” periods must be scheduled between installation and use of the space.
   3. The contractor shall maintain all manufacturers’ Material Safety Data Sheets (MSDS) at the site for all products used in the project. Copies of the MSDS sheets shall be given to the Architect and to the School District. MSDS sheets shall be provided to anyone who requests them.

3.10 ASBESTOS-CONTAINING BUILDING MATERIALS

A. Large and small asbestos abatement projects as defined by 12NYCRR56 shall not be performed while the building is occupied. The term "building", as referenced in this section, means a wing or major section of a building that can be completely isolated from the rest of the building with sealed noncombustible construction. The isolated portion of the building must contain exits that do not pass through the occupied portion and ventilation systems must be physically separated and sealed at the isolation barrier.

B. Exterior work such as roofing, flashing, siding, or soffit work may be performed on occupied buildings provided proper variances are in place as required, and complete isolation of ventilation systems and at windows is provided. Care must be taken to schedule work so that classes are not disrupted by noise or visual distraction.

C. For clearance sampling, the air sampling technician shall provide aggressive air sampling per Rule 56 and as follows: First direct the exhaust of a leaf blower, against all walls, ceilings, floors, ledges, and other surfaces in the work area. Continue agitation for at least five minutes per every 1,000 sf of floor space. Following this aggressive agitation, the air-sampling technician shall use at least one 20-inch fan per 10,000 cubic feet of work area space for continuous agitation. The fan shall be operated on low speed and pointed toward the ceiling. Sampling pumps shall be started after the fans are started and stopped before the fans are stopped.
   1. Samples shall be logged on a permanently bound logbook at the laboratory. No whiteout will be used to make corrections.
   2. All lab counts, data and analysis shall be recorded on a lab summary sheet for each sample.
   3. Per the requirements of the New York State Education Department all Final Air Clearance Samples shall be (TEM) Transmission Electron Microscopy methodology.

3.11 LEAD-CONTAINING BUILDING MATERIALS

A. Surfaces that will be disturbed by reconstruction have been tested for the present of lead based paint materials. This information is provided in order that proper measures are taken, to train and protect workers per OSHA regulations. Refer to Division 0 Existing Hazardous Material Information for testing results.

B. Projects which disturb surfaces that contain lead shall have in the specifications a plan prepared by a certified Lead Risk Assessor or Supervisor which details provisions for occupant protection, worksite preparation, work methods, cleaning and clearance testing which are in general accordance with the HUD Guidelines.

END OF SECTION 014119

SECTION 014200
REFERENCES

PART 1 GENERAL

1.01 KEY DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.02 DEFINITIONS

A. Air Handling Unit: A blower or fan used for the purpose of distributing supply air to a room, space or area.

B. Approved Agency: An established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved according to the requirements established in this Section and as required by the Code Official having jurisdiction over this project.

C. Architect: Other terms including “Architect/Engineer” and “Engineer” have the same meaning as "Architect".

D. Company Field Adviser: An employee of the Company which lists and markets the primary components of the system under the name who is certified in writing by the Company to be technically qualified in design, installation, and servicing of the required products or an employee of an organization certified by the foregoing Company to be technically qualified in design, installation, and serving of the required products. Personnel involved solely in sales do not qualify.

E. Concealed Location: A location that cannot be accessed without damaging permanent parts of the building structure or finish surface. Spaces above, below or behind readily removable panels or doors shall not be considered as concealed.

F. Concealed Piping: Piping that is located in a concealed location. (See "concealed location".)

G. Connect: A term contraction and unless otherwise specifically noted is to mean " The labor and materials necessary to join or attach equipment, materials or systems to perform the functions intended".

H. Construction Manager: Construction Manager's Name.

I. Drain: Any pipe that carries wastewater or water-borne wastes in a building drainage system.

J. Drainage Fittings: Type of fitting or fittings utilized in the drainage system. Drainage fittings are similar to cast-iron fittings, except that instead of having a bell and spigot, drainage fittings are recessed and tapped to eliminate ridges on the inside of the installed pipe.

K. Drainage System: Piping within a public or private premise that conveys sewage, rainwater or other liquid wastes to a point of disposal. A drainage system does not include the mains of a public sewer system or a private or public sewage treatment or disposal plant.
   1. Building Gravity: A drainage system that drains by gravity into the building sewer.
   2. Sanitary: A drainage system that carries sewage and excludes storm, surface and ground water.
   3. Storm: A drainage system that carries rainwater, surface water, condensate, cooling water or similar liquid wastes.

L. Duct: A tube or conduit utilized for conveying air. The air passages of self-contained systems are not to be construed as air ducts.

M. Duct System: A continuous passageway for the transmission of air that, in addition to ducts, includes duct fittings, dampers, plenums, fans and accessory air-handling equipment and appliances.

N. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

O. Headroom: Minimum clearance between the floor and the underside of the point of lowest installed mechanical construction above. In case of stairways and walkways, the minimum clearance between the step or surface of the walkway and the lowest installed mechanical construction above the stairway or the walkway.

P. Include: When used in any form other than "inclusive", is non-limiting and is not intended to mean "all-inclusive."

Q. Indicated: Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

R. Inspection Certificate: Identification applied on a product by an approved agency containing the name of the manufacturer, the function and performance characteristics, and the name and identification of an approved agency that indicates that the product or material has been inspected and evaluated by an approved agency.

S. Installer: An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.
   1. Trades: Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

2. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.
3. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.

T. Label: An identification applied on a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material, and the name and identification of an approved agency and that indicates that the representative sample of the product or material has been tested and evaluated by an approved agency.

U. Location:
1. Damp Location: Partially protected locations under canopies, marquees, roofed open porches and like locations, and interior locations subject to moderate degrees of moisture, such as some basements, some barns and some cold-storage warehouses.
2. Dry Location: A location not normally subject to dampness or wetness. A location classified as dry may be temporarily subject to dampness or wetness, as in the case of a building under construction.
3. Wet Location: Installations underground or in concrete slabs or masonry in direct contact with the earth and locations subject to saturation with water or other liquids, such as vehicle-washing areas, and locations exposed to weather and unprotected.

V. Manufacturer’s Designation: Identification applied on a product by the manufacturer indicating that a product or material complies with a specified standard or set of rules (see also "Inspection Certificate," "Label" and "Mark").

W. Mark: An identification applied on a product by the manufacturer indicating the name of the manufacturer and the function of a product or material (see also "Inspection Certificate," "Label" and "Manufacturer's Designation").

X. Mechanical: Other terms including “HVAC”, “Plumbing”, “Sprinkler”, “Laboratory Equipment”, “Food Service Equipment”, “Laundry Equipment”, and “Refrigeration” have the same meaning as "Mechanical".

Y. Owner: Monroe-Woodbury Central School District.

Z. Piping: This term includes pipe, tube and appurtenant fittings, flanges, valves, traps, hangers and supports.

AA. Piping, Concealed: Piping built into construction and not accessible without removal of construction Work such as masonry, plaster or other finish material, and piping installed in floors, furred spaces, suspended ceilings, non-walk-in tunnels, conduits, and behind removable panels and cabinet doors.

BB. Piping, Distribution: Domestic water supply piping, starting with a connection to service piping, and continuing throughout the building to point of connection to equipment and fixture supply piping.

CC. Piping, Exposed: Piping directly accessible by normal accesses without removal of any construction Work or material.

DD. Piping, Service: Underground domestic water supply piping with a connection to a water main or supply as noted, and continuing to and into a building and terminating with the exposed fitting inside the building.

EE. Piping, Tunnel: Piping installed in walk-in or non-walk-in tunnels or conduits up to first shut-off valve inside building.

FF. Plumbing System: Includes the water supply and distribution pipes; plumbing fixtures and traps; water-treating or water-using equipment; soil, waste and vent pipes; and sanitary and storm sewers and building drains, in addition to their respective connections, devices and appurtenances within a structure or premises.

GG. Product: As used includes materials, systems and equipment.

HH. Registered Design Professional: An individual who is a registered architect (RA) in accordance with Article 147 of the New York State Education Law or a licensed professional engineer (PE) in accordance with Article 145 of the New York State Education Law.

II. Space, Finished: A space which has a finishing material applied to walls or ceilings, such as paint, plaster, ceramic tile, enamel glazing, face brick, vinyl wall covering, etc. to provide a finished appearance or which will have such finishes applied under a related Contract.

JJ. Space, Unfinished: A space which does not meet the definition of a finished space.

KK. Special Inspection: Inspection as herein required of the materials, installation, fabrication, erection, or placement of components and connections requiring special expertise to ensure compliance with approved construction documents and referenced standards.

LL. Steam-Heating Boiler: A boiler operated at pressures not exceeding 15 psi for steam.

MM. Supplier: Any person or organization who supplies materials or equipment for the work, including that fabricated to a special design.

NN. Utility: Any gas, steam, water, sanitary sewer, storm sewer, electrical or other such service.

OO. Water Supply System: The water service pipe, water distribution pipes, and the necessary connecting pipes, fittings, control valves and all appurtenances in or adjacent to the structure or premises.

1. Chilled: Water-cooled by refrigeration.
2. Cold: Water with at temperature between 33 degrees F and 80 degrees F and which is neither cooled nor heated mechanically.
3. Domestic: Water for use in buildings, except water used in connection with space heating and space cooling.
4. High Temperature: Water with a supply water temperature above 350 degrees.
5. Hot: Water at a temperature greater than or equal to 110ºF.

1.03 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Conflicting Requirements: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
   1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.04 ABBREVIATIONS AND ACRONYMS

AA	Aluminum Association, Inc. (The)
AABC	Associated Air Balance Council
AAALAC	Association for Assessment and Accreditation of Laboratory Animal Care
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	ACI International (American Concrete Institute)
ACPA	American Concrete Pipe Association
AF&PA	American Forest & Paper Association
AGA	American Gas Association
AGC	Associated General Contractors of America (The)
AHA	American Hardboard Association (part of CPA)
AI	Asphalt Institute
AIA	American Institute of Architects (The)
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ALSC	American Lumber Standard Committee, Incorporated

AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute
AOSA	Association of Official Seed Analysts, Inc.
APA	Architectural Precast Association
APA	APA - The Engineered Wood Association
ARI	Air-Conditioning & Refrigeration Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	ASME International
ASSE	American Society of Sanitary Engineering
ASTM	ASTM International
AWCMA	American Window Covering Manufacturers Association (WCSC)
AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association (The)
CBM	Certified Ballast Manufacturers
CCC	Carpet Cushion Council
CDA	Copper Development Association

CISCA	Ceilings & Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CPA	Composite Panel Association
CRI	Carpet & Rug Institute (The)
CRSI	Concrete Reinforcing Steel Institute
CSI	Cast Stone Institute
CSI	Construction Specifications Institute (The)
CTI	Cooling Technology Institute
DHI	Door and Hardware Institute
EIA	Electronic Industries Alliance
EIMA	EIFS Industry Members Association
EJCDC	Engineers Joint Contract Documents Committee
EJMA	Expansion Joint Manufacturers Association, Inc.
ESD	ESD Association
FM Approvals	Factory Mutual Approvals
FSA	Fluid Sealing Association
GA	Gypsum Association
GANA	Glass Association of North America
GSI	Geosynthetic Institute

HI	Hydraulic Institute
HI	Hydronics Institute
HMMA	Hollow Metal Manufacturers Association
HPVA	Hardwood Plywood & Veneer Association
ICEA	Insulated Cable Engineers Association, Inc
ICRI	International Concrete Repair Institute, Inc.
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)
IESNA	Illuminating Engineering Society of North America
IEST	Institute of Environmental Sciences and Technology
IGCC	Insulating Glass Certification Council
IGMA	Insulating Glass Manufacturers Alliance
ILI	Indiana Limestone Institute of America, Inc.
IPCEA	Insulated Power Cable Engineer Associates
ISO	International Organization for Standardization
ISSFA	International Solid Surface Fabricators Association
ITU	International Telecommunication Union
KCMA	Kitchen Cabinet Manufacturers Association
LEED	Leadership in Energy and Environmental Design

MBMA	Metal Building Manufacturers Association
MFMA	Maple Flooring Manufacturers Association, Inc.
MFMA	Metal Framing Manufacturers Association, Inc.
MIA	Marble Institute of America
MPI	Master Painters Institute
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.
NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International
NADCA	National Air Duct Cleaners Association
NAIMA	North American Insulation Manufacturers Association
NCMA	National Concrete Masonry Association
NCPI	National Clay Pipe Institute
NCTA	National Cable & Telecommunications Association
NEBB	National Environmental Balancing Bureau
NECA	National Electrical Contractors Association
NeLMA	Northeastern Lumber Manufacturers' Association
NEMA	National Electrical Manufacturers Association
NETA	National Electrical Testing Association
NFHS	National Federation of State High School Associations
NFPA	National Fire Protection Association

NFRC	National Fenestration Rating Council
NGA	National Glass Association
NHLA	National Hardwood Lumber Association
NLGA	National Lumber Grades Authority
NOFMA	NOFMA: The Wood Flooring Manufacturers Association
NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	NSF International (National Sanitation Foundation International)
NSSGA	National Stone, Sand & Gravel Association
NTMA	National Terrazzo & Mosaic Association, Inc. (The)
NWWDA	National Wood Window and Door Association (WDMA)
PCI	Precast/Prestressed Concrete Institute
PDCA	Painting & Decorating Contractors of America
PDI	Plumbing & Drainage Institute
PGI	PVC Geomembrane Institute
PTI	Post-Tensioning Institute
RCSC	Research Council on Structural Connections
RFCI	Resilient Floor Covering Institute
SAE	SAE International
SDI	Steel Deck Institute

SDI	Steel Door Institute
SEFA	Scientific Equipment and Furniture Association
SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers
SGCC	Safety Glazing Certification Council
SIA	Security Industry Association
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SPIB	Southern Pine Inspection Bureau (The)
SPRI	Single Ply Roofing Industry
SSINA	Specialty Steel Industry of North America
SSPC	SSPC: The Society for Protective Coatings
STI	Steel Tank Institute
SWRI	Sealant, Waterproofing, & Restoration Institute
TCA	Tile Council of America, Inc.

1.05 FEDERAL GOVERNMENT AGENCIES:

A. Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CE	Army Corps of Engineers

CPSC	Consumer Product Safety Commission
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FDA	Food and Drug Administration
GSA	General Services Administration
HUD	Department of Housing and Urban Development
NIST	National Institute of Standards and Technology
OSHA	Occupational Safety & Health Administration
PHS	Office of Public Health and Science
SD	State Department
TRB	Transportation Research Board
USDA	Department of Agriculture
USPS	Postal Service

B. Codes, Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list.

ADAAG	Americans with Disabilities Act (ADA) Accessibility Guidelines
BCNYS	Building Code of New York State
CFR	Code of Federal Regulations

DOD	Department of Defense Military Specifications and Standards
FS	Federal Specification
MILSPEC	Military Specification and Standards

1.06 NEW YORK STATE GOVERNMENT AGENCIES:

A. Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

DASNY	Dormitory Authority of the State of New York
DEC	Department of Environmental Conservation
DHCR	Division of Housing and Community Renewal
DOH	Department of Health
NYSDOL	New York State Department of Labor
DOS	Department of State
DOT	Department of Transportation
NYSPA	New York State Power Authority
OGS	Office of General Services
OCFS	Office of Children and Family Services
OMRD	Office of Mental Retardation and Developmental Disabilities
OPRHP	Office of Parks, Recreation and Historic Preservation

NYSED	New York State Education Department (Department of Education)
SHPO	State Historic Preservation Office
SUCF	State University Construction Fund
SUNY	State University of New York

1.07 NEW YORK STATE CODES

A. Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.
   1. BCNYS Building Code of New York State
   2. 9-NYCRR New York State Dept. of Labor Title 9 State Building Code
   3. 10-NYCRR New York State Dept. of Labor Title 10 State Hospital Code
   4. 19-NYCRR Charter XXXIII, Sub Charter A, Uniform Fire Prevention and Building Code

B. Where these abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.
   1. BCNYS Building Code of New York State
   2. ECCNYS Energy Conservation Code of New York State
   3. PCNYS Plumbing Code of New York State of New York State
   4. MCNYS Mechanical Code of New York State
   5. FGCNYS Fuel Gas Code of New York State
   6. FCNYS Fire Code of New York State

1.08 OTHER TERMS OR ACRONYMS:

A. Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name in the following list.
   1. Asbestos Containing Materials
   2. Acoustical Tile
   3. Infection Control Risk Assessment
   4. Resilient Vinyl Tile
   5. Suspended Acoustical Tile
   6. Spray on Fire Resistive Materials
   7. Thermal Systems Insulation
   8. Vinyl Asbestos Tile
   9. Vinyl Composition Tile

1.09 OTHER TERMS OR ACRONYMS:

A. Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name in the following list.
   a. Asbestos Containing Materials
   b. Acoustical Tile
   c. Infection Control Risk Assessment
   d. Resilient Vinyl Tile

e. Suspended Acoustical Tile
f. Spray on Fire Resistive Materials
g. Thermal Systems Insulation
h. Vinyl Asbestos Tile
i. Vinyl Composition Tile

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION 014200 014200

This page intentionally left blank

SECTION 014529
ASBESTOS TESTING LABORATORY SERVICES (NYS)

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Air monitoring services for asbestos removal provided by the Owner.
   2. Security expenses incurred by the District when building is unoccupied.

1.02 PERFORMANCE REQUIREMENTS

A. General: Provide air monitoring for the Owner to verify that the building areas beyond the asbestos abatement work areas and the exterior environment remain uncontaminated.
   1. Upon completion of abatement activities, verify that elevated airborne fiber count encountered during abatement operations have been reduced to an acceptable level.

B. Regulatory Requirements: Comply with the current and applicable portions of the following:
   1. New York State Regulations:
      a. 12NYCRR56, referred to as “Code Rule 56” of the NYS Codes, Rules and Regulations (Statutory Authority: New York State Labor Law Section 906).
         1) Exception: Variances obtained in accordance with Article 30 of the Labor Law.
      b. New York State School Asbestos Safety Act (SASA).
   2. Regulations and Requirements of Federal Agencies:
      a. Occupational Safety and Health Administration (OSHA).
      b. United States Environmental Protection Agency (EPA).
      c. 40 CFR Part 763 Subpart E (AHERA) Appendix A unless permitted otherwise by the N.Y. State Department of Labor, EPA, and the Owner's Representative.

1.03 SUBMITTALS

A. Proposed Materials and Equipment: List by brand name and model number including, but not necessarily limited to, the following:
   1. Sampling pumps.
   2. Sampling stands.
   3. Flow meters.
   4. Sample cassettes.
   5. Sample filters.
   6. Aggressive sampling equipment.
   7. Microscopes.

B. Qualification Data: For qualified testing laboratory, including the following:
   1. Current NYS Asbestos Contractor’s License.
   2. Certificate of the Environmental Laboratory Approval Program (ELAP).
   3. List of the names, addresses and telephone numbers of all laboratory technical personnel employed on the project.
   4. Current State and Federal licenses and certifications, analyst qualifications, respirator fit tests and medical screenings for all personnel.
   5. Lab CIH and field supervisor CIH's, ABIH and/or PIH's Certificate.

C. Sampling Plan: Proposed plan for sampling based on the air monitor's understanding of the project. The plan shall include:

1. Number and type of samples to be collected on each date.
2. Proposed methodologies for collection and analyzing samples.

D. References: Not less than three (3) three names and telephone numbers from New York State Public School Districts (K-12) in which asbestos project consultation has been approved.

1.04 QUALITY ASSURANCE

A. Daily Recordkeeping:
1. For all records, each sheet shall include all necessary “who, what, when, how” data by minimally including project, work area, location, dates, times, type, person doing the work, applicable observations, and sample I.D. instruments used.
2. Field sheets shall be kept for each sample during collection. Field sheets shall additionally include start/stop times of pumps, sample I.D. number, air volumes, machine used, filters, calibration data, Owner's Representative sign-off, etc. For exterior samples, include temperature, wind speed and direction, and precipitation data.
3. A chain of custody form shall be initiated for each sample in the field. The form shall be kept with the sample and updated as the sample changes possession.
4. Samples will be logged in at the laboratory, and a separate lab sheet (or combined with field sheet) shall be kept, for all lab data, for each sample, equipment used, count, methodology, calculations and interpretations.
5. Daily field sheets, lab analysis and chain of custody sheets, for each work area set of samples, shall be kept together with a summary cover sheet indicating general data above, specific fiber counts for each sample, plus applicable calculations, status of blanks, and interpretations of "pass" or "failed". Phone notification data shall also be included. These shall all be stapled together at the upper left-hand corner. This shall comprise a "Daily Progress Report" for that work area.
6. This Recordkeeping format shall also apply to samples taken prior to commencement of work and for final air clearance.

B. Documentation:
1. Weekly Air Monitoring Results: At the beginning of each week (Monday) written summary results of the prior week’s air samples shall be submitted to the School District's Environmental Safety Office. Each work area shall have a summary of daily analysis including a listing of counts for each sample with locations indicated and interpretation results.
2. Close-out Documentation: Within (2) two weeks from the completion of the project, the air monitoring contractor shall submit three (3) three bound copies of a final report; (1) one copy to the Project Inspector, (2) two copies to the School District's Environmental Safety Office. The final reports shall be broken down by each work area including:
   a. Project Executive Summary per work area including an overall project description, a summary "Daily Progress Reports", dates of non-compliance, reasons, actions taken by Asbestos Abatement Contractor to bring into compliance. Final air clearance interpretation.
   b. "Daily Progress Reports” includes field logs, calculations, lab logs, counts, interpretations, chain of custody documents. All organized consecutively by days.
   c. Final Clearance PCM Sample Results, counts, calculations, and interpretations.
   d. Final Clearance TEM Sample Results, counts, calculations, and interpretations.
   e. Floor plans for each work area identifying exact sample locations including separate drawings for pre-abatement, during abatement, and final clearance sampling.
   f. Certified Industrial Hygienist Certification (Stamp).
   g. Air sample pump and rotometer calibration records.

h. A copy of all start of work submittals required in the SUBMITTALS article of this Section.

C. Worker Protection:
1. The air-monitoring contractor shall supply all air-sampling technicians with the proper respiratory protection and training.
2. The air-sampling technicians shall enter and exit the work areas using the protocols established for personal decontamination for asbestos projects.

D. Supervision: Supervise and certify by a CIH or a Professional Industrial Hygienist (PIH) all air monitoring practices and procedures. The PIH's responsibilities shall include:
1. Review and become familiar with the asbestos project specifications.
2. Attend at a minimum the initial pre-abatement meeting.
3. Review and document that preliminary, concurrent, and final air sampling and pump calibration techniques conform to AHERA and New York State asbestos abatement regulations.
4. Visit the project site at a minimum of one time per week, accompanied by School District's Director of Environmental Safety, to document and insure proper sampling techniques, methods and equipment are being utilized and conform to AHERA and New York State requirements.
5. Review and certify (stamp) final reports.

1.05 COORDINATION

A. General: Coordinate the activities of the air-sampling technicians with the abatement contractor and Owner's Representative.

B. Collect air samples, 24 hours a day, seven days a week, as instructed by the Owner's Representative.
1. Present the field sheet to the Owner's Representative to be initialed and dated prior to leaving the site.
2. Unless otherwise instructed by the Owner's Representative, air sampling shall be performed during the abatement contractor's shift.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. General: Provide all necessary and proper materials and equipment, canisters, filters, etc. to obtain and process air samples.

PART 3 EXECUTION

3.01 SAMPLES

A. Air sampling shall occur continuously during all shift hours of the contractors per Code Rule 56. Minimally this shall be assumed as 9 hours per day, 7 days a week.

B. The air-sampling technician shall calibrate sampling pumps on site at least once before, once at the midpoint and once after the collection of samples, and record in the field sheets.

C. Where possible, sample locations shall be at least 3-feet from any wall or column and 2-feet above the floor. Sampler shall be supported by a stand.

D. For clearance sampling, the air sampling technician shall provide aggressive air sampling per Rule 56 and as follows:
1. First direct the exhaust of a leaf blower against all walls, ceilings, floors, ledges, and other surfaces in the work area.

2. Continue agitation for at least five minutes per every 1,000 sf of floor space. Following this aggressive agitation, the air-sampling technician shall use at least one 20-inch fan per 10,000 cubic feet of work area space for continuous agitation.
3. The fan shall be operated on low speed and pointed toward the ceiling.
4. Sampling pumps shall be started after the fans are started and stopped before the fans are stopped.

3.02 ANALYSIS

A. Samples shall be logged on a permanently bound logbook at the laboratory. No whiteout will be used to make corrections.

B. All lab counts, data and analysis shall be recorded on a lab summary sheet for each sample.

C. When both TEM and PCM Clearance samples are collected, PCM samples shall be analyzed first. TEM samples will be analyzed only if PCM samples pass clearance criteria.
   1. If TEM samples are analyzed, they shall be analyzed one at a time until the number of asbestos structures counted total 350, or one more sample is found to have 140 asbestos structures. If, and only if, neither of these cases is found, then all TEM samples will be analyzed.

D. Analytical Methods: The following methods shall be used in analyzing filters used to collect air samples:
   1. Cellulose ester filters (PCM) shall be analyzed using NIOSH 7400. This analysis shall be carried out at a laboratory located off the job site.
   2. Polycarbonate filers (TEM) shall be analyzed using AHERA Counting Protocol analysis per EPA.

E. If blank samples analysis causes that batch of samples to be suspect so as to cause resampling that shall be done at no cost to the Owner.

3.03 INTERPRETATIONS

A. Daily monitoring sample results shall be daily compared to all requirement levels per Rule 56. If they exceed background or .01 fibers per C.C., Air Monitoring Contractor shall fail the daily sample. If all samples are satisfactory, the summary sheet shall so indicate.
   1. Final Clearance Monitoring: Satisfactory levels.

B. For Code Rule 56 PCM Analysis: The clearance air monitoring results shall be considered satisfactory when every sample demonstrates an airborne concentration of asbestos fibers of less than 0.01 fibers per cubic centimeter, or the background level, whichever is greater.

C. For AHERA TEM Analysis: Clearance shall be satisfactory per AHERA protocols including: If the mean average of all the inside samples have asbestos structure concentrations at or below 70 s/mm' and the average airborne asbestos concentrations inside the area is not higher than the average outside calculated by the "Z" Test. All analysis to be per AHERA requirements.

D. Passing of PCM/56 criteria shall satisfy that requirement. Further work by the Asbestos Abatement Contractor, daily monitoring, and clearance retesting need only be done to satisfy the failed TEM method. If PCM/56 sampling fails, TEM samples will be discarded unanalyzed and the clearance has failed. Recleaning and resampling is required for both the PCM and TEM.

3.04 NOTIFICATION

A. Results for pre-abatement and daily abatement sampling shall be reported to the Owner's Representative and the Asbestos Abatement Contractor within 48 hours with the exception that the few final daily sample results must be reported to the Owner's Representative within 24 hours of the clearance sampling. Results for clearance sampling and roofing work area samples shall be reported to the Owner's Representative and the Asbestos Abatement Contractor within 24 hours.

B. If any daily monitoring of clearance sampling fails, the Asbestos Abatement Contractor shall immediately notify the Owner's Representative and the applicable Asbestos Abatement Contractor. The Asbestos Abatement Contractor shall make note of possible reasons for failure, and what corrective actions the Asbestos Abatement Contractor undertakes.

C. All notifications shall occur first by telephone followed by written notices. Telephone notifications shall be recorded indicating who was notified, position, time, date, telephone number, etc. Telephone notification shall only be to acceptable people approved at the beginning of the project.

D. Final air clearance results shall be sent to the Commissioner of Labor per CR-56, minimally by certified mail with copies and certificate to the Owner's Representative.

3.05 SCHEDULE OF AIR SAMPLES

A. Before start of work, verify locations and number of samples, as well as methodology for approval. Submittal shall include pre-abatement, post-abatement and during-abatement phases. Comply with Part 56.
   1. Per the requirements of the New York State Education Department all Final Air Clearance Samples shall be (TEM) Transmission Electron Microscopy Methodology.

END OF SECTION 014529 014529

This page intentionally left blank

SECTION 014533
CODE-REQUIRED SPECIAL INSPECTIONS AND PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Code-required special inspections.

B. Testing services incidental to special inspections.

C. Submittals.

D. Manufacturers' field services.

E. Fabricators' field services.

1.02 RELATED REQUIREMENTS

A. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 003119 - Existing Condition Information: Soil investigation data.

C. Document 007100 - General Conditions: Inspections and approvals required by public authorities.

D. Section 012100 - Allowances: Allowance for payment of testing services.

E. Section 013300 Submittal Procedures: Submittal procedures.

F. Section 014000 - Quality Requirements.

G. Section 014200 - Reference Standards.

H. Section 016000 - Product Requirements: Requirements for material and product quality.

1.03 ABBREVIATIONS AND ACRONYMS

A. AHJ: Authority having jurisdiction.

B. IAS: International Accreditation Service, Inc.

C. NIST: National Institute of Standards and Technology.

1.04 DEFINITIONS

A. Code or Building Code: ICC (IBC)-2018, Edition of the International Building Code and specifically, Chapter 17 - Special Inspections and Tests.

B. Authority Having Jurisdiction (AHJ): Agency or individual officially empowered to enforce the building, fire and life safety code requirements of the permitting jurisdiction in which the Project is located.

C. Special Inspection:
   1. Special inspections are inspections and testing of materials, installation, fabrication, erection or placement of components and connections mandated by the AHJ that also require special expertise to ensure compliance with the approved Contract Documents and the referenced standards.
   2. Special inspections are separate from and independent of tests and inspections conducted by Owner or Contractor for the purposes of quality assurance and contract administration.

1.05 REFERENCE STANDARDS

A. ACI 318 - Building Code Requirements for Structural Concrete; 2019 (Reapproved 2022).

B. AISC 341 - Seismic Provisions for Structural Steel Buildings; 2022.

C. AISC 360 - Specification for Structural Steel Buildings; 2022, with Errata (2025).

D. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

E. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2024.

F. ASTM A706/A706M - Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement; 2024.

G. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field; 2024.

H. ASTM C172/C172M - Standard Practice for Sampling Freshly Mixed Concrete; 2017.

I. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing of Soil and Rock as Used in Engineering Design and Construction; 2026.

J. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2021.

K. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2026.

L. ASTM E605/E605M - Standard Test Methods for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members; 2019 (Reapproved 2023).

M. ASTM E736/E736M - Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members; 2019 (Reapproved 2023).

N. ASTM E2174 - Standard Practice for On-Site Inspection of Installed Firestop Systems; 2024.

O. ASTM E2393 - Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers; 2024.

P. ASTM E2570/E2570M - Standard Test Methods for Evaluating Water-Resistive Barrier (WRB) Coatings Used Under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage; 2007 (Reapproved 2025).

Q. AWCI 117 - Technical Manual 12-B; Standard Practice for the Testing and Inspection of Field Applied Thin Film Intumescent Fire-Resistive Materials; an Annotated Guide; 2014.

R. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2022).

S. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel; 2018.

T. AWS D1.4/D1.4M - Structural Welding Code - Steel Reinforcing Bars; 2018, with Amendment (2020).

U. IAS AC89 - Accreditation Criteria for Testing Laboratories; 2021.

V. IAS AC291 - Accreditation Criteria for Special Inspection Agencies AC291; 2023.

W. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

X. ICC (IBC)-2009 - International Building Code; 2009.

Y. ICC (IBC)-2012 - International Building Code; 2012.

Z. ICC (IBC)-2015 - International Building Code; 2015.

AA. ICC (IBC)-2018 - International Building Code; 2018.

BB. SDI QA/QC - Standard for Quality Control and Quality Assurance for Installation of Steel Deck; 2022.

CC. SJI 100 - Standard Specifications for K-Series, LH-Series, and DLH-Series Open Web Steel Joists, and for Joist Girders; 2020.

DD. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022.

1.06 SUBMITTALS

A. See Section 013300 Submittal Procedures, for submittal procedures.

B. Special Inspection Agency Qualifications: Prior to the start of work, the Special Inspection Agency is required to:
   1. Submit agency name, address, and telephone number, names of full time registered Engineer and responsible officer.
   2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
   3. Submit certification that Special Inspection Agency is acceptable to AHJ.
   4. Submit documentation that Special Inspection Agency is accredited by IAS according to IAS AC291.

C. Testing Agency Qualifications: Prior to the start of work, the Testing Agency is required to:
   1. Submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
   2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
   3. Submit certification that Testing Agency is acceptable to AHJ.
   4. Submit documentation that Testing Agency is accredited by IAS according to IAS AC89.

D. Smoke Control Testing Agency Qualifications: Prior to the start of work, the Testing Agency is required to:
   1. Submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
   2. Submit documentary evidence that agency has appropriate credentials and documented experience in fire protection engineering, mechanical engineering and HVAC air balancing.
   3. Submit certification that Testing Agency is acceptable to AHJ.
   4. Submit documentation that Testing Agency is accredited by IAS according to IAS AC89.

E. Manufacturer's Qualification Statement: Manufacturer is required to submit documentation of manufacturing capability and quality control procedures. Include documentation of AHJ approval.

F. Fabricator's Qualification Statement: Fabricator is required to submit documentation of fabrication facilities and methods as well as quality control procedures. Include documentation of AHJ approval.

G. Special Inspection Reports: After each special inspection, Special Inspector is required to promptly submit at least two copies of report; one to Architect and one to the AHJ.
   1. Include:
      a. Date issued.
      b. Project title and number.

c. Name of Special Inspector.
d. Date and time of special inspection.
e. Identification of product and specifications section.
f. Location in the Project.
g. Type of special inspection.
h. Date of special inspection.
i. Results of special inspection.
j. Compliance with Contract Documents.

2. Final Special Inspection Report: Document special inspections and correction of discrepancies prior to the start of the work.

H. Fabricator Special Inspection Reports: After each special inspection of fabricated items at the Fabricator's facility, Special Inspector is required to promptly submit at least two copies of report; one to Architect and one to AHJ.
1. Include:
a. Date issued.
b. Project title and number.
c. Name of Special Inspector.
d. Date and time of special inspection.
e. Identification of fabricated item and specification section.
f. Location in the Project.
g. Results of special inspection.
h. Verification of fabrication and quality control procedures.
i. Compliance with Contract Documents.
j. Compliance with referenced standard(s).

I. Test Reports: After each test or inspection, promptly submit at least two copies of report; one to Architect and one to AHJ.
1. Include:
a. Date issued.
b. Project title and number.
c. Name of inspector.
d. Date and time of sampling or inspection.
e. Identification of product and specifications section.
f. Location in the Project.
g. Type of test or inspection.
h. Date of test or inspection.
i. Results of test or inspection.
j. Compliance with Contract Documents.

J. Certificates: When specified in individual special inspection requirements, Special Inspector shall submit certification by the manufacturer, fabricator, and installation subcontractor to Architect and AHJ, in quantities specified for Product Data.
1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect and AHJ.

K. Manufacturer's Field Reports: Submit reports to Architect and AHJ.
1. Submit report in duplicate within 30 days of observation to Architect for information.
2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in Contract Documents.

L. Fabricator's Field Reports: Submit reports to Architect and AHJ.

1. Submit report in duplicate within 30 days of observation to Architect for information.
2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in Contract Documents.

1.07 SPECIAL INSPECTION AGENCY

A. Owner or Architect will employ services of a Special Inspection Agency to perform inspections and associated testing and sampling in accordance with ASTM E329 and required by the building code.

B. The Special Inspection Agency may employ and pay for services of an independent testing agency to perform testing and sampling associated with special inspections and required by the building code.

C. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.08 TESTING AND INSPECTION AGENCIES

A. Owner or Architect may employ services of an independent testing agency to perform additional testing and sampling associated with special inspections but not required by the building code.

B. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.09 QUALITY ASSURANCE

A. Special Inspection Agency Qualifications:
   1. Independent firm specializing in performing testing and inspections of the type specified in this section.
   2. Accredited by IAS according to IAS AC291.

B. Testing Agency Qualifications:
   1. Independent firm specializing in performing testing and inspections of the type specified in this section.
   2. Accredited by IAS according to IAS AC89.

C. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 SCHEDULE OF SPECIAL INSPECTIONS, GENERAL

A. Frequency of Special Inspections: Special Inspections are indicated as continuous or periodic.
   1. Continuous Special Inspection: Special Inspection Agency is required to be present in the area where the work is being performed and observe the work at all times the work is in progress.
   2. Periodic Special Inspection: Special Inspection Agency is required to be present in the area where work is being performed and observe the work part-time or intermittently and at the completion of the work.

3.02 SPECIAL INSPECTIONS FOR STEEL CONSTRUCTION

A. Structural Steel: Comply with quality assurance inspection requirements of ICC (IBC)-2018.

B. Cold-Formed Steel Deck: Comply with quality assurance inspection requirements of SDI QA/QC.

C. Open-Web Joists and Joist Girders: Comply with requirements of ICC (IBC), Table 1705.2.3.
   1. End Connections - Welding or Bolted: Comply with requirements of SJI 100; periodic.
   2. Bridging - Horizontal or Diagonal:
      a. Standard Bridging: Comply with requirements of SJI 100; periodic.
      b. Bridging That Differs From the SJI Specifications: Periodic inspection.

D. Cold-Formed Steel Trusses Spanning 60 feet or Greater: Special Inspector is required to verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.

E. High-Strength Bolt, Nut and Washer Material:
   1. Verify identification markings comply with ASTM standards specified in the approved contract and to AISC 360, Section A3.3; periodic.
   2. Submit manufacturer's certificates of compliance; periodic.

F. High-Strength Bolting Installation: Verify items listed below comply with AISC 360, Section M2.5.
   1. Snug tight joints; periodic.
   2. Pretensioned and slip-critical joints with matchmarking, twist-off bolt or direct tension indicator method of installation; periodic.
   3. Pretensioned and slip-critical joints without matchmarking or calibrated wrench method of installation; continuous.

G. Structural Steel and Cold Formed Steel Deck Material:
   1. Structural Steel: Verify identification markings comply with AISC 360, Section M3.5; periodic.
   2. Other Steel: Verify identification markings comply with ASTM standards specified in the approved Contract Documents; periodic.
   3. Submit manufacturer's certificates of compliance and test reports; periodic.

H. Weld Filler Material:
   1. Verify identification markings comply with AWS standards specified in the approved Contract Documents and to AISC 360, Section A3.5; periodic.
   2. Submit manufacturer's certificates of compliance; periodic.

I. Welding:
   1. Structural Steel and Cold Formed Steel Deck:
      a. Complete and Partial Joint Penetration Groove Welds: Verify compliance with AWS D1.1/D1.1M; continuous.
      b. Multipass Fillet Welds: Verify compliance with AWS D1.1/D1.1M; continuous.
      c. Single Pass Fillet Welds Less than 5/16 inch Wide: Verify compliance with AWS D1.1/D1.1M; periodic.
      d. Plug and Slot Welds: Verify compliance with AWS D1.1/D1.1M; continuous.
      e. Single Pass Fillet Welds 5/16 inch or Greater: Verify compliance with AWS D1.1/D1.1M; continuous.
      f. Floor and Roof Deck Welds: Verify compliance with AWS D1.3/D1.3M; continuous.

J. Steel Frame Joint Details: Verify compliance with approved Contract Documents.
   1. Details, bracing and stiffening; periodic.

2. Member locations; periodic.
3. Application of joint details at each connection; periodic.

K. Cold-formed steel trusses spanning 60 feet or more; periodic.

3.03 SPECIAL INSPECTIONS FOR CONCRETE CONSTRUCTION

A. Reinforcement, Including Prestressing Tendons, and Verification of Placement: Verify compliance with ACI 318, Chapters 20, 25.2, 25.3, 26.6.1-26.6.3; periodic.

B. Anchors Cast in Concrete: Verify compliance with ACI 318; periodic.

C. Anchors Post-Installed in Hardened Concrete: Verify compliance with ACI 318.
1. Adhesive Anchors: Verify horizontally or upwardly-inclined orientation installations resisting sustained tension loads - Section 17.8.2.4; continuous.
2. Other Mechanical and Adhesive Anchors: Verify as per Chapter 17.8.2; periodic.

D. Design Mix: Verify plastic concrete complies with the design mix in approved Contract Documents and with ACI 318, Chapter 19, 16.4.3, 26.4.4; periodic.

E. Concrete Sampling Concurrent with Strength Test Sampling: Each time fresh concrete is sampled for strength tests, verify compliance with ASTM C172/C172M, ASTM C31/C31M and ACI 318, Chapter 26.5, 26.12, and record the following, continuous:
1. Slump.
2. Air content.
3. Temperature of concrete.

F. Concrete and Shotcrete Placement: Verify application techniques comply with approved Contract Documents and ACI 318, Chapter 26.5; continuous.

G. Specified Curing Temperature and Techniques: Verify compliance with ACI 318, Chapter 26.5.3 through 26.5.5; periodic.

H. Precast Concrete Members: Verify erection techniques and placement comply with approved Contract Documents and ACI 318, Chapter 26.9; periodic.

I. Formwork Shape, Location and Dimensions: Verify compliance with approved Contract Documents and ACI 318, Chapter 26.11.1.2(b); periodic.

J. Materials: If the Contractor cannot provide sufficient data or documentary evidence that concrete materials comply with the quality standards of ACI 318, the AHJ will require testing of materials in accordance with the appropriate standards and criteria in ACI 318, Chapters 19 and 20.

3.04 SPECIAL INSPECTIONS FOR MASONRY CONSTRUCTION

A. Masonry Structures Subject to Special Inspection:
1. Masonry construction when required by the quality assurance program of TMS 402/602.
2. Engineered masonry in structures classified as "Standard Hazard" (Category II.)
   a. Perform inspections in accordance with Level B Quality Assurance.

B. Verify each item below complies with approved Contract Documents and the applicable articles of TMS 402/602.
1. Inspections and Approvals:
   a. Verify compliance with the required inspection provisions of the approved Contract Documents; periodic.
   b. Verify approval of submittals required by Contract Documents; periodic.
2. Compressive Strength of Masonry: Verify compressive strength of masonry units prior to start of construction unless specifically exempted by code; periodic.

3. Slump Flow and Visual Stability Index (VSI): Verify compliance as self consolidating grout arrives on site; continuous.
4. Joints and Accessories: When masonry construction begins, verify:
   a. Proportions of site prepared mortar; periodic.
   b. Construction of mortar joints; periodic.
   c. Location of reinforcement, connectors, prestressing tendons, anchorages, etc; periodic.
   d. Prestressing technique; periodic.
   e. Grade and size of prestressing tendons and anchorages; periodic.
5. Structural Elements, Joints, Anchors, Protection: During masonry construction, verify:
   a. Size and location of structural elements; periodic.
   b. Type, size and location of anchors, including anchorage of masonry to structural members, frames or other construction; periodic.
   c. Size, grade and type of reinforcement, anchor bolts and prestressing tendons and anchorages; periodic.
   d. Welding of reinforcing bars; continuous.
   e. Preparation, construction and protection of masonry against hot weather above 90 degrees F and cold weather below 40 degrees F; periodic.
   f. Application and measurement of prestressing force; continuous.
6. Grouting Preparation: Prior to grouting, verify:
   a. Grout space is clean; periodic.
   b. Correct placement of reinforcing, connectors, prestressing tendons and anchorages; periodic.
   c. Correctly proportioned site prepared grouts and prestressing grout for bonded tendons; periodic.
   d. Correctly constructed mortar joints; periodic.
7. Preparation of Grout Specimens, Mortar Specimens and Prisms: Observe preparation of specimens; periodic.

C. Engineered Masonry in Buildings Designated as "Essential Facilities": Verify compliance of each item below with approved Contract Documents and the applicable articles of TMS 402/602.
   1. Inspections and Approvals:
      a. Perform inspections in accordance with Level C Quality Assurance.
      b. Verify compliance with the required inspection provisions of the approved Contract Documents; periodic.
      c. Verify approval of submittals required by Contract Documents; periodic.
   2. Compressive Strength of Masonry: Verify compressive strength of masonry units prior to start of construction and upon completion of each 5,000 square feet increment of masonry erected during construction; periodic.
   3. Preblended Mortar and Grout: Verify proportions of materials upon delivery to site; periodic.
   4. Slump Flow and Visual Stability Index (VSI): Verify compliance as self consolidating grout arrives on site; continuous.
   5. Engineered Elements, Joints, Anchors, Grouting, Protection: Verify compliance of each item below with approved Contract Documents and referenced standards.
      a. Proportions of site prepared mortar; periodic.
      b. Placement of masonry units and construction of mortar joints; periodic.
      c. Placement of reinforcement, connectors, prestressing tendons, anchorages, etc.; periodic.
      d. Grout space prior to grouting; continuous.

e. Placement of grout; continuous.
f. Placement of prestressing grout; continuous.
g. Size and location of structural elements; periodic.
h. Type, size and location of anchors, including anchorage of masonry to structural members, frames or other construction; continuous.
i. Size, grade and type of reinforcement, anchor bolts and prestressing tendons and anchorages; periodic.
j. Welding of reinforcing bars; continuous.
k. Preparation, construction and protection of masonry against hot weather above 90 degrees F and cold weather below 40 degrees F; periodic.
l. Application and measurement of prestressing force; continuous.

6. Preparation of Grout Specimens, Mortar Specimens and Prisms: Observe preparation of specimens; continuous.

3.05 SPECIAL INSPECTIONS FOR PREFABRICATED AND SITE-BUILT WOOD CONSTRUCTION

A. High Load Diaphragms: Verify compliance of each item below with approved Contract Documents.
1. Grade and thickness of sheathing.
2. Nominal size of framing members at adjacent panel edges.
3. Nail or staple diameter and length.
4. Number of fastener lines.
5. Fastener spacing at lines and at edges.

B. Metal Plate Connected Wood Trusses with Clear Span of 60 feet or More: Verify compliance of each item below with approved Contract Documents in general and with approved truss submittal package in particular.
1. Temporary restraint and bracing.
2. Permanent individual truss member restraint and bracing.

3.06 SPECIAL INSPECTIONS FOR SOILS

A. Materials and Placement: Verify each item below complies with approved construction documents and approved geotechnical report.
1. Design bearing capacity of material below shallow foundations; periodic.
2. Design depth of excavations and suitability of material at bottom of excavations; periodic.
3. Materials, densities, lift thicknesses; placement and compaction of backfill: continuous.
4. Subgrade, prior to placement of compacted fill verify proper preparation; periodic.

B. Testing: Classify and test excavated material; periodic.

3.07 STRUCTURAL OBSERVATIONS FOR STRUCTURES

A. Provide Observations: For structure where one or more of the following conditions exist:
1. The structure is classified as Risk Category IV.
2. The structure is a high-rise building.
3. Such observation is required by the registered design professional responsible for the structural design.
4. Such observation is specifically required by AHJ.

3.08 SPECIAL INSPECTION AGENCY DUTIES AND RESPONSIBILITIES

A. Special Inspection Agency shall:
   1. Verify samples submitted by Contractor comply with the referenced standards and the approved Contract Documents.
   2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   3. Perform specified sampling and testing of products in accordance with specified reference standards.
   4. Ascertain compliance of materials and products with requirements of Contract Documents.
   5. Promptly notify Architect and Contractor of observed irregularities or non-compliance of work or products.
   6. Perform additional tests and inspections required by Architect.
   7. Attend preconstruction meetings and progress meetings.
   8. Submit reports of all tests or inspections specified.

B. Limits on Special Inspection Agency Authority:
   1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency may not approve or accept any portion of the work.
   3. Agency may not assume any duties of Contractor.
   4. Agency has no authority to stop the work.

C. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.

D. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.09 TESTING AGENCY DUTIES AND RESPONSIBILITIES

A. Testing Agency Duties:
   1. Test samples submitted by Contractor.
   2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   3. Perform specified sampling and testing of products in accordance with specified standards.
   4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   5. Promptly notify Architect and Contractor of observed irregularities or non-compliance of work or products.
   6. Perform additional tests and inspections required by Architect.
   7. Attend preconstruction meetings and progress meetings.
   8. Submit reports of all tests or inspections specified.

B. Limits on Testing or Inspection Agency Authority:
   1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency may not approve or accept any portion of the work.
   3. Agency may not assume any duties of Contractor.
   4. Agency has no authority to stop the work.

C. On instructions by Architect, perform re-testing required because of non-compliance with specified requirements, using the same agency.

D. Contractor will pay for re-testing required because of non-compliance with specified requirements.

3.10 CONTRACTOR DUTIES AND RESPONSIBILITIES

A. Contractor Responsibilities, General:
   1. Deliver to agency at designated location, adequate samples of materials for special inspections that require material verification.
   2. Cooperate with agency and laboratory personnel; provide access to approved documents at project site, to the work, to manufacturers' facilities, and to fabricators' facilities.
   3. Provide incidental labor and facilities:
      a. To provide access to work to be tested or inspected.
      b. To obtain and handle samples at the site or at source of Products to be tested or inspected.
      c. To facilitate tests or inspections.
      d. To provide storage and curing of test samples.
   4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing or inspection services.
   5. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
   6. Retain special inspection records.

B. Contractor Responsibilities, Seismic Force-Resisting System, Designated Seismic System, and Seismic Force-Resisting Component: Submit written statement of responsibility for each item listed in the Statement of Special Inspections to AHJ and Owner prior to starting work. Statement of responsibility shall acknowledge awareness of special construction requirements and other requirements listed.

C. Contractor Responsibilities, Wind Force-Resisting System and Wind Force-Resisting Component: Submit written statement of responsibility for each item listed in the Statement of Special Inspections to AHJ and Owner prior to starting work. Statement of responsibility shall acknowledge awareness of special construction requirements and other requirements listed.

3.11 MANUFACTURER'S AND FABRICATOR'S FIELD SERVICES

A. When specified in individual specification sections, require material suppliers, assembly fabricators, or product manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, to test, adjust, and balance equipment and _____ as applicable, and to initiate instructions when necessary.

B. Submit qualifications of observer to Architect 30 days in advance of required observations.
   1. Observer subject to approval of Architect.
   2. Observer subject to approval of Owner.

C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.12 STATEMENT OF SPECIAL INSPECTIONS

A. Refer to attached form, “Statement of Special Inspections”, at the end of this section.

B. Refer to attached, “Schedule of Special Inspections”, at the end of this section.

3.13 SPECIAL INSPECTION REPORTS

A. Report Requirement: Special Inspectors shall keep records of inspections. The special inspector shall furnish inspection reports to the code enforcement official, and to the registered design professional in responsible charge.
   1. Reports shall indicate that work inspected was done in conformance to approved construction documents.
   2. Discrepancies shall be brought to the immediate attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the code enforcement official and to the registered design professional in responsible charge prior to the completion of that phase of the work.

B. Periodic Report: On the first day of each month, the special inspector shall furnish to the Architect five copies of the combined progress reports of the special inspector's observations. These progress reports shall list all special inspections of construction or reviews of testing performed during that month, note all uncorrected deficiencies, and describe the corrections made both to these deficiencies and to previously reported deficiencies.
   1. Each monthly report shall be signed by all special inspectors who performed special inspections of construction or reviewed testing during that month, regardless of whether they reported any deficiencies.
   2. Each monthly report shall be signed by the Contractor.

C. Final Report: At completion of construction, each special inspector shall prepare and sign a final report attesting that all work they inspected and all testing and test reports they reviewed were completed in accordance with the approved construction documents and that deficiencies identified were satisfactorily corrected.
   1. The Special Inspector shall submit a combined final report containing the signed final reports.
   2. The Contractors shall sign the combined final report attesting that all final reports of special inspectors that performed work to comply with these construction documents are contained therein, and that the Contractor has reviewed and approved all of the individual inspector's final reports.
   3. Refer to attached form, “Special Inspections Report”, attached at the end of this section.

STATEMENT OF SPECIAL INSPECTIONS

Name of Project:	
Address or Legal **Description:**	
Owner's Name:	
AUTHORITY HAVING JURISDICTION:	
Signed:	
I , as the structural engineer of record, certify that I have prepared the following special inspections program as required by the **XXXX** Building Code for the construction project located at the site listed above.	
Printed Name:	
	Seal Signature: Date:
List of work requiring special inspections: See following schedule.	

SPECIAL INSPECTIONS REPORT

Report Type: ____Continuous ____Periodic ____Final
Work/Material Inspected:
Project Name:
Address or Legal Description:
Owner's Name:
Phone:
email:
Approved Inspection Agency:
Address:
Phone:
email:
Authority Having Jurisdiction:
Address:
Phone:
email:
Registered Design Professional of Record:
Address:
Phone:
email:
Statement of Conformance:
Discrepancies:
____None
Contractor review:
Contractor signature:
Contractor correction:
Outstanding Discrepancies:
____None
Authority Having Jurisdiction review:
Registered Design Professional review:

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1704.2.5 INSPECTION OF FABRICATORS				
Verify fabrication / quality control procedures	In-plant review		Y	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.1.1 SPECIAL CASES				
1. Work that is unusual in its nature, such as, but not limited to:				
A. Construction materials and systems that are alternatives to materials and systems prescribed by the Building Code	Submittal review, shop[3] and / or field inspection		Y	Periodic
B. Unusual design applications of materials described in the Building Code	Submittal review, shop[3] and / or field inspection		Y	Periodic
C. Materials and systems required to be installed in accordance with additional manufacturer's instructions that prescribe requirements not contained in the Building Code or in standards referenced by the Building Code	Submittal review, shop[3] and / or field inspection		Y	Periodic
2. Inspection of anchors post-installed in solid grouted masonry per research reports including verification of:				
A. Anchor type and dimensions	Field inspection		Y	Periodic
B. Hole dimensions and cleaning procedures	Field inspection		Y	Periodic
C. Anchor spacing and edge distances	Field inspection		Y	Periodic
D. Masonry unit, grout, masonry compressive strength	Field inspection		Y	Periodic
E. Anchor embedment and tightening torque	Field inspection		Y	Periodic
3. Aggregate piers				
A. Prior to construction:				

a. Review of aggregate pier designer's use of soil parameters as presented in the project soils report	Field inspection		N	Periodic
B. During construction:				
a. Verification of aggregate properties	Field inspection		N	Periodic
b. Type and number of lifts of aggregate	Field inspection		N	Periodic
c. Verify compliance of with design results of qualitative tests on production aggregate pier elements such as modulus load testing, uplift pull-out testing, bottom stabilization tests and dynamic cone penetration tests	Field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.2 STEEL CONSTRUCTION				
1. Fabricator and erector documents	Submittal review	AISC 360, Section N3.2	Y	Each submittal
2. Material verification of structural steel	Shop[3] and field inspection		Y	Periodic
3. Structural steel welding:				
A. Inspection tasks prior to welding:				
Observe, or perform for each welded joint or member in accordance with QA tasks	Shop[3] and field inspection	AISC 360, Table N5.4-1	Y	Observe or Perform as noted[4]
B. Inspection tasks during welding:				
Observe, or perform for each welded joint or member in accordance with QA tasks	Shop[3] and field inspection	AISC 360, Table N5.4-2	Y	Observe[4]
C. Inspection tasks after welding:				
Observe, or perform for each welded joint or member in accordance with QA tasks	Shop[3] and field inspection	AISC 360, Table N5.4-3	Y	Observe or Perform as noted[4]
D. Nondestructive testing (NDT) of welded joints:				
a) Complete penetration groove welds 5/16" or greater in risk category III or IV	Shop[3] or field ultrasonic testing - 100%		Y	Periodic

b) Complete penetration groove welds 5/16" or greater in risk category II	Shop[3] or field ultrasonic testing - 10% of welds minimum		Y	Periodic
c) Welded joints subject to fatigue when required	Shop[3] or field radiographic or Ultrasonic testing	AISC 360, Appendix 3, Table A3.1	Y	Periodic
d) Fabricator's NDT reports when fabricator performs NDT	Verify reports		Y	Periodic
4. Structural steel bolting:	Shop[3] and field inspection			
a. Inspection tasks Prior to Bolting (Observe, or perform tasks for each bolted connection, in accordance with QA tasks		AISC 360, Table N5.6-1	Y	Observe or Perform as noted[4]
b. Inspection tasks During Bolting in accordance with QA tasks		AISC 360, Table N5.6-2	Y	Observe[4]
1) Pre-tensioned and slip-critical joints:				
a) Turn-of-nut with matching markings			Y	Periodic
b) Direct tension indicator			Y	Periodic
c) Twist-off type tension control bolt			Y	Periodic
d) Turn-of-nut without matching markings			Y	Continuous
e) Calibrated wrench			Y	Continuous
2) Snug-tight joints			Y	Periodic
Inspection tasks After Bolting (Perform tasks for each bolted connection in accordance with QA tasks		AISC 360, Table N5.6-3	Y	Perform[4]
5. Visual inspection of exposed cut surfaces of galvanized structural steel main members and exposed corners of the rectangular HSS for cracks subsequent to galvanizing	Shop[3] or field inspection		Y	Periodic
6. Embedments (Verify diameter, grade, type, length, embedment. See 1705.3 for anchors)	Field inspection		Y	Periodic
7. Verify member locations, braces, stiffeners, and application of joint details at each connection comply with construction documents	Field inspection		Y	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.2.2 COLD FORMED STEEL DECK				
1. Manufacturer documents (Verify reports and certificates with Paragraphs 2.1 and 2.2 for compliance with construction documents)		SDI QA/QC Section 2	N	
2. Material verification of steel deck, mechanical fasteners and welding materials	Shop[3] and field inspection		N	Periodic
3. Cold-formed steel deck placement:	Shop[3] and field inspection			
a. Inspection tasks Prior to Deck Placement (Perform the QA tasks)		SDI QA/QC, Appendix 1, Table 1.1	N	Perform[4]
b. Inspection tasks After Deck Placement (Perform the QA tasks)		SDI QA/QC, Appendix 1, Table 1.2	N	Perform[4]
4. Cold-formed steel deck welding:	Shop[3] and field inspection			
a. Inspection tasks Prior to Welding (Observe the QA tasks)		SDI QA/QC, Appendix 1, Table 1.3	N	Observe[4]
b. Inspection tasks During Welding (Observe the QA tasks)		SDI QA/QC, Appendix 1, Table 1.4	N	Observe[4]
c. Inspection tasks After Welding (Perform the QA tasks)		SDI QA/QC, Appendix 1, Table 1.5	N	Perform[4]
5. Cold-formed steel deck mechanical fastening:	Shop[3] and field inspection			
a. Inspection tasks Prior to Mechanical Fastening (Observe the QA tasks)		SDI QA/QC, Appendix 1, Table 1.6	N	Observe[4]
b. Inspection tasks During Mechanical Fastening (Observe the QA tasks)		SDI QA/QC, Appendix 1, Table 1.7	N	Observe[4]
c. Inspection tasks After Mechanical Fastening (Perform the QA tasks)		SDI QA/QC, Appendix 1, Table 1.8	N	Perform[4]

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.2.3 OPEN-WEB STEEL JOISTS AND JOIST GIRDERS				
1. Installation of open-web steel joists and joist girders.				
a. End connections - welding or bolted.	per SJI CJ or SJI 100		N	Periodic
b.. Bridging - horizontal or diagonal.				
1) Standard bridging.	per SJI CJ or SJI 100		N	Periodic
2) Bridging that differs from the specifications listed in SJI CJ or SJI 100.			N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.2.4 COLD-FORMED STEEL TRUSSES SPANNING 60 FEET OR GREATER				
Verify temporary and permanent restraint/bracing are installed in accordance with the approved truss submittal package	Field Inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.3 CONCRETE CONSTRUCTION				
1. Inspect reinforcement, including prestressing tendons, and verify placement.	Field inspection	ACI 318: 20, 25.2, 25.3, 26.6.2-26.6.3	Y	Periodic
2. Reinforcing bar welding:				
a. Verification of weldability of bars other than ASTM A706.		AWS D1.4	N	Periodic
b. Inspection of single-pass fillet welds 5/16 or less in size.		ACI 318: 26.6.4	N	Periodic
c. Inspection of all other welds.			N	Continuous
3. Inspection of anchors cast in concrete.	Field inspection		Y	Periodic

4. Inspection of anchors post-installed in hardened concrete members per research reports, or, if no specific requirements are provided, requirements shall be provided by the registered design professional and approved by the building official, including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, concrete minimum thickness, anchor embedment and tightening torque	Field inspection		Y	Periodic or as required by the research report issued by an approved source
a. Adhesive anchors installed in horizontal or upward-inclined orientation that resist sustained tension loads.	Field inspection	ACI 318: 17.8.2.4	Y	Continuous
b. Mechanical and adhesive anchors note defined in 4a.	Field inspection	ACI 318: 17.8.2	Y	Periodic
5. Verify use of approved design mix	Field inspection	ACI 318: 19, 26.4.3, 26.4.4	Y	Periodic
6. a. Prior to placement, fabricate specimens for strength tests, fresh concrete sampling, perform slump or slump flow, and air content density tests, and determine temperature of concrete.	Field inspection	ASTM C172, ASTM C31, ACI 318: 26.5, 26.12	Y	Continuous
6. b. Verify that concrete specimens for strength tests are maintained in the required initial curing and laboratory curing environment, and that the maximum and minimum temperatures during the initial curing period are reported.	Field inspection		Y	Continuous
7. Inspection of concrete and shotcrete placement for proper application techniques	Field inspection	ACI 318: 26.5	Y	Continuous
8. Verify maintenance of specified curing temperature and techniques	Field inspection	ACI 318: 26.5.3-26.5.5	Y	Periodic
9. Inspection of prestressed concrete:	Shop[3] and field inspection			
a. Application of prestressing force		ACI 318: 26.10	N	Continuous
b. Grouting of bonded prestressing tendons		ACI 318: 26.10	N	Continuous

10. Inspect erection of precast concrete members		ACI 318: 26.9	Y	Periodic
11. Verification of in-situ concrete strength, prior to stressing of tendons in post tensioned concrete and prior to removal of shores and forms from beams and structural slabs	Review field testing and laboratory reports	ACI 318: 26.11.2	N	Periodic
12. Inspection of formwork for shape, lines, location and dimensions	Field inspection	ACI 318: 26.11.1.2(b)	Y	Periodic
13. Concrete strength testing and verification of compliance with construction documents	Field testing and review of laboratory reports		Y	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.4 MASONRY CONSTRUCTION				
MINIMUM VERIFICATION REQUIREMENTS				
(A) Level A, B and C Quality Assurance:				
1. Prior to construction, verification of compliance of submittals	Submittal Review	TMS 602: 1.5	N	Prior to Construction
(B) Level B and C Quality Assurance:				
1. Prior to construction verification of f'm and f'_{AAC} except where specifically exempted by the code	Testing by unit strength method or prism test method	TMS 602: 1.4B	N	Prior to Construction
2. During construction, verification of proportions of materials as delivered to the project site for premixed or pre-blended mortar, prestressing grout, and grout other than self-consolidating grout.	Testing by unit strength method or prism test method		N	Periodic
(C) Level C Quality Assurance:				
1. During construction, verification of f'm and f'_{AAC} for every 5,000 SF	Testing by unit strength method or prism test method	TMS 602: 1.4B	N	Periodic
2. During construction, verification of proportions of materials as delivered to the project site for premixed or pre-blended mortar, prestressing grout, and grout other than self-consolidating grout.	Field inspection		N	Periodic
MINIMUM SPECIAL INSPECTION REQUIREMENTS				

(D) Levels B and C Quality Assurance:				
1. As masonry construction begins, verify that the following are in compliance:				
a. Proportions of the site-prepared mortar	Field inspection	TMS 602: 2.1, 2.6A	Y	Periodic
b. Grade and size of prestressing tendons and anchorages	Field inspection	TMS 602: 2.4B, 2.4H	Y	Periodic
c. Grade, type, and size of reinforcement, anchor bolts, and prestressing tendons and anchorages	Field inspection		N	Periodic
d. Prestressing technique	Field inspection	TMS 602: 3.6B	N	Periodic
e. Properties of thin-bed mortar for AAC masonry (b) Required for the first 5,000 square feet (c) Required after the first 5,000 square feet	Field inspection	TMS 602: 2.1C	N	Level B - Continuous[(b)] Level B - Periodic[(c)]
			N	Level C - Continuous
f. Sample panel construction	Field inspection		N	Level B - Periodic
			N	Level C - Continuous
2. Prior to grouting, verify that the following are in compliance:				
a. Grout space	Field Inspection	TMS 602: 3.2D, 3.2F	N	Level B - Periodic
			N	Level C - Continuous
b. Placement of prestressing tendons and anchorages	Field Inspection		N	Periodic
c. Placement of reinforcement, connectors, and anchor bolts	Field Inspection		N	Level B - Periodic
			N	Level C - Continuous
d. Proportions of site-prepared grout and pre-stresssing grout for bonded tendons	Field Inspection		N	Periodic
3. Verify compliance of the following during construction:				
a. Materials and procedures with the approved submittals	Field inspection		N	Periodic
b. Placement of masonry units and mortar joint construction	Field inspection		N	Periodic
c. Size and location of structural members	Field inspection	TMS 602: 3.3F	N	Periodic
d. Type, size, location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction	Field inspection	TMS 402: 1.2.1(e), 6.1.4.3, 6.2.1	N	Level B - Periodic
			N	Level C - Continuous

e. Welding of reinforcement	Field inspection	TMS 402: 8.1.6.7.2, 9.3.3.4, 11.3.3.4(b)	N	Continuous
f. Preparation, construction, and protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F)	Field inspection	TMS 602: 1.8C, 1.8D	N	Periodic
g. Application and measurement of prestressing force	Field testing	TMS 602: 3.6B	N	Continuous
h. Placement of grout and prestressing grout for bonded tendons is in compliance	Field inspection	TMS 602: 3.5, 3.6C	N	Continuous
i. Placement of AAC masonry units and construction of thin-bed mortar joints (b) Required for the first 5,000 square feet (c) Required after the first 5,000 square feet	Field inspection	TMS 602: 3.3B.9, 3.3F.1.b	N	Level B - Continuous(b) Level B - Periodic(c)
			N	Level C - Continuous
4. Observe preparation of grout specimens, mortar specimens, and/or prisms	Field inspection	TMS 602: 1.4B.2.a.3, 1.4B.2.b.3, 1.4B.2.c.3, 1.4B.3, 1.4B.4	N	Level B - Periodic
			N	Level C - Continuous

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.5 WOOD CONSTRUCTION				
1. For prefabricated wood structural elements, inspection of the fabrication process and assemblies in accordance with Section 1704.2.5.	In-plant review(3)		N	Periodic
2. For high-load diaphragms, verify grade and thickness of structural panel sheathing agree with approved building plans.	Field inspection		N	Periodic
3. For high-load diaphragms, verify nominal size of framing members at adjoining panel edges, nail or staple diameter and length, number of fastener lines, and that spacing	Field inspection		N	Periodic

between fasteners in each line and at edge margins agree with approved building plans				
4. Metal-plate-connected wood trusses:				
a. Verification that permanent individual truss member restraint/bracing has been installed in accordance with the approved truss submittal package when the truss height is greater than or equal to 60".	Field inspection		N	Periodic
b. For trusses spanning 60 feet or greater: verify temporary and permanent restraint/bracing are installed in accordance with the approved truss submittal package	Field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.5.3 MASS TIMBER CONSTRUCTION				
1. Inspection of anchorage and connection of mass timber construction to timber deep foundation systems.	Field inspection		N	Periodic
2. Inspect erection of mass timber construction.	Field inspection		N	Periodic
3. Inspection of connections where installation methods are required to meet design loads.				
a. Threaded Fasteners				
1) Verify use of proper installation equipment.	Field inspection		N	Periodic
2) Verify use of pre-drilled holes where required.	Field inspection		N	Periodic
3) Inspect screws, including diameter, length, head type, spacing, installation angle, and depth.	Field inspection		N	Periodic
b. Adhesive anchors installed in horizontal or upwardly inclined orientation to resist sustained tension loads.	Field inspection		N	Periodic
c. Other adhesive anchors.	Field inspection		N	Periodic

d. Bolted connections.	Field inspection		N	Periodic
e. Concealed connections	Field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.6 SOILS				
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Field inspection		Y	Periodic
2. Verify excavations are extended to proper depth and have reached proper material.	Field inspection		Y	Periodic
3. Perform classification and testing of compacted fill materials.	Field inspection		Y	Periodic
4. Verify use of proper materials, densities, and lift thicknesses during placement and compaction of controlled fill	Field inspection		Y	Continuous
5. Prior to placement of controlled fill, inspect subgrade and verify that site has been prepared properly	Field inspection		Y	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.7 DRIVEN DEEP FOUNDATIONS				
1. Verify element materials, sizes and lengths comply with requirements	Field inspection		N	Continuous
2. Determine capacities of test elements and conduct additional load tests, as required	Field inspection		N	Continuous
3. Inspect driving operations and maintain complete and accurate records for each element	Field inspection		N	Continuous
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	Field inspection		N	Continuous

capacity, record tip and butt elevations and document any damage to foundation element				
5. For steel elements, perform additional inspections per Section 1705.2	See Section 1705.2		N	See Section 1705.2
6. For concrete elements and concrete-filled elements, perform tests and additional inspections per Section 1705.3	See Section 1705.3		N	See Section 1705.3
7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge	Field inspection		N	In accordance with construction documents

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.8 CAST-IN-PLACE DEEP FOUNDATIONS				
1.Inspect drilling operations and maintain complete and accurate records for each element	Field inspection		N	Continuous
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes	Field inspection		N	Continuous
3. For concrete elements, perform tests and additional inspections in accordance with Section 1705.3	See Section 1705.3		N	See Section 1705.3

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.9 HELICAL PILE FOUNDATIONS				
Verify installation equipment, pile dimensions, tip elevations, final depth, final installation torque and other	Field inspection		N	Continuous

installation data as required by construction documents.				

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.10 FABRICATED ITEMS				
1. List of fabricated items requiring special inspection during fabrication:	Shop inspection		Y	As noted in each applicable shop activity
Open-web steel joists				
Joist Girders				
Structural steel fabricator				
2. List of fabricated items to be fabricated on the premises of a fabricator approved to perform such work without special inspection (including name of approved agency providing periodic auditing):	Shop inspection		Y	As noted in each applicable shop activity
Open-web joists				
Joist girders				
Structural steel fabricator				

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.11.1 STRUCTURAL WOOD SPECIAL INSPECTIONS FOR WIND RESISTANCE				
1. Inspection of field gluing operations of elements of the main wind force-resisting system	Field inspection		N	Continuous
2. Inspection of nailing, bolting, anchoring and other fastening of components within the main wind force-resisting system, including wood shear walls, wood diaphragms, drag struts, braces and hold-downs.	Shop[(3)] and field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES

PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.11.2 COLD-FORMED STEEL SPECIAL INSPECTIONS FOR WIND RESISTANCE				
1.Inspection during welding operations of elements of the main wind force-resisting system	Shop[3] and field inspection		N	Periodic
2. Inspection of screw attachment, bolting, anchoring and other fastening of components within the main wind force-resisting system, including shear walls, braces, diaphragms, collectors (drag struts) and hold-downs.	Shop[3] and field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.11.3 WIND-RESISTING COMPONENTS				
1. Roof covering, roof deck and roof framing connections.	Shop[3] and field inspection		N	Periodic
2. Exterior wall covering and wall connections to roof and floor diaphragms.	Shop[3] and field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.12.1 STRUCTURAL STEEL SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE				
1. Seismic force-resisting systems in SDC B, C, D, E, or F.	Shop[3] and field inspection		N	In accordance with AISC 341
2. Structural steel elements in SDC B, C, D, E, or F other than those in Item 1. including struts, collectors, chords and foundation elements.	Shop[3] and field inspection		N	In accordance with AISC 341

SCHEDULE OF SPECIAL INSPECTION SERVICES			
PROJECT			
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED**	**APPLICABLE**

		STANDARD	Y/N	FREQUENCY
1705.12.2 STRUCTURAL WOOD SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE				
1. Field gluing operations of elements of the seismic-force resisting system for SDC C, D, E or F.	Shop[3] and field inspection		N	Continuous
2. Nailing, bolting, anchoring and other fastening of components within the seismic-force-resisting system including wood shear walls, wood diaphragms, drag struts, shear panels and hold-downs for SDC C, D, E or F.	Shop[3] and field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.12.3 COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE				
1. During welding operations of elements of the seismic-force-resisting system for SDC C, D, E or F.	Shop[3] and field inspection		N	Periodic
2. Screw attachment, bolting, anchoring and other fastening of components within the seismic-force-resisting system including shear walls, braces, diaphragms, collectors (drag struts) and hold-downs for SDC C, D, E or F.	Shop[3] and field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.12.4 DESIGNATED SEISMIC SYSTEMS VERIFICATION SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE				
For SDC C, D, E or F, inspect and verify that that the component label, anchorage or mounting conforms to the certificate of compliance in accordance with ASCE 7 Section 13.2.2.	Field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES

PROJECT				
MATERIAL / ACTIVITY	SERVICE	REFERENCED STANDARD	APPLICABLE Y/N	APPLICABLE FREQUENCY
1705.12.5 ARCHITECTURAL COMPONENTS SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE				
1. For SDC D, E or F, inspection during the erection and fastening of exterior cladding and interior or exterior veneer more than 30 feet above grade or walking surface and weighing more than 5 psf.	Field inspection		N	Periodic
2. For SDC D, E or F, inspection during the erection and fastening of interior nonloadbearing walls more than 30 feet above grade or walking surface and weighing more than 15 psf.	Field inspection		N	Periodic
3. For SDC D, E or F, inspection during the erection and fastening of exterior nonloadbearing walls more than 30 feet above grade or walking surface.	Field inspection		N	Periodic
4. For SDC D, E or F, inspection during anchorage of access floors	Field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	SERVICE	REFERENCED STANDARD	APPLICABLE Y/N	APPLICABLE FREQUENCY
1705.12.6 PLUMBING, MECHANICAL AND ELECTRICAL COMPONENTS SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE				
1. Inspection during the anchorage of electrical equipment for emergency or standby power systems in SDC C, D, E or F	Field inspection		N	Periodic
2. Inspection during the anchorage of other electrical equipment in SDC E or F	Field inspection		N	Periodic
3. Inspection during installation and anchorage of piping systems designed to carry hazardous materials, and their associated mechanical units in SDC C, D, E or F	Field inspection		N	Periodic
4. Inspection during the installation and anchorage of HVAC ductwork designed to contain hazardous materials in SDC C, D, E or F	Field inspection		N	Periodic

5. Inspection during the installation and anchorage of vibration isolation systems in SDC C, D, E or F where nominal clearance of 1/4 inch or less is required by the approved construction documents	Field inspection		N	Periodic
6. Inspection during installation of mechanical and electrical equipment, including duct work, piping systems and their structural supports, where automatic fire sprinkler systems are installed in structures assigned to SDC C, D, E, or F to verify one of the following unless flexible sprinkler hose fittings are used:				
a. Minimum required clearances have been provided.	Field inspection	ASCE/SEI 7: 13.2.3	N	Periodic
b. A three inch or greater nominal clearance has been provided between fire protection sprinkler system drops and sprigs and: structural members not used collectively or independently to support the sprinklers; equipment attached to the building structure; and other systems' piping.	Field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.12.7 STORAGE RACKS SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE				
Inspection during the anchorage of storage racks 8 feet or greater in height in structures assigned to SDC D, E or F.	Field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.12.8 SEISMIC ISOLATION SYSTEMS				
Inspection during the fabrication and installation of isolator units and energy	Shop[(3)] and field inspection		N	Periodic

dissipation devices used as part of the seismic isolation system in structures assigned to SDC B, C, D, E or F.				

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.12.9 COLD-FORMED STEEL SPECIAL BOLTED MOMENT FRAMES				
Inspection of installation of cold-formed steel special bolted moment frames in the seismic force-resisting systems in structures assigned to SDC D, E or F.	Field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.13.1 STRUCTURAL STEEL TESTING FOR SEISMIC RESISTANCE				
1. Nondestructive testing of structural steel in the seismic force-resisting systems in accordance with AISC 341 in structures assigned to SDC B, C, D, E or F.	Field test		N	Periodic
2. Nondestructive testing of structural steel elements in the seismic force-resisting systems not covered in 1 above including struts, collectors, chords and foundation elements in accordance with AISC 341 in structures assigned to SDC B, C, D, E or F.	Field test		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.13.2 SEISMIC CERTIFICATION ON NON-STRUCTURAL COMPONENTS				
Review certificate of compliance for designated seismic system components in structures assigned to	Certificate of compliance review		N	Each submittal

SDC B, C, D, E or F.				

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.13.3 SEISMIC CERTIFICATION OF DESIGNATED SEISMIC SYSTEMS				
Review certificate of compliance for designated seismic system components in structures assigned to SDC C, D, E or F	Certificate of compliance review		N	Each submittal

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.13.4 SEISMIC ISOLATION SYSTEMS				
Test seismic isolation system in structures assigned to SDC B, C, D, E or F.	Prototype testing	ASCE 7: 17.8	N	Per ASCE 7

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.14 SPRAYED FIRE-RESISTANT MATERIALS				
1. Verify surface condition preparation of structural members	Field inspection		N	Periodic
2. Verify minimum thickness of sprayed fire-resistant materials applied to structural members	Field inspection		N	Periodic
3. Verify density of the sprayed fire-resistant material complies with approved fire-resistant design	Field inspection		N	Per Section 1705.14.5
4. Verify the cohesive/adhesive bond strength of the cured sprayed fire-resistant material	Field inspection		N	Per Section 1705.14.6
5. Condition of finished application	Field inspection		N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.13.15 MASTIC AND INTUMESCENT FIRE-RESISTANT COATINGS				
Inspect and test mastic and intumescent fire-resistant coatings applied to structural elements and decks	Field inspection and testing	AWCI 12-B	N	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.13.16 EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)				
Inspection of water-resistive barrier over sheathing substrate	Field inspection		Y	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.13.17 FIRE-RESISTANT PENETRATIONS AND JOINTS				
1. Inspect penetration firestop systems	Field testing		Y	Per ASTM E2174
2. Inspect fire-resistant joint systems	Field testing		Y	Per ASTM E2393

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.13.18 SMOKE CONTROL SYSTEMS				
1. Leakage testing and recording of device locations prior to concealment	Field testing		Y	Periodic
2. Prior to occupancy and after sufficient completion, pressure difference testing, flow measurements, and detection and control verification	Field testing		Y	Periodic

SCHEDULE OF SPECIAL INSPECTION SERVICES				
PROJECT				
MATERIAL / ACTIVITY	**SERVICE**	**REFERENCED STANDARD**	**APPLICABLE**	
			Y/N	**FREQUENCY**
1705.13.19 SEALING OF MASS TIMBER CONSTRUCTION				
1. Inspect sealants and adhesives to resist passage of air in buildings of Type IV-A, IV-B, and IV-C.	Field testing		N	Periodic
a. At abutting edges and intersections of mass timber building elements required to be fire-resistance rated.	Field testing		N	Periodic
b. At abutting intersections of mass timber building elements and building elements of other materials where both are required to be fire-resistance rated.	Field testing		N	

*** INSPECTION AGENTS**

FIRM NO.	**ADDRESS**	**TELEPHONE**
1.		
2.		
3.		
4.		

Notes:
1. The inspection and testing agent(s) shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official prior to commencing work. The qualifications of the Special Inspector(s) and/or testing agencies may be subject to the approval of the Building Official and/or the Design Professional.
2. The list of Special Inspectors may be submitted as a separate document, if noted so above.
3. Shop Inspections of fabricated items are not required where the fabricator is approved in accordance with IBC Section 1704.2.5.1 and listed in activity 1709.2.
4. Observe: Observe on a random basis, operations need not be delayed pending these inspections. Perform: These tasks shall be performed for each welded joint, bolted connection, or steel element.
5. NDT of welds completed in an approved fabricator's shop may be performed by that fabricator when approved by the AHJ. Refer to AISC 360, N6.

Are Special Inspections for Seismic Resistance included in the Statement of Special Inspections? **Yes** **No**

Are Special Inspections for Wind Resistance included in the Statement of Special Inspections? ***Yes*** ***No***

DATE: _ _ _ _ _ _ _ _ _ _

END OF SECTION 014533

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:
   1. Section 012500 "Substitution Procedures" for requests for substitutions.
   2. Section 012519 “Equivalents” for equivalent products submitted prior to Contract award.
   3. Section 014200 "References" for applicable industry standards for products specified.

1.02 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
   1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
   2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
   3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.03 ACTION SUBMITTALS

A. Comparable Product Requests, if allowed: After award of contract submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
   1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
   2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor through Construction Manager of approval or rejection of proposed comparable product request within 10 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
      a. Form of Approval: As specified in Section 013300 "Submittal Procedures."
      b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

1.04 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
   1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
   2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:
   1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
   2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
   3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
   4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:
   1. Store products to allow for inspection and measurement of quantity or counting of units.
   2. Store materials in a manner that will not endanger Project structure.
   3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
   4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
   5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
   6. Protect stored products from damage and liquids from freezing.
   7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.06 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
   1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
   2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
   1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
   2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.

3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 PRODUCTS

2.01 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
   1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
   2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
   3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
   4. Where products are accompanied by the term "as selected," Architect will make selection.
   5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
   6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:
   1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
   2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
   3. Products:
      a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
      b. Non-restricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
   4. Manufacturers:
      a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not] be considered unless otherwise indicated.
      b. Non-restricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.

5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
   1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.02 EQUIVALENT PRODUCTS

A. Conditions for Consideration: Architect will consider Contractor's request for equivalent product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
   1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
   2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
   3. Evidence that proposed product provides specified warranty.
   4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
   5. Samples, if requested.

B. Refer to specification section 012519 Equivalents for additional equivalent product requirements required to be furnished by the contractor prior to execution of the contract.

PART 3 EXECUTION (NOT USED)

END OF SECTION 016000

SECTION 017300
EXECUTION

PART 1 GENERAL

1.01 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
   1. Construction layout.
   2. Field engineering and surveying.
   3. Installation of the Work.
   4. Cutting and patching.
   5. Coordination of Owner-installed products.
   6. Progress cleaning.
   7. Starting and adjusting.
   8. Protection of installed construction.

B. Related Requirements:
   1. Division 01 "Summary" for limits on use of Project site.
   2. Division 01 "Submittal Procedures" for submitting surveys.
   3. Division 01 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
   4. Division 02 "Demolition" for demolition and removal of selected portions of the building.
   5. Division 07 "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.02 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.03 INFORMATIONAL SUBMITTALS

A. Qualification Data: For land surveyor.

B. Certificates: Submit certificate signed by land surveyor, certifying that location and elevation of improvements comply with requirements.

C. Cutting and Patching Plan: Submit plan describing procedures at least (10) ten days prior to the time cutting and patching will be performed. Include the following information:
   1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
   2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
   3. Products: List products to be used for patching and firms or entities that will perform patching work.
   4. Dates: Indicate when cutting and patching will be performed.
   5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.

a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

D. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

E. Certified Surveys: Submit (2) two copies signed by land surveyor.

F. Final Property Survey: Submit (10) ten copies showing the Work performed and record survey data.

1.04 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
    a. Operational elements include but are not limited to the following:
        1) Primary operational systems and equipment.
        2) Fire separation assemblies.
        3) Air or smoke barriers.
        4) Fire-suppression systems.
        5) Mechanical systems piping and ducts.
        6) Control systems.
        7) Communication systems.
        8) Fire-detection and -alarm systems.
        9) Electrical wiring systems.
        10) Operating systems of special construction.
        11) Door access and security controls
3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
    a. Other construction elements include but are not limited to the following:
        1) Water, moisture, or vapor barriers.
        2) Membranes and flashings.
        3) Exterior curtain-wall construction.
        4) Spray applied fire-resistive material.
        5) Equipment supports.
        6) Piping, ductwork, vessels, and equipment.
        7) Noise- and vibration-control elements and systems.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 PRODUCTS

2.01 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
   1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

C. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 EXECUTION

3.01 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
   1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
   2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
   1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
   2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
   3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
   1. Description of the Work.
   2. List of detrimental conditions, including substrates.
   3. List of unacceptable installation tolerances.
   4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.02 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.03 FIELD ENGINEERING

A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
   1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect and Construction Manager. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect and Construction Manager before proceeding.
   2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
   1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
   2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
   3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

D. Final Property Survey: Engage a land surveyor to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
   1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
   2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.04 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
   1. Make vertical work plumb and make horizontal work level.
   2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
   3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
   1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
   2. Allow for building movement, including thermal expansion and contraction.
   3. Coordinate installation of anchorages. 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.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.05 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
   1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary".

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
   1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
   2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
   3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
   4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
   5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
   6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
   1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
   2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
      a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
      b. Restore damaged pipe covering to its original condition.
   3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
      a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch extending to an inside or outside corner of a wall. Provide additional coats until patch blends with adjacent surfaces.
   4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
   5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.06 OWNER-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for Owner's construction personnel.

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
   1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
   2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.07 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
   1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
   2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
   3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
      a. Use containers intended for holding waste materials of type to be stored.
   4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
   1. Remove liquid spills promptly.
   2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
   3. Broom clean dust from site daily.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015001 "Temporary Facilities and Controls - Multiple Prime Contracts"

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.08 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements".

3.09 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017700
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Substantial Completion procedures.
   2. Final completion procedures.
   3. Warranties.
   4. Final cleaning.
   5. Repair of the Work.

B. Related Requirements:
   1. Section 017300 "Execution" for progress cleaning of Project site.
   2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
   3. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
   4. Section 017900 "Demonstration and Training" for requirements for instructing Owner's personnel.
   5. Divisions 02 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.02 ACTION SUBMITTALS

A. Product Data: For cleaning agents.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.03 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

1.04 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.05 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete. **The Architect will not perform a punch list inspection until the contractor's punch list is received and reviewed.**

B. Submittals Prior to Substantial Completion: Complete the following a minimum of (30) thirty days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Construction Manager. Label with manufacturer's name and model number where applicable.
    a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Construction Manager's signature for receipt of submittals.
5. Submit test/adjust/balance records.
6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of (30) thirty days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Complete startup and testing of systems and equipment
3. Submit test/adjust/balance records.
4. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
5. Perform preventive maintenance on equipment used prior to Substantial Completion. Complete startup testing of systems.
6. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training".
7. Touch up paint and otherwise repair and restore damaged finishes.
8. Complete final cleaning requirements, including touchup painting

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of (30) thirty days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
    a. The Architects basic services include (1) one initial punch list and (1) one follow-up punch list inspection to ensure all corrective action and or incomplete work has been finished. The Contractor is responsible to the Owner for all costs incurred by the Architect for additional services to provide multiple punch lists for the same work area. The cost for these additional services, may be deducted from the Contractors Contract by deduct Change Order.

2. Results of completed inspection will form the basis of requirements for final completion.

1.06 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
   1. Submit a final Application for Payment according to Section 012900 "Payment Procedures".
   2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
   3. Submit pest-control final inspection report.
   4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
   5. Advise Owner of pending insurance changeover requirements.
   6. Advise Owner of changeover in heat and other utilities.
   7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
   8. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
   9. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
   10. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
   11. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
   12. Prepare and submit Project Record Documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.

B. Inspection: Submit a written request for final inspection to determine acceptance, a minimum of (10) ten days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
   1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.07 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
   1. Organize list of spaces in sequential order.
   2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
   3. Include the following information at the top of each page:
      a. Project name.
      b. Date
      c. Name of Architect and Construction Manager.
      d. Name of Contractor.

e. Page number.

4. Submit list of incomplete items in one of the following formats:
   a. MS Excel electronic file. Architect through Construction Manager, will return annotated file.
   b. PDF electronic file. Architect will return annotated file.
   c. Web-Based Project Software Upload: Utilize software feature for creating and updating list of incomplete items (punch list).

1.08 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Partial Occupancy: Submit properly executed warranties within (15) fifteen days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
   1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
   2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
   3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
   4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 PRODUCTS

2.01 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 EXECUTION

3.01 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
   1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Sweep concrete floors broom clean in unoccupied spaces.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Wipe surfaces of mechanical, electrical, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
    1) Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.
p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
q. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste disposal requirements in Section 015001 "Temporary Facilities and Controls - Multiple Prime Contracts"

3.02 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

END OF SECTION 017700

This page intentionally left blank

SECTION 017823
OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
   1. Operation and maintenance documentation directory.
   2. Emergency manuals.
   3. Operation manuals for systems, subsystems, and equipment.
   4. Product maintenance manuals.
   5. Systems and equipment maintenance manuals.

B. Related Requirements:
   1. Section 011200 "Multiple Contract Summary" for coordinating operation and maintenance manuals covering the Work of multiple contracts.
   2. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
   3. Divisions 02 through 49 Sections for any specific closeout requirements for the Work in those Sections.

1.02 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.03 CLOSEOUT SUBMITTALS

A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
   1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
   2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operations and maintenance manuals in the following format:
   1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.
      a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
      b. Enable inserted reviewer comments on draft submittals.
   2. Submit two paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves.

C. Initial Manual Submittal: Submit draft copy of each manual at least (30) thirty days before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.

D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least (15) fifteen days before commencing demonstration and training. Architect will return copy with comments.

1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within (15) fifteen days of receipt of Architect's comments and prior to commencing demonstration and training.

PART 2 PRODUCTS

2.01 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:
   1. List of documents.
   2. List of systems.
   3. List of equipment.
   4. Table of contents.

B. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
   1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
   2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

C. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems".

2.02 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
   1. Title page.
   2. Table of contents.
   3. Manual contents.

B. Title Page: Include the following information:
   1. Subject matter included in manual.
   2. Name and address of Project.
   3. Name and address of Owner.
   4. Date of submittal.
   5. Name and contact information for Contractor.
   6. Name and contact information for Construction Manager.
   7. Name and contact information for Architect.
   8. Name and contact information for Commissioning Authority.
   9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
   10. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
   1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
   1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
   2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
   1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
      a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
      b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL", Project title or name. Indicate volume number for multiple-volume sets.
   2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
   3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
   4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
   5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
      a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
      b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.03 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
1. Fire.
2. Flood.
3. Gas leak.
4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include the following, as applicable:
1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

2.04 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:
1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:
   1. Startup procedures.
   2. Equipment or system break-in procedures.
   3. Routine and normal operating instructions.
   4. Regulation and control procedures.
   5. Instructions on stopping.
   6. Normal shutdown instructions.
   7. Seasonal and weekend operating instructions.
   8. Required sequences for electric or electronic systems.
   9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed and identify color-coding where required for identification.

2.05 PRODUCT MAINTENANCE MANUALS

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Product Information: Include the following, as applicable:
   1. Product name and model number.
   2. Manufacturer's name.
   3. Color, pattern, and texture.
   4. Material and chemical composition.
   5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
   1. Inspection procedures.
   2. Types of cleaning agents to be used and methods of cleaning.
   3. List of cleaning agents and methods of cleaning detrimental to product.
   4. Schedule for routine cleaning and maintenance.
   5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
   1. Include procedures to follow and required notifications for warranty claims.

2.06 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
   1. Standard maintenance instructions and bulletins.
   2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
   3. Identification and nomenclature of parts and components.
   4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
   1. Test and inspection instructions.
   2. Troubleshooting guide.
   3. Precautions against improper maintenance.
   4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
   5. Aligning, adjusting, and checking instructions.
   6. Demonstration and training video recording, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
   1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
   2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
   1. Include procedures to follow and required notifications for warranty claims.

PART 3 EXECUTION

3.01 MANUAL PREPARATION

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.

B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
   1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
   1. Do not use original project record documents as part of operation and maintenance manuals.
   2. Comply with requirements of newly prepared record Drawings in Section 017839 "Project Record Documents".

G. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

This page intentionally left blank

SECTION 017839
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:
   1. Record Drawings.
   2. Record Specifications.
   3. Record Product Data.
   4. Miscellaneous record submittals.

B. Related Requirements:
   1. Division 01 "Multiple Contract Summary" for coordinating project record documents covering the Work of multiple contracts.
   2. Division 01 "Execution" for final property survey.
   3. Division 01 "Closeout Procedures" for general closeout procedures.
   4. Division 01 "Operation and Maintenance Data" for operation and maintenance manual requirements.
   5. Divisions 02 through 49 Sections for specific requirements for project record documents of the Work in those Sections.

1.02 CLOSEOUT SUBMITTAL

A. Record Drawings: Comply with the following:
   1. Number of Copies: Submit **one** set(s) of marked-up record prints.
   2. Number of Copies: Submit copies of record Drawings as follows:
      a. Initial Submittal:
         1) Submit **one** paper-copy set(s) of marked-up record prints.
         2) Submit PDF electronic files of scanned record prints and [one] or Insert number of file prints.
         3) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
         4) Submit Record Digital Data Files and [one] or Insert number set(s) of plots.
      b. Final Submittal:
         1) Submit three paper-copy set(s) of marked-up record prints.
         2) Submit PDF electronic files of scanned record prints and **three** set(s) of prints.
         3) Print each drawing, whether or not changes and additional information were recorded.
         4) Submit Record Digital Data Files and **one** set(s) of plots.

B. Record Specifications: Submit one paper copy or annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one paper copy or annotated PDF electronic files and directories of each submittal.
   1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one paper copy or annotated PDF electronic files and directories of each submittal.

E. Reports: Submit written report **weekly** indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

1.03 RECORD DRAWINGS

A. Record Drawings: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
   1. Preparation: Mark record drawings to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
      a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
      b. Accurately record information in an acceptable drawing technique.
      c. Record data as soon as possible after obtaining it.
      d. Record and check the markup before enclosing concealed installations.
      e. Cross-reference record prints to corresponding archive photographic documentation.
   2. Content: Types of items requiring marking include, but are not limited to, the following:
      a. Dimensional changes to Drawings.
      b. Revisions to details shown on Drawings.
      c. Depths of foundations below first floor.
      d. Locations and depths of underground utilities.
      e. Revisions to routing of piping and conduits.
      f. Revisions to electrical circuitry.
      g. Actual equipment locations.
      h. Duct size and routing.
      i. Locations of concealed internal utilities.
      j. Changes made by Change Order or [Construction] [Work] Change Directive.
      k. Changes made following Architect's written orders.
      l. Details not on the original Contract Drawings.
      m. Field records for variable and concealed conditions.
      n. Record information on the Work that is shown only schematically.
   3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
   4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
   5. Mark important additional information that was either shown schematically or omitted from original Drawings.
   6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
   7. Submit as indicated in the Article 1.2 final submittal.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record drawings with Architect and Construction Manager. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
   1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
   2. Format: Annotated PDF electronic file with comment function enabled.
   3. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.

4. Refer instances of uncertainty to Architect through Construction Manager for resolution.
5. Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
6. Architect will furnish Contractor one set of digital data PDF files of the Contract Drawings for use in recording information.
    a. See Section 013300 "Submittal Procedures" for requirements related to use of Architect's digital data files.

C. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
2. Consult Architect and Construction Manager for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared record Drawings into record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.
3. Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
4. Submit as indicated in the Article 1.2 final submittal.

1.04 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
5. Note related Change Orders **record Product Data,]**and record Drawings where applicable.
6. Submit as indicated in the Article 1.2 final submittal

1.05 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders record Specifications, and record Drawings where applicable.
4. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.
5. Submit as indicated in the Article 1.2 final submittal

1.06 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.
2. Submit as indicated in the Article 1.2 final submittal

PART 2 PRODUCT (NOT USED)

PART 3 EXECUTION

3.01 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's and Construction Manager's reference during normal working hours.

END OF SECTION 017839

SECTION 017900
DEMONSTRATION AND TRAINING

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
   1. Demonstration of operation of systems, subsystems, and equipment.
   2. Training in operation and maintenance of systems, subsystems, and equipment.
   3. Demonstration and training video recordings.

1.02 INFORMATIONAL SUBMITTALS

A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
   1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

B. Qualification Data: For instructor.

C. Attendance Record: For each training module, submit list of participants and length of instruction time.

D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

1.03 CLOSEOUT SUBMITTALS

A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.
   1. Identification: On each copy, provide an applied label with the following information:
      a. Name of Project.
      b. Name of Architect.
      c. Name of Construction Manager.
      d. Name of Contractor.
   2. Transcript: Prepared in PDF electronic format. Include a cover sheet with same label information as the corresponding video recording and a table of contents with links to corresponding training components. Include name of Project and date of video recording on each page.

B. At completion of training, submit complete training manual(s) for Owner's use, prepared and bound in format matching operation and maintenance manuals.

1.04 QUALITY ASSURANCE

A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.

1.05 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 PRODUCTS

2.01 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
    a. System, subsystem, and equipment descriptions.
    b. Performance and design criteria if Contractor is delegated design responsibility.
    c. Operating standards.
    d. Regulatory requirements.
    e. Equipment function.
    f. Operating characteristics.
    g. Limiting conditions.
    h. Performance curves.
2. Documentation: Review the following items in detail:
    a. Emergency manuals.
    b. Operations manuals.
    c. Maintenance manuals.
    d. Project record documents.
    e. Identification systems.
    f. Warranties and bonds.
    g. Maintenance service agreements and similar continuing commitments.
3. Emergencies: Include the following, as applicable:
    a. Instructions on meaning of warnings, trouble indications, and error messages.
    b. Instructions on stopping.
    c. Shutdown instructions for each type of emergency.
    d. Operating instructions for conditions outside of normal operating limits.
    e. Sequences for electric or electronic systems.
    f. Special operating instructions and procedures.
4. Operations: Include the following, as applicable:
    a. Startup procedures.
    b. Equipment or system break-in procedures.
    c. Routine and normal operating instructions.
    d. Regulation and control procedures.
    e. Control sequences.

f. Safety procedures.
g. Instructions on stopping.
h. Normal shutdown instructions.
i. Operating procedures for emergencies.
j. Operating procedures for system, subsystem, or equipment failure.
k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:
   a. Checking adjustments.
   b. Noise and vibration adjustments.
   c. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
   a. Diagnostic instructions.
   b. Test and inspection procedures.
7. Maintenance: Include the following:
   a. Inspection procedures.
   b. Types of cleaning agents to be used and methods of cleaning.
   c. List of cleaning agents and methods of cleaning detrimental to product.
   d. Procedures for routine cleaning
   e. Procedures for preventive maintenance.
   f. Procedures for routine maintenance.
   g. Instruction on use of special tools.
8. Repairs: Include the following:
   a. Diagnosis instructions.
   b. Repair instructions.
   c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
   d. Instructions for identifying parts and components.
   e. Review of spare parts needed for operation and maintenance.

PART 3 EXECUTION

3.01 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."

B. Set up instructional equipment at instruction location.

3.02 INSTRUCTION

A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
   1. Owner will furnish Contractor with names and positions of participants.

B. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
   1. Schedule training with Owner **through Construction Manager** with at least **seven** days' advance notice.

C. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

D. Cleanup: Collect used and leftover educational materials and**remove from Project site.** Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

3.03 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

A. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.
   1. Film training session(s) in segments not to exceed 15 minutes.
      a. Produce segments to present a single significant piece of equipment per segment.
      b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
      c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.

B. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.
   1. Furnish additional portable lighting as required.

C. Narration: Describe scenes on video recording by video recording is recorded. Include description of items being viewed.

D. Transcript: Provide a transcript of the narration. Display images and running time captured from videotape opposite the corresponding narration segment.

END OF SECTION 017900

SECTION 024100
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

1.02 RELATED REQUIREMENTS

A. Section 003126 Hazardous Material Information: Existing building survey conducted by Owner; information about known hazardous materials.

B. Division 1 Sections : Limitations on Contractor's use of site and premises, sequencing and staging requirements..

C. Section 011000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.

D. Section 015001: Site fences, security, protective barriers, and waste removal.

E. Section 016000 - Product Requirements: Handling and storage of items removed for salvage and relocation.

F. Section 017300: Execution: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

G. Section 312200 - Grading: Rough and fine grading.

H. Section 312323 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.

I. Section 028213 - Asbestos Abatement: Other hazardous material remediation.

1.03 DEFINITIONS

A. Demolition: Dismantle, raze, destroy or wreck any building or structure or any part thereof.

B. Remove: Detach or dismantle items from existing construction and dispose of them off site, unless items are indicated to be salvaged or reinstalled.

C. Remove and Salvage: Detach or dismantle items from existing construction in a manner to prevent damage. Clean, package, label and deliver salvaged items to Owner in ready-for-reuse condition.

D. Remove and Reinstall: Detach or dismantle items from existing construction in a manner to prevent damage. Clean and prepare for reuse and reinstall where indicated.

E. Existing to Remain: Designation for existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1.04 REFERENCE STANDARDS

A. 29 CFR 1926 - Safety and Health Regulations for Construction; Current Edition.

1.05 SUBMITTALS

A. See Section 013300 - Sumittal Procedures.

B. Site Plan: Indicate:
   1. Vegetation to be protected.
   2. Areas for temporary construction and field offices.

C. Demolition Plan: Submit demolition plan as required by OSHA and local AHJs.
   1. Indicate extent of demolition, removal sequencing, bracing and shoring, and location and construction of barricades and fences.
   2. Summary of safety procedures.

3. Demolition firm qualifications.

D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 DEMOLITION

A. Remove items indicated, for salvage, relocation, recycling, and reinstallation.

B. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Section 312200.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with other requirements specified in Section 017300 - Execution.

B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   3. Provide, erect, and maintain temporary barriers and security devices.
   4. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
   5. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   6. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
   7. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
   8. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.

C. Do not begin removal until receipt of notification to proceed from Owner.

D. Do not begin removal until built elements to be salvaged or relocated have been removed.

E. Protect existing structures and other elements to remain in place and not removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

F. Minimize production of dust due to demolition operations. Do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

G. If hazardous materials are discovered during removal operations, stop work and notify Construction Manager Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

3.03 EXISTING UTILITIES

A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without 7 days prior written notification to Owner.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone. Identify and mark, in same manner as other utilities to remain, utilities to be reconnected.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.
   1. Verify construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Separate areas in which demolition is being conducted from areas that remain occupied.
   1. Provide, erect, and maintain temporary dustproof partitions of construction _____ in locations indicated on drawings.
   2. Provide sound retardant partitions of construction and in locations indicated on drawings.

C. Maintain weatherproof exterior building enclosure, except for interruptions required for replacement or modifications; prevent water and humidity damage.

D. Remove existing work as indicated and required to accomplish new work.
   1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction indicated.
   2. Remove items indicated on drawings.

E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, Telecommunications, and Smoke and Fire Detection): Remove existing systems and equipment as indicated.
   1. Maintain existing active systems to remain in operation, and maintain access to equipment and operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
   3. Verify that abandoned services serve only abandoned facilities before removal.
   4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings. Remove back to source of supply where possible, otherwise cap stub and tag with identification.

F. Protect existing work to remain.
   1. Prevent movement of structure. Provide shoring and bracing as required.
   2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch to match new work.

3.05 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION 024100

SECTION 020800
ASBESTOS ABATEMENT PROCEDURES

AT: MONROE-WOODBURY CSD –
PHASE 2A: 2023 BOND WORK
CENTRAL VALLEY ELEMENTARY SCHOOL
SED#: 44-12-01-06-0-004-013
NORTH MAIN ELEMENTARY SCHOOL
SED#: 44-12-01-06-0-002-011

OWNER: MONROE-WOODBURY CSD
278 ROUTE 32
CENTRAL VALLEY, NY 10917
PH. (845) 460-6200

CONSULTANT: QUALITY ENVIRONMENTAL SOLUTIONS
& TECHNOLOGIES, INC. (QUES&T)
1376 ROUTE 9
WAPPINGERS FALLS, NEW YORK 12590
PH. (845) 298-6031
FX. (845) 298-6251

SPECIFICATION DATED: October 23, 2026
Design conforms to all applicable provisions of the NYS Uniform Fire Prevention and Building Code, NYS Energy Conservation Construction Code and Education Department Building Standards.

PART I - GENRAL

1.01 DESCRIPTION

A. All work under this contract shall be performed in strict accordance with the specifications and all applicable laws for asbestos removal projects. The Abatement Contractor shall furnish all labor, materials, supervision, services, insurance and equipment necessary for the complete and total removal of Asbestos-containing Materials (ACM) as described herein, in attachments to the specification, Job Specific Variance(s) and/or as directed by Monroe-Woodbury CSD (here-in-after the "Owner") and/or the Owners Representative(s) to support the scope of work at the ***Monroe-Woodbury CSD – Phase 2A:2023 Bond Work*** at the following school buildings:

- Central Valley Elementary School
  45 NY Route 32, Central Valley, NY 10917
  SED #44-12-01-06-0-015-011

- North Main Elementary School
  212 North Main St, Monroe, NY 10950
  SED #44-12-01-06-0-012-009

B. Abatement Contractor shall provide for personnel air monitoring to satisfy OSHA regulation 29 CFR Parts 1926.1101(f). All work performed shall be in strict accordance with applicable provisions and regulations promulgated under New York State Department of Labor, Industrial Code 56 (ICR-56).

C. The Abatement Contractor shall satisfy the requirements for asbestos projects issued by the New York State Department of Labor concerning licensing and certification; notification; equipment; removal and disposal procedures; engineering controls; work area preparation; decontamination and clean-up procedures; and personnel air monitoring.

D. The Abatement Contractor shall be responsible for submittal of asbestos project notification(s) and applicable fees to EPA and NYSDOL concerning this project. Project notification(s) shall be made for the cumulative total of ACM to be removed as required by ICR-56-3.4. Work practices for each individual work area established shall be consistent with the quantity of ACM contained within that work area as defined in ICR-56-2.

E. The scope of work under this contract shall include the following:

1. All Asbestos-containing Materials (ACM), detailed within Section #3.17 – Location of Work, shall be removed in accordance with these specifications. The Abatement Contractor is responsible for field verification of estimated quantities, locations and other site conditions that may affect work and must provide fully execute Page #56 – Estimate of ACM Quantities Form and return with their bid.

2. All fixed objects remaining within the work area(s) shall be protected as required by Title 12 NYCRR Section 56-7.10(b) and as described in these specifications.

3. The containerization, labeling and disposal of all asbestos waste in accordance with applicable city, state and federal regulations and these specifications.

4. The Abatement Contractor will be responsible for repairing all building components damaged during abatement including, but not limited to, ceiling tiles, ceiling finishes, wall finishes and/or floor finishes, etc.

5. The Abatement Contractor shall be responsible for any and all demolition required to access materials identified in scope of work and on associated drawings.

6. Concealed conditions that are exposed and may require additional work shall be brought to the attention of the Owner(s) immediately. The Abatement Contractor shall not abate these areas without a written notice to proceed. If the Abatement Contractor removes additional asbestos prior to the order to proceed the additional work will not be acknowledged.

7. Permissible working hours shall be Monday through Friday 7:00 A.M. to 4:00 P.M. and/or as defined by the Owner. Holidays shall be considered weekends and not included for working days. Upon written approval from the Owner, the Abatement Contractor may work past these hours. The Abatement Contractor will incur any and all costs associated for work performed beyond the defined schedule including, but not limited to: abatement activities, project/air monitoring, custodial/staffing labor, overtime, mobilizations, etc.

8. Buildings will be turned over to the Abatement Contractor as is. At that time, all electrical services and HVAC systems in the proposed work areas will be shut down. Electricity and water supply will be maintained in the building for use by the Abatement Contractor. The Abatement Contractor is responsible for securing all power in the work area(s) and establishing all temporary GFCI hookups necessary to complete his work.

9. As required, the Abatement Contractor shall remove identified asbestos-containing floor coverings to building substrates beneath; in areas indicted within Section #3.17 – Location of Work and associated Asbestos Abatement Location Drawings. Subsequent to final air clearances, the substrate(s) shall be washed with a neutralizing agent to prepare the substrate to accept new floor covering(s) and eliminate residual odors.

10. The Abatement Contractor must coordinate location of waste containers with the Facility and the Owner. Deliveries and storage of equipment must be coordinated with the Facility and the Owner.

11. All “Large” and “Small” asbestos abatement projects, as defined by 12 NYCRR56 shall not be performed while the building is occupied. The term “building” means a wing or major section of a building that can be completely isolated from the rest of the building with sealed non-combustible construction. The isolated portion of the building must contain exists that do not pass through the occupied portion(s) and ventilation systems must be physically separated and sealed at the isolation barriers.

1.02 PRE-CONTRACT SUBMITTALS

Within three (3) days after bids are opened, the three (3) apparent low bidders shall be required to submit the following documentation:

A. Resume': Shall include the following:

1. Provide a list of projects of similar nature performed within the past two (2) years and include the dollar value of all projects. Provide project references to include owner, consultant, and air monitoring firms' name, contact person, address, and phone number, include location of project and date of completion.

2. Abatement Contractor license issued by New York State Department of Labor for asbestos work in accordance with ICR-56-3.

3. A list of owned equipment available to be used in the performance of the project.

4. The number of years engaged in asbestos removal.

5. An outline of the worker training courses and medical surveillance program conducted by the Abatement Contractor.

6. A standard operating procedures manual describing work practices and procedures, equipment, type of decontamination facilities, respirator program, special removal techniques, etc.

7. Documentation to the satisfaction of the Owner pertaining to the Abatement Contractor's financial resources available to perform the project. Such data shall include, but not be limited to, the firm's balance sheet for the last fiscal year.

B. Citations/Violations/Legal Proceedings

1. Submit a notarized statement describing any citations, violations, criminal charges, or legal proceedings undertaken or issued by any law enforcement, regulatory agency, or consultant concerning performance on previous asbestos abatement contracts. Briefly describe the circumstances citing the project and involved persons and agencies as well as the outcome of any actions.

2. Answer the question: "Has your firm or its agents been issued a Stop Work order on any project within the last two years?" If "Yes" provide details as discussed above.

3. Answer the question: "Are you now, or have you been in the past, a party to any litigation or arbitrations arising out of your performance on Asbestos Abatement Contracts?" If "Yes" provide details as discussed in 1. above.

4. Describe any liquidated damages assessed within the last two years.

C. Preliminary Schedule

1. Provide a detailed schedule including work dates, work shift times, estimate of manpower to be utilized and the start and completion date for completion of each major work area.

1.03 DOCUMENTATION

A. The Abatement Contractor shall be required to submit the following and receive the Consultant's approval prior to commencing work on this project:

1. Provide documentation of worker training for each person assigned to the project. Documentation shall include copies of each workers valid New York State asbestos handler certificates (for those employees who may perform asbestos removal), documentation of current respirator fit test and current OSHA required training and medical examination.

2. The attached "Asbestos Employee Medical Examination Statement" and "Asbestos Employee Training Statement" forms shall be completed, signed and submitted for each worker assigned to the project. Records of all employee training and medical surveillance shall be maintained for at least forty (40) years. Copies of the records shall be submitted to the Consultant prior to commencement.

3. The Abatement Contractor shall submit proof of a current, valid license issued by the New York State Department of Labor pursuant to the authority vested in the Commissioner by section 906 of the Labor Laws, and that the employees performing asbestos related work on this project are certified by the State of New York as required in Part 56 of Title 12 of the Official Compilation of Codes, Rules and Regulations of the State of New York latest edition. Copies of all licenses shall be submitted prior to the commencement of the project.

4. The Abatement Contractor shall submit a written respiratory protection program meeting the requirements of 29 CFR 1910.134 to the Consultant.

5. The name, address, social security number and NYS DOL certificate number of the person(s) who will supervise the asbestos project.

6. The name and address of the deposit or waste disposal site or sites where the asbestos materials are to be deposited or disposed of. This site must be approved by the Owner. The manifesting procedure must also be specified.

7. The name, address and New York State Dept. of Environmental Conservation ID Number of any transporters that are to be used to transport waste.

8. A written Standard Operation Procedure (SOP) that is designed and implemented to maximize protection against human exposure to asbestos dust. The SOP shall take into consideration the workers, visitors, building employees, general public and environment. As a minimum the procedures must include the following:

   a. Security for all work areas on an around-the-clock basis against unauthorized access.

   b. Project organization chart including the phone numbers of at least two responsible persons who shall be authorized to dispatch men and equipment to the project in the event of an emergency; including weekends.

c. Description of protective clothing and NIOSH approved respirators to be used.

d. Description of all removal methods to be used, including HEPA air filtration and decontamination sequence with special emphasis on any procedure that may deviate from these specifications.

e. A list of manufacturers' certificates stating that all vacuums, negative air filtration equipment, respirators and air supply equipment meet OSHA and EPA requirements.

f. A list of all materials proposed to be furnished and used under this contract.

g. Emergency evacuation procedures in the event of fire, smoke or accidents such as injury from falling, heat exposure, electrical shock, etc.

h. The name, address and ELAP number of the New York State Department of Health Certified Analytical Testing Laboratory the Contractor proposes to use for the OSHA monitoring.

9. A detailed plan, in triplicate, for the phasing of the project, division of work areas and location of decontamination facilities, waste containers and temporary office.

10. Work schedule, identifying firm dates and completion for actual areas. Bar chart or critical path chart indicating phases is required.

B. The Abatement Contractor shall post their NYS DOL contractor's license and maintain a daily log documenting the dates and time of the following items within each personal decontamination unit:

1. Meetings; purpose, attendants, discussion (brief)

2. Sign-in and sign-out of all persons entering the work area including name, date, time, social security number, position or function and general description of daily activity.

3. Testing of barriers and enclosure systems using smoke tubes prior to the beginning of abatement activities and at least once a day thereafter until satisfactory clearance air monitoring results have been achieved.

4. Inspection of all plastic barriers, twice daily, by the asbestos supervisor.

5. Loss of enclosure integrity; special or unusual events, barrier breaches, equipment failures, etc.

6. Daily cleaning of enclosures.

7. Personnel air monitoring test results for OSHA Compliance. Results shall be posted at the work site within 24 hours of testing and copies supplied to the Owner within five (5) days of testing. Abnormalities shall be supplied to the Owner immediately.

C. Documentation with confirmation signature of Consultant's representative of the following shall be provided by the Abatement Contractor at the final closeout of the project.

1. Testing of barriers and enclosure systems using smoke tubes shall be performed prior to the beginning of abatement activities and at least once a day thereafter until satisfactory clearance air monitoring results have been achieved.

2. Inspection of all plastic barriers.

3. Removal of all polyethylene barriers.

4. Consultant's inspections prior to encapsulation.

5. Removal of waste materials.

6. Decontamination of equipment (list items).

7. Consultant's final inspection/final air tests.

D. The Abatement Contractor shall provide records of all project information, to include the following which shall be submitted upon completion of the project and prior to approval of the Abatement Contractor's payment application:

1. The location and description of the abatement project.

2. The name, address and social security number of the person(s) who supervised the asbestos project.

3. Certified payroll documentation Pursuant to Article 8, Section 220 of the NYS Labor Law

4. Copies of EPA/NYSDOL Asbestos Certificates for all Workers and Supervisors employed on the Project.

5. Copies of Medical Approval and Respirator Fit-testing for all Asbestos Workers and Supervisors employed on the Project.

6. Copies of Abatement Contractors Daily Sign-In Sheets & Logs for persons entering and leaving the work area. – Title 12 NYCRR Part 56-7.3.

7. Copies of Abatement Contractor’s personal air sampling laboratory results.

8. The amounts and type of asbestos materials that was removed, enclosed, encapsulated, or disturbed.

9. The name and address of the deposit or waste disposal site or sites where the asbestos waste materials were deposited or disposed of and all related manifests, receipts and other documentation associated with the disposal of asbestos waste.

10. The name and address of any transporters used to transport waste and all related manifests, receipts and other documentation associated with the transport of asbestos waste.

11. All other information that may be required by state, federal or local regulations.

12. Copy of the Supervisor's Daily Project Log of events as described in 1.03 B, above.

1.04 NOTIFICATIONS AND PERMITS

A. The Abatement Contractor shall be required to prepare and submit notifications to the following agencies at least ten (10) days prior to the commencement of the project:

1. Asbestos NESHAPS Contact
   U.S. Environmental Protection Agency
   NESHAPS Coordinator, Air Facilities Branch
   26 Federal Plaza
   New York, New York 10007
   (212) 264-7307

2. State of New York Department of Labor
   Division of Safety and Health
   Asbestos Control Bureau
   State Office Building Campus, Building 12, Room 454
   Albany, New York 12240

3. Owner(s): Monroe-Woodbury CSD
   278 Route 32
   Central Valley, NY 10917
   ATTN: Andrzej Rudiak, Director of Buildings and Grounds
   Ph. (845) 460-6770 x 6778
   E-mail. arudiak@mw.k12.ny.us

4. Owner's Representative(s): Clark Patterson Lee
   50 Front Street
   Suite 202
   Newburgh, NY 12550
   ATTN: Lisa Fasciglione
   Ph. (845) 567-6700
   E-mail. ljfasciglione@cplteam.com

5. Environmental Consultant(s): Quality Environmental Solutions & Technologies, Inc. (QuES&T)
   1376 Route 9
   Wappingers Falls, New York 12590
   ATTN: Todd McAfee
   Ph. (845) 298-6031
   Fx. (845) 298-6251
   E-mail. tmcafee@qualityenv.com

B. The notification shall include but not be limited to the following information:

1. Name and address of Owner.

2. Name, address and asbestos handling license number of the Abatement Contractor.

3. Address and description of the building, including size, age, and prior use of the building or area; the amount, in square feet or linear feet of asbestos material to be removed; room designation numbers or other local information where asbestos material is found, including the type of asbestos material (friable or non-friable).

4. Scheduled starting and completion dates for removal.

5. Methods to be employed in abating asbestos containing materials.

6. Procedures and equipment, including ventilating/exhaust systems, that will be employed to comply with the Code of Federal Regulation (CFR) Title 40, Part 61 of the U.S. Environmental Protection Agency.

7. The name and address of the carting company and of the waste disposal site where the asbestos waste will be deposited.

NOTE: Notifications shall be submitted using standard forms as may be used by the respective agency.

For DOL (NYS) include "Asbestos Project Notification" form (DOSH-483) with proper fee, if required. For EPA include "Notification of Demolition and Renovation"; 40 CFR Part 61.

C. The Abatement Contractor shall secure any permits required by the city, town, county, or state that may be required and the cost for obtaining the permit shall be included in his base bid.

D. The Abatement Contractor shall erect warning signs around the work space at every point of potential entry into the work area in accordance with OSHA 1926.58k (2), (i). These signs shall bear the following information:

DANGER

CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE
CLOTHING
ARE REQUIRED IN THIS AREA

E. The Abatement Contractor shall post at entrances to the work place and immediate adjacent areas, notifications to building occupants which include the name and license number of the contractor, project location and size, amount and type of ACM, abatement procedures, dates of expected occurrence and name and address of the air monitor and laboratory in compliance with ICR 56-3.6.

F. The Abatement Contractor shall post a list of emergency telephone numbers at the job site which shall include the Owner's Representative, police, emergency squad, local hospital, Environmental Protection Agency, N.Y. State Department of Labor, Occupational Safety and Health Administration and the local Department of Health.

1.05 APPLICABLE STANDARDS

Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, applicable standards of the construction industry have the same force and effects (and are made a part of contract documents by reference) as if copied directly into contract documents, or as if published copies were bound herewith. Resolution of overlapping and conflicting requirements, which result from the application of several different industry standards to the same unit of work, shall be by adherence to the most stringent requirement.

A. Applicable standards listed in these Specifications form a part of this Specification and include, but are not necessarily limited to, standards promulgated by the following agencies and organizations:

1. ANSI:
   American National Standards Institute
   1430 Broadway
   New York, New York 10018

2. ASHRAE:
   American Society for Heating, Refrigerating
   and Air Conditioning Engineers
   1791 Tullie Circle NE
   Atlanta, Georgia 30329

3. ASTM:
   American Society for Testing and Materials
   1916 Race Street
   Philadelphia, Pennsylvania 19103

4. CFR
   Code of Federal Regulations Available
   from Government Printing Office
   Washington, District of Columbia 20402

5. CGA
   Compressed Gas Association
   1235 Jefferson Davis Highway
   Arlington, Virginia 22202

6. CS
   Commercial Standard of NBS
   (US Dept. of Commerce)
   Government Printing Office

7. EPA

   Environmental Protection Agency, Region II
   26 Federal Plaza
   New York, New York 10007
   Asbestos Coordinator - Room 802
   (212) 264-9538
   Part 61, Sub-Parts A & B
   National Emission Standard for Asbestos

8. FEDERAL SPECS

   Federal Specification (General Services Administration)
   7th and D Street, SW
   Washington, District of Columbia 20406

9. NBS

   National Bureau of Standards
   (US Department of Commerce)
   Gaithersburg, Maryland 20234

10. NEC

    National Electrical Code (by NFPA)

11. NFPA

    National Fire Protection Association
    Batterymarch Park
    Quincy, Massachusetts 02269

12. NIOSH

    National Institute for Occupational Safety and Health
    26 Federal Plaza
    New York, New York 10007

13. NYSDOH

    New York State Department of Health
    Bureau of Toxic Substance Assessment
    Room 359 - 3rd Floor
    Tower Building Empire State Plaza
    Albany, New York 12237

14. NYSDEC

    New York State Department of Environmental Conservation
    Room 136
    50 Wolf Road
    Albany, New York 12233-3245

15. NYSDOL
    State of New York Department of Labor
    Division of Safety and Health
    Asbestos Control Program
    State Campus
    Building 12
    Albany, New York 12240

16. OSHA
    Occupational Safety and Health Administration
    (US Department of Labor)
    New York Regional Office - room 3445
    1515 Broadway
    New York, New York 10036

17. UL
    Underwriters Laboratories
    333 Pfingsten Road
    Northbrook, Illinois 60062

B. Federal Regulations: Those which govern asbestos abatement work or hauling and disposal of asbestos waste materials:

1. U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA):

   a. Asbestos Regulations
      Title 29, Part 1910, of the Code of Federal Regulations.

   b. Respiratory Protection
      Title 29, Part 1910, Section 134 of the Code of Federal Regulations.

   c. Construction Industry
      Title 29, Part 1926, of the Code of Federal Regulations.

   d. Access to Employee Exposure & Medical Records
      Title 29, Part 1910, Section 20 of the Code of Federal Regulations.

   e. Hazard Communication
      Title 29, Part 1910, Section 1200 of the Code of Federal Regulations.

   f. Specifications for Accident Prevention Signs and Tags
      Title 29, Part 1910, section 145 of the Code of Federal Regulations.

2. U.S. Environmental Protection Agency (EPA):

   a. Asbestos Hazard Emergency Response Act (AHERA) Regulation Asbestos Containing Materials in Schools Final Rule & Notice Title 40, Part 763, Subpart E of the Code of Federal Regulations.

b. Worker Protection Rule
40 CFR Part 763, Subpart G, CPTS 62044, FLR 2843-9
Federal Register, Vol. 50, No. 134, 7/12/85, P28530-28540

c. Regulation for Asbestos
Title 40, Part 61, Subpart A of the Code of Federal Regulations

d. National Emission Standard for Asbestos
Title 40, Part 61, Subpart M (Revised Subpart B) of the Code of Federal Regulations

e. Resource Conservation and Recovery Act (RCRA) 1976, 1980
Hazardous and Solid Waste Amendments (HSWA) 1984
Subtitle D, Subtitle C

3. U.S. Department of Transportation (DOT):

a. Hazardous Substances: Final Rule Regulation 49 CFR, Part 171 and 172.

C. State Regulations: Those which govern asbestos abatement work or hauling and disposal of asbestos waste materials:

1. New York State Department of Environmental Conservation (DEC) Regulations regarding waste collection registration. Title 6, Part 364 of the New York State Official Compilation of Codes, Rules and Regulations - 6NYCRR 364.

2. New York State Right-To-Know Law

3. New York State Department of Labor Asbestos Regulations Industrial Code Rule 56.

D. Standards: Those which govern asbestos abatement work or hauling and disposal of asbestos waste materials:

1. American National Standards Institute (ANSI)

a. Fundamentals Governing the Design and Operation of Local Exhaust Systems
Publication Z9.2-79

b. Practices for Respiratory Protection
Publication Z88.2-80

E. Guidance Documents: Those that discuss asbestos abatement work or hauling and disposal of asbestos waste materials are listed below only for the Abatement Contractor's information. These documents do not describe the work and are not a part of the work of this contract.

EPA:

1. Guidance for Controlling Asbestos Containing Materials in Buildings (Purple Book) EPA560/5-85-024.

2. Asbestos Waste Management Guidance EPA 530-SW-85-007.

F. Patents and Royalties: The Abatement Contractor shall pay all royalties and/or license fees. The Abatement Contractor shall defend all suits and claims for infringement of any patent rights and save the Owner and Consultant harmless from loss including attorney fees on account thereof.

1.06 DEFINITIONS

As used in or in connection with these specifications the following are terms and definitions.

Abatement - Procedure to control release from asbestos material. This includes removal, encapsulation and enclosure.

Aggressive sampling - A method of sampling in which the person collecting the air sample creates activity by the use of mechanical equipment during the sampling period to stir up settled dust and simulate activity in that area of the building.

AIHA - The American Industrial Hygiene Association, 475 Wolf Ledges Parkway, Akron, Ohio 44311.

Airlock - A system for permitting entrance and exit while restricting air movement between a containment area and an uncontaminated area. It consists of two curtained doorways separated by a distance of at least three feet such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.

Air sampling - The process of measuring the content of a known volume of air collected during a specific period of time.

Amended water - Water to which a surfactant has been added.

Approved asbestos safety program - A program approved by the Commissioner of Health providing training in the various disciplines that may be involved in an asbestos project.

Area air sampling - Any form of air sampling or monitoring where the sampling device is placed at some stationary location.

Asbestos - Any naturally occurring hydrated mineral silicate separable into commercially usable fibers, including chrysotile (serpentine), amosite (cumingtonite-gunerite), crocidolite (riebeckite), tremolite, anthophyllite and actinolite.

Asbestos contract - An oral or written agreement contained in one or more documents for the performance of work on an asbestos project and includes all labor, goods and service.

Asbestos handler - An individual who installs, removes, applies, encapsulates, or encloses asbestos or asbestos material, or who disturbs friable asbestos. Only individuals certified by NYS Department of Labor shall be acceptable for work under this specification.

Asbestos handling certificate - A certificate issued by the Commissioner of Labor of the State of New York, to a person who has satisfactorily completed an approved asbestos safety program.

Asbestos project - Work undertaken by a contractor which involves the installation, removal, encapsulation, application or enclosure of any ACM or the disturbance of friable ACM.

Asbestos Safety Technician (AST) - Individual designated to represent the Consultant, perform third party monitoring and perform compliance monitoring at the job site during the asbestos project.

Asbestos waste material - Asbestos material or asbestos contaminated objects requiring disposal.

Authorized visitor - The building owner, his or her representative or any representative of a regulatory or other agency having jurisdiction over the project.

Background level monitoring - A method used to determine ambient airborne concentrations inside and outside of a building or structure prior to starting an abatement project.

Building owner - The person in whom legal title to the premises is vested unless the premises are held in land trust, in which instance Building Owner means the person in whom beneficial title is vested.

Clean room - An uncontaminated area or room that is a part of the personal decontamination enclosure with provisions for storage of persons' street clothes and protective equipment.

Cleanup - The utilization of HEPA vacuuming to control and eliminate accumulations of asbestos material and asbestos waste material.

Clearance air monitoring - The employment of aggressive sampling techniques with a volume of air collected to determine the airborne concentration of residual fibers upon conclusion of an asbestos abatement project.

Commissioner - Commissioner of the New York State Department of Labor.

Contractor - A company, unincorporated association, firm, partnership or corporation and any owner or operator thereof, which engages in an asbestos project or employs persons engaged in an asbestos project.

Curtained doorway - A device that consists of at least three overlapping sheets of plastic over an existing or temporarily framed doorway. One sheet shall be secured at the top and left side, the second sheet at the top and right side, and the third sheet at the top and the left side. All sheets shall have weights attached to the bottom to insure that the sheets hang straight and maintain a seal over the doorway when not in use.

Decontamination enclosure system - A series of connected rooms, separated from the work area and from each other by air locks, for the decontamination of persons, materials, equipment, and authorized visitors.

Encapsulant (sealant) or encapsulating agent - A liquid material that can be applied to asbestos material and which prevents the release of asbestos from the material by creating a membrane over the surface.

Enclosure - The construction of airtight walls, ceilings and floors between the asbestos material and the facility environment, or around surfaces coated with asbestos materials, or any other appropriate procedure that prevents the release of asbestos materials.

Equipment room - A contaminated area or room that is part of the personal decontamination enclosure system with provisions for the storage of contaminated clothing and equipment.

Fixed object - A unit of equipment, furniture or other fixture in the work area which cannot be readily removed from the work area.

Friable Asbestos Material - That condition of crumbled, pulverized, powdered, crushed or exposed asbestos capable of being released into the air by hand pressure.

Friable material containment - The encapsulation or enclosure of any friable asbestos material.

Glovebag technique - A method for removing asbestos material from heating, ventilating, and air conditioning (HVAC) ducts, piping runs, valves, joints, elbows, and other nonplanar surfaces in a noncontained work area. The glovebag assembly is a manufactured device consisting of a glovebag constructed of at least six mil transparent plastic, two inward-projecting longsleeve gloves, which may contain an inward projecting waterwand sleeve, an internal tool pouch, and an attached, labeled receptacle or portion for asbestos waste. The glovebag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and to contain all asbestos fibers released during the abatement process.

HEPA filter - A high efficiency particulate air filter capable of trapping and retaining 99.97 percent of particulate greater than 0.3 microns equivalent aerodynamic diameter.

HEPA vacuum equipment - Vacuuming equipment with a high efficiency particulate air filtration system.

Holding area - A chamber in the waste decontamination enclosure located between the washroom and an adjacent uncontaminated area.

Homogeneous work area - A site within the abatement work area that contains one type of asbestos material and where one type of abatement is used.

Large asbestos project - An asbestos project involving the installation, removal, disturbance, enclosure, or encapsulation of 160 square feet or more of asbestos or asbestos material or 260 linear feet or more of asbestos or asbestos material.

Minor asbestos project - An asbestos project involving the installation, removal, disturbance, enclosure, or encapsulation of 10 square feet or less of asbestos or asbestos material, or 25 linear feet or less of asbestos or asbestos material.

Movable object - A unit of equipment, furniture or fixture in the work area that can be readily removed from the work area.

Negative air pressure equipment - A local exhaust system equipped with HEPA filtration. The system shall be capable of creating and maintaining a negative pressure differential between the outside and the inside of the work area.

Non-asbestos material - Any material containing one percent or less asbestos by weight.

Occupied area - Any frequented portion of the work site where abatement is not taking place.

Outside air - The air outside the building or structure.

Personal air monitoring - A method used to determine an individuals exposure to airborne contaminants. The sample is collected outside the respirator in the person's breathing zone.

Plasticize - To cover floors, walls, ceilings and other surfaces with 6 mil fire retardant plastic sheeting as herein specified.

Project - Any form of work performed in connection with the abatement of asbestos or alteration, renovation, modification or demolition of a building or structure that may disturb asbestos or asbestos material.

Removal - The stripping of any asbestos material.

Repair - Corrective action using required work practices to control fiber release from damaged areas.

Respiratory protection - Respiratory protection required of licensed asbestos workers and authorized visitors in accordance with the applicable laws.

Satisfactory clearance air monitoring results - For all post- abatement samples, airborne concentrations of total fibers that are less than 0.01 fibers per cubic centimeter or background levels, whichever are greater, using phase contrast microscopy (PCM).

Shower room - A room between the clean room and the equipment room in the personal decontamination enclosure with hot and cold running water controllable at the top and arranged for complete showering during decontamination.

Small asbestos project - An asbestos project involving the installation, removal, disturbances, enclosure, or encapsulation of more than 10 and less than 160 square feet of asbestos or asbestos material of more than 25 and less than 260 linear feet of asbestos or asbestos material.

Staging area - The area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the work area.

Surfactant - A chemical wetting agent added to water to improve its penetration.

Visible emissions - An emissions of particulate material that can be seen without the aid of instruments.

Washroom - A room between the work area and the holding area in the waste decontamination enclosure system, where equipment and waste containers are wet cleaned and/or HEPA vacuumed.

Waste decontamination enclosure system - An area, consisting of a washroom and a holding area, designated for the controlled transfer of materials and equipment.

Wet cleaning - The process of eliminating asbestos contamination from surfaces, equipment or other objects by using cloths, mops, or other cleaning tools.

Work area - Designated rooms, spaces, or areas where asbestos abatement takes place.

Work site - Premises where asbestos abatement is taking place.

Work Surface - Substrate surface from which asbestos-containing material has been removed.

1.07 UTILITIES, SERVICE AND TEMPORARY FACILITIES

A. The Owner shall make available to the Abatement Contractor all reasonable amounts of water and electrical power at no charge.

B. The Abatement Contractor shall provide, at his own expense, all electrical, water, and waste connections, extensions, and construction materials, supplies, etc. All connections must be approved in advance by the Owner and all work relative to the utilities must be in accordance with the applicable building codes.

C. The Abatement Contractor shall provide scaffolding, ladders and staging, etc. as necessary to accomplish the work of this contract. The type, erection and use of all scaffolding, ladders and staging, etc. shall comply with all applicable OSHA provisions.

D. All connections to the Owner's water system shall include reduced pressure backflow protection or double check and double gate valves. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.

E. The Abatement Contractor shall use only heavy duty abrasion resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water to each work area and to each decontamination unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment. All water must be shut off at the end of each shift.

F. The Abatement Contractor shall provide service to decontamination unit electrical subpanel with minimum 60 amp, 2 pole circuit breaker or fused disconnect and ground-fault circuit interrupters (GFCI), reset button and pilot light, connected to the building's main distribution panel. Subpanel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the work. This electrical subpanel shall be used for hot water heater, PAPR battery recharging and air sampling pumps.

G. The Abatement Contractor shall provide UL rated 40-gallon electric hot water heater to supply hot water for the decontamination unit shower. Activate from 30 amp circuit breaker on the electrical subpanel located within the decontamination unit. Provide with relief valve compatible with water heater operation; relief valve down to drip pan on floor with type L copper. Wiring of the hot water heater shall be in compliance with NEMA, NEC, and UL standards.

H. The Abatement Contractor shall provide identification warning signs at power outlets, which are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 plugs into higher voltage outlets. Dry transformers shall be provided where required to provide voltages necessary for work operations. All outlets or power supplies shall be protected by ground fault circuit interrupter (GFCI) at the power source.

I. The Abatement Contractor shall use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas of work.

J. The Abatement Contractor shall provide general service incandescent lamps of wattage indicated or required for adequate illumination; Protect lamps with guard cages or tempered glass enclosures; Provide exterior fixtures where fixtures are exposed to moisture.

K. The Abatement Contractor shall provide temporary heat or air conditioning as necessary to maintain comfortable working temperatures inside and immediately outside the work areas. Heating and A/C equipment shall have been tested and labeled by UL, FM or another recognized trade association related to the fuel being used. Fuel burning heaters shall not be used inside containment areas. The Contractor shall also provide a comfortable working environment for occupied areas that are impacted by the asbestos removal.

L. The Abatement Contractor shall comply with recommendations of the NFPA standard in regard to the use and application of fire extinguishers. Locate fire extinguishers where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher in each work area, equipment room, clean room and outside the work area.

1.08 REMOVAL OF FIXTURES

A. In locations where the Abatement Contractor is directed to dispose of fixtures he shall either decontaminate the fixtures and dispose of them as non-asbestos containing materials or he shall place them in an appropriate container and dispose of them as asbestos containing material.

B. In locations where the Abatement Contractor is directed to remove and reinstall fixtures, the fixtures shall be removed, decontaminated, labeled, protected with plastic and stored by the contractor in a location as directed by the Owner.

C. Upon completion of the asbestos removal and upon receiving satisfactory clearance air monitoring results, all items to be replaced shall be restored to their original location and reinstalled by the Abatement Contractor.

PART 2 – PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. GENERAL REQUIREMENTS

1. Materials shall be stored off the ground, away from wet or damp surfaces and under protective cover to prevent damage or contamination.

2. Damaged or deteriorating materials shall not be used and shall be removed from the premises.

3. Power tools used to drill, cut into, or otherwise disturb asbestos material shall be equipped with HEPA filtered local exhaust ventilation.

4. The Abatement Contractor shall make available to authorized visitors, ladders and/or scaffolds of sufficient dimension and quantity so that all work surfaces can be easily and safely reached for inspection. Scaffold joints and ends shall be sealed with tape to prevent incursion of asbestos. Scaffolds and ladders shall comply with all applicable codes.

B. PLASTIC BARRIERS (POLYETHYLENE)

1. In sizes and shapes to minimize the number of joints.

   a. Six mil. (.006") fire-retardant for vertical protection (walls, entrances and openings).

   b. Six mil. (.006") fire-retardant for horizontal protection (fixed equipment) and heating grilles.

   c. Six mil. (.006") reinforced fire-retardant for floors of decon units.

2. Provide two (2) layers over all roof, wall and ceiling openings. Floor penetrations shall be sealed with a rigid material prior to plasticizing to prevent tripping and fall hazards. All seams within a layer shall be separated by a minimum distance of six feet and sealed airtight. All seams between layers shall be staggered.

3. Barrier Attachment - Commercially available duct tape (fabric or paper) and spray-on adhesive. Duct tape shall be capable of sealing joints of adjacent sheets of plastic, facilitating attachment of plastic sheets to finished or unfinished surfaces of dissimilar materials and adhering under both dry and wet conditions.

C. SIGNS

1. Danger signs shall be provided and shall conform to 29 CFR 1926.1101 and be 14" x 20". These signs shall bear the following information:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
RESPIRATORS AND PROTECTIVE
CLOTHING
ARE REQUIRED IN THIS AREA

D. DANGER LABELS AND TAPE

1. Labels shall be affixed to any asbestos contaminated material in accordance with the requirements of 29 CFR 1910.1200 (f) of OSHA's Hazard Communication Standard, and shall contain the following information:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID BREATHING DUST
CANCER AND LUNG DISEASE HAZARD

2. A label shall be affixed on each container of asbestos waste in accordance with the requirements of 49 CFR Parts 171 and 172, Hazardous Substances; Final Rule (U.S. Department of Transportation), and shall contain the following information:

RQ HAZARDOUS SUBSTANCE
SOLID, NOS, ORM-E, NA 9188
(ASBESTOS)

3. A label shall be affixed on each container of asbestos waste in accordance with the requirements of 40 CFR Part 61.150, NESHAP; Asbestos; Final Rule (USEPA) and shall contain the name of the waste generator and the location at which the waste was generated.

   NOTE: All containers marked as above (1, 2 and 3) shall be disposed of as asbestos waste.

4. Provide 3" red barrier tape printed with black lettered "DANGER ASBESTOS REMOVAL". Locate barrier tape across all corridors, entrances and access routes to asbestos work area.

E. PROTECTIVE EQUIPMENT

1. Respiratory Requirements

   a. Where fiber levels permit, and in compliance with regulatory requirements, Powered Air Purifying Respirators are the minimum allowable respiratory protection permitted to be utilized during removal operations.

   b. Where not in violation of NIOSH, OSHA, and any other regulatory requirements, the Abatement Contractor shall provide the following minimum respiratory protection to the maximum use concentrations indicated:

MSHA/NIOSH Approved Respiratory Protection	Maximum Use Concentration
Half-Mask Air Purifying with HEPA Filters	10x PEL
Full-Facepiece Air Purifying HEPA Filters and Quantitative Fit Test	10x PEL
Powered Air Purifying (PAPR), Loose fitting Helmet or Hood, HEPA Filter	25x PEL
Powered Air Purifying (PAPR), Full Facepiece, HEPA Filter	50x PEL
Supplied Air, Continuous Flow Loose fitting Helmet or Hood	25x PEL
Supplied Air, Continuous Flow Full Facepiece, HEPA Filter	50x PEL
Full Facepiece-Supplied Air Pressure Demand, HEPA Filter	100x PEL
Full Facepiece-Supplied Air Pressure Demand, with Aux. SCBA, Pressure Demand or Continuous Flow	>100x PEL

2. Disposable Clothing -"Tyvek" manufactured by Dupont or approved equal.

3. NIOSH approved safety goggles to protect eyes.

4. Polyethylene bags, 6 mil. (.006") thick (use double bags).

NOTE: Workers must wear disposable coveralls and respirator masks at all times while in the work area. Contaminated coveralls or equipment must be left in work area and not worn into other parts of the building.

F. TOOLS AND EQUIPMENT

1. Airless Sprayer - An airless sprayer, suitable for application of encapsulating material, shall be used.

2. Scaffolding - Scaffolding, as required to accomplish the specified work, shall meet all applicable safety regulations.

3. Transportation Equipment - Transportation equipment, as required, shall be suitable for loading, temporary storage, transport and unloading of contaminated waste without exposure to persons or property. Water tight, hard wall containers shall be provided to retain and dispose of any asbestos waste material with sharp-edged components that may tear plastic bags or sheeting. The containers shall be marked with danger labels.

4. Surfactant - Wetting Agents - "Asbestos-Wet" - Aquatrols Corp. of America or approved equal, and shall be non- carcinogenic.

5. Portable (negative air pressure) asbestos filtration system - by Micro-Trap, or approved equal.

6. Vacuum, HEPA type equal to "Nilfisk" #GA73, or "Pullman/Holt" #75 ASA.

7. Amended Water Sprayer - The water sprayer shall be an airless or other low-pressure sprayer for amended water application.

8. Other Tools and Equipment - The Abatement Contractor shall provide other suitable tools for the stripping, removal, encapsulation, and disposal activities including but not limited to: hand-held scrapers, nylon brushes, sponges, rounded edge shovels, brooms, and carts.

PART 3 - EXECUTION

3.01 PRE-ABATEMENT WORK AREA PREPARATION

A. The work area shall be vacated by the occupants prior to work area preparation and not reoccupied until satisfactory clearance air monitoring results have been achieved.

B. Caution signs shall be posted at all locations and approaches to a location where airborne concentrations of asbestos may exceed ambient background levels. Signs shall be posted that permit a person to read the sign and take the necessary protective measures to avoid exposure.

C. Shut down and lock out electric power to all work areas. The Abatement Contractor shall provide temporary power and lighting and ensure safe installation of temporary power sources and equipment used where high humidity and/or water shall be sprayed in accordance with all applicable codes. All power to work areas shall be brought in from outside the area through a ground-fault interrupter at the source.

D. Isolate the work area HVAC system.

E. The personnel decontamination enclosure system shall be installed or constructed prior to preparatory work in the work area and in particular before the disturbance of asbestos material. The waste decontamination enclosure system shall be installed or constructed prior to commencement of abatement activities.

F. Movable objects within the work area shall be pre-cleaned using HEPA filtered vacuum equipment an/or wet cleaning and such objects shall be removed from the work area to an uncontaminated location. If disposed of as asbestos waste material, cleaning is not required.

G. Fixed objects and other items, which are to remain within the work area, shall be pre-cleaned using HEPA filtered vacuum equipment and/or wet cleaning. Such objects shall be enclosed with two layers of at least six mil plastic sheeting and sealed with tape.

H. The work area shall be pre-cleaned using HEPA filtered vacuum equipment and/or wet cleaning. Methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters, shall be prohibited. Asbestos material shall not be disturbed during pre-cleaning.

I. Isolation barriers that seal off all openings, including windows, corridors, doorways, ducts, and any other penetrations of the work area, shall be constructed using two layers of at least six mil fire-retardant plastic sheeting sealed with tape. Also, all seams in mechanical system components that pass through the work area shall be sealed. Doorways and corridors, which shall not be used for passage during work, shall also be sealed.

J. Removal of mounted objects. After isolation barriers are in place, objects such as light fixtures, electrical track, alarm systems, ventilation equipment and other items not previously sealed, shall be double sealed with six mil fire-retardant plastic sheeting. Localized HEPA filtered vacuum equipment shall be used during fixture removal to reduce asbestos dispersal.

K. Individual roof and floor drains shall be sealed water tight using two layers of 6-mil fire-retardant plastic sheeting and tape prior to plasticizing. Openings in floor shall be fully covered with plywood sheeting secured to the floor in such a way as to minimize a tripping hazard prior to plasticizing.

L. Emergency and fire exits from the work area shall be maintained or alternate exits shall be established according to all applicable codes.

M. Adequate toilet facilities shall be supplied by the Abatement Contractor and shall be located either in the clean area of the personnel decontamination enclosure or shall be readily accessible to the personnel decontamination enclosure.

3.02 LARGE ASBESTOS PROJECT PERSONNEL DECONTAMINATION ENCLOSURE SYSTEM (ICR 56-7.5)

A. The personnel decontamination enclosure shall be constructed prior to preparatory work in the work area and in particular before the disturbance of asbestos material.

1. Construction and use of personnel decontamination enclosure systems shall be in accordance with ICR-56 and any Applicable or Site Specific Variances utilized on this project. Such systems may consist of existing rooms outside of the work area, if the layout is appropriate, that can be enclosed is plastic sheeting and are accessible from the work area. When this situation does not exist, enclosure systems may be constructed out of metal, wood or plastic support.

2. The personnel decontamination enclosure system shall consist of a clean room, a shower room, and an equipment room, in series, separated from each other and from the work area by three airlocks.

3. There shall be one shower per six full shift abatement persons calculated on the basis of the largest shift.

4. The personnel decontamination enclosure system shall be fully framed, sheathed for safety and constructed to prevent unauthorized entry.

5. Personnel decontamination enclosure systems constructed at the work site shall utilize at least six mil fire-retardant opaque plastic sheeting. At least two layers of six mil fire-retardant reinforced plastic sheeting shall be used for the flooring of this area.

6. All prefabricated decontamination units shall be completely decontaminated and sealed prior to separation and removal from the work area. Mobile decontamination units shall remain in place until satisfactory clearance results have been attained.

7. The clean room shall be sized to accommodate all authorized persons. Benches, lockers and hooks shall be provided for street clothes. Shelves for storing respirators shall also be provided. Clean clothing, replacement filters for respirators, towels and other necessary items shall be provided. The clean room shall not be used for the storage of tools, equipment or materials. It shall not be used for office space. A lockable door shall be provided to permit access to the clean room from outside the work area or enclosure. It shall be used to secure the work area and decontamination enclosure during off-shift hours.

8. The shower room shall contain one or more showers. Each shower head shall be supplied with hot and cold water adjustable at the tap. The shower enclosure shall be constructed to ensure against leakage of any kind. Uncontaminated soap, shampoo and towels shall be available at all times. Shower water shall be drained, collected and filtered through a system with at least 5.0 micron particle size collection capability. A system containing a series of several filters with progressively smaller pore sizes shall be used to avoid rapid clogging of the filtration system by large particles. Filtered wastewater shall be discharged in accordance with applicable codes. Contaminated filters shall be disposed of as asbestos waste. The shower room shall be constructed in such way that travel through the decontamination unit shall be through the shower.

9. The equipment room shall be used for the storage of equipment and tools after decontamination using a HEPA filtered vacuum and/or wet cleaning. A one day supply of replacement filters, in sealed containers, for HEPA vacuums and negative pressure ventilation equipment, extra tools, containers of surfactant and other materials and equipment that may be required during the abatement project may also be stored here. A walk-off pan filled with water shall be located in the work area just outside the equipment room for persons to clean foot covering when leaving the work area. A drum lined with a labeled, at least six mil plastic bag is required for collection of clothing and shall be located in this room. Contaminated footwear and work clothes shall be stored in this area.

3.03 WASTE DECONTAMINATION ENCLOSURE SYSTEM (ICR 56-7.5)

A. General Requirements

1. A waste decontamination enclosure system shall consist of the following:

   a. A washroom/cleanup room shall be constructed with an airlock doorway to the work area and another airlock doorway to the holding area.

   b. The holding area shall be constructed with an airlock doorway to the washroom/cleanup room and another lockable door to the outside.

2. Where there is only one egress from the work area, the holding area of the waste decontamination enclosure system may branch off from the equipment decontamination room, which doubles as a waste washroom, of the personnel decontamination enclosure.

3. The waste washroom shall be equipped with a drain installed to collect water and deliver it to the shower drain where it shall be filtered through a system with at least 5.0 micron particle size collection capability. A system containing a series of several filters with progressively smaller pore sizes shall be used to avoid rapid clogging of the filtration system by large particles. Filtered wastewater shall be discharged in accordance with applicable codes. Contaminated filters shall be disposed of as asbestos waste.

4. The waste washroom shall be constructed in such a way that travel through the rooms shall be through the waste washroom

3.04 WORK AREA ENTRY AND EXIT PROCEDURES

A. The following procedures shall be followed throughout the asbestos abatement project until satisfactory clearance air monitoring results have been achieved:

1. All persons shall enter and exit the work area through the personnel decontamination enclosure system.

2. All persons who enter the work area or an enclosure shall sign the entry/exit log, located in the clean room, upon every entry and exit.

3. All persons, before entering the work area, or an enclosure shall read and be familiar with all posted regulations, personal protection requirements, including work area entry and exit procedures, and emergency procedures. The entry/exit log headings shall indicate, and the signatures shall be used to acknowledge, that these have been reviewed and understood by all persons prior to entry.

4. All persons shall proceed first to the clean room, remove all street clothing, store these items in clean sealable plastic bags or lockers and don coveralls, head covering, foot covering and gloves. All persons shall also don NIOSH approved respiratory protection. Clean respirators and protective clothing shall be utilized, by each person, for each separate entry into the work area. Respirators shall be inspected prior to each use and tested for proper seal using quantitative or qualitative fit checks.

5. Persons wearing designated personal protective equipment shall proceed from the clean room through the shower room to the equipment room, where necessary tools are collected and any additional clothing shall be donned, before entry into the work area.

6. Before leaving the work area, all persons shall remove gross contamination from the outside of respirators and protective clothing by brushing, wet cleaning, and/or HEPA vacuuming.

7. Persons shall proceed to the equipment room where all coveralls, head covering, foot covering and gloves shall be removed. Disposable clothing shall be deposited into labeled containers for disposal. Reusable contaminated clothing, footwear, head gear and gloves shall be stored in the equipment room when not being used in the work area.

8. Still wearing respirators, persons shall proceed to the shower area, clean the outside of the respirator and the exposed face area under running water prior to removal of the respirator, and then fully and vigorously shower and shampoo to remove residual asbestos contamination. Respirators shall be washed thoroughly with soap and water. Some types of respirators will require slight modification of these procedures. An airline respirator with HEPA filtered disconnect protection shall be disconnected in the equipment room and worn into the shower. A powered air-purifying respirator facepiece shall be disconnected from the filter/power pack assembly prior to entering the shower.

9. After showering and drying, all persons shall proceed to the clean room and don clean personal protective equipment if returning to the work area or street clothing if exiting the enclosure.

3.05 EQUIPMENT AND WASTE CONTAINER DECONTAMINATION & REMOVAL PROCEDURES

A. The following procedures shall be followed throughout the asbestos abatement project until satisfactory clearance air monitoring results have been achieved.

1. External surfaces of contaminated containers and equipment shall be cleaned by wet cleaning and/or HEPA vacuuming in the work area before moving such items into the waste decontamination enclosure system airlock by persons assigned to this duty. These work area persons shall not enter the airlock.

2. These contaminated items shall be removed from the airlock by persons stationed in the washroom during waste removal operations. These washroom persons shall remove gross contamination from the exterior of their respirators and protective clothing by brushing, HEPA vacuuming and/or wet cleaning.

3. Once in the waste decontamination enclosure system, external surfaces of contaminated containers and equipment shall be cleaned a second time by wet cleaning.

4. The cleaned containers of asbestos material and equipment are to be dried of any excessive pooled or beaded liquid, placed in uncontaminated plastic bags or sheeting and sealed airtight.

5. The clean recontainerized items shall be moved into the airlock that leads to the holding area. The washroom persons shall not enter this airlock or the work area until waste removal is finished for that period.

6. Containers and equipment shall be moved from the airlock and into the holding area by persons dressed in clean personal protective equipment, who have entered from uncontaminated areas.

7. The cleaned containers of asbestos material and equipment shall be placed in water tight carts with doors or tops that shall be closed and secured. These carts shall be held in the holding area pending removal. The carts shall be wet cleaned and/or HEPA vacuumed at least once each day.

8. The exit from the decontamination enclosure system shall be secured to prevent unauthorized entry.

9. Where the waste removal enclosure is part of the personnel decontamination enclosure, waste removal shall not occur during shift changes or when otherwise occupied. Precautions shall be taken to prevent short circuiting and cycling of air outward through the shower and clean room.

10. Containers labeled with Asbestos hazard warnings shall not be used to dispose of non asbestos waste.

3.06 ENGINEERING CONTROLS

A. Ventilation.

1. The Abatement Contractor shall employ HEPA equipped vacuums or negative air pressure equipment for ventilation as required.

2. All negative air pressure equipment ventilation units shall be equipped with HEPA filtration. The Contractor shall provide a manufacturer's test certificate for each unit documenting the capability of trapping and retaining 99.97 percent of asbestos fibers greater than 0.3 microns equivalent aerodynamic diameter.

3. A power supply shall be available to satisfy the requirements of the total of all ventilating units.

4. On electric power failure, abatement shall stop immediately and shall not resume until power is restored and exhaust units are operating fully. On extended power failure, longer than one hour, the decontamination facilities, after the evacuation of all persons from the work area, shall be sealed airtight.

5. If extending the exhaust of the ventilation units 50 feet from the building would result in an exhaust location either in the road, blocking driveway access to the facility or within 50 feet of other buildings, a second unit will be run in series with the primary unit.

3.07 MAINTENANCE OF DECONTAMINATION ENCLOSURE SYSTEMS AND WORK AREA BARRIERS

A. GENERAL REQUIREMENTS

1. The Consultant must review and approve installation before commencement of work. Upon completion of the construction of all plastic barriers and decontamination system enclosures and prior to beginning actual abatement activities.

2. All plastic barriers inside the work area, in the personnel decontamination enclosure system, in the waste decontamination enclosure system and at partitions constructed to isolate the work area from occupied areas, shall be inspected by the asbestos supervisor at least twice daily. The barriers shall be inspected before the start of and following the completion of the day's abatement activities. Inspections and observations shall be documented in the project log.

3. Damage and defects in the barriers and/or enclosure systems shall be repaired immediately upon discovery and prior to resumption of abatement activities.

4. At any time during the abatement activities, if visible emissions are observed outside of the work area of if damage occurs to the barriers, work shall be stopped, repairs made and visible residue immediately cleaned up using HEPA vacuuming methods prior to the resumption of abatement activities.

5. The Abatement Contractor shall HEPA vacuum and/or wet clean the waste decontamination enclosure system and the personnel decontamination enclosure system at the end of each day of abatement activities.

3.08 HANDLING AND REMOVAL PROCEDURES

The Abatement Contractor may utilize existing provisions of ICR-56, Applicable Variances or a Site Specific Variance, approved by the Owner's Consultant, to permit the conduct of this work.

3.09 ABATEMENT PROCEDURES

A. AIR SAMPLING - By Owner

1. Air sampling and analysis shall be conducted according to the requirements of Subpart 56-4 before the start, during and after the completion of the asbestos removal project.

2. In addition to the requirements of Subpart 56-4, air monitoring shall be conducted in accordance with any approved job specific variance(s) or applicable variance utilized.

3. Clearance samples may be analyzed using PCM to maintain compliance with ICR-56.

4. If applicable, clearance samples will be analyzed using TEM to maintain compliance with ICR-56 and 40 CFR 763.90[i].

B. The provisions of the Applicable Variances or a Job Specific Variance shall apply only in those areas where approval has been granted by the NYS DOL and the Contractor has obtained concurrence from the Owner's Consultant. All other applicable provisions of Industrial Code Rule 56-1 through 56-12 shall be complied.

C. A copy of the NYS DOL Job Specific or Applicable Variance, if applicable, shall be conspicuously posted at the work area(s).

D. The Abatement Contractor shall construct a decontamination unit at the work site. The Abatement Contractor shall, as a minimum, comply with the requirements of 29 CFR 1926.1101(j); Hygiene facilities and practices for employees.

3.10 ENCAPSULATION PROCEDURES

The following procedures shall be followed to seal in non-visible residue, after obtaining satisfactory clearance air monitoring results, while conducting lockdown encapsulation on any surfaces which were the subject of removal or other remediation activities:

A. Only encapsulants rated as acceptable or marginally acceptable on the basis of Battelle Columbus Laboratory test procedures and rating requirements developed under the 1978 USEPA contract shall be used for lockdown encapsulation.

B. Sealants considered for use in encapsulation shall first be tested to ensure that the sealant is adequate for its intended use. A section of the work surface shall be evaluated following this initial test application of the sealant to quantitatively determine the sealant's effectiveness in terms of penetrating and locking down the asbestos fibers. The American Society of Testing and Materials (ASTM) Committee E06.21.06E on Encapsulation of Building Materials has developed a guidance document to assist in the selection of an encapsulant.

C. The encapsulant solvent or vehicle shall not contain a volatile hydrocarbon.

D. Encapsulants shall be applied using airless spray equipment.

1. Spraying is to occur at the lowest pressure range possible to minimize fiber release from encapsulant impact at the surface. It shall be applied with a consistent horizontal or vertical motion.

E. Encapsulation shall be utilized as a surface sealant once all asbestos containing materials have been removed in a work area. In no event shall encapsulant be applied to any surface that was the subject of removal or other remediation activities prior to obtaining satisfactory clearance air monitoring.

3.11 CLEANUP PROCEDURES

A. The following cleanup procedures shall be required.

1. Cleanup of accumulations of loose asbestos material shall be performed whenever enough loose asbestos materials have been removed to fill a single leak tight container of the type commensurate with the material properties. In no case shall cleanup be performed less than once prior to the close of each working day. Asbestos material shall be kept wet until cleaned up.

2. Accumulations of dust shall be cleaned off all surfaces on a daily basis using HEPA vacuum cleaning methods.

3. Decontamination enclosures shall be HEPA vacuumed at the end of each shift.

4. Accumulations of asbestos waste material shall be containerized utilizing HEPA vacuums or rubber or plastic dust pans, squeegees or shovels. Metal shovels shall not be used to pick up or move waste.

5. Excessive water accumulation or flooding in the area shall require work to stop until the water is collected and disposed of properly.

B. The following cleanup procedures shall be required after completion of all removal activities.

1. All accumulations of asbestos waste material shall be containerized utilizing HEPA vacuums or rubber or plastic dust pan, squeegees or shovels. Metal shovels shall not be used to pick up or move waste. HEPA vacuums shall be used to clean all surfaces after gross cleanup.

2. Cleaning. All surfaces in the work area shall be HEPA vacuumed. To pick up excess liquid and wet debris, a wet purpose shop vacuum may be used and shall be decontaminated prior to removal from the work area.

3. Windows, doors, HVAC system vents and all other openings shall remain sealed. Decontamination enclosure systems shall remain in place and be utilized.

4. All containerized waste shall be removed from the work area and the holding area.

5. All tools and equipment shall be decontaminated and removed from the work area.

6. A final visual inspection and clearance air monitoring, as per the schedule for air sampling and analysis, shall be conducted.

7. The isolation barriers and decontamination unit shall be removed only after satisfactory clearance air monitoring results have been achieved.

3.12 SAFETY MONITORING – CONSULTANT:

The Consultant will designate an Asbestos Safety Technician (AST) to represent the Owner during the removal program. The AST must be on the job site at all times during abatement work. Absolutely no abatement or preparation work will occur without the presence of the AST.

The AST will conduct four (4) milestone inspections.

1. Pre-commencement inspection shall be conducted as follows:

   a. Notification in writing to the Consultant shall be made by the Abatement Contractor to request a pre-commencement inspection at least 48 hours in advance of the desired date of inspection. This inspection shall be requested prior to beginning preparatory work in another work area.

   b. The AST shall ensure that:

      i. The job site is properly prepared and that all containment measures are in place;

      ii. The designated supervisor shall present to the inspector a valid supervisor's license issued by the New York Department of Labor;

      iii. All workers shall present to the inspector a valid handler's license issued by the New York Department of Labor;

      iv. Measures for the disposal of removed asbestos material are in place and shall conform to the adopted standards;

      v. The Abatement Contractor has a list of emergency telephone numbers at the job site which shall include the monitoring firm employed by the Owner and telephone numbers for fire, police, emergency squad, local hospital and health officer.

   c. If all is in order, the AST shall issue a written notice to proceed in the field. If the job site is not in order, then any needed corrective action must be taken before any work is to commence. Conditional approvals shall not be granted.

Progress inspection shall be conducted as follows:

   a. Primary responsibility for ensuring that the abatement work progresses in accordance with these technical specifications and regulatory requirements rests with the Abatement Contractor. The AST shall continuously be present to observe the progress of work and perform required tests.

   b. If the AST observes irregularities at any time, he shall direct such corrective action as may be necessary. If the Abatement Contractor fails to take the corrective action required, or if the Abatement Contractor or any of their employees habitually and/or excessively violate the requirements of any regulation, then the AST shall inform the Owner who shall issue a Stop Work Order to the Abatement Contractor and have the work site secured until all violations are abated.

Clean-up inspections shall be conducted as follows:

a. Notice for clean-up inspection shall be requested by the Abatement Contractor at least 24 hours in advance of the desired date of inspection;

b. The clean-up inspection shall be conducted prior to the removal of any isolation or critical barriers and before final air clearance monitoring;

c. The AST shall ensure that:

i. The work site has been properly cleaned and is free of visible asbestos containing material and debris.

ii. All removed asbestos has been properly placed in a locked secure container outside of the work area.

d. If all is in order, the AST shall issue a written notice of authorization to remove surface barriers from the work area. All isolation barriers shall remain in place until satisfactory clearance air sampling has been completed.

4. Clearance Visual Inspection shall be conducted after the removal of non-critical plastic sheeting. The AST shall insure that:

a. The work area is free of all visible asbestos or suspect asbestos debris and residue.

b. All waste has been properly bagged and removed from the work area.

c. Should clearance visual inspection identify residual debris, as determined by the AST, the Abatement Contractor is responsible for recleaning the area at his own cost and shall bear all costs of reinspection until acceptable levels are achieved.

B. The Abatement Contractor shall be required to receive written approval before proceeding after each milestone inspection.

3.13 PERSONNEL AIR MONITORING – CONTRACTOR (29 CFR 1926.1101)

A. Personnel air monitoring shall be provided to determine both short-term (STEL) and full shift during when abatement activities occur. Personnel sampling shall be performed in each work area in order to accurately determine the concentrations of airborne asbestos to which workers may be exposed.

B. The Abatement Contractor shall have a qualified "Competent Person" (as specified in 29 CFR 1926 OSHA) to conduct personnel air monitoring.

C. The laboratory performing the air sample analysis shall be certified by NYS DOH ELAP and approved by the consultant.

D. Personnel air monitoring test results for OSHA Compliance. Results shall be posted at the work site within 24 hours of testing and copies supplied to the Owner within five (5) days of testing. Abnormalities shall be supplied to the Owner immediately.

3.14 CLEARANCE AIR MONITORING

A. Air samples will be collected in and around the work areas at the completion of abatement activities.

B. Clearance samples may be analyzed using PCM to maintain compliance with ICR-56.

C. If applicable, clearance samples will be analyzed using TEM to maintain compliance with ICR-56 and 40 CFR part 763 "Asbestos-Containing Materials in Schools; Final Rule and Notice" section 763.90.

D. ***RETESTING***
Should clearance air monitoring yield fiber concentrations above the "Clearance" criteria of either 0.01 fibers per CC and/or background levels (PCM) –OR- seventy (70) structures per square millimeter (TEM/AHERA), the Abatement Contractor is responsible for re-cleaning the area at his own cost and shall bear all costs associated with the retesting of the work area(s) including monitoring labor, sampling, analysis, etc. until such levels are achieved.

3.15 RESPIRATORY PROTECTION REQUIREMENT

A. Respiratory protection shall be worn by all individuals inside the work area from the initiation of the asbestos project until all areas have successfully passed clearance air monitoring in accordance with these specifications. The Abatement Contractor shall keep available at all times two PAPR's with new filters and charged batteries for use by authorized visitors.

B. All respiratory protection shall be MSHA/NIOSH approved in accordance with the provisions of 30 CFR Part II. All respiratory protection shall be provided by the Abatement Contractor, and used by workers in conjunction with the written respiratory protection program.

C. The Abatement Contractor shall provide respirators that meet the requirements of 29 CFR Parts 1910 and 1926.

1. Full facepiece Type C supplied-air respirators operated in pressure demand mode equipped with an auxiliary self- contained breathing apparatus, operated in pressure demand or continuous flow, shall be worn during gross removal, demolition, renovation and/or other disturbance of ACM whenever airborne fiber concentrations inside the work area are greater than 10.0 f/cc.

2. Full facepiece Type C supplied-air respirators operated in pressure demand mode with HEPA filter disconnect protection shall be work during gross removal, demolition, renovation and/or other disturbance of ACM with an amphibole content and/or whenever airborne fiber concentrations inside the work area are equal to or greater than 0.5 f/cc and less than or equal to 10.0 f/cc.

3. Full facepiece powered air-purifying respirators (PAPR) equipped with HEPA filters shall be worn during the removal, encapsulation, enclosure, repair and/or other disturbance of friable ACM if airborne fiber concentrations inside the work area are less than 0.5 f/cc. A supply of charged replacement batteries, HEPA filters and flow test meter shall be available in the clean room for use with powered air-purifying respirators. HEPA filters shall be changed daily or as flow testing indicates change is necessary. Any Type C supplied-air respirator operated in continuous flow, with HEPA filter disconnect protection, may be substituted for a powered air-purifying respirator.

4. Loose fitting helmets or hoods with powered air-purifying respirators (PAPR) equipped with HEPA filters may be worn during the removal, encapsulation, enclosure, repair and/or other disturbance of friable ACM if airborne fiber concentrations inside the work area are less than 0.25 f/cc. A supply of charged replacement batteries, HEPA filters and flow test meter shall be available in the clean room for use with powered air-purifying respirators. HEPA filters shall be changed daily or as flow testing indicates change is necessary. Any Type C supplied-air respirator operated in continuous flow may be substituted for a powered air- purifying respirator.

5. Half-mask or full-face air-purifying respirators with HEPA filters shall be worn only during the preparation of the work area and final clean up procedures provided airborne fiber concentrations inside the work area are less than 0.1 f/cc.

6. Use of single use dust respirators is prohibited for the above respiratory protection.

D. Workers shall be provided with personally issued and individually marked respirators. Respirators shall not be marked with any equipment that will alter the fit of the respirator in any way. Only waterproof identification markers shall be used.

E. The Abatement Contractor shall ensure that the workers are qualitatively or quantitatively fit tested by an Industrial Hygienist initially and every six months thereafter with the type of respirator he/she will be using.

F. Whenever the respirator design permits, workers shall perform the positive and negative air pressure fit test each time a respirator is worn. Powered air-purifying respirators shall be tested for adequate flow as specified by the manufacturer.

G. No facial hair, which interferes with the face-to-mask sealing surface, shall be permitted to be worn when wearing respiratory protection that requires a mask-to-face seal.

H. Contact lenses shall not be worn in conjunction with respiratory protection.

I. If a worker wears glasses, a spectacle kit to fit their respirator shall be provided by the Abatement Contractor at the Abatement Contractor's expense.

J. Respiratory protection maintenance and decontamination procedures shall meet the following requirement:

1. Respiratory protection shall be inspected and decontaminated on a daily basis in accordance with OSHA 29 CFR 1910.134(b); and

2. HEPA filters for negative pressure respirators shall be changed after each shower; and

3. Respiratory protection shall be the last piece of worker protection equipment to be removed. Workers must wear respirators in the shower when going through decontamination procedures; and

4. Airline respirators with HEPA filtered disconnect shall be disconnected in the equipment room and worn into the shower. Powered air-purifying respirator facepieces shall be worn into the shower. Filtered/power pack assemblies shall be decontaminated in accordance with manufacturers' recommendations; and

5. Respirators shall be stored in a dry place and in such a manner that the facepiece and exhalation valves are not distorted; and

6. Organic solvents shall not be used for washing of respirators.

K. No visitors shall be allowed to enter the contaminated area if they do not have their medical certification and training certificate. Authorized visitors shall be provided with suitable PAPR respirators and instructions on the proper use of respirators whenever entering the work area.

3.16 DISPOSAL OF WASTE

A. APPLICABLE REGULATIONS

1. All asbestos waste shall be stored, transported and disposed of as per, but not limited to, the following Regulations:

   a. NYS Code Rule 56

   b. U.S. Department of Transportation (DOT)
   Hazardous Substances
   Title 29, Part 171 and 172 of the code of Federal Regulations
   regarding waste collector registration

   c. Regulations regarding waste collector registration Title 6, part 364 of the New York State Official Compilation of Codes, Rules and Regulations – 6 NYCRR 364

   d. USEPA NESHAPS 40 CRF 61

   e. USEPA ASBESTOS WASTE MANAGEMENT GUIDANCE EPA/530-SW-85-007

B. TRANSPORTER OR HAULER - The Abatement Contractor shall bear full responsibility for proper characterization, transportation and disposal of all solid or liquid waste, generated during the project, in a legal manner. The Owner shall approve all transportation and disposal methods.

1. The Abatement Contractor's Transporter (hauler) and disposal site shall be approved by the Owner. The Abatement Contractor shall remove within 48 hours all asbestos waste from the site after completing the clean up.

2. The Transporter must possess and present to the Owner's representative a valid New York State Department of Environmental Conservation Part 364 asbestos hauler's permit to verify license plate and permit numbers. The Owner's representative will verify the authenticity of the hauler's permit with the proper authority.

3. The Abatement Contractor shall give 24 hour notification prior to removing any waste from the site. All waste shall be removed from site only during normal working hours. No waste may be taken from the site without authorization from the Owner's representative.

4. The Abatement Contractor shall have the Transporter give the date and time of arrival at the disposal site.

5. The Transporter with the Abatement Contractor and Owner's consultant shall inspect all material in the transport container prior to taking possession and signing the Waste Manifest. The Transporter shall not have any off site transfers or be combined with any other off-site asbestos material.

6. The Transporter must travel directly to the disposal site with no unauthorized stops.

C. WASTE STORAGE CONTAINER

1. During loading and on site storage, the asbestos waste container shall be labeled with EPA Danger signage:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

2. The NYS DEC Hauler's Permit number shall be on both sides and back of the container.

3. The Container will not be permitted to leave the site without the proper signage.

4. A copy of the completed waste manifest shall be forwarded directly to the Owner's Consultant by the disposal facility.

5. Packaging of Non-friable Asbestos. Use of an open top container shall require written request, by the Contractor, and written approval by the Owners Representative, and be performed in compliance with all applicable regulations.

   a) A chute, if used, shall be air/dust tight along its lateral perimeter and at the terminal connection to the dumpster at ground level (solid wall and top container). The upper end of the chute shall be furnished with a hinged lid, to be closed when the chute is not being used.

   b) The container shall be lined with a minimum of two (2) layers of 6 mil. Fire-retardant polyethylene draped loosely over the sides so as to facilitate being wrapped over the top of the load and sealed prior to transport from the site.

   c) Prior to transport from the work site the Dumpster will be disconnected from the chute and sealed air/dust tight utilizing six mil plastic and tape. The waste material will be transported as an asbestos containing material by appropriate legal methods.

6. Packaging Friable Asbestos.

   a) The container shall be a solid wall, hard top and lockable container.

   b) The container shall be locked upon arrival at the site to restrict access. Security shall be provided at the entrance to the container during the loading process and immediately locked upon completion.

   c) The interior walls, floor and ceiling shall be lined with two (2) layers of 6 mil. Fire-retardant polyethylene.

d) The waste shall be loaded in such a manner as to protect the integrity of the individual waste packages.

e) Prior to transport from the work site the interior of the Dumpster will sealed air/dust tight utilizing six mil plastic and tape. The waste material will be transported as an asbestos containing material by appropriate legal methods.

D. WASTE DISPOSAL MANIFEST

1. The Asbestos Waste Manifest shall be equivalent to the "Waste Shipment Record" included in 40 CFR 61. A copy of the Contractor's manifest shall be reviewed by the Owner's Consultant and shall be the only manifest used.

2. The Manifest shall be verified by the Owner's Consultant indicating that all the information and amounts are accurate and the proper signatures are in place.

3. The Manifest shall have the signatures of the Abatement Contractor and the Transporter prior to any waste being removed from the site.

4. The Manifest shall be signed by the Disposal Facility owner or operator to certify receipt of asbestos containing materials covered by the manifest.

5. A copy of the completed manifest shall be provided by the Abatement Contractor to the Owner's Consultant and remain on site for inspection.

6. Abatement Contractor shall maintain a waste disposal log which indicates load number, date and time left site, container size, type of waste, quantity of waste, name of hauler, NYS DES permit number, trailer and tractor license number, and date manifest was returned to Consultant.

7. The Disposal Facility owner or operator shall return a signed copy of the Waste Manifest directly to:

Monroe-Woodbury CSD

278 Route 32

Central Valley, NY 10917

ATTN: Andrzej Rudiak

8. Copies of the completed Waste Manifest are to be sent by the disposal facility to the Hauler and Abatement Contractor.

9. Submit signed dump tickets and manifests with final payment request.

10. Final payment request will not be honored without signed dump ticket or manifests accounting for all asbestos waste removed from the site.

E. VIOLATIONS OF SPECIFICATIONS

1. Violations of the safety, hygiene, environmental, procedures herein, any applicable federal, and state of local requirement s or failure to cooperate with the Owner's representative shall be grounds for dismissal and/or termination of this contract.

F. VIOLATIONS OF NO SMOKING POLICY

1. The Federal Pro Children Act of 1994 prohibits School District Officials from smoking in any buildings or on the grounds that is property of the School District. The District shall be considered smoke free. The School District strongly enforces its' No Smoking Policy. It is the Contractor's responsibility to inform all workers of this policy. Any worker(s) involved with this project that are found smoking or using tobacco products will be informed that they are in violation of the Federal and State Law and School Board Policy and will be removed from site.

3.17. A LOCATION OF MONROE-WOODBURY CSD – PHASE 2A: 2023 BOND WORK – BASE BID

(Please see attached Drawings for approximate locations)

1) **Central Valley Elementary School (Exteriors) – Roofing Abatement:**

- Asbestos abatement contractor responsible for removal of approximately 400 SF of non-friable asbestos-containing equipment flashing (ACM built-up roofing material on non-ACM fiberboard) to cleanable non-ACM building substrate to facilitate rooftop HVAC work. Abatement contractor to coordinate exact removal locations with general contractor and/or owner's representative. Asbestos abatement contractor is responsible for providing all demolition activities required to access materials, as well as for providing all labor, equipment, and materials necessary. The Owner and/or General Contractor responsible for re-installation of non-asbestos roofing.

- Note to All Trades: Windows with ACM Window Caulk from a previous build history exist concealed behind the current non-ACM Foam Stucco (EIFS) façade. This ACM Window Caulking at probe locations was intact, but all trades should use caution to not disturb these concealed window systems with ACM caulk during construction activities.

2) **North Main ES (Exteriors) – Roofing Abatement:**

- Asbestos abatement contractor responsible for removal of approximately 20,000 SF of non-friable asbestos-containing roofing (ACM built-up roofing and ACM tar paper vapor barrier on non-ACM wood deck and non-ACM masonry walls AND ACM termination bar caulk on non-ACM Masonry walls) to cleanable non-ACM building substrate. Asbestos abatement contractor is responsible for providing all demolition activities required to access materials, as well as for providing all labor, equipment, and materials necessary. The Owner and/or General Contractor responsible for re-installation of non-asbestos roofing. Please see the attached drawings for asbestos roofing removal locations. Below is a breakdown of approximate square footage by roof designation (as per set drawings):

  Roof A: 6172 SF
  Roof B: 115 SF
  Roof C: 8345 SF
  Roof D: 4440 SF
  Roofs G and H – 265 SF (combined)

3) **North Main ES (Exteriors) – Soffit Cementitious Panel Abatement:**

Asbestos abatement contractor responsible for removal of approximately 2,500 SF of non-friable asbestos-containing cementitious panels to non-ACM substrate on soffit overhangs below roof fascias surrounding the 1972 Wing (labeled A and B wings on attached drawings). Asbestos abatement contractor is responsible for providing all demolition activities required to access materials, as well as for providing all labor, equipment, and materials necessary. The Owner and/or General Contractor responsible for re-installation of non-asbestos materials. Please see the attached drawings for asbestos cementitious panel removal locations.

END OF LOCATION OF WORK

3.18 GENERAL

A. The Abatement Contractor will be responsible for repairing all building components damaged during abatement including, but not limited to: ceiling tiles, ceiling finishes, wall finishes, floor finishes, etc.

B. The Abatement Contractor shall be responsible for all demolition required to access materials identified in scope of work and on associated drawings.

C. Concealed conditions that are exposed and may require additional work shall be brought to the attention of the Owner immediately. The Abatement Contractor shall not abate these areas without a written notice to proceed. Additional asbestos abatement performed prior to the order to proceed will not be acknowledged.

D. The Abatement Contractor shall remove asbestos-containing floor covering to the building substrate beneath; in areas indicted. Subsequent to final air clearance the substrate shall be washed with a neutralizing agent to prepare the substrate to accept new floor covering and eliminate residual odors.

E. Power tools used to drill, cut into or otherwise disturb asbestos containing material shall be equipped with HEPA filtered local exhaust ventilation.

F. The Abatement Contractor shall provide access to GFCI electrical power, required to perform the area air monitoring for this project, within and immediately adjacent to each work area.

G. Unwrapped or unbagged ACM shall be immediately placed in an impermeable waste bag or wrapped in plastic sheeting.

H. Coordinate all removal operations with the Owner.

Asbestos Employee Medical Examination Statement
Certificate of Worker Release
Asbestos Employee Training Statement
CERTIFICATE OF WORKERS'S ACKNOWLEDGEMENT

PROJECT NAME: **Monroe-Woodbury CSD – Phase 2A: 2023 Bond Work @ Sapphire ES, Smith Clove ES, & Micro Computer Center**

CONTRACTOR'S NAME: _____

WORKING WITH ASBESTOS INVOLVES POTENTIAL EXPOSURE TO AIRBORNE ASBESTOS FIBERS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER AND RESPIRATORY DISEASES. SMOKING CIGARETTES AND INHALATION OF ASBESTOS FIBERS INCREASES THE RISK THAT YOU WILL DEVELOP LUNG CANCER ABOVE THAT OF THE NON-SMOKING PUBLIC.

The Contract for this project requires your employer to 1) supply proper respiratory protection devices and training on their use 2) provide training on safe work practices and on use of the equipment used on the project 3) provide a medical examination meeting the requirements of 29 CFR 1926.1101. Your signature on this certificate, documents that your employer has fulfilled these contractual obligations and you understand the information presented to you.

****DO NOT SIGN THIS FORM UNLESS YOU FULLY UNDERSTAND THIS INFORMATION****

RESPIRATORY PROTECTION: I have been trained in the proper use and limitations of the type of respiratory protection devices to be used on this project. I have reviewed the written respiratory protection program manual and a copy is available for my use. Respiratory protection equipment has been proved, by the Contractor, at no cost to me.

TRAINING COURSE: I have been trained in the risks and dangers associated with handling asbestos, breathing asbestos dust, proper work procedures, and personal protection and engineering controls. I have satisfactorily completed and Asbestos Safety Training Program for New York State and have been issued a New York State Department of Health Certificate of Asbestos Safety Training.

MEDICAL EXAMINATION: I have satisfactorily completed a medical examination within the last 12 months that meets the OSHA requirement for an asbestos worker and included at least 1) medical history 2) pulmonary function 3) medical examination 4) approval to wear respiratory protection devises and may have included an evaluation of a chest x-ray.

Signature: _____Date_____

Printed Name: _____SS#:_____

Witness: _____Date:_____

RETURN THIS EXECUTED FORM WITH COMPLETED BID SHEET

Monroe-Woodbury CSD – Phase 2A: 2023 Bond Work @

Sapphire ES, Smith Clove ES, & Micro Computer Center

ESTIMATE OF ACM QUANTITIES

****

EACH ABATEMENT CONTRACTOR SHALL READ AND ACKNOWLEDGE THE FOLLOWING NOTICE. A SIGNED AND DATED COPY OF THIS ACKNOWLEDGMENT SHALL BE SUBMITTED WITH THE ABATEMENT CONTRACTOR'S BID FOR THIS PROJECT. FAILURE TO DO SO MAY, AT THE SOLE DISCRETION OF THE OWNER, RESULT IN THE BID BEING CONSIDERED NON-RESPONSIVE AND RESULT IN DISQUALIFICATION OF THE ABATEMENT CONTRACTOR'S BID ON THIS PROJECT.

****

*** **NOTICE** ***

The linear and square footages listed within this specification are approximates. Abatement Contractor is required to visit the work locations prior to bid submittal in order to take actual field measurements within each listed location. The Abatement Contractor shall base their bid on actual quantities determined, by them, at the site walkthrough. Estimates provided in these specifications are for informational purposes only and shall not be considered a basis for Change Orders on this project.

****

Acknowledgment: I have read and understand the above **NOTICE** regarding removal quantity estimates and understand that estimates provided in these specifications are for informational purposes only and shall not be considered a basis for Change Orders on this project. The Abatement Contractor's signatory represents to the Owner that he/she has the authority of the entity he/she represents to sign this agreement on its behalf.

Company Name: _____
Type or Print

BY: _____ _____ _____
Signature Title Date

Print Name: _____

RETURN THIS EXECUTED FORM WITH COMPLETED BID SHEET

ASSOCIATED ASBESTOS REMOVAL LOCATION DRAWINGS

- ***Monroe-Woodbury CSD: Phase 2A Bond Work***
  DRAWING #CVES HZ100 – Central Valley ES Asbestos Removal Locations
  DRAWING #NMES HZ100 – North Main ES Asbestos Removal Locations

END OF SPECIFICATION
SECTION 020800

SECTION 030130
MAINTENANCE OF CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM - Ameican Society for Testing and Materials; Current.

1.02 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.03 SUMMARY

A. Section Includes:
   1. Removal of deteriorated concrete and subsequent replacement and patching.
   2. Corrosion-inhibiting treatment.
   3. Polymer sealers.
   4. Composite structural reinforcement.

1.04 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.
   1. Review methods and procedures related to concrete maintenance including, but not limited to, the following:
      a. Verify concrete-maintenance specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
      b. Materials, material application, sequencing, tolerances, and required clearances.
      c. Quality-control program.
      d. Coordination with building occupants.

1.05 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, chemical composition, physical properties, test data, and mixing, preparation, and application instructions.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For concrete-maintenance specialist.

B. Material Certificates: For each type of portland cement supplied for mixing or adding to products at Project site.

C. Product Test Reports: For each manufactured bonding agent, for tests performed by manufacturer and witnessed by a qualified testing agency.

D. Field quality-control reports.

1.07 QUALITY ASSURANCE

A. Mockups: Build mockups to demonstrate aesthetic effects and to set quality standards for materials and execution.
   1. Concrete Removal and Patching: Remove and repair an approximately 4 lin. ft. area of deteriorated concrete wall. Include tinted sealer to match existing adjacent concrete foundation wall.
   2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
   3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.

B. Comply with manufacturer's written instructions for minimum and maximum temperature requirements and other conditions for storage.

C. Store materials in a dry location with temperature maintained between 50 deg F (10 deg C) 50° and 85 deg F (29 deg C). Protect from direct sunlight.

D. Store aggregates covered and in a dry location; maintain grading and other required characteristics and prevent contamination.

1.09 FIELD CONDITIONS

A. Environmental Limitations for Epoxies: Do not apply when air and substrate temperatures are outside limits permitted by manufacturer. During hot weather, cool epoxy components before mixing, store mixed products in shade, and cool unused mixed products to retard setting. Do not apply to wet substrates unless approved by manufacturer.
   1. Use only Class A epoxies when substrate temperatures are below or are expected to go below 40 deg F (5 deg C) within eight hours.
   2. Use only Class A or B epoxies when substrate temperatures are below or are expected to go below 60 deg F (16 deg C) within eight hours.
   3. Use only Class C epoxies when substrate temperatures are above and are expected to stay above 60 deg F (16 deg C) for eight hours.

B. Cold-Weather Requirements for Cementitious Materials: Do not apply unless concrete-surface and air temperatures are above 40 deg F (5 deg C) and will remain so for at least 48 hours after completion of Work.

C. Hot-Weather Requirements for Cementitious Materials: Protect repair work when temperature and humidity conditions produce excessive evaporation of water from patching materials. Provide artificial shade and wind breaks, and use cooled materials and cool potable water for mixing, as required. Do not apply to substrates with temperatures of 85 deg F (29 deg C) and above.
   1. Do not mix with cement or additives other than manufacturer’s approved products.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Source Limitations: For repair products, obtain each color, grade, finish, type, and variety of product from single source and from single manufacturer with resources to provide products of consistent quality in appearance and physical properties.

2.02 BONDING AGENTS

A. Epoxy-Modified, Cementitious Bonding and Anticorrosion Agent: Manufactured product that consists of water-insensitive epoxy adhesive, portland cement, and water-based solution of corrosion-inhibiting chemicals that forms a protective film on steel reinforcement.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide ARDEX Americas; ARDEX BACA™ Bonding & Anti-Corrosion Agent or a comparable product by one of the following:
      a. Sika Corporation.
      b. Sto Corp.

B. Epoxy Bonding Agent: ASTM C 881/C 881M, bonding system Type II and free of VOCs.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. BASF Corporation; Construction Systems.

b. Euclid Chemical Company (The); an RPM company.
c. MAPEI Corporation.
d. Sika Corporation.
e. Sto Corp.

C. Latex Bonding Agent, Non-Redispersible: ASTM C 1059/C 1059M, Type II for use at structural and exterior locations and where indicated.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. ChemMasters, Inc.
b. Dayton Superior.
c. Euclid Chemical Company (The); an RPM company.
d. Kaufman Products, Inc.
e. MAPEI Corporation.
f. W. R. Meadows, Inc.

D. Mortar Scrub Coat: Work a scrub coat of the mixed material into the primed or SSD concrete substrate, applying enough pressure to ensure good mortar-to-concrete contact. Apply the repair mortar while the scrub coat is still wet. If the scrub coat is allowed to dry, it must be removed mechanically and reapplied before applying the mortar. Once the mortar is applied, consolidate to remove any air pockets.

2.03 PATCHING MORTAR

A. Patching Mortar Requirements:
1. Only use patching mortars that are recommended by manufacturer for each applicable horizontal, vertical, or overhead use orientation.
2. Color and Aggregate Texture: Provide patching mortar and aggregates of colors and sizes necessary to produce patching mortar that matches existing, adjacent, exposed concrete. Blend several aggregates if necessary to achieve suitable matches.

B. Cementitious Patching Mortar : Packaged, dry mix for repair of concrete.
1. Basis-of-Design Product: Subject to compliance with requirements, provide ARDEX Americas; ARDEX B20™ for vertical surfaces or a comparable product by one of the following:
a. Sika Corporation.
b. Sto Corp.
2. Compressive Strength: Not less than 6300 psi at 28 days when tested according to ASTM C 109/C 109M.

2.04 CORROSION-INHIBITING MATERIALS

A. Corrosion-Inhibiting Treatment: Waterborne solution of alkaline corrosion-inhibiting chemicals for concrete-surface application that penetrates concrete by diffusion and forms a protective film on steel reinforcement.
1. Basis-of-Design Product: Subject to compliance with requirements, provide ARDEX Americas; ARDEX BACA™ Bonding and Anticorrosion Agent or a comparable product by one of the following:
a. Euclid Chemical Company (The); an RPM company.
b. Sika Corporation.
c. Insert manufacturer’s name.

2.05 COMPOSITE REINFORCEMENT MATERIALS

A. Composite Structural Reinforcement: Manufacturer's system consisting of carbon-fiber reinforcement in the form of tow sheet with field-applied saturant and epoxy primers, fillers, adhesives, saturants, and topcoats, designed for use as externally bonded structural reinforcement for concrete.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. BASF Corporation; Construction Systems.
      b. MAPEI Corporation.
      c. Sika Corporation.

2.06 MISCELLANEOUS MATERIALS

A. Portland Cement: ASTM C 150/C 150M, Type I, II, or III unless otherwise indicated.

B. Water: Potable.

2.07 MIXES

A. General: Mix products, in clean containers, according to manufacturer's written instructions.
   1. Do not add water, thinners, or additives unless recommended by manufacturer.
   2. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovel or trowel as unit of measure.
   3. Do not mix more materials than can be used within time limits recommended by manufacturer. Discard materials that have begun to set.

B. Mortar Scrub Coat: Mix dry ingredients with enough water to provide consistency of thick cream.

C. Concrete: Comply with Section 033000 "Cast-in-Place Concrete."

PART 3 EXECUTION

3.01 CONCRETE MAINTENANCE

A. Have concrete-maintenance work performed only by qualified concrete-maintenance specialist.

B. Comply with manufacturers' written instructions for surface preparation and product application.

3.02 EXAMINATION

A. Notify Architect seven days in advance of dates when areas of deteriorated or delaminated concrete and deteriorated reinforcing bars will be located.

B. Locate areas of deteriorated or delaminated concrete using hammer or chain-drag sounding and mark boundaries. Mark areas for removal by simplifying and squaring off boundaries. At columns and walls make boundaries level and plumb unless otherwise indicated. The repair areas must be saw cut in basic rectangular shapes to a minimum depth in accordance with the manufacturer’s technical data information. The cuts should be made at approximately a 90 degree angle and should be slightly keyed. Chip out the concrete inside the cuts to the minimum depth required by the manufacturer until the area is squared or boxed in shape.

C. Perform surveys as the Work progresses to detect hazards resulting from concrete-maintenance work.

3.03 PREPARATION

A. Ensure that supervisory personnel are on-site and on duty when concrete maintenance work begins and during its progress.

B. Protect persons, motor vehicles, surrounding surfaces of building being repaired, building site, plants, and surrounding buildings from harm resulting from concrete maintenance work.
   1. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.
   2. Use only proven protection methods appropriate to each area and surface being protected.
   3. Provide temporary barricades, barriers, and directional signage to exclude public from areas where concrete maintenance work is being performed.
   4. Contain dust and debris generated by concrete maintenance work and prevent it from reaching the public or adjacent surfaces.
   5. Protect floors and other surfaces along haul routes from damage, wear, and staining.
   6. Protect adjacent surfaces and equipment by covering them with heavy polyethylene film and waterproof masking tape. If practical, remove items, store, and reinstall after potentially damaging operations are complete.
   7. Dispose of debris and runoff from operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

C. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is in working order.
   1. Prevent solids such as aggregate or mortar residue from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from concrete maintenance work.
   2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

D. Preparation for Concrete Removal: Examine construction to be repaired to determine best methods to safely and effectively perform concrete maintenance work. Examine adjacent work to determine what protective measures will be necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed in the course of repair.
   1. Verify that affected utilities have been disconnected and capped.
   2. Inventory and record the condition of items to be removed for reinstallation or salvage.

E. Reinforcing-Bar Preparation: Remove loose and flaking rust from exposed reinforcing bars by wire brushing until a white metal finish.
   1. Where section loss of reinforcing bar is more than 25 percent, or 20 percent in two or more adjacent bars, cut bars and remove and replace .
   2. Remove additional concrete as necessary to provide at least 3/4-inch (19-mm) clearance at existing and replacement bars.
   3. Splice replacement bars to existing bars according to ACI 318 (ACI 318M) by lapping, welding, or using mechanical couplings.

F. Exposed Reinforcing Steel: Prepare concrete to achieve a minimum 3/4 inch around the steel to ensure sufficient placement of the corrosion inhibitor. Mechanically clean steel to remove all rust and other contaminants in accordance with ICRI 03730.

G. Surface Preparation for Corrosion-Inhibiting Treatment: Clean concrete to remove dirt, oils, films, asphalt, existing patching materials, curing and sealing compounds, and other materials detrimental to treatment application.
   1. Use scarifying, scabbling or similar.

H. Surface Preparation for Overlays:
   1. Remove delaminated material and deteriorated concrete surface material.

2. Roughen surface of concrete to produce a surface profile matching CSP 5 according to ICRI 310.2.
3. Use scarifying, scabbling or similar.
4. Sweep and vacuum roughened surface to remove debris.

I. Surface Preparation for Composite Structural Reinforcement: Clean concrete where reinforcement and epoxy patching mortar is to be placed by low-pressure water cleaning Insert requirement to remove dirt, oils, films, and other materials detrimental to epoxy patching mortar.
1. Roughen surface of concrete by sand blasting.
2. Remove delaminated material and deteriorated concrete surface material.
3. Sweep and vacuum roughened surface to remove debris followed by low-pressure water cleaning.

3.04 CONCRETE REMOVAL

A. Saw-cut perimeter of areas indicated for removal to a depth of at least 1/2 inch . Make cuts perpendicular to concrete surfaces and no deeper than cover on reinforcement.

B. Remove deteriorated and delaminated concrete by breaking up and dislodging from reinforcement.

C. Remove additional concrete if necessary to provide a depth of removal of at least 1/2 inch over entire removal area.

D. Where half or more of the perimeter of reinforcing bar is exposed, bond between reinforcing bar and surrounding concrete is broken, or reinforcing bar is corroded, remove concrete from entire perimeter of bar and to provide at least 3/4-inch (19-mm) clearance around bar.

E. Test areas where concrete has been removed by tapping with hammer, and remove additional concrete until unsound and disbonded concrete is completely removed.

F. Provide surfaces with a fractured profile of at least 1/16 inch that are approximately perpendicular or parallel to original concrete surfaces. At columns and walls, make top and bottom surfaces level unless otherwise directed.

G. Thoroughly clean removal areas of loose concrete, dust, and debris.

3.05 BONDING AGENT APPLICATION

A. Epoxy-Modified, Cementitious Bonding and Anticorrosion Agent: Apply to reinforcing bars and concrete by stiff brush or hopper spray according to manufacturer's written instructions. Apply to reinforcing bars in two coats, allowing first coat to dry 30 to 45 minutes before applying second coat.
1. Place patching mortar or concrete while epoxy is still tacky. If epoxy dries, recoat before placing patching mortar or concrete.

B. Epoxy Bonding Agent: Apply to reinforcing bars and concrete by brush, roller, or spray according to manufacturer's written instructions, leaving no pinholes or other uncoated areas. Apply to reinforcing bars in at least two coats, allowing first coat to dry before applying second coat. Place patching mortar or concrete while epoxy is still tacky. If epoxy dries, recoat before placing patching mortar or concrete.

C. Mortar Scrub Coat for Job-Mixed Patching Mortar and Concrete: Dampen repair area and surrounding concrete 6 inches beyond repair area. Remove standing water and apply scrub coat with a brush, scrubbing it into surface and thoroughly coating repair area. If scrub coat dries, recoat before placing patching mortar or concrete.

3.06 PATCHING MORTAR APPLICATION

A. Pretreatment: Apply specified bonding agent .

B. General Placement: Place patching mortar by troweling toward edges of patch to force intimate contact with edge surfaces. For large patches, fill edges first and then work toward center, always troweling toward edges of patch. At fully exposed reinforcing bars, force patching mortar to fill space behind bars by compacting with trowel from sides of bars.

C. Vertical and Overhead Patching: Place material in lifts of not more than 2 inches or less than 1/4 inch. Do not feather edge.

D. Consolidation: After each lift is placed, consolidate material and screed surface.

E. Multiple Lifts: Where multiple lifts are used, score surface of lifts to provide a rough surface for placing subsequent lifts. Allow each lift to reach final set before placing subsequent lifts.

F. Finishing: Allow surfaces of lifts that are to remain exposed to become firm and then finish to a smooth surface with a steel trowel.

G. Curing: Wet-cure cementitious patching materials, including polymer-modified cementitious patching materials, for not less than seven days by water-fog spray or water-saturated absorptive cover.

3.07 COMPOSITE STRUCTURAL REINFORCEMENT APPLICATION

A. Fiber Tow Sheet and Saturant: Unless otherwise recommended by manufacturer, install as follows:
   1. Apply epoxy primer using brush or short nap roller to prepared concrete surfaces in areas where composite structural reinforcement will be applied.
   2. After primer has set, patch surface defects with epoxy filler and allow to set before beginning reinforcement application.
   3. Apply epoxy saturant to fiber tow sheet using roller. Apply fiber tow sheet to primed and patched surface while saturant is still wet, using pressure roller to remove air pockets. Remove paper backing from fiber tow sheet and apply additional epoxy to fully saturate tow sheet.
   4. Apply additional layers using same procedure, fully saturating each layer with epoxy.
   5. After saturant has cured, apply protective topcoat by brush.

B. Preimpregnated Fiber Sheet: Unless otherwise recommended by manufacturer, install as follows:
   1. Patch surface defects with epoxy mortar and allow to set before beginning reinforcement application.
   2. Apply epoxy adhesive to a thickness of 1/16 inch to prepared concrete surfaces.
   3. Clean fiber sheet with acetone or other suitable solvent, and apply epoxy adhesive to a thickness of 1/16 inch.
   4. Apply adhesive-coated fiber sheet to adhesive-coated concrete and roll with a hard rubber roller until fiber sheet is fully embedded in adhesive, air pockets are removed, and adhesive is forced out from beneath fiber sheet at edges.
   5. Apply additional layers using same procedure.

3.08 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:
   1. Job-Mixed Patching Mortar: randomly selected sets of samples for each type of mortar required, tested for compressive strength according to ASTM C 109/C 109M.
   2. Concrete: As specified in Section 033000 "Cast-in-Place Concrete."

B. Product will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

D. Manufacturers Field Service: Engage manufacturers' factory-authorized service representatives for consultation and Project-site inspection and to provide on-site assistance when requested by Architect.

END OF SECTION 030130

SECTION 033000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete formwork.

B. Floors and slabs on grade.

C. Concrete footings, piers, and foundation walls.

D. Concrete reinforcement.

E. Joint devices associated with concrete work.

F. Miscellaneous concrete elements, including equipment pads, equipment pits, light pole bases, flagpole bases, thrust blocks, and manholes.

G. Concrete curing.

H. Concrete repair materials.

1.02 RELATED REQUIREMENTS

A. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 079200 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.

1.03 REFERENCE STANDARDS

A. ACI 117 - Specification for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).

B. ACI 211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide; 2022.

C. ACI 301 - Specifications for Concrete Construction; 2020.

D. ACI 302.1R - Guide to Concrete Floor and Slab Construction; 2015.

E. ACI 305R - Guide to Hot Weather Concreting; 2020.

F. ACI 306R - Guide to Cold Weather Concreting; 2016.

G. ACI 308R - Guide to External Curing of Concrete; 2016.

H. ACI 318 - Building Code Requirements for Structural Concrete; 2019 (Reapproved 2022).

I. ACI 347R - Guide to Formwork for Concrete; 2014 (Reapproved 2021).

J. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2024.

K. ASTM A775/A775M - Standard Specification for Epoxy-Coated Steel Reinforcing Bars; 2022.

L. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2024.

M. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.

N. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2021.

O. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2024.

P. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens); 2021.

Q. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.

R. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; 2020.

S. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2023.

T. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2019.

U. ASTM C330/C330M - Standard Specification for Lightweight Aggregates for Structural Concrete; 2023.

V. ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters, and Gypsum Concrete; 2020.

W. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019, with Editorial Revision (2022).

X. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2022.

Y. ASTM C827/C827M - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures; 2023.

Z. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2020a.

AA. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2021.

BB. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2020.

CC. ASTM C1202 - Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration; 2019.

DD. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures; 2020.

EE. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete; 2019.

FF. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2022.

GG. ASTM C1708/C1708M - Standard Test Methods for Self-leveling Mortars Containing Hydraulic Cements; 2019.

HH. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Asphalt Types); 2023.

II. ASTM D1752 - Standard Specification for Preformed Sponge Rubber, Cork, and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction; 2018 (Reapproved 2023).

JJ. ASTM D3963/D3963M - Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Steel Reinforcing Bars; 2021.

KK. ASTM D8139 - Standard Specification for Semi-Rigid, Closed-Cell Polypropylene Foam, Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction; 2023.

LL. ASTM E1155/E1155M - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers; 2023.

MM. ASTM E1155M - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers (Metric); 2014.

NN. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017 (Reapproved 2023).

OO. COE CRD-C 572 - Handbook for Concrete and Cement Corps of Engineers Specifications for Polyvinylchloride Waterstop; 1974.

PP. ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair; 2013.

QQ. NSF 61 - Drinking Water System Components - Health Effects; 2021.

RR. NSF 372 - Drinking Water System Components - Lead Content; 2022.

1.04 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.

C. Mix Design: Submit proposed concrete mix design.
   1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.
   2. Indicate proposed mix design complies with requirements of ACI 318, Chapter 5 - Concrete Quality, Mixing and Placing.

D. Samples: Submit samples of underslab vapor retarder to be used.

E. Test Reports: Submit report for each test or series of tests specified.

F. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

G. Reinforcement Shop Drawings: Comply with requirements of ACI SP-66. Include bar schedules, shapes of bent bars, spacing of bars, and location of splices

H. Reports: Submit certified copies of mill test report of reinforcement materials analysis.

1.05 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.

B. Follow recommendations of ACI 305R when concreting during hot weather.

C. Follow recommendations of ACI 306R when concreting during cold weather.

D. For slabs required to include moisture vapor reducing admixture (MVRA), do not proceed with placement unless manufacturer's representative is present for every day of placement.

1.06 WARRANTY

A. Slabs with Moisture Vapor Reducing Admixture (MVRA): Provide warranty to cover cost of flooring failures due to moisture migration from slabs for life of the concrete.
   1. Provide warranty by admixture manufacturer matching terms of flooring adhesive or primer manufacturer's material defect warranty.

B. Moisture Emission-Reducing Curing and Sealing Compound, Penetrating: Provide non-prorated warranty to cover cost of flooring delamination failures for 20 years.
   1. Include cost of repair or removal of failed flooring, remediation with a moisture vapor impermeable surface coating, and replacement of flooring with comparable flooring system.

PART 2 PRODUCTS

2.01 FORMWORK

A. Formwork Design and Construction: Comply with guidelines of ACI 347R to provide formwork that will produce concrete complying with tolerances of ACI 117.

B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Form Facing for Exposed Finish Concrete: Steel.

2. Earth Cuts: Do not use earth cuts as forms for vertical surfaces. Natural rock formations that maintain a stable vertical edge may be used as side forms.
3. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
4. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
   1. Type: Deformed billet-steel bars.
   2. Finish: Unfinished, unless otherwise indicated.
   3. Finish: Epoxy coated in accordance with ASTM A775/A775M as indicated.

B. Steel Welded Wire Reinforcement (WWR): Plain type, ASTM A1064/A1064M.
   1. Form: Flat Sheets.
   2. WWR Style: As noted on drawings.

C. Reinforcement Accessories:
   1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.
   2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
   1. Acquire cement for entire project from same source.

B. Fine and Coarse Aggregates: ASTM C33/C33M.
   1. Acquire aggregates for entire project from same source.

C. Lightweight Aggregate: ASTM C330/C330M.

D. Fly Ash: ASTM C618, Class C or F.

E. Calcined Pozzolan: ASTM C618, Class N.

F. Silica Fume: ASTM C1240, proportioned in accordance with ACI 211.1.

G. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.04 ADMIXTURES

A. General: Concrete supplier(s) permitted to select and use chemical admixtures indicated in this Section in concrete mix designs to enhance the placement, workability, and other characteristics of the wet concrete properties. Concrete supplier(s) shall review project schedule and coordinate the use of accelerators, retarders, etc. as necessary to facilitate concrete placement in accordance with Hot Weather and/or Cold Weather concreting practice guidelines. Concrete contractor shall also review compatability of all admixtures selected for use in each individual mix design submitted.

B. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.

D. High Range Water Reducing Admixture: ASTM C494/C494M Type F.

E. Water Reducing and Accelerating Admixture: ASTM C494/C494M Type E.

F. Water Reducing and Retarding Admixture: ASTM C494/C494M Type D.

G. Accelerating Admixture: ASTM C494/C494M Type C.

H. Moisture Vapor Reducing Admixture (MVRA): Liquid, inorganic admixture free of volatile organic compounds (VOCs). Closes capillary systems formed during concrete curing to reduce moisture vapor emission and transmission. Reduces concrete shrinkage with no adverse effect on concrete properties or applied flooring.
   1. Provide admixture in slabs to receive adhesively applied flooring or roofing.
   2. Products:
      a. Barrier One, Inc; Barrier One Moisture Vapor Reduction Admixture (MVRA-CPS): www.barrierone.com/#sle.
      b. Hycrete, Inc: www.hycrete.com/#sle.
      c. ISE Logik Industries, Inc; MVRA 900: www.iselogik.com/#sle.
      d. Specialty Products Group; Vapor Lock 20/20: www.spggogreen.com/#sle.

I. Waterproofing Admixture: Admixture formulated to reduce permeability to liquid water, with no adverse effect on concrete properties.
   1. Admixture Composition: Crystalline, functioning by growth of crystals in capillary pores.
   2. Products:
      a. Aquafin, Inc: www.aquafin.net/#sle.
      b. Euclid Chemical Company; Eucon Vandex AM-10: www.euclidchemical.com/#sle.
      c. Kryton International, Inc; Krystol Internal Membrane (KIM): www.kryton.com/#sle.
      d. Penetron, Inc.; Penetron Admix.: www.penetron.com
      e. Sika USA; Sika WT-240P: www.usa.sika.com
      f. Xypex Chemical Corporation; XYPEX Admix C-500: www.xypex.com/#sle.

2.05 ACCESSORY MATERIALS

A. Underslab Vapor Retarder:
   1. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations.
   2. Products:
      a. Fortifiber Building Systems Group ; Moistop Ultra 10: www.fortifiber.com/#sle.
      b. ISI Building Products; Viper VaporCheck II 10-mil (Class A): www.isibp.com/#sle.
      c. Stego Industries, LLC10-mil: www.stegoindustries.com/#sle.
      d. W. R. Meadows, Inc; PERMINATOR Class A - 10 mils (0.25 mm): www.wrmeadows.com/#sle.

B. Non-Shrink Cementitious Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
   1. Grout: Comply with ASTM C1107/C1107M.
   2. Height Change, Plastic State; when tested in accordance with ASTM C827/C827M:
      a. Maximum: Plus 4 percent.
      b. Minimum: Plus 1 percent.
   3. Minimum Compressive Strength at 28 Days, ASTM C109/C109M: 7,000 pounds per square inch.

C. Architectural Concrete Floor Topping and Resurfacer:
   1. Minimum Compressive Strength at 28 Days, ASTM C109/C109M: 6,000 pounds per square inch.
   2. Compressive Strength: Minimum 5000 pounds per square inch, tested per ASTM C472.

D. Self-Leveling Cementitious Concrete Floor Topping:
   1. Minimum Compressive Strength at 28 Days, ASTM C1708/C1708M: 7,000 pounds per square inch.
   2. Products:
      a. LATICRETE International, Inc; LATICRETE SUPERCAP SC650-MC: www.laticrete.com/#sle.

2.06 BONDING AND JOINTING PRODUCTS

A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.
   1. Products:
      a. Euclid Chemical Company; AKKRO-7T: www.euclidchemical.com/#sle.
      b. Kaufman Products Inc; SureBond: www.kaufmanproducts.net/#sle.
      c. Kaufman Products Inc; SureWeld: www.kaufmanproducts.net/#sle.
      d. SpecChem, LLC; Strong Bond Acrylic Bonder: www.specchemllc.com/#sle.
      e. W. R. Meadows, Inc; ACRY-LOK-: www.wrmeadows.com/#sle.

B. Epoxy Bonding System:
   1. Complying with ASTM C881/C881M and of Type required for specific application.
   2. Products:
      a. Adhesives Technology Corporation; Crackbond LR-321 SV, Crackbond LR-321 LV, Crackbond 2100 LPL, Crackbond 2100 MV, Ultrabond 1, Ultrabond 2, or Ultrabond HS-1CC: www.atcepoxy.com/#sle.
      b. Euclid Chemical Company; DURAL FAST SET LV: www.euclidchemical.com/#sle.
      c. Euclid Chemical Company; DURALFLEX GEL: www.euclidchemical.com/#sle.
      d. Euclid Chemical Company; DURALFLEX LV: www.euclidchemical.com/#sle.
      e. Euclid Chemical Company; DURAL 452 GEL, DURAL 452 LV, or DURAL 452 MV: www.euclidchemical.com/#sle.
      f. SpecChem, LLC; SpecPoxy 1000, SpecPoxy 2000, SpecPoxy 3000, or SpecPoxy 3000FS: www.specchemllc.com/#sle.
      g. W. R. Meadows, Inc; Rezi-Weld Gel Paste, Rezi-Weld Gel Paste State, Rezi-Weld 1000: www.wrmeadows.com/#sle.

C. Waterstops: PVC, complying with COE CRD-C 572.

D. Waterstops: Bentonite and butyl rubber, complying with NSF 61 and NSF 372.
   1. Products:

E. Reglets: Formed steel sheet, galvanized, with temporary filler to prevent concrete intrusion during placement.

F. Slab Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.
   1. Material: ASTM D1751, cellulose fiber.
   2. Material: ASTM D1752, sponge rubber (Type I).
   3. Material: ASTM D8139, semi-rigid, closed-cell polypropylene foam.
   4. Material: Closed-cell, non-absorbent, compressible polymer foam in sheet form.
   5. Products:
      a. Nomaco, Inc; Nomaflex Expansion Joint Filler with Void Cap Option: www.nomaco.com/#sle.
      b. Nomaco, Inc; Fastflex Slab Isolation Joint Filler with Tear-Off Strip: www.nomaco.com/#sle.
      c. W. R. Meadows, Inc; Fiber Expansion Joint Filler with Snap-Cap: www.wrmeadows.com/#sle.

G. Slab Contraction Joint Device: Preformed linear strip intended for pressing into wet concrete to provide straight route for shrinkage cracking.

H. Slab Construction Joint Devices: Combination keyed joint form and screed, galvanized steel, with rectangular or round knockout holes for conduit or rebar to pass through joint form at 6 inches on center; ribbed steel stakes for setting.

I. Dowel Sleeves: Plastic sleeve for smooth, round, steel load-transfer dowels.

J. Plate Dowel System: Steel plate dowel and plastic dowel sleeve; with integral fasteners for attachment to formwork.

2.07 CURING MATERIALS

A. Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound; complying with ASTM C309.

B. Resin Curing Compound: Solvent-based liquid, membrane-forming.
   1. Comply with ASTM C309, Types 1 and 1D, Classes A and B.
   2. VOC Content: Less than 350 g/L.
   3. Products:
      a. Euclid Chemical Company: KUREZ DR-100: www.euclidchemical.com/#sle.
      b. Euclid Chemical Company: KUREZ DR-VOX: www.euclidchemical.com/#sle.
      c. Euclid Chemical Company: Tammscure WB: www.euclidchemical.com/#sle..

C. Curing and Sealing Compound, Moisture Emission-Reducing, Penetrating: Clear, water-based, non-film-forming curing agent; capable of providing adequate bond for flooring adhesives, initially and over the long term; with sufficient moisture vapor impermeability to prevent deterioration of flooring adhesives due to moisture emission, moisture vapor emission, and alkalinity.
   1. Use this product to cure and seal all slabs to receive adhesively applied flooring or roofing.
   2. Compressive Strength of Treated Concrete: Equal to or greater than strength after 28-day water cure when tested according to ASTM C39/C39M.
   3. Chloride Ion Resistance of Treated Concrete: Equal to or greater than strength after 28-day water cure when tested according to ASTM C1202.
   4. Comply with ASTM C309 and ASTM C1315 Type I Class A.
   5. Products:
      a. Green Umbrella Architectural Concrete Systems, Inc. 20 Jetview Dr. Rochester, NY 14624, basis of design manufacturer. Technical and Architectural Support:(844) 200-7336, info@greenumbrellasystems.com.

D. Moisture-Retaining Sheet: ASTM C171.
   1. Polyethylene film, white opaque, minimum nominal thickness of 4 mil, 0.004 inch.

2.08 FLOOR AND SLAB TREATMENTS

A. Concrete Slab Sealer: ASTM C309 and C1315.
   1. Clear, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components.
   2. Odorless; colorless.
   3. Formulated to penetrate, harden, and densify concrete surfaces.
   4. Formulated to reduce water vapor and alkali migration detrimental to adhesion of applied sheet or tile floor finishes.
   5. Products:
      a. Burke by Edoco; Titan Hard.
      b. ChemMasters; Chemisil Plus.
      c. ChemTec International; ChemTec One.
      d. Concrete Waterproofing Products, Inc.; Creteseal CS2000.
      e. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Intraseal.
      f. Euclid Chemical Company (The); Euco Diamond Hard.
      g. Meadows, W. R., Inc.; Liqui-Hard.Symons Corporation, a Dayton Superior Company; Buff Hard.
      h. Symons Corporation, a Dayton Superior Company; Buff Hard.

2.09 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
   1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
   2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
   3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
   4. Compressive Strength: Not less than 4100 psi at 28 days when tested according to ASTM C 109.

B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
   1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
   2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
   3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
   4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109.

2.10 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.

B. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.

C. Normal Weight Concrete: Footings and Buried Foundations. (Exposure Category F0)
   1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,500 pounds per square inch.
   2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
   3. Cement Content: Minimum 540 pounds per cubic yard.
   4. Water-Cement Ratio: Maximum 50 percent by weight.
   5. Maximum Slump: 3 1/2 inches (+/- one inch)
   6. Maximum Aggregate Size: 1-1/2 inches.

D. Normal Weight Concrete: Exposed Foundations and Retaining Walls (Exposure Category F3)
   1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 5,000 pounds per square inch.
   2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
   3. Cement Content: Minimum 660 pounds per cubic yard.
   4. Water-Cement Ratio: Maximum 40 percent by weight.
   5. Total Air Content: 5.5 percent (+/- one percent), determined in accordance with ASTM C173/C173M.
   6. Maximum Slump: 3 1/2 inches (+/- one inch.)
   7. Maximum Aggregate Size: 1-1/2 inches.

E. Normal Weight Concrete: Slab-on-Grade (interior). (Exposure Category F0)
   1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,500 pounds per square inch.
   2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.

3. Cement Content: Minimum 590 pounds per cubic yard.
4. Water-Cement Ratio: Maximum 45 percent by weight.
5. Total Air Content: 2 percent (+/- one percent), determined in accordance with ASTM C173/C173M.
6. Maximum Slump: 3 1/2 inches (+/- one inch.)
7. Maximum Aggregate Size: 3/4 inch.

F. Normal Weight Concrete: Exterior Slabs. (Exposure Category F3)
1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 5,000 pounds per square inch.
2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
3. Cement Content: Minimum 660 pounds per cubic yard.
4. Water-Cement Ratio: Maximum 40 percent by weight.
5. Total Air Content: 5.5 percent (+/- one percent) determined in accordance with ASTM C173/C173M.
6. Maximum Slump: 3 1/2 inches (+/- one inch.)
7. Maximum Aggregate Size: 3/4 inch.

G. Structural Normal Weight Concrete: Vehicular Parking Slabs and Aprons. (Exposure Category F3)
1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 5,000 pounds per square inch.
2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
3. Cement Content: Minimum 750 pounds per cubic yard.
4. Water-Cement Ratio: Maximum 40 percent by weight.
5. Total Air Content: 6 percent (+/- one percent) determined in accordance with ASTM C173/C173M.
6. Maximum Slump: 3 1/2 inches (+/- one inch.)
7. Maximum Aggregate Size: 3/4 inch.
8. Provide a silane sealer on vehicle parking slabs.

H. Structural Normal Weight Concrete: Site Slip-form Curbs. (Exposure Category F3)
1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 4500 pounds per square inch.
2. Cement Content: Minimum 675 pounds per cubic yard.
3. Water-Cement Ratio: Maximum 45 percent by weight.
4. Total Air Content: 5 percent (+/- one percent), determined in accordance with ASTM C173/C173M.
5. Maximum Slump: 1 inch (+/- one-half inch.)
6. Maximum Aggregate Size: 5/8 inch.

I. Controlled Low Strength Material (CLSM)
1. Permanent Material.
   a. Material shall meet the requirements of ACI 229R with a minimum compressive strength of 400 lb./sq. in
2. Removable Material.
   a. Material shall meet the requirements of ACI 229R with a minimum compressive strength of 50 to 100 lb./sq. in.

2.11 MIXING

A. Transit Mixers: Comply with ASTM C94/C94M.

B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

C. Do not use shrinkage-reducing admixture (SRA) in same concrete batch with MVRA or PIA.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.

B. Verify that forms are clean and free of rust before applying release agent. Coat contact surfaces of forms with form-release agent before placing reinforcement.

C. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

F. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
   1. Class A, 1/8 inch for smooth-formed finished surfaces.
   2. Class C, 1/2 inch for rough-formed finished surfaces.

G. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
   1. Install keyways, reglets, recesses, and the like, for easy removal.
   2. Do not use rust-stained steel form-facing material.

H. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

I. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

J. Chamfer exterior corners and edges of permanently exposed concrete.

K. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

L. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

M. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

N. Prepare existing concrete surfaces to be repaired according to ICRI 310.2R.

O. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
   1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.
   2. Use latex bonding agent only for non-load-bearing applications.

P. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. Lap joints minimum 6 inches. Run vapor retarder up the face of foundation walls at slab perimeter and adhere with manufacturer's recommended adhesive. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

3.03 INSTALLING REINFORCEMENT, ANCHOR RODS, AND OTHER EMBEDDED ITEMS

A. Fabricate and handle epoxy-coated reinforcing in accordance with ASTM D3963/D3963M.

B. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.
   1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
   2. Allow six hours between completion of reinforcement installation and placement of concrete for special inspection.

C. Bend steel reinforcement in accordance with ACI 318.
   1. Do not heat steel reinforcement for bending. Bend or straighten bars cold.
   2. Do not bend partially embedded steel reinforcement, except as approved.

D. Clean reinforcement of dirt, grease, scale, loose rust, oil, paint and other foreign matter prior to installation.

E. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

F. Splicing of Reinforcement: Conform to ACI 318 Chapter 25 for wired lap splices and embedment lengths.

G. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

H. Install welded wire reinforcement in maximum possible lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Splice laps with tie wire.

I. "Wet Sticking", "Hooking-up" or "Walking-in" of any reinforcement will not be permitted.

J. Maintain required concrete cover dimensions indicated. Coordinate placement of conduit and inserts with reinforcement. Protect installed reinforcement from damage or displacement prior to and during concrete placement.

K. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

L. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
   1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303. Misplaced or damaged anchor rods shall be subject to re-engineering fees.
   2. 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.
   3. Install dovetail anchors in concrete structures as indicated.

3.04 REMOVING AND REUSING FORMS

A. General: 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, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.
   1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports 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. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.05 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R. Verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed and corrections made.

B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.

C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
   1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
   2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
      a. Supplement mechanical consolidation by hand, spading, rodding, or tamping.
   3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. 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.

D. Place concrete for floor slabs in accordance with ACI 302.1R. 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. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
   2. Maintain reinforcement in position on chairs during concrete placement.
   3. Screed slab surfaces with a straightedge and strike off to correct elevations.
   4. Slope surfaces uniformly to drains where required.
   5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

E. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

F. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.

G. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

3.06 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. 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 steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.

D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel-finish concrete surfaces.

3.07 JOINTING

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
   1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
   2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
   3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
   4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
   5. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
   6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
   7. Provide waterstops as indicated, and at all construction joints below grade adjacent to usable spaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness or a minimum of 1-inch as follows:
   1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
   2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

3. Spacing of joints shall not exceed 30 times (24 times for exposed concrete floor surface) the thickness of the slab nor 15 feet on center. All panels should be square or nearly so. Joints shall typically isolate columns and run between columns, with intermediate joints located at equal spaces between column lines.
4. Joints produced using conventional processes shall be made within 4 or 12 hours after the slab in that area has been finished- within 4 hours in hot weather and within 12 hours in cold weather.
5. Joints produced using early-entry dry-cut saws shall be made within 1 or 4 hours after the slab in that area has been finished- within 1 hour in hot weather and within 4 hours in cold weather.
6. Hand tooled joints shall be done immediately following edging, or at the same time.
7. For floors to be covered with quarry tile, ceramic tile, or terrazzo, the joints shall be aligned with joints in the rigid floor coverings.

D. Contraction Joints in Walls: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Provide adequate shear reinforcement as indicated or directed. Construct contraction joints as follows:
1. Joints shall be constructed to provide for the installation of watertight joint and sealant, and filled with sealant.
2. Provide waterstops as indicated, and at all joints below grade adjacent to usable spaces.
3. Spacing of joints shall be located 4 feet from corners and intersections, and then at 25 feet on center thereafter.

E. Isolation Joints in Slabs-on-Grade: 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.
2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants, specified in Division 07 Section "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.

F. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.

G. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch thick blade and cut at least 1 inch deep but not less than one quarter (1/4) the depth of the slab.

3.08 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. Maximum Variation of Surface Flatness:
1. Exposed Concrete Floors: 1/8 inch in 10 feet.
2. Under Seamless Resilient Flooring: 1/16 inch in 10 feet.
3. Under Carpeting: 1/8 inch in 10 feet.

B. Correct the slab surface if tolerances are less than specified.

C. Measure F(F) Floor Flatness and F(L) Floor Levelness in accordance with ASTM E1155/E1155M (ASTM E1155M), within 48 hours after slab installation; report both composite overall values and local values for each measured section.

D. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.09 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
   1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.

C. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
   1. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI 302.1R; thin floor coverings include carpeting, resilient flooring, seamless flooring, resinous matrix terrazzo, thin set quarry tile, and thin set ceramic tile.
   2. Other Surfaces to Be Left Exposed: Trowel as described in ACI 302.1R, minimizing burnish marks and other appearance defects.

D. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.

E. Sidewalk slabs shall be broom finished after floating concrete. Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

3.10 CURING AND PROTECTION

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 301 for hot-weather protection during curing.

B. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

C. 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 before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

D. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
   1. Normal concrete: Not less than seven days.
   2. High early strength concrete: Not less than four days.

E. Formed Surfaces: Cure by moist curing with forms in place for full curing period.
   1. Slabs and Floors To Receive Adhesive-Applied Flooring: Curing compounds and other surface coatings are usually considered unacceptable by flooring and adhesive manufacturers. If such materials must be used, either obtain the approval of the flooring and adhesive manufacturers prior to use or remove the surface coating after curing to flooring manufacturer's satisfaction.
   2. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water-fog spray or saturated burlap.
      a. Ponding: Maintain 100 percent coverage of water over floor slab areas, continuously for 4 days.
      b. Spraying: Spray water over floor slab areas and maintain wet.
      c. Saturated Burlap: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place.
   3. Final Curing: Begin after initial curing but before surface is dry.
      a. Moisture-Retaining Sheet: Lap strips not less than 3 inches and seal with waterproof tape or adhesive; secure at edges.
      b. Curing Compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

3.11 LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.
   1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
   2. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing. Rinse with water; remove excess material until surface is dry. Apply a second coat in a similar manner if surface is rough or porous.

3.12 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 014000 - Quality Requirements.

B. Provide free access to concrete operations at project site and cooperate with appointed firm.

C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.

D. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 50 cubic yards or less of each class of concrete placed.

E. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

F. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

G. Slab Testing: Cooperate with manufacturer of specified moisture vapor reducing admixture (MVRA) to allow access for sampling and testing concrete for compliance with warranty requirements.

H. Measure floor and slab flatness and levelness according to ASTM E1155/E1155M within 24 hours of finishing.

3.13 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.

B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.

C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

3.14 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, 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 in any dimension in solid concrete, but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. 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 will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.15 PROTECTION

A. Do not permit wheeled traffic over unprotected concrete floor surface for first seven days after pour and not until concrete has attained a minimum compressive strength of 3500 psi.

END OF SECTION 033000

SECTION 040100
MAINTENANCE OF MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Replacement of brick units.

B. Repointing mortar joints.

C. Repair of damaged masonry.

D. Retrofitting masonry veneer construction with brick ties and weeps.

E. Removal and reinstallation of brick at new steel lintels.

F. Replacement of existing sealant at windows, door frames, louvers, ducts and miscellaneous items with new sealant.

G. Sealing brick.

1.02 SUMMARY

A. Extent of masonry restoration and cleaning is indicated on drawings and in provisions of this section.

1. Examine the site, building and adjacent property. Confirm quantities of brick requiring repointing, replacement. Notify architect if these quantities differ from contract documents. Thoroughly investigate conditions at the site to determine measures required to protect existing windows, doors and similar items from restoration and cleaning work. Examine potential interferences and difficulties that may be encountered in proper and complete execution..

1.03 RELATED REQUIREMENTS

A. Section 042000 - UNIT MASONRY: Brick masonry units.

1.04 REFERENCE STANDARDS

A. BIA Technical Notes No. 20 - Cleaning Brick Work - August 2018

B. BIA Technical Notes No. 46 - Maintenance of Brick Masonry - December 2017

C. National Parks Service US Dept. of the Interior Preservation Brief # 1 - Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings.

D. National Parks Service US Dept. of the Interior Preservation Brief # 2 - Repointing Mortar Joints in Historic Masonry Buildings.

E. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2023.

F. ASTM A641/A641M - Standard Specifications for Zinc-Coated (Galvanized) Carbon Steel Wire 2019.

G. ASTM A951/A951M - Standard Specifications for Steel Wire for Masonry Joint Reinforcement 2022.

H. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar 2018.

I. ASTM C150/C150M - Standard Specification for Portland Cement

J. ASTM C207- Standard Specification for Hydrated Lime for Masonry Purposes 2018.

K. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale) 2022.

L. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.

M. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2019 (Reapproved 2025).

N. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement; 2022.

O. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2019.

P. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.

Q. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2018.

R. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale); 2022.

S. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022.

T. FS TT-S-230 - Sealing coumpound, synthetic rubber base, single component chemically Curing (For Caulking and Glazing in Building Construction); Current Edition.

U. FS TT - S-1543 - Sealing Compound; Silicone Rubber Base (For Caulking and Sealants); Current Edition.

V. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022..

1.05 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week prior to commencing work of this section.
   1. Require attendance of parties directly affecting work of this section.
   2. Review conditions of installation, installation procedures, and coordination with related work.

1.06 SUBMITTALS

A. See Section 013300 - Submittal Procedures.

B. Product Data: Provide data on cleaning solutions, repointing mortar, and brick anchors.

C. Certifications for mortar components.

D. Samples: Submit four samples of face brick units to illustrate matching color, texture and extremes of color range.

E. Submit two samples of full range of sealant colors for selection by Architect.

1.07 QUALITY ASSURANCE - MASONRY WORK

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.

B. Restorer: Company specializing in masonry restoration with minimum five years of documented experience.

C. Source limitations: Obtain each type of material for masonry restoration(face brick, cement, sand, etc.) from one source with resources to provide materials of consisten queality in appearance and physical properties.

D. Cleaning and Repair Appearance Standard: Cleaned and repaird surfaces are to have a uniform appearance as viewed from 20 feet away by Architect. Perform additional paint and stain removal, general cleaning and spot cleaning of small areas that are noticeably different, so that surfaces blends smoothly into surrounding areas.

E. Supervision: The Contractor shall keep on the job at all times during the entire restoration and cleaning project, a competent and responsible supervisor, whom has had a minimum of five (5) years experience in this type of specialized work. All othere mechanics, excluding Laborers shall have had a minimum of three (3) years experience.

F. Sealant Applicators: Sealants shall be installed only by mechanics with a minimum of four(4) years experience in sealant application.

1.08 MOCK-UPS

A. See Section 014000 - Quality Requirements for additional requirements.

B. Restore and repoint an existing masonry wall area sized 8 feet long by 6 feet high; include in mock-up area instances of mortar, accessories, and recaulking..

C. Clean a 10 ft by 10 ft panel of wall to determine extent of cleaning.

D. Locate where directed.

E. Acceptable panel and procedures employed will become the standard for work of this section.

F. Mock-up may remain as part of the Work.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Deliver masonry neatly stacked and tied on pallets. Store clear of ground with adequate waterproof covering.

B. Store all materials in covered, well ventilated are protected from exposure to weather.

1.10 FIELD CONDITIONS - MASONRY WORK

A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.

B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

1.11 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. See Section 017700 - Closeout Procedures for additonal warranty requirements.

C. Warranty: Provide a written two (2) year installation warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Restoration and Cleaning Chemicals:
   1. PROSOCO: www.prosoco.com/#sle.
   2. Approved equal.

2.02 MORTAR MATERIALS

2.03 POINTING MORTAR

A. Non-shrinking waterproof

2.04 MASONRY MATERIALS

A. Brick: Section 042000.

B. Mortar for installation of new brick, comply with requirements of Section 042000.

C. Water: Clean, potable.

2.05 BRICK ANCHORS AND TIES

A. Hohmann and Barnard 345-BT: Stainless Steel

B. Hohmann and Barnard Spira-Lok Helical Wall Tie; Stainless Steel.

C. Approved Equal

2.06 SEALANT FOR WINDOWS, DOOR FRAMES, LOUVERS, DUCTS & MISCELLANEOUS ITEMS

A. Equivalent to Dow Corning - 795 medium modulus, one part silicone sealant. Sealant shall comply with FS TT-S-1543, Class A, FS-S-230. Class A and ASTM C920, Type S, Grade NS, Class 50, Use NT, M, G, A and O.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces to be cleaned are ready for work of this section.

3.02 PREPARATION

A. Protect surrounding elements from damage due to restoration procedures.

B. Carefully remove and store removable items located in areas to be restored, including fixtures, fittings, finish hardware, accessories, and signage; reinstall upon completion.

C. Separate areas to be protected from restoration areas using means adequate to prevent damage.

D. Cover existing landscaping with tarpaulins or similar covers.

E. Mask immediately adjacent surfaces with material that will withstand cleaning and restoration procedures.

F. Protect roof membrane and flashings from damage with 1/2 inch plywood laid on roof surfaces over full extent of work area and traffic route.

3.03 REPLACING BRICK

A. Salvage as many whole, undamaged bricks as possible by carefully removing, by hand, all bricks at locations indicated. Remove mortar and loose particles from salvated brick by cleaning with brushes and water. Store brick for reuse.

B. Cut out damaged and deteriorated brick with care including entire mortar joint around brick, in a manner to prevent damage to any adjacent remaining materials.

C. Deteriorated brick shall be defined as brick with cracks 1/16 inch or wider, brick with checked and crazed face and brick with face missing(spalled).

D. Rebuild areas with new or salvated brick to replace removed brick. Fit replacement units into bonding and coursing pattern of existing brick.

E. Support structure as necessary in advance of cutting out units.

F. Cut away loose or unsound adjoining masonry as directed.

G. Build in new units following procedures for new work specified in other section(s).

H. Mortar Mix: Colored and proportioned to match existing work.

I. Ensure that anchors are correctly located and built in.

J. Install built in masonry work to match and align with existing, with joints and coursing true and level, faces plumb and in line. Build in all openings, accessories and fittings.

3.04 REPOINTING

A. Perform repointing prior to cleaning masonry surfaces.

B. Examine joints of existing brick, both vertical and horizontal and test with hammer and chisel. Joints found to be loose, hollow, cracked, broked or otherwise structuralluy defective shall be cut out until firm mortar is reached, not less than 1 inch.

C. After cutting out, backfill any joints found to be deeper than 1 inch with mortar to a depth of 1".

D. Use power tools only after test cuts determine no damage to masonry units will result.

E. Do not damage masonry units.

F. When cutting is complete, remove dust and loose material with water jet.

G. Premoisten joint and apply mortar. Pack tightly in maximum 1/4 inch layers with a pointing tool. When mortar is thumbprint hard compress and tool joints to match existing adjacent mortar joints.

H. Moist cure for 72 hours.

3.05 REPLACEMENT OF EXISTING MORTAR OR SEALANT AT WINDOWS, DOOR FRAMES, LOUVERS, DUCTS AND MISCELLANEOUS ITEMS WITH NEW SEALANT

A. Remove 100% of existing sealant or mortar around windows, door frames, louvers, ducts and miscellaneous items indicated on drawings.

B. Work shall be performed without damage to surfaces, Should any damages occur, Contractor shall repair and refinish as required and approved by Architect.

C. Leave joints clean, ready to receive backer rod and sealant.

D. Install specified backer rod and sealant.

3.06 INSTALLING BACKER ROD AND SEALANT

A. Joint requirements
   1. Joint width to depth proportions: As recommended by sealant manufacturer.
   2. Regulate sealant depth in joints by use of proper backer rods.
   3. Backer rod size before insertion; As recommended by backer rod and/or sealant manufacturer for conditions encountered.
   4. Install backer rods observing manufacturer's precautions pertaining to punctures, folds and creases.

B. Priming: (Where recommended by manufacturer).
   1. Prime joints in which sealant is to be installed.
   2. Apply primer to confines of joint protecting adjacent exposed surfaces to prevent primer from staining surfaces not covered by sealant.
   3. Immediately remove primer splashed on adjacent surfaces following recomendations of primer manufacturer.
   4. Replace, at no additional cost to Owner, surfaces stained by primer.

C. Application:
   1. Fill joints from bottom to top by holding properly sized nozzle against bottom of joint. Superficial or skin bead, not acceptable.
   2. Properly tool sealant to assure correct bead configuration and maximum adhesion to sides of joints.
   3. Strike off excess material with tooling stick or knife.
   4. Unless otherwise indicated, finish bead fluch with surface.
   5. Remove excess materials and smears adjacent to joint as work progresses.
   6. Remove masking tape, if used, immediately following tooling of joints.

D. Acceptance:.
   1. Where sealant or material fails to adhere to sides of joint, remove and repeat installation procedures to insure properly sealed joints.
   2. Remove and replace selant material allowing passage of air and /or water or that has hardened, cracked, crumbled, melted, shrunk, run or stained adjacent surfaces.

3.07 PAINTING OF EXISTING EXTERIOR STEEL LINTELS AND BEAMS

A. Where existing metal surfaces are scheduled to receive new paint finish, clean surfaces free of dirt, dust, grease, oil, wax and other contaminates that would be detrimental to bond of new primer and paint finish. Where rust or scale is present, wire brush or sandpaper clean before painting. Apply appropriate primer to all areas to provide proper bond between existing and new finish painted surfaces.

B. Apply new primer and paint:
   1. Paint: Equivalent to Sherwin-Williams Company.
      a. 1 coat - S-W Pro-Cryl Universal Water Based Primer.
      b. 2 coats - S-W Sher Cryl HPA, B66-300 Series Gloss or B66-350 Series Semi-Gloss.

3.08 CLEANING

A. Immediately remove stains, efflorescence, or other excess resulting from the work of this section.

B. Remove excess mortar, smears, and droppings as work proceeds and upon completion.

C. Clean surrounding surfaces.

END OF SECTION 040100

SECTION 042000
UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete block
B. Clay facing brick.
C. Precast concrete Shapes - Chimney caps.
D. Mortar and grout.
E. Reinforcement and anchorage.
F. Flashings.
G. Installation of lintels.
H. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 040100 - Maintenance of Masonry.
B. Section 055000 - Metal Fabrications: Loose steel lintels.
C. Section 076200 - Sheet Metal Flashing and Trim: Through-wall masonry flashings.
D. Section 078400 - Firestopping: Firestopping at penetrations of fire-rated masonry and at top of fire-rated walls.
E. Section 079200 - Joint Sealants: Sealing control and expansion joints.

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.
B. ASTM A580/A580M - Standard Specification for Stainless Steel Wire; 2023.
C. ASTM A666/A666M - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2024.
D. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement; 2022.
E. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction; 2022.
F. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2022.
G. ASTM C129 - Standard Specification for Dry-Cast Nonloadbearing Concrete Masonry Units; 2026.
H. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2018.
I. ASTM C150/C150M - Standard Specification for Portland Cement; 2024.
J. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2024.
K. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale); 2022.
L. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019a, with Editorial Revision.
M. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2018.
N. ASTM C476 - Standard Specification for Grout for Masonry; 2022.

O. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete; 2016.

P. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2017 (Reapproved 2023).

Q. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing; 2017.

R. BIA Technical Notes No. 13 - Ceramic Glazed Brick Exterior Walls; 2017.

S. BIA Technical Notes No. 28B - Brick Veneer/Cold-Formed Steel Framed Walls; 2025.

T. BIA Technical Notes No. 46 - Maintenance of Brick Masonry; 2017.

U. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022.

V. UL (FRD) - Fire Resistance Directory; Current Edition.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all relevant installers.

1.05 SUBMITTALS

A. See Division 01-Submittal Procedures.

B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, masonry accessories, and flashing.

C. Selection samples: Submit a range of options for facing brick for Architect to select from.
   1. Brick to match existing.

D. Manufacturer's Certificate: Certify that masonry units meet or exceed fire ratings and other specified requirements.

E. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

F. Cold and Hot weather procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.06 QUALITY ASSURANCE

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.

B. Fire Rated Assemblies: Comply with applicable code for UL Assembly's requirements for fire rated masonry construction.

C. Source limitations for masonry units: Obtain exposed masonry units of a uniform quality and color,from single manufacturer for each cementitious compontent and from single source or producer for each aggregate.

D. Source limitations for mortar materials: Obtain mortar ingredients of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product listed.

E. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum three years of documented experience.

F. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage, rusting and contamination by other materials.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

A. Concrete Block: Comply with referenced standards and as follows:
   1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
   2. Special Shapes: Provide non-standard blocks configured for corners, lintels, control joint edges and other detailed conditions where indicated on Drawings.
   3. Nonloadbearing Units: ASTM C129.
      a. Hollow block, as indicated.
      b. Normal weight.

2.02 BRICK UNITS

A. Facing Brick: ASTM C216, Type FBX, Grade SW.
   1. Color and texture: Match existing building..

2.03 PRECAST CONCRETE SHAPES

A. Shapes: As indicated on Drawings.
   1. Chimney caps.

B. Manufacturers:
   1. Southside Precast Products: (Basis of Design) www.southsideprecast.com/#sle.
   2. Trimstone: www.trimstone.com/#sle.
   3. Equivalent: Approved equal.

2.04 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I, color as required to match existing.

B. Hydrated Lime: ASTM C207, Type S.

C. Mortar Aggregate: ASTM C144.

D. Grout Aggregate: ASTM C404.

E. Pigments for Colored Mortar: Pure, concentrated mineral pigments specifically intended for mixing into mortar and complying with ASTM C979/C979M.
   1. Manufacturers:
      a. Davis Colors, a division of Venator Materials PLC: www.daviscolors.com/#sle.
      b. Solomon Colors, Inc: www.solomoncolors.com/#sle.
      c. Equivalent: Approved equal.

F. Water: Clean and potable.

G. Moisture-Resistant Admixture: Water repellent compound designed to reduce capillarity.

2.05 REINFORCEMENT AND ANCHORAGE

A. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.

B. Single Wythe Joint Reinforcement: ASTM A951/A951M.
   1. Type: Truss or ladder.
   2. Material: stainless steel complying with ASTM A580/A580M Type 304.
   3. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.

C. Multiple Wythe Joint Reinforcement: ASTM A951/A951M.
   1. Type: Truss.
   2. Material: stainless steel complying with ASTM A580/A580M Type 304.
   3. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.

D. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch of mortar coverage from masonry face.

E. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, stainless steel.
   1. Anchor plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
   2. Wire ties: Manufacturer's standard shape, 0.1875 inch thick.
   3. Vertical adjustment: Not less than 3-1/2 inches.
   4. Manufacturers:
      a. Hohmann & Barnard, Inc; www.h-b.com/#sle
      b. Equivalent: Approved equal.

F. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws; corrosion resistant finish or hot dip galvanized to ASTM A153/A153M.
   1. Manufacturers:
      a. ITW Commercial Construction North America; Teks Select Series: www.ITWBuildex.com/#sle.
      b. Equivalent: Approved equal.

2.06 FLASHINGS

A. Metal Flashing Materials:
   1. Copper Flashing: ASTM B370, 060 soft annealed; 20 oz/sq ft thick; natural finish.
   2. Stainless Steel Flashing: ASTM A666/A666M, Type 304, soft temper; 26 gauge, 0.0187 inch thick; finish 2B to 2D.

B. Termination Bars: Stainless steel; compatible with membrane and adhesives.
   1. Manufacturers:
      a. Hohmann & Barnard, Inc: www.h-b.com/#sle.
      b. Mortar Net Solutions; Termination Bars: www.mortarnet.com/#sle.
      c. Equivalent: Approved equal.

C. Drip Edge: Stainless steel; angled drip with hemmed edge; compatible with membrane and adhesives.
   1. Manufacturers:
      a. Hohmann & Barnard, Inc: www.h-b.com/#sle.
      b. Mortar Net Solutions; Metal Drip Edges: www.mortarnet.com/#sle.
      c. Equivalent: Approved equal.

D. Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with membrane and adhesives.

2.07 ACCESSORIES

A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
   1. Manufacturers:
      a. Hohmann & Barnard, Inc: www.h-b.com/#sle.
      b. WIRE-BOND: www.wirebond.com/#sle.
      c. Equivalent: Approved equal.

B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; in maximum lengths available.
   1. Manufacturers:
      a. Hohmann & Barnard, Inc: www.h-b.com/#sle.
      b. WIRE-BOND: www.wirebond.com/#sle.
      c. Equivalent: Approved equal.

C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
   1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations.
      a. Manufacturers:
         1) Mortar Net Solutions; MortarNet: www.mortarnet.com/#sle.
         2) Equivalent: Approved equal.

D. Building Paper: ASTM D226/D226M, Type I ("No.15") asphalt felt.

E. Weeps:
   1. Type: Molded PVC grilles, insect resistant.
   2. Color(s): As selected by Architect from manufacturer's full range.
   3. Manufacturers:
      a. Mortar Net Solutions; WeepVent: www.mortarnet.com/#sle.
      b. Equivalent: Approved equal.

F. Cavity Vents:
   1. Type: Polyester mesh.
   2. Color(s): As selected by Architect from manufacturer's full range.
   3. Manufacturers:
      a. Hohmann & Barnard, Inc: www.h-b.com/#sle.
      b. Mortar Net Solutions; CellVent: www.mortarnet.com/#sle.
      c. WIRE-BOND: www.wirebond.com/#sle.
      d. Equivalent: Approved equal.

G. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.08 MORTAR AND GROUT MIXING

A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
   1. Masonry below grade and in contact with earth: Type S.
   2. Exterior, non-loadbearing masonry: Type N.
   3. Interior, non-loadbearing masonry: Type O.

B. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.
   1. Color to match exiting adjacent mortar.

C. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

D. Mixing: Use mechanical batch mixer and comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

A. Direct and coordinate placement of metal anchors supplied for installation under other sections.

B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COLD AND HOT WEATHER REQUIREMENTS

A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.

B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

3.04 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Concrete Masonry Units:
   1. Bond: Running.
   2. Coursing: One unit and one mortar joint to equal 8 inches.
   3. Mortar Joints: Concave.

D. Brick Units:
   1. Bond: Running.
   2. Coursing: Three units and three mortar joints to equal 8 inches.
   3. Mortar Joints: Concave.

3.05 PLACING AND BONDING

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Lay hollow masonry units with face shell bedding on head and bed joints.

C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.

D. Remove excess mortar and mortar smears as work progresses.

E. Remove excess mortar as work progresses.

F. Interlock intersections and external corners, except for units laid in stack bond.

G. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

H. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

I. Cut mortar joints flush where wall tile is scheduled or resilient base is scheduled.

J. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.06 WEEPS/CAVITY VENTS

A. Install weeps in veneer and cavity walls at 24 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.

B. Install cavity vents in veneer and cavity walls at 32 inches on center horizontally below shelf angles and lintels and near top of walls.

3.07 CAVITY MORTAR CONTROL

A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.

B. For cavity walls, build inner wythe ahead of outer wythe to accommodate accessories.

C. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

3.08 REINFORCEMENT AND ANCHORAGE - GENERAL, SINGLE WYTHE MASONRY, AND CAVITY WALL MASONRY

A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.

B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.

C. Place continuous joint reinforcement in first and second joint below top of walls.

D. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch mortar cover on each side.

E. Lap joint reinforcement ends minimum 6 inches.

F. Reinforce stack bonded unit joint corners and intersections with strap anchors 16 inches on center.

G. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 16 inches horizontally and 16 inches vertically.

H. Embed ties and anchors in mortar joint and extend into masonry unit a minimum of 1-1/2 inches with at least 5/8 inch mortar cover to the outside face of the anchor.

3.09 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

A. Masonry Back-Up: Embed anchors in masonry back-up to bond veneer at maximum 1.77 sq ft of wall surface per anchor. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

B. Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 16 inches on center vertically and 16 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

3.10 REINFORCEMENT AND ANCHORAGES - MULTIPLE WYTHE UNIT MASONRY

A. Use individual metal ties installed in horizontal joints to bond wythes together. Provide ties spaced as indicated on drawings.

B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

3.11 MASONRY FLASHINGS

A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
   1. Extend flashings full width at such interruptions and at least 6 inches, minimum, into adjacent masonry or turn up flashing ends at least 1 inch, minimum, to form watertight pan at nonmasonry construction.
   2. Remove or cover protrusions or sharp edges that could puncture flashings.
   3. Seal lapped ends and penetrations of flashing before covering with mortar.

B. Terminate flashing up 8 inches minimum on vertical surface of backing:
   1. Install vertical leg of flashing behind water-resistive barrier sheet over backing.
   2. Install vertical leg of flashing over fluid-applied or self-adhered air/vapor barriers over backing or per manufacturer’s directions.
   3. Anchor vertical leg of flashing into backing with a termination bar and sealant.
   4. Apply cap bead of sealant on top edge of self-adhered flashing.

C. Install flashing in accordance with manufacturer's instructions and BIA Technical Notes No. 7.

D. Extend metal flashings through exterior face of masonry and terminate in an angled drip with hemmed edge. Install joint sealer below drip edge to prevent moisture migration under flashing.

E. Support flexible flashings across gaps and openings.

F. Lap end joints of flashings at least 6 inches, minimum, and seal watertight with flashing sealant/adhesive.

3.12 LINTELS

A. Install loose steel lintels over openings.

B. Maintain minimum 8 inch bearing on each side of opening.

3.13 GROUTED COMPONENTS

A. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.

3.14 CONTROL AND EXPANSION JOINTS

A. Do not continue horizontal joint reinforcement through control or expansion joints.

B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

C. Size control joints as indicated on drawings; if not indicated, 3/4 inch wide and deep.

D. Form expansion joint as detailed on drawings.

3.15 TOLERANCES

A. Install masonry within the site tolerances found in TMS 402/602.

B. Maximum Variation from Alignment of Columns: 1/4 inch.

C. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.

D. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

E. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

F. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.16 CUTTING AND FITTING

A. Cut and fit for chases. Coordinate with other sections of work to provide correct size, shape, and location.

B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.17 PARGING

A. Dampen masonry walls prior to parging.

B. Scarify each parging coat to ensure full bond to subsequent coat.

C. Parge masonry walls in two uniform coats of mortar to a total thickness of 3/4 inch.

D. Steel trowel surface smooth and flat with a maximum surface variation of 1/8 inch per foot.

E. Strike top edge of parging at 45 degrees.

3.18 CLEANING

A. Remove excess mortar and mortar droppings.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

3.19 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION 042000

This page intentionally left blank

SECTION 051200
STRUCTURAL STEEL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Structural steel framing members.

B. Structural steel support members and struts.

C. Base plates

D. Grouting under base plates.

1.02 RELATED REQUIREMENTS

A. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 055000 - Metal Fabrications: Steel fabrications affecting structural steel work.

1.03 REFERENCE STANDARDS

A. AISC (MAN) - Steel Construction Manual; 2023, with Errata (2025).

B. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges; 2022, with Errata (2025).

C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

D. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.

E. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2021a.

F. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2021.

G. ASTM A563/A563M - Standard Specification for Carbon and Alloy Steel Nuts (Inch and Metric); 2021a.

H. ASTM A992/A992M - Standard Specification for Structural Steel Shapes; 2022.

I. ASTM C827/C827M - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures; 2023.

J. ASTM F436/F436M - Standard Specification for Hardened Steel Washers Inch and Metric Dimensions; 2019.

K. ASTM F959/F959M - Standard Specification for Compressible-Washer-Type Direct Tension Indicators for Use with Structural Fasteners, Inch and Metric Series; 2017a.

L. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength; 2020.

M. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2022.

N. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification; 2021.

O. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2022).

P. SSPC-SP 3 - Power Tool Cleaning; 2024.

1.04 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Shop Drawings:
   1. Indicate profiles, sizes, spacing, locations of structural members, openings, attachments, and fasteners.
   2. Connections not detailed.

C. Manufacturer's Mill Certificate: Certify that products meet or exceed specified requirements.

D. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before start of scheduled welding work.

E. Fabricator's Qualification Statement: Provide documentation showing steel fabricator's years of experience prerforming this type of work and provide list of minimum five (5) previous projects.

1.05 QUALITY ASSURANCE

A. Fabricate structural steel members in accordance with AISC (MAN) "Steel Construction Manual."

B. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and no more than 12 months before start of scheduled welding work.

C. Fabricator Qualifications: A qualified steel fabricator that is certified by the American Institute of Steel Construction (AISC) Fabricator Certification Program for Structural Steel Buildings in accordance with AISC 207-20.

D. Fabricator Qualifications: A qualified steel fabricator that is not certified by the American Institute of Steel Construction (AISC) Fabricator Certification Program shall be subject to requirements for “On Premises Inspection of Fabricated Items”, and “Review each Fabricator’s Quality Control Procedures” as listed in Division 01 Section “Code Required Special Inspections and Procedures.” and shall be responsible for the inspection costs associated with these inspections.

E. Erector: Company specializing in performing the work of this section with minimum 5 years of documented experience.

F. Design connections not detailed on drawings under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.

PART 2 PRODUCTS

2.01 MATERIALS

A. Steel Angles and Plates: ASTM A36/A36M.

B. Steel W Shapes and Tees: ASTM A992/A992M.

C. Rolled Steel Structural Shapes: ASTM A992/A992M.

D. Cold-Formed Structural Tubing: ASTM A500/A500M, Grade B.

E. Hot-Formed Structural Tubing: ASTM A501/A501M, seamless or welded.

F. Structural Bolts and Nuts: Carbon steel, ASTM A307, Grade A for incidental sub-framing for steel erection purposes only.

G. High-Strength Structural Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, with matching compatible ASTM A563/A563M nuts and ASTM F436/F436M washers. Includes:
   1. Grade A325/A325M
   2. Grade A490/A490M

H. Tension Control Bolts: Twist-off type; ASTM F3125/F3125M. Includes:
   1. Grade F1852 (A325-TC)
   2. Grade F2280 (A490-TC)

I. Unheaded Anchor Rods: ASTM F1554, Grade 36, plain, with matching ASTM A563/A563M nuts and ASTM F436/F436M Type 1 washers.

J. Headed Anchor Rods: ASTM F1554 Grade 36, plain.

K. Load Indicator Washers: Provide washers complying with ASTM F959/F959M at connections requiring high-strength bolts.

L. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

M. Grout: ASTM C1107/C1107M; Non-shrink; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
   1. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch.
   2. Minimum Compressive Strength at 28 Days: 7,000 pounds per square inch.
   3. Height Change, Plastic State; when tested according to ASTM C827/C827M:
      a. Maximum: Plus 4 percent.
      b. Minimum: Plus 1 percent.

N. Shop and Touch-Up Primer: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction.

O. Touch-Up Primer for Galvanized Surfaces: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction. test

2.02 FABRICATION

A. Shop fabricate to greatest extent possible.

B. Space shear stud connectors as indicated on framing plan(s).

C. Fabricate connections for bolt, nut, and washer connectors.

2.03 FINISH

A. Prepare structural component surfaces in accordance with SSPC-SP 3.

B. Shop prime structural steel members. Do not prime surfaces that will be fireproofed, field welded, in contact with concrete, or high strength bolted.

C. Leave structural steel members un-primed.

2.04 SOURCE QUALITY CONTROL

A. Provide shop testing and analysis of structural steel.

B. High-Strength Bolts: Provide testing and verification of shop-bolted connections in accordance with RCSC (HSBOLT) "Specification for Structural Joints Using High-Strength Bolts," testing at least 20 percent of bolts at each connection.

C. Welded Connections: Visually inspect all shop-welded connections

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that conditions are appropriate for erection of structural steel and that the work may properly proceed. Verify elevations of concrete and masonry bearing surfaces, and locations of anchor rods, bearing plates and other embedments for compliance with construction documents.

B. Verify that concrete in the footings, piers and walls or the mortar in the masonry piers and walls has attained, on the basis of an appropriate ASTM standard test method of field-cured samples, 75 percent of its design compressive design strength before commencement of steel erection.

C. Proceed with erection only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Provide temporary shores, guys, braces and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections and bracing are in place unless otherwise directed.
   1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

3.03 ERECTION

A. Erect structural steel in compliance with AISC 303.

B. Field weld components and shear studs indicated on shop drawings.

C. Do not field cut or alter structural members without approval of Architect.

D. Provide temporary shores, guys, braces and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections and bracing are in place unless otherwise directed.
   1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

E. Grout solidly between column plates and bearing surfaces, complying with manufacturer's instructions for non-shrink grout. Trowel grouted surfaces smooth, splaying neatly to 45 degrees. Protect grout and allow to cure.

F. Align and adjust various members that form part of a complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
   1. Level and plumb individual members of structure.
   2. Make allowances for difference in temperature at time of erection and mean temperature when structure is completed and in service.

G. Splice members only where indicated.

H. Do not use thermal cutting during erection unless approved by architect. Finish thermally cut sections within smoothness limits in AWS D1.1/D1.1M.

I. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

3.04 FIELD CONNECTIONS

A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint.
   1. Joint Type: Snug tightened, except slip critical at wind frames and moment connections.

B. Welded Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welded work..
   1. Comply with AISC 303 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
   2. Remove backing bars or runoff tabs, back gouge and grind steel smooth.
   3. Assemble and weld built-up sections by methods that will maintaintrue alignment of axes without exceeding tolerances in AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mil material.

3.05 TOLERANCES

A. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."

B. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

C. Maximum Offset From True Alignment: 1/4 inch.

3.06 FIELD QUALITY CONTROL

A. High-Strength Bolts: Provide testing and verification of field-bolted connections in accordance with RCSC (HSBOLT) "Specification for Structural Joints Using High-Strength Bolts," testing at least 20 percent of bolts at each connection.

END OF SECTION 051200

This page intentionally left blank

SECTION 055000
METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated steel and aluminum items.

1.02 RELATED REQUIREMENTS

A. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 042000 - UNIT MASONRY: Placement of metal fabrications in masonry.

C. Section 055133 - Metal Ladders.

D. Section 055213 - PIPE AND TUBE RAILINGS.

E. Section 099000 - Paintings and Coatings: Paint Finish.

1.03 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2020.

B. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2020, with Errata (2022).

C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

D. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2020.

E. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.

F. ASTM A276/A276M - Standard Specification for Stainless Steel Bars and Shapes; 2017.

G. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2018.

H. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.

I. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2021.

J. ASTM A554 - Standard Specification for Welded Stainless Steel Mechanical Tubing; 2026.

K. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2020.

L. ASTM A666/A666M - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2024.

M. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2018a.

N. ASTM B26/B26M - Standard Specification for Aluminum-Alloy Sand Castings; 2018, with Editorial Revision.

O. ASTM B85/B85M - Standard Specification for Aluminum-Alloy Die Castings; 2018, with Editorial Revision.

P. ASTM B177/B177M - Standard Guide for Engineering Chromium Electroplating; 2011 (Reapproved 2021).

Q. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

R. ASTM B210/B210M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes; 2026.

S. ASTM B211/B211M - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire; 2023.

T. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

U. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2022.

V. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.

W. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification; 2021.

X. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2022).

Y. AWS D1.2/D1.2M - Structural Welding Code - Aluminum; 2026.

Z. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 2004.

AA. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

BB. SSPC-SP 2 - Hand Tool Cleaning; 2024.

1.04 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
   1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
   2. Design data: Submit drawings and supporting calculations, signed and sealed by a qualified professional structural engineer.
      a. Include the following, as applicable:
         1) Design criteria.
         2) Engineering analysis depicting stresses and deflections.
         3) Member sizes and gauges.
         4) Details of connections.
         5) Support reactions.
         6) Bracing requirements.

C. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before start of scheduled welding work.

D. Designer's Qualification Statement.

1.05 QUALITY ASSURANCE

A. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and AWS D1.2/D1.2M and dated no more than 12 months before start of scheduled welding work.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

A. Steel Sections: ASTM A36/A36M.

B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.

C. Plates: ASTM A283/A283M.

D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.

E. Stainless Steel, General: ASTM A666/A666M, Type 304.

F. Stainless Steel Tubing: ASTM A554, Type 304, 16 gauge, 0.0625 inch minimum metal thickness, 1-1/2 inch diameter.

G. Stainless Steel Bars, Shapes and Moldings: ASTM A276/A276M, Type 304.

H. Slotted Channel Fittings: ASTM A1011/A1011M.

I. Mechanical Fasteners: Same material as or compatible with materials being fastened; type consistent with design and specified quality level.

J. Bolts, Nuts, and Washers: ASTM A307, Grade A, plain.

K. Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, plain.

L. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

M. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

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

2.02 MATERIALS - ALUMINUM

A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

B. Sheet Aluminum: ASTM B209/B209M, 5052 alloy, H32 or H22 temper.

C. Aluminum-Alloy Drawn Seamless Tubes: ASTM B210/B210M, 6063 alloy, T6 temper.

D. Aluminum-Alloy Bars: ASTM B211/B211M, 6061 alloy, T6 temper.

E. Aluminum-Alloy Sand Castings: ASTM B26/B26M.

F. Aluminum-Alloy Die Castings: ASTM B85/B85M.

G. Bolts, Nuts, and Washers: Stainless steel.

H. Welding Materials: AWS D1.2/D1.2M; type required for materials being welded.

2.03 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

D. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

E. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.04 FABRICATED ITEMS

A. Lintels: As detailed; galvanized finish.

2.05 FINISHES - STEEL

A. Prime paint steel items.
   1. Exceptions: Galvanize items to be embedded in concrete and items to be embedded in masonry.

2. Exceptions: Do not prime surfaces in direct contact with concrete, where field welding is required, and items to be covered with sprayed fireproofing.

B. Prepare surfaces to be primed in accordance with SSPC-SP2.

C. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.

D. Prime Painting: One coat.

E. Galvanizing of Structural Steel Members: Galvanize after fabrication to ASTM A123/A123M requirements. Provide minimum 1.7 oz/sq ft galvanized coating.

F. Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.

G. Chrome Plating: ASTM B177/B177M, nickel-chromium alloy, satin finish.

H. Slotted Channel Framing: ASTM A653/A653M, Grade 33.

I. Stainless Steel Finish: No. 4 Bright Polished finish.

2.06 FINISHES - ALUMINUM

A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick.

B. Superior Performance Organic Coating System: AAMA 2605 multiple coat, thermally cured polyvinylidene fluoride system; color as indicated.

2.07 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

B. Furnish setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

C. Field weld components as indicated on drawings.

D. Perform field welding in accordance with AWS D1.1/D1.1M.

E. Obtain approval prior to site cutting or making adjustments not scheduled.

F. After erection, prime welds, abrasions, and surfaces not shop primed , except surfaces to be in contact with concrete.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION 055000

This page intentionally left blank

SECTION 055133
METAL LADDERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop-fabricated metal ladders.

1.02 RELATED REQUIREMENTS

A. Section 055100 - Metal Stairs.

B. Section 099123 - Interior Painting: Paint finish.

1.03 REFERENCE STANDARDS

A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2020.

C. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2018.

D. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.

E. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2021.

F. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.

G. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification; 2021.

H. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2022).

I. AWS D1.2/D1.2M - Structural Welding Code - Aluminum; 2026.

J. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel AC172; 2019.

K. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 2004.

L. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

M. SSPC-SP 2 - Hand Tool Cleaning; 2024.

1.04 SUBMITTALS

A. See Section 013300 - Submittal Procedures.

B. Shop Drawings:
   1. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
   2. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.

C. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before start of scheduled welding work.

D. Fabricator's Qualification Statement: Provide documentation showing steel fabricator is accredited under IAS AC172.

1.05 QUALITY ASSURANCE

A. Design ladders under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.

B. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and AWS D1.2/D1.2M and dated no more than 12 months before start of scheduled welding work.

C. Fabricator Qualifications: A qualified steel fabricator that is accredited by IAS AC172.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

A. Steel Sections: ASTM A36/A36M.

B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.

C. Plates: ASTM A283/A283M.

D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.

E. Mechanical Fasteners: Same material or compatible with materials being fastened; type consistent with design and specified quality level.

F. Bolts, Nuts, and Washers: ASTM A307, plain.

G. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

H. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

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

2.02 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

D. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FINISHES - STEEL

A. Prime paint steel items.
   1. Do not prime surfaces in direct contact with concrete.

B. Prepare surfaces to be primed in accordance with SSPC-SP2.

C. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.

D. Prime Painting: One coat.

2.04 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

B. Supply setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

C. Perform field welding in accordance with AWS D1.1/D1.1M.

D. Obtain approval prior to site cutting or making adjustments not scheduled.

E. After erection, prime welds, abrasions, and surfaces not shop primed , except surfaces to be in contact with concrete.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION 055133

This page intentionally left blank

SECTION 055213
PIPE AND TUBE RAILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wall mounted handrails.

B. Stair and ramp railings and guardrails.

C. Free-standing railings at steps and ramps.

1.02 RELATED REQUIREMENTS

A. Section 033000 - Cast-in-Place Concrete: Placement of anchors in concrete.

B. Section 042000 - Unit Masonry: Placement of anchors in masonry.

C. Section 099000 - Painting and Coating: Paint finish.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2020.

C. ASTM A780/A780M - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings; 2020.

D. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings; 2021.

E. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.

F. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification; 2021.

G. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2022).

H. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 2004.

1.04 SUBMITTALS

A. See Section 133000 - Submittal Procedures.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.
   1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
   2. Include the design engineer's seal and signature on each sheet of shop drawings.
      a. Design Engineer must be licensed to practice in the State of New York.

C. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated within the previous 12 months.

1.05 QUALITY ASSURANCE

A. Structural Designer Qualifications: Professional Structural Engineer experienced in design of this work and licensed in the State of New York, or personnel under direct supervision of such an engineer.

B. Welder Qualifications: Welding processes and welding operators qualified within previous 12 months.

C. Fabricator Qualifications:
   1. A company specializing in manufacturing products specified in this section, with not less than ten years of documented experience.

PART 2 PRODUCTS

2.01 RAILINGS - GENERAL REQUIREMENTS

A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of applicable local code.

B. Distributed Loads: Design railing assembly, wall rails, and attachments to resist distributed force of 50 pounds per linear foot applied to the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935

C. Concentrated Loads: Design railing assembly, wall rails, and attachments to resist a concentrated force of 200 pounds applied at any point on the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935

D. Allow for expansion and contraction of members and building movement without damage to connections or members.

E. Dimensions: See drawings for configurations and heights.

F. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.
   1. For anchorage to concrete, provide inserts to be cast into concrete, for bolting anchors.
   2. For anchorage to masonry, provide brackets to be embedded in masonry, for bolting anchors.
   3. For anchorage to stud walls, provide backing plates, for bolting anchors.

G. Welded and Brazed Joints: Make visible joints butt tight, flush, and hairline; use methods that avoid discoloration and damage of finish; grind smooth, polish, and restore to required finish.
   1. Ease exposed edges to a small uniform radius.
   2. Welded Joints:
      a. Carbon Steel: Perform welding in accordance with AWS D1.1/D1.1M.

2.02 STEEL RAILING SYSTEM

A. Steel Pipe: ASTM A53/A53M Grade B Schedule 40, galvanized finish.

B. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.

C. Exposed Fasteners: No exposed bolts or screws.

D. Refer to Section 099000 for painting.

E. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

2.03 FABRICATION

A. Accurately form components to suit specific project conditions and for proper connection to building structure.

B. Fit and shop assemble components in largest practical sizes for delivery to site.

C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.

D. Welded Joints:
   1. Interior Components: Continuously seal joined pieces by intermittent welds and plastic filler.
   2. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

E. Weld connections that cannot be shop welded due to size limitations.
   1. Weld in accordance with AWS D1.1/D1.1M.

2. Match shop welding and bolting.
3. Clean welds, bolted connections, and abraded areas.
4. Touch up shop primer and factory-applied finishes.
5. Repair galvanizing with galvanizing repair paint per ASTM A780/A780M.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

B. Supply items required to be cast into concrete or embedded in masonry with setting templates, for installation as work of other sections.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.

C. Install railings in compliance with ADA Standards for accessible design at applicable locations.

D. Anchor railings securely to structure.

E. Conceal anchor bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

F. Paint all railings, as directed in Section 099000 - Painting and coating.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION 055213

This page intentionally left blank

SECTION 061000
ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonstructural dimension lumber framing.

B. Sheathing.

C. Steep slope roof cover boards

D. Roofing nailers.

E. Roofing cant strips.

F. Preservative treated wood materials.

G. Fire retardant treated wood materials.

H. Miscellaneous framing and sheathing.

I. Concealed wood blocking, nailers, and supports.

J. Miscellaneous wood nailers, furring, and grounds.

1.02 RELATED REQUIREMENTS

A. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 07600 - Air Barriers: Air barrier over sheathing.

C. Section 092116 - Gypsum Board Assemblies: Gypsum-based sheathing.

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.

C. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2024.

D. ASTM D2898 - Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing; 2010 (Reapproved 2017).

E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2026a.

F. AWC (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings; 2024, with Errata (2026).

G. AWPA U1 - Use Category System: User Specification for Treated Wood; 2022.

H. PS 2 - Performance Standard for Wood Structural Panels; 2019.

I. PS 20 - American Softwood Lumber Standard; 2021.

J. WWPA G-5 - Western Lumber Grading Rules; 2025.

1.04 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide technical data on wood preservative materials and application instructions.

C. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.05 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.

1.06 WARRANTY

A. See Section 017700 - Closeout Procedures, for additional warranty requirements.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
   1. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
   2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Grading Agency: Western Wood Products Association; WWPA G-5.

B. Sizes: Nominal sizes as indicated on drawings, S4S.

C. Moisture Content: S-dry or MC19.

D. Stud Framing (2 by 2 through 2 by 6):
   1. Species: Douglas Fir-Larch.
   2. Grade: No. 2.

E. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16):
   1. Species: Douglas Fir-Larch.
   2. Grade: No. 1 and Better.

F. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
   1. Lumber: S4S, No. 2 or Standard Grade.
   2. Boards: Standard or No. 3.

2.03 SHEATHING AND COVER BOARDS

A. Roof Sheathing: PS 2 type, rated Structural I Sheathing.
   1. Bond Classification: Exterior.
   2. Span Rating: 32/16.
   3. Performance Category: 1/2 PERF CAT.

B. Roof Cover Board: Sizes to minimize joints in place; ends square cut.
   1. Application: Steep slope roof cover boards, unless otherwise indicated.
   2. Glass Mat Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
   3. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
   4. Core Type: Regular.
   5. Regular Board Thickness: 1/4 inch.
   6. Edges: Square.
   7. Glass Mat Faced Products:
      a. National Gypsum; Dexcell Roof Board www.nationalgypsum.com/#sle.

b. Equivalent: Approved equal.

C. Wall Sheathing: PS 2 type.
1. Bond Classification: Exterior.
2. Grade: Structural I Sheathing.
3. Span Rating: 32/16.
4. Performance Category: 3/4 PERF CAT.
5. Edge Profile: Square edge.

2.04 ACCESSORIES

A. Metal and Finish of Fasteners:
1. Fire-Retardant-Treated Wood:
a. Nails, timber rivets, wood screws, and lag screws: Hot-dip galvanized steel complying with ASTM A153/A153M Class D.
2. Preservative-Treated Wood:
a. Nails, timber rivets, wood screws, and lag screws - general use: Hot-dip galvanized steel complying with ASTM A153/A153M Class D.
3. Untreated Wood: Hot-dip galvanized steel complying with ASTM A153/A153M Class D.

B. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions.
1. For contact with preservative treated wood in exposed locations, provide minimum G185 galvanizing complying with ASTM A653/A653M.

2.05 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

B. Fire Retardant Treatment:
1. Products:
a. Hoover Treated Wood Products, Inc: www.frtw.com/#sle.
b. Substitutions: See Section 016000 - Product Requirements.
2. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
b. Do not use treated wood in direct contact with the ground.
3. Interior Type A: AWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
b. Treat rough carpentry items as indicated .
c. Do not use treated wood in applications exposed to weather or where the wood may become wet.

C. Preservative Treatment:
   1. Products:
      a. Koppers Performance Chemicals, Inc:
         www.koppersperformancechemicals.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.
   2. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
      a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
      b. Treat lumber exposed to weather.
      c. Treat lumber in contact with flashing or waterproofing.
      d. Treat lumber in contact with masonry or concrete.
      e. Treat lumber less than 18 inches above grade.
      f. Treat lumber where indicated on drawings.

PART 3 EXECUTION

3.01 PREPARATION

A. Where wood framing bears on cementitious foundations, install full width sill flashing continuous over top of foundation, lap ends of flashing minimum of 4 inches and seal.

B. Install sill gasket under sill plate of framed walls bearing on foundations; puncture gasket cleanly to fit tightly around protruding anchor bolts.

C. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 FRAMING INSTALLATION

A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength.

B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.

C. Install structural members full length without splices unless otherwise specifically detailed.

D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AWC (WFCM) Wood Frame Construction Manual.

E. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches of bearing at each end.

F. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.

G. Frame wall openings with two or more studs at each jamb; support headers on cripple studs.

3.04 BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

B. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.

C. Provide nonstructural framing and blocking to support the following:
   1. Cabinets and shelf supports.
   2. Wall brackets.
   3. Handrails.
   4. Grab bars.
   5. Towel and bath accessories.
   6. Wall-mounted door stops.
   7. Chalkboards and marker boards.
   8. Wall paneling and trim.
   9. Joints of rigid wall coverings that occur between studs.
   10. Other wall- or ceiling-mounted items indicated on drawings.

3.05 ROOF-RELATED CARPENTRY

A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

B. Provide wood curb at each roof opening except where prefabricated curbs are specified and where specifically indicated otherwise; form corners by alternating lapping side members.

3.06 INSTALLATION OF SHEATHING

A. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
   1. Nail panels to framing; staples are not permitted.

B. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails, screws, or staples.

3.07 TOLERANCES

A. Framing Members: 1/4 inch from true position, maximum.

B. Variation from Plane, Other than Floors: 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

3.08 CLEANING

A. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.

B. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION 061000

This page intentionally left blank

SECTION 072100
THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Batt insulation in exterior roof construction.

B. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

C. Rigid insulation that is not specified elsewhere

1.02 RELATED REQUIREMENTS

A. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 075323 - EPDM Roofing: Installation requirements for board insulation over existing roof deck.

1.03 DEFINITIONS

A. Mineral Fiber Material Composition: Insulation referred to as mineral fiber block, board, and blanket insulation is composed of fibers from mineral based substances such as rock, slag, or glass and processed from the molten state into fibrous form.
   1. Based on type of insulation substance, the material will be referred to as a mineral fiber when having a rock or slag base, and glass fiber with a glass or silica sand base, also considered a mineral.
   2. Insulation blankets are flexible units consisting of felted, bonded, or unbonded fibers formed into rolls or flat cut pieces referred to as batts; rolls are simply longer versions of batts.
   3. For additional information about mineral fiber and the various classification types, refer to the following reference standards; ASTM C553, ASTM C612, ASTM C665, and ASTM C726.

1.04 REFERENCE STANDARDS

A. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications; 2024.

B. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2023.

C. ASTM C612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation; 2025.

D. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2024.

E. ASTM C726 - Standard Specification for Mineral Wool Roof Insulation Board; 2024.

F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2026a.

G. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C; 2026.

1.05 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.06 FIELD CONDITIONS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Source Limitations: Obtain insulation materials from single manufacturer.

B. The manufacturer and model number(s) or series listed below are Basis-of-Design.
   1. Subject to compliance with requirements of product identified as basis-of-design, other manufacturers shall be considered for bidding as an equivalent when the bidder provides a written request for equivalency to the Architect prior to bidding.
   2. Follow all instructions as indicated in Section 012519 - Equivalent Procedures.

2.02 APPLICATIONS

A. Insulation in Wood Framed Ceiling Structure: Batt insulation with separate vapor retarder.

2.03 FOAM BOARD INSULATION MATERIALS

A. Extruded Polystyrene (XPS) Board Insulation: Comply with ASTM C578 with either natural skin or cut cell surfaces.
   1. Type and Compressive Resistance: Type IV, 25 psi (173 kPa), minimum.
   2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
   3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
   4. Type and Thermal Resistance, R-value: Type IV, 5.0 (0.88), minimum, per 1 inch thickness at 75 degrees F mean temperature.
   5. Board Edges: Square.
   6. Products:
      a. DuPont de Nemours, Inc; Styrofoam Brand Cavitymate Ultra: building.dupont.com/#sle.
      b. Owens Corning Corporation; FOAMULAR Type High-Perfomance Extruded Polystyrene (XPS) Insulation: www.ocbuildingspec.com/#sle.
      c. Substitutions: See Section 016000 - Product Requirements.

2.04 MINERAL FIBER BLANKET INSULATION MATERIALS

A. Flexible Glass Fiber Blanket Thermal Insulation: Preformed insulation, complying with ASTM C665; friction fit.
   1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
   2. Smoke Developed Index: 150 or less, when tested in accordance with ASTM E84.

3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
4. Products:
   a. Owens Corning Corporation; Pink Next Gen Fiberglas Insulation: www.ocbuildingspec.com/#sle.
   b. Substitutions: See Section 016000 - Product Requirements.

2.05 ACCESSORIES

A. Interior Vapor Retarder: Modified polyethylene/polyacrylate (PE/PA) film reinforced with polyethylene terephthalate (PET) fibers, 12 mil, 0.012 inch thick.
   1. Width: 4.9 feet.

B. Tape: Reinforced polyethylene film with acrylic pressure sensitive adhesive.
   1. Application: Sealing of interior circular penetrations, such as pipes or cables.
   2. Width: As required for application.

C. Tape joints of rigid insulation in accordance with roofing and insulation manufacturers' instructions.

D. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BATT INSTALLATION

A. Install insulation and vapor retarder in accordance with manufacturer's instructions.

B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.

C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

E. At wood framing, place vapor retarder on warm side of insulation by stapling at 6 inches on center. Lap and seal sheet retarder joints over face of member.

F. Tape seal tears or cuts in vapor retarder.

G. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane; tape seal in place.

3.03 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for additional requirements.

3.04 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION 072100

SECTION 073113
ASPHALT SHINGLES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Asphalt shingle roofing.

B. Flexible sheet membranes for eave protection and valley protection.

C. Flashing.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Roof sheathing..

B. Section 076200 - Sheet Metal Flashing and Trim: Edge and cap flashings.

1.03 REFERENCE STANDARDS

A. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2025.

B. ASTM D3462/D3462M - Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules; 2025.

C. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2018).

D. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings; 2020a.

E. ASTM F1667/F1667M - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples; 2021a.

F. NRCA (RM) - The NRCA Roofing Manual; 2026.

1.04 SUBMITTALS

A. See Section 013300 for submittal procedures.

B. Product Data: Provide data indicating material characteristics, performance criteria, and limitations.

C. Shop Drawings: For metal flashings, indicate specially configured metal flashings, jointing methods and locations, fastening methods and locations, and installation details.

D. Samples: Submit two samples of each shingle color indicating color range and finish texture/pattern ; for color selection.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements for additional provisions.
   2. Extra Shingles: 2 sq ft of each type and color.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacture of roofing systems similar to those required for this project, with not less than 5 years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store materials with labels intact in manufacturer's unopened packaging until ready for installation.

B. Store materials under dry and waterproof cover, well ventilated, and elevated above grade on a flat surface.

C. Protect materials from harmful environmental elements, construction dust, direct sunlight, and other potentially detrimental conditions.

D. When storing roofing materials on roofing system ensure that no damage occurs to supporting members and other materials.

1.07 FIELD CONDITIONS

A. Do not install shingles, eave protection membrane when surface, ambient air, wind chill, or underlayment surface temperature temperatures are below 45 degrees F.

1.08 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Provide 30 year manufacturer's warranty for coverage against black streaks caused by algae.

C. Provide 15 -year manufacturer's warranty for wind damage.

D. Provide 30 year warranty on shingle replacement, roof tear-off, disposal, metal work and flashing.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Asphalt Shingles:
   1. Certainteed Roofing; Landmark Pro: Basis of Design: www.certainteed.com/#sle.
   2. GAF; Timberline HDZ RS Shingles: www.gaf.com/#sle.
   3. Approved equal.

2.02 ASPHALT SHINGLES

A. Asphalt Shingles: Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D3462/D3462M.
   1. Fire Resistance: Class A, complying with ASTM E108.
   2. Warranted Wind Speed: Not greater than 110 mph.
   3. Algae resistant.
   4. Weight: 250 lb/100 sq ft.
   5. Self-sealing type.
   6. Color: As selected by Architect.

2.03 SHEET MATERIALS

A. Eaves Protection: Sheet barrier of self-adhering, rubberized, asphalt membrane, shingle underlayment having internal reinforcement and plastic release film. Complies with ASTM D 1970.
   1. Products:
      a. Certainteed Roofing; Winterguard: www.certainteed.com/#sle.
      b. Equivalent: Approved Equal.

B. Underlayment: Self adhering, asphalt impregnated, fiberglass reinforced organic felt. sheet complying with ASTM D1970/D1970M,
   1. Self Sealability: Passing nail sealability test specified in ASTM D1970/D1970M.
   2. Low Temperature Flexibility: Passing test specified in ASTM D1970/D1970M.
   3. Products:
      a. Certainteed Roofing; Roffers' Select: www.certainteed.com/#sle.
      b. Equivalent: Approved equal.

2.04 FLASHING

A. Metal Flashings: Provide aluminum eave edge, gable edge, ridge, ridge vents, and other flashing as indicated.
   1. Form flashings to profiles indicated on drawings.

2. Form sections square and accurate to profile, in maximum possible lengths, free from distortion or defects detrimental to appearance or performance.
3. Hem exposed edges of flashings minimum 1/4 inch on underside.

B. Aluminum Flashing: Prefinished aluminum, 26 gauge, 0.017 inch minimum thickness; stucco embossed, PVC coating, color as selected.

2.05 ACCESSORIES

A. Roofing Nails: Standard round wire shingle type, stainless steel, minimum 3/8-inch head diameter, 12-gauge, 0.109-inch nail shank diameter, 1-1/2 inches long and complying with ASTM F1667/F1667M.

B. Asphalt Roof Cement: ASTM D4586/D4586M, asbestos-free.

C. Bituminous Paint: Acid and alkali resistant type; black color.

D. Lap Cement: Fibrated cutback asphalt type, recommended for use in application of underlayment, free of toxic solvents.

E. Aluminum Ridge Vents: Aluminum, powder coated with vent openings that do not permit direct water or weather entry; flanged to receive shingles.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions prior to starting this work.

B. Verify that roof deck is of sufficient thickness to accept fasteners.

C. Verify that roof penetrations and plumbing stacks are in place and flashed to deck surface.

D. Verify roof openings are correctly framed.

E. Verify deck surfaces are dry, free of ridges, warps, or voids.

3.02 PREPARATION

A. Seal roof deck joints wider than 1/16 inch as recommended by shingle manufacturer.

B. At areas where eave protection membrane is to be adhered to substrate, fill knot holes and surface cracks with latex filler.

C. Broom clean deck surfaces before installing underlayment or eave protection.

D. Protect surrounding areas and adjacent surfaces from damage during execution of this work.

E. Install eave edge flashings tight with fascia boards, weather lap joints 2 inches and seal with roof cement, and secure flange with nails..

3.03 INSTALLATION

A. Eave Protection Membrane:
1. Install eave protection membrane from eave edge to minimum 48 inches up-slope beyond interior face of exterior wall.

B. Metal Flashing:
1. Install flashings in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
2. Weather lap joints minimum 6 inches and seal weather tight with plastic cement.
3. Secure in place with nails, and conceal fastenings.
4. Items Projecting Through or Mounted on Roofing: Flash and seal weather tight with plastic cement.

C. Shingles:
1. Install shingles in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.

a. Fasten strip shingles using four nails per strip, or as required by manufacturer and local building code, whichever is greater.

2. Place shingles in straight coursing pattern with 5-inch weather exposure to produce double thickness over full roof area, and provide double course of shingles at eaves.
3. Project first course of shingles 3/4 inch beyond fascia boards.
4. Extend shingles 1/2 inch beyond face of gable edge fascia boards.
5. After installation, place one daub of plastic cement 1-inch diameter under each individual shingle tab exposed to weather to prevent lifting.
6. Complete installation to provide weathertight service.

3.04 CLEANING

A. See Section 017000 - Execution and Closeout Requirements for additional requirements.

B. Clean exposed work upon completion of installation; remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to finish.

3.05 PROTECTION

A. Do not permit traffic over finished roof surface; protect roofing until completion of project.

B. Touch-up, repair, or replace damaged asphalt shingles or accessories before Date of Substantial Completion.

END OF SECTION 073113

SECTION 074213
METAL WALL PANELS - PETERSEN ALUMINUM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Exterior wall panels.

B. Related flashings.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Wall panel substrate.

B. Section 076200 - Sheet Metal Flashing and Trim: Transitions between wall panel substrate and wall panels.

C. Section 079200 - Joint Sealants: Sealing joints between metal wall panel system and adjacent construction.

1.03 REFERENCE STANDARDS

A. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.

B. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

C. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components; 2025.

1.04 SUBMITTALS

A. See Section 133000 - Submittal Procedures.

B. Product Data - Wall System: Manufacturer's data sheets on each product used, including:
   1. Physical characteristics of components shown on shop drawings.
   2. Storage and handling requirements and recommendations.
   3. Installation instructions and recommendations.

C. Shop Drawings: Indicate dimensions, layout, joints, construction details, support clips, and anchorage methods.

D. Color charts: Submit two copies of color charts for architect's selection.

E. Test Reports: Submit test report verifying compliance with NFPA 285 for previously tested exterior wall assembly.

F. Manufacturer's qualification statement.

G. Specimen warranty.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.

B. Store prefinished material off the ground and protected from weather; prevent twisting, bending, or abrasion; provide ventilation; slope metal sheets to ensure proper drainage.

C. Prevent contact with materials that may cause discoloration or staining of products.

1.07 FIELD CONDITIONS

A. Do not install wall panels when air temperature or relative humidity is outside manufacturer's limits.

1.08 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Finish Warranty: Provide 35-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Metal Wall Panels - Concealed Fasteners:
   1. Petersen Aluminum Corporation; Precision Series HWP Wall Panels: www.pac-clad.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

2.02 METAL WALL PANEL SYSTEM

A. Wall Panel System: Factory-fabricated, prefinished metal panel system, site assembled.
   1. Provide exterior wall panels.
   2. Provide components which will support panel dead loads and withstand live loads caused by positive and negative wind pressure acting normally to plane of wall.
   3. Design Pressure: In accordance with applicable codes and as indicated on Drawings.
   4. Fire Performance: Tested in accordance with and complying with acceptance criteria of NFPA 285.
   5. Movement: Accommodate movement within system without damage to components or deterioration of seals; between system and perimeter components when subject to seasonal temperature cycling; when subject to dynamic loading and release of loads; and under deflection of structural support framing.
   6. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
   7. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
   8. Provide continuity of weather barrier seal at building enclosure elements in accordance with requirements; see Section 072500.

B. Exterior Wall Panels:
   1. Profile: Vertical; style as indicated.
   2. Side Seams: Double-interlocked, tight-fitting, sealed with continuous bead of sealant.
   3. Material: Precoated aluminum sheet, .040 inch minimum thickness.
   4. Panel Width: 16 inches.
   5. Panel Depth: 7/8 inches.
   6. Color: As selected by Architect from manufacturer's standard line.

C. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; shop cut and factory mitered to required angles.

D. Expansion Joints: Same material, thickness, and finish as exterior sheets; manufacturer's standard brake-formed type, of profile to suit system.

E. Trim: Same material, thickness, and finish as exterior sheets; brake-formed to required profiles.

F. Anchors: Galvanized steel or Stainless steel.

2.03 MATERIALS

A. Precoated Aluminum Sheet: ASTM B209/B209M, 3105 alloy, O temper, with smooth surface texture; continuous coil-coated on exposed surfaces and panel back with specified finishes.

B. Select materials with surface flatness, smoothness, and lack of surface blemishes where exposed to view in finished system.

2.04 FINISHES

A. Exposed Surface Finish: Panel manufacturer's standard polyvinylidene fluoride (PVDF) coating.

B. Panel Backside Finish: Panel manufacturer's standard siliconized polyester wash coat.

2.05 ACCESSORIES

A. Cladding Support Clips: Thermally broken, thermal spacer clips for support of cladding z-girts, angles, channels, and other framing.
   1. Thermal Spacer Clip: Pultruded glass fiber and thermoset polyester resin clip; 3/16 inch thick at top, base, and web.
   2. Clip Depth: As indicated on drawings.

B. Weather Barrier: High tempurature, self adhering underlayment.
   1. Install primer where required by manufacturer.
   2. Products:
      a. Pac-clad HT Underlayment: Basis of Design.
      b. Equivalent: Approved equal.

C. Flashing: See Section 076200.

D. Gaskets: Manufacturer's standard type suitable for use with system, permanently resilient; ultraviolet and ozone resistant.

E. Concealed Sealant: Noncuring butyl or tape sealant; see Section 07 9200.

F. Exposed Sealant: silicone; see Section 07 9200.

G. Fasteners: Manufacturer's standard type to suit application; with soft neoprene washers, steel, hot-dip galvanized.

H. Field Touch-Up Paint: As recommended by panel manufacturer.

I. Bituminous Paint: Asphalt base.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that building framing members are ready to receive panels.

B. Verify weather barrier, see Section 072500, has been installed over wall panel substrate.

3.02 PREPARATION

A. Install subgirts perpendicular to panel length, securely fastened to substrates and shimmed and leveled to uniform plane, and spaced at intervals indicated.

B. Protection of In-Place Conditions: Protect surrounding areas and adjacent surfaces from damage during execution of this work.

3.03 INSTALLATION

A. Install panels on walls in accordance with manufacturer's instructions.

B. Protect surfaces in contact with cementitious materials and dissimilar metals with bituminous paint; allow to dry prior to wall panel installation.

C. Fasten panels to structural supports; align, level, and plumb.

D. Locate joints over supports.

E. Lap panel ends 2 inches, minimum.

F. Provide expansion and control joints where indicated.

G. Use concealed fasteners unless otherwise indicated by Architect.

H. Seal and place gaskets to prevent weather penetration. Maintain neat appearance.

3.04 TOLERANCES

A. Offset from True Alignment between Adjacent Members Abutting or In Line: 1/16 inch, maximum.

B. Variation from Plane or Location as Indicated on Drawings: 1/4 inch, maximum.

3.05 CLEANING

A. See Section 017000 - Execution and Closeout Requirements for additional requirements.

B. Remove site cuttings from finish surfaces.

C. Remove protective material from wall panel surfaces.

D. Upon completion of installation, thoroughly clean prefinished aluminum surfaces in accordance with AAMA 609 & 610.

3.06 PROTECTION

A. Protect metal wall panels until completion of project.

B. Touch up, repair, or replace damaged wall panels or accessories before Date of Substantial Completion.

END OF SECTION 074213

SECTION 074633.10
PLASTIC SOFFIT PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Plastic soffit and trim.

1.02 REFERENCE STANDARDS

A. ASTM D4477 - Standard Specification for Rigid (Unplasticized) Poly(Vinyl Chloride) (PVC) Soffit; 2024.

B. ASTM D5206 - Standard Test Method for Windload Resistance of Rigid Plastic Siding; 2024.

C. VSI (INST) - Vinyl Siding Installation Manual; 2020.

1.03 SUBMITTALS

A. See Section 013300 Submittal Procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:

C. Color Samples: Where colors are not specified, provide samples of manufacturer's entire color line for selection.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Not less than three years of experience with products specified.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.06 FIELD CONDITIONS

A. Do not install soffits when air temperature or relative humidity are outside manufacturer's limits.

1.07 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Provide manufacturer's limited lifetime warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Plastic Soffit Panels:
   1. Certanteed LLC.: Triple 4" Universal Soffit: Basis of Design: www.certainteed.com/#sle
   2. Equivalent: Approved equal.

2.02 MATERIALS

A. General Requirements:
   1. Soffit: Complying with ASTM D4477.
   2. Wind Resistance: Capable of withstanding minimum of 40 psf negative pressure, when tested in accordance with ASTM D5206.
   3. Class A flame spread per ASTM E84

B. Plastic Soffit Panels:
   1. Profile: Board Style, Triple 4-Inch; 4 inches wide, fully vented; 12 inch width, 4 inch exposure.
   2. Thickness: 0.040 inch, minimum.
   3. Nailing Hem: Single layer, with 1-1/8 inch long nail holes at maximum 18 inches on center.

4. Finish: Smooth.
5. Color: As selected by Architect from manufacturer's full range of available colors.

2.03 ACCESSORIES

A. Accessories: Provide coordinating accessories made of same material as required for complete and proper installation even when not specifically indicated on drawings.
   1. Color: Match adjacent siding or soffit panels.

B. Fasteners: Aluminum nails, alloy 5056 or 6110, with minimum tensile strength of 63,000 psi; length as required to penetrate framing at least 3/4 inch.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrate conditions before beginning installation; verify dimensions and acceptability of substrate.

B. Do not proceed with installation until unacceptable conditions have been corrected.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

A. Install siding, soffit, and trim in accordance with manufacturer's printed installation instructions and VSI (INST).

B. Attach securely to framing, not sheathing, with horizontal components true to level and vertical components true to plumb, providing a weather resistant installation.

C. Clean dirt from surface of installed products, using mild soap and water.

3.03 CLEANING

A. See Section 017000 - Execution and Closeout Requirements for additional requirements.

B. Clean exposed work upon completion of installation; remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to finish.

3.04 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION 074633.10

SECTION 075323
ETHYLENE PROPYLENE DIENE MONOMER MEMBRANE ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Vapor retarder.

B. Substrate board.

C. Roof insulation.

D. Cover boards.

E. Base sheet materials.

1.02 RELATED REQUIREMENTS

A. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 061063 - MISCELLANEOUS ROUGH CARPENTRY: Wood cant strips.

1.03 REFERENCE STANDARDS

A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

B. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2024.

C. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2025.

D. ASTM D41/D41M - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing; 2011 (Reapproved 2023).

E. ASTM D2178/D2178M - Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing; 2015a (Reapproved 2021).

F. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2015, with Editorial Revision (2022).

G. ASTM D6083/D6083M - Standard Specification for Liquid-Applied Acrylic Coating Used in Roofing; 2021.

H. FM (AG) - FM Approval Guide; current edition.

I. FM 4470 - Examination Standard for Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for Use in Class 1 and Noncombustible Roof Deck Construction; 2022.

J. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

K. UL 790 - Standard for Standard Test Methods for Fire Tests of Roof Coverings; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene preinstallation meeting one week before starting work of this section; require attendance by affected installers; review preparation, installation procedures, coordination, and scheduling necessary for related work.

1.05 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, vapor retarder, surfacing, and fasteners.

C. Shop Drawings: Provide roofing system plans, elevations, sections, details, and attachment details to other work, including:
   1. Base flashings, cants, and membrane terminations.
   2. Tapered insulation, including slopes.
   3. Crickets, saddles, and tapered edge strips, including slopes.
   4. Insulation fastening patterns.

D. Samples: Provide for each product specified.

E. Manufacturer's qualification statement.

F. Installer's Qualification Statement: Confirmation installer approved, authorized, or licensed by manufacturer to properly install roofing system.

G. Maintenance Data: Latest published documents.

H. Guarantees: Provide manufacturer's current guarantee specimen for the following:
   1. Roofing subcontractor to provide copy of final System Assembly Letter issued by Johns Manville Roofing Systems, indicating products and system installed eligible to receive specified manufacturer's guarantee when installed by certified Johns Manville contractor, in accordance with manufacturer's application requirements, and inspected and approved by Johns Manville technical representative.
   2. Prior to roofing system installation, roofing subcontractor to provide copy of Guarantee Application Confirmation document issued by John Manville Roofing Systems, indicating project has been reviewed for eligibility to receive specified guarantee and registered.

I. Testing firm's qualification statement.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of this section with minimum three years documented experience.

C. Testing Firm Qualifications: Company specializing in performing work of type specified and approved by manufacturer.
   1. Test Reports:
      a. Roof drain and leader test or submit plumber's verification.
      b. Core cutting, if requested.
      c. Roof deck fastener pullout test, if required.
      d. Bonded pull test, if required.
   2. Source Limitations: Obtain components from one single-source roofing system manufacturer to guarantee product quality consistency.
   3. Fire-Test Response Characteristics: Roofing materials to comply with characteristics indicated as determined by testing identical products, using test methods listed herein by UL or another testing and inspection agency considered the standard.

1.07 DELIVERY, STORAGE, AND HANDLING

A. See Section 017419 - Construction Waste Management and Disposal for packaging waste requirements.

B. Deliver materials in manufacturer's original containers, dry and undamaged, with seals and labels intact, product brand name, type, date of manufacture, and directions for storage.

C. Store materials in weather-protected environment; do not place directly on ground, and protect from moisture.

D. Ensure materials' storage and staging does not exceed static and dynamic loadbearing roof decking capacities.

E. Store liquid materials in original, undamaged containers, in clean, dry, protected location, and within temperature range required by roofing system manufacturer.

F. Protect roof insulation materials from physical damage and deterioration by sunlight, moisture, soiling, and other sources. Comply with insulation manufacturer's written instructions for handling, storing, and protection during installation.

G. Protect foam insulation from direct exposure to sunlight.

1.08 FIELD CONDITIONS

A. Do not apply roofing membrane during unsuitable weather.

B. Do not apply roofing membrane when ambient temperature below 40 degrees F or above 110 degrees F.

C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation expected or occurring.

D. Protect materials vulnerable to water or sun damage during day that work occurs.

E. Schedule applications so no partially completed roof sections left exposed at end of workday.

1.09 WARRANTY

A. See Section 017700 - Closeout Procedures, for additional warranty requirements.

B. Provide manufacturer's system guarantee equal to Johns Manville's Peak Advantage No Dollar Limit Roofing System Guarantee:
   1. Single-source special guarantee includes roofing membrane, accessories, basic flashing, and other approved single-source components of roofing system marketed by manufacturer, including roof insulation.
   2. Warranty Period: 20 years from Date of Substantial Completion.

C. Installer's Warranty: Submit roofing Installer's Warranty, including components of roofing system for a guarantee period of two years from Date of Substantial Completion.

D. Existing Warranties: Ensure warranties on existing building elements not affected by project scope of work. Installer responsible for coordinating with building Owner's representative to verify compliance.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Johns Manville - Commercial Roofing Systems: www.jm.com/#sle.

B. Versico.- VersiGard - www.versico.com
C. Mule-Hide Products - www.mulehide.com
D. Holcim Elevate - EPDM Roofing Systems: holcimelevate.com
E. Carlisle - EPDM Roofing Systems: carlislesyntec.com
F. Subsitutions: See Section 016000 - Product Requirements.
G. Source Limitations: Furnish products produced by single manufacturer and obtained from single supplier.

2.02 PERFORMANCE CRITERIA

A. General: Install watertight roofing membrane system, resist specified wind uplift pressures, thermally induced movement, and exposure to weather without failure.
B. Material Compatibility: Ensure roofing materials compatible with one another under conditions of service and application required, as demonstrated by roofing system manufacturer based on testing and field experience.
C. Installer to comply with current code requirements from authority having jurisdiction.
D. Wind Uplift Performance: Roofing system to meet intent of systems successfully tested by qualified testing and inspecting agency to resist wind uplift pressure calculated in accordance with ASCE 7.
E. Fire Test Response Characteristics: Provide roofing materials with characteristics as determined by testing identical products with UL test method below or comparable testing and inspecting agencies acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
   1. Exterior Fire Test Exposure: UL 790, Class A, for applications and roof slopes indicated.

2.03 EPDM MEMBRANES

A. EPDM Membrane Materials:
   1. Thickness: 60 mils, 0.060 inch.
   2. Product: JM EPDM NR.

B Non- Reinforced Uniform Fabric:
   1. Flexible sheet made from Ethylene Propylene Diene Monomer, ASTM D4637/D4637M, Type II.
   2. Thickness: 60 mils, 0.060 inch.
   3. Exposed Face Color: Black.
   4. Factory Inseam Tape: 6 inches wide minimum, butyl splice tape with release film.
   5. Product: JM EPDM NR.
   6. Substitutions: See Section 016000 - Product Requirements.

2.04 VAPOR RETARDER

A. Self-Adhered SBS Vapor Retarder:
   1. Tri-laminate woven polyethylene, nonslip UV protected top surface; suitable for application method specified. Basis of design: JM Vapor Barrier SAR.

B. Self-Adhered Primer:
   1. One-part penetrating primer solution to enhance the adhesion of self-adhering membranes. Basis of design: SA Primer Low VOC

C. Torch-applied SBS Vapor Retarder:
   1. Smooth-surfaced, torch-grade SBS base ply with fiberglass reinforcement.

2.05 SUBSTRATE BOARD (STEEL AND GYPSUM DECK)

A. Gypsum Board:
   1. Heavy-duty coated glass-mat facer, water-resistant gypsum substrate for adhered roof applications, complying with ASTM C1177/C1177M.
      a. Products: JM Dens Deck Prime Roof Board.

2.06 ROOF INSULATION

A. Standard:
   1. Preformed roof insulation boards complying with requirements and referenced standards, selected from material sizes and thicknesses indicated. Provide insulation package with minimal R Value: 30 required by code Energy Code of the State of NY.
   2. Provide insulation package in multiple layers.
   3. Minimum Long-Term Thermal Resistance (LTTR): 5.7 per inch, determined in accordance with CAN-ULC-S770 at 75 degrees F.
      a. Polyisocyanurate Board Insulation:
         1) In accordance with ASTM C1289, Type II, Class 1, Grade 2 (20 psi).
         2) Products: JM ENRGY 3 or approved equal.

B. Tapered Insulation:
   1. Factory-tapered insulation boards fabricated to slope of1/8" inch per 12 inches, unless indicated otherwise.
      a. Polyisocyanurate Board Insulation, Tapered:
         1) In accordance with ASTM C1289, Type II, Class 1, Grade 2 (20 psi).
         2) Products: JM Tapered ENRGY 3.

C. Insulation Accessories:
   1. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with membrane roofing.
      a. Provide saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.
         1) Products: JM Tapered Fesco Edge Strip or approved equal.
      b. Fasteners: Factory-coated steel fasteners with metal or plastic plates designed for fastening roof insulation to substrate and furnished by roofing system manufacturer. Comply with corrosion-resistant provisions in FM 4470.
         1) Products: JM UltraFast Fasteners and UltraFast Plates or approved equal
      c. Urethane Adhesive: Manufacturer's two-component polyurethane adhesive formulated to adhere insulation to substrate.
         1) Products: JM Two-Part Urethane Insulation Adhesive (UIA) or approved equal.
      d. Wood Nailer Strips: See Section 061063.

2.07 COVER BOARDS

A. Polyisocyanurate Boards: Faced with high compressive strength polyisocyanurate insulation, complying with ASTM C1289.
   1. Classifications:
      a. Type II - Bonded in-line to fiberglass reinforced facer.
         1) Class 1 - Faced with glass-reinforced facers on both major surfaces of closed cell foam core. Product thickness of 1/2 inch (12.7 mm).
            (a) Compressive Strength: Grade 2, 20 psi, minimum.
         2) Board Size: 48 by 96 inches.

3) Board Thickness: 1/2 inch.
4) Thermal Resistance at 1/2 inch Thick, R-Value (RSI-Value): 2.8.
5) Products: JM SeparatoR.

b. Type II - Bonded in-line to inorganic coated glass facer.
1) Class 2 - Faced with inorganic coated glass facers on both major surfaces of closed cell polyisocyanurate foam core. This product used at maximum thickness of 1/2 inch (12.7 mm).
(a) Compressive Strength: Grade 3, 25 psi, minimum.
2) Board Size: 48 by 96 inches.
3) Board Thickness: 1/2 inch.
4) Thermal Resistance at 1/2 inch Thick, R-Value (RSI-Value): 2.9.
5) Products: JM SeparatoR CGF.

2.08 NOT USED

2.09 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing:
1. Liquid-type auxiliary materials meet VOC limits of authorities having jurisdiction.

B. Sheet Flashing: Internally reinforced or scrim reinforced.
1. Product: JM EPDM Peel & Stick Flashing.

C. Primer Material: Synthetic-rubber polymer.
1. Products: JM EPDM Tape Primer Plus.

D. Liquid-Applied Flashing: Single-ply liquid and fabric-reinforced flashing system created with fleece polyester scrim and two-component, polyurethane-based, liquid-applied flashing material, consisting of liquid resin.
1. Products: JM SP Liquid Flashing Resin and JM SP Liquid Flashing Scrim curing agent.

E. Seaming Material: Butyl splice tape with release film.
1. Product: 3 inches wide, minimum, EPDM Seam Tape Plus butyl splice tape.

F. Sealing Strip: 6 inches wide, 45 mil, 0.045 inch thick minimum, cured EPDM with factory-laminated, self-adhering seam tape.
1. Product: JM EPDM Peel & Stick Sealing Strip.

G. Bonding Adhesive: Solvent-based bonding adhesive for membrane. Serviceable Installation Ambient Air Temperature: 25 degrees F and rising.
1. Products: JM All Season Sprayable Bonding Adhesive.

H. Flashing Adhesive: Solvent-based bonding adhesive for base flashings. Serviceable Installation Ambient Air Temperature: 25 degrees F and rising.
1. Products: JM Membrane Bonding Adhesive (TPO and EPDM).

I. Slip Sheet: Manufacturer recommended slip sheet of type required for application.

J. Protection Mat: Nominal 7 oz/yd^2 needle-punched, UV-resistant polypropylene fabric.

K. Metal Termination Bars: Standard predrilled stainless steel or aluminum bars with anchors.
   1. Product: JM Termination Systems.

L. Membrane Battens: Manufacturer recommended polymer or aluminum-zinc-alloy coated, prepunched steel sheet.

M. Fasteners (steel wood, and concrete deck areas): Factory-coated steel fasteners and metal plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane to substrate, and acceptable to membrane roofing system manufacturer. Basis of design:
   1. At steel and wood deck areas: High Load Fasteners and Plates
   2. At concrete deck areas: All Purpose Fasteners and High Load Plates

N. Polymer Fasteners (tectum and gypsum deck areas): Glass-reinforced nylon fasteners with ¼" square drive and 1" head with Galvalume®*-coated 2" metal stress plates, designed to lock into the fastener head. Fasteners designed for fastening roof insulation to substrate and furnished by roofing system manufacturer. Basis of design: Polymer Auger Fasteners and Plates.

O. Miscellaneous Accessories: Provide accessories to meet roofing manufacturer's warranty requirements.

2.10 WALKWAYS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads.
   1. Product: JM EPDM Peel & Stick Walkpads.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify surfaces and site conditions ready to receive work.

B. Verify deck supported and secure.

C. Verify deck clean and smooth, flat, free of depressions, waves, or projections, sloped according to drawings and correct installation of roof system.

D. Verify deck surfaces dry and free of snow or ice.

E. Verify roof drains securely clamped in place.

F. Verify roof openings, curbs, blocking, nailers, and penetrations through roof are solidly set, and cant strips in place. Thickness of nailers to match thickness of insulation.

G. Ensure rigidity and proper slope for drainage for decking materials.

H. Verify deck securely fastened with no projecting fasteners and adjoining deck units no greater than 1/16 inch out-of-plane relative to each other.

I. Bring unacceptable panels to the attention of General Contractor and Project Owner's Representative and correct or replace with appropriate panels of like material prior to installation of roofing system.

J. Wood Deck
   1. Confirm dry deck by moisture meter with 12 percent moisture maximum.
   2. Verify wood provides minimum fastener pullout resistance.

3.02 PREPARATION

A. General
   1. Clean and remove from substrate sharp projections, dust, debris, moisture, and other substances detrimental to roofing installation, in accordance with roofing system manufacturer's written instructions.
   2. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto other adjacent surfaces.

3. If applicable, prime surface of deck with primer at rate recommended by roofing manufacturer and allow primer to dry.
4. Proceed with installation steps only after correcting unsatisfactory conditions.

B. Reroofing Preparation
1. Remove area no larger than one day's worth of reroofing. Remove roofing membrane, surfacing, coverboards, insulation, fasteners, asphalt, pitch, adhesives, and other related materials.
2. Tear out base flashings, counterflashings, pitch pans, pipe flashings, vents, sumps, and like components necessary for new membrane applications.
3. Remove abandoned equipment curbs, skylights, smoke hatches, and penetrations. Install new decking to match existing, adjoining decking material.
4. Raise HVAC units and other equipment supported by curbs to conform with the following:
   a. If necessary, disconnect connections to existing HVAC units, work done by appropriate, licensed tradesmen, and coordinated by General Contractor.
   b. Modify curbs as required to provide minimum 8 inches of base flashing height measured from surface of new membrane to top of flashing membrane.
   c. Secure existing flashing and install new metal counterflashing prior to reinstallation of units.
   d. Elevate perimeter nailers to match elevation of new roof insulation.
   e. Ensure removal of roof surface debris. Do not store demolished roof system material on roof surface.

3.03 INSTALLATION - MEMBRANE

A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.

B. Shingle joints on sloped substrate in direction of drainage.

C. Refer to membrane manufacturer's installation instructions regarding installation direction and backnailing, where roof slope exceeds 0.5 inch per 12 inches (1:24).

D. Cooperate with testing and inspecting agencies engaged to perform testing services for roofing system installation.

E. Coordinate roofing system installation to ensure insulation and other roofing membrane components not permanently exposed are not subjected to precipitation or left uncovered at end of each work day, or if rain imminent:
1. Provide tie-offs at end of each work day to cover exposed roofing membrane sheets and insulation. Complete terminations, base flashing, and provide temporary seals to prevent water from entering completed sections of roofing system. Remove and discard temporary seals before beginning work on adjoining roofing.

F. Adhered Roofing Membrane Installation:
1. Install roofing membrane over area to receive roofing in accordance with membrane roofing system manufacturer's written instructions.
2. Unroll roofing membrane and allow to relax before installing.
3. Align roofing membrane, stagger end laps, and maintain uniform side and end laps of minimum dimensions required by manufacturer.
4. Bonding Adhesive: Apply solvent-based bonding adhesive to substrate and underside of roofing membrane at rate required by manufacturer and allow to partially dry before installing roofing membrane. Do not apply bonding adhesive to splice area of roofing membrane.
5. Mechanically fasten roofing membrane securely at terminations, penetrations, and perimeter of roofing.

6. Apply roofing membrane with side laps shingled along slope of roof deck where possible.
7. Field-Fabricated Seam Installation: Clean and prime both faces of splice areas, apply splice tape and firmly roll side and end laps of overlapping roofing membrane according to manufacturer's written instructions to ensure watertight seam installation. Apply lap sealant and seal exposed edges of roofing membrane terminations.
8. Tape-to-Tape Installation: Align membrane for appropriate overlap, remove release liners and firmly roll side and end laps of overlapping roofing membranes according to manufacturer's written instructions to ensure watertight seam installation.
9. Tape-to-Standard Sheet Installation: Align membrane for appropriate overlap, clean and prime nontaped face of splice area, remove release liners and firmly roll side and end laps of overlapping roofing membranes according to manufacturer's written instructions to ensure watertight seam installation.
10. Spread sealant or mastic bead over deck drain flange at deck drains and securely seal roofing membrane with clamping ring.

G. Around roof penetrations, seal flanges and flashings with flexible flashing.

H. Coordinate installation of roof drains and sumps and related flashings.

3.04 INSTALLATION - VAPOR RETARDER AND INSULATION, UNDER MEMBRANE

A. Install polyethylene sheet vapor retarder as loose-laid single layer over area to receive vapor retarder, with side and end-lapping each sheet minimum of 2 inches and 6 inches, respectively. Ensure side and end laps securely sealed.

B. Install modified bituminous vapor retarder sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets over and terminate beyond cants, installing as follows:
1. Unroll roofing bituminous vapor retarder sheet according to roofing manufacturer.
2. Torch-apply vapor retarder to substrate according to roofing system manufacturer's instruction.
3. Adhere vapor retarder in full mopping of hot asphalt to substrate according to roofing system manufacturer's instruction.
4. Self-adhere vapor retarder to substrate according to roofing system manufacturer's instruction.

C. Laps: Align roofing membrane sheets without stretching, and maintain uniform side and end laps. Stagger end laps and completely bond and seal laps, leaving no voids. Repair tears and voids in laps and lapped seams not completely sealed.

D. Completely seal vapor retarder at terminations, obstructions, and penetrations, to prevent air movement into membrane roofing system.

E. Cover Boards: Mechanically fasten cover boards in accordance with roofing manufacturer's instructions and FM (AG) Factory Mutual requirements.

F. Lay subsequent layers of insulation with joints staggered minimum 6 inches from joints of preceding layer.

G. On metal deck, place boards parallel to flutes with insulation board edges bearing on deck flutes.

H. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.

I. Apply only enough insulation to cover membrane within one work day.

3.05 INSTALLATION - SUBSTRATE BOARD

A. Install substrate board with long joints in continuous straight lines, perpendicular to roof slopes with end joints staggered between rows. Tightly butt substrate boards together.

3.06 INSTALLATION - INSULATION

A. Standard Installation:
   1. Coordinate installation of roof system components so insulation and cover board not exposed to precipitation or left exposed at end of each work day.
   2. Install tapered insulation under area of roofing to conform to slopes indicated.
   3. Install insulation boards with long joints in continuous straight line. Stagger joints between rows, abutting edges. Fill gaps exceeding .25 inch with like materials.
   4. Install two or more layers with joints of each succeeding layer staggered minimum of 6 inches from joints of previous layer.
   5. Trim surface of insulation boards where necessary at roof drains so completed surface is flush and does not restrict flow of water.
   6. Install tapered edge strips at perimeter edge of roof not terminating at vertical surfaces.

B. Adhered Installation:
   1. Install each layer in two-part urethane adhesive according to roofing system manufacturer's instruction.
   2. Install each layer to resist uplift pressure at corners, perimeter, and entire roof field.

3.07 INSTALLATION - COVER BOARDS

A. Coordinate installing membrane roofing system components so cover board not exposed to precipitation or left exposed at end of each work day.

B. Comply with membrane roofing system manufacturer's written instructions for installing roof cover boards.

C. Install cover board with long joints in continuous straight line. Stagger joints between rows, abutting edges, and ends as directed by manufacturer's written instructions. Fill gaps exceeding .25 inch with cover board. Cut and fit cover board within .25 inch of nailers, projections and penetrations.

D. Trim surface of cover board where necessary at roof drains so completed surface is flush and does not restrict flow of water. Install tapered edge strips at perimeter edges of roof not terminating at vertical surfaces.

E. Adhered Cover Board Installation:
   1. Install each layer in two-part urethane adhesive according to roofing system manufacturer's instruction.
   2. Install each layer to resist uplift pressure at corners, perimeter and entire roof field.

3.08 INSTALLATION - BASE SHEET

A. Install one lapped base sheet course and mechanically fasten to substrate according to roofing system manufacturer's written instructions:
   1. Enhance fastening rate along perimeter and corner zones, according to code requirements, including wind uplift system minimums and manufacturer's warranty requirements.

B. Comply with roofing manufacturer's written instructions for installing roof insulation.

3.09 INSTALLATION - BASE FLASHING

A. Apply solvent-based bonding adhesive at required rate and allow to dry partially. Do not apply bonding adhesive to seam area of flashing.

3.10 INSTALLATION - COATINGS

A. Ensure surfaces clean, dry, and free of dirt, grease, oil, or other debris interfering with proper adhesion.

B. Apply coating to roofing membrane and base flashings as recommended by manufacturer. Apply in two coats, allowing first coat to completely dry before applying second coat.

3.11 INSTALLATION - EDGE METAL

A. Examine substrates and conditions under which sheet metal flashings and trim installed and verify work can commence. Do not proceed with installation until unsatisfactory conditions corrected.

B. Provide edge details as indicated on drawings. Install in accordance with membrane manufacturer's requirements and SMACNA (ASMM) Architectural Sheet Metal Manual.

C. Join individual sections in accordance with membrane manufacturer's requirements and SMACNA (ASMM) Architectural Sheet Metal Manual.

3.12 INSTALLATION - WALKWAYS

A. Flexible Walkways: Install walkway products in locations indicated. Adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

B. Roof-Paver Walkways: Install walkway roof pavers with applicable slip sheet according to manufacturer's written instructions in locations indicated. Leave 3 inches of space between adjacent roof pavers.

3.13 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for additional requirements.

B. Owner to provide testing services, and Contractor to provide temporary construction and materials for testing in accordance with requirements.

C. Provide daily on-site attendance of roofing and insulation manufacturer's representative during installation of this work.

D. Final Roof Inspection: Arrange for roofing system manufacturer's technical representative to inspect roofing installation upon completion, and submit report to Architect for approval.

E. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.

F. Perform additional testing and inspecting to determine compliance of replaced or additional work with specified requirements, at General Contractor's expense.

3.14 CLEANING

A. See Section 017000 - Execution and Closeout Requirements for additional requirements.

B. Remove bituminous markings from finished surfaces.

C. In areas where finished surfaces soiled by work of this section, including overspray and spillage from adjacent construction, consult manufacturer of surfaces for cleaning advice, proper cleaning agents and procedures, and comply with manufacturer's documented instructions.

D. Repair or replace defaced or damaged finishes caused by work of this section.

3.15 PROTECTION

A. Protect installed roofing and flashings from construction operations.

B. Where traffic continues over finished roof membrane, protect surfaces using durable materials.

C. Correct deficiencies or remove roofing system not complying with requirements. Repair substrates and repair or reinstall roofing system to condition free of damage and deterioration at time of Substantial Completion, and according to warranty requirements.

END OF SECTION 075323

SECTION 076200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Manufactured Products:
      a. Manufactured reglets.
   2. Formed Products:
      a. Formed roof drainage sheet metal fabrications.
      b. Formed low-slope roof sheet metal fabrications.
      c. Formed wall sheet metal fabrications.
      d. Formed equipment support flashing.

B. Related Sections:
   1. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
   2. Division 06 Section "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
   3. Division 07 Section "Roof Accessories" for set-on-type curbs, equipment supports, roof hatches, vents, and other manufactured roof accessory units.

C. Custom Fabrication of fascia metal in lieu of providing manufactured metal specified in section 077100 will not be accepted.

1.02 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. SPRI Wind Design Standard: Manufacture and install copings and roof-edge flashings tested according to SPRI ES-1 and capable of resisting the following design pressures:
   1. Design Pressure: As indicated on Drawings.

C. Metal Edge Securement: Install in accordance with ANSI/SPRI ES-1, “American National Standard for Edge Systems Used with Low-Slope Roofing Systems.”

D. Thermal Movements: Provide sheet metal flashing and trim that allows for thermal movements from ambient and surface temperature changes.
   1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

1.03 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

C. Shop Drawings: Show fabrication and installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work. Include the following:
   1. Identification of material, thickness, weight, and finish for each item and location in Project.
   2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.

3. Details for joining, supporting, and securing sheet metal flashing and trim, including layout of fasteners, cleats, clips, and other attachments. Include pattern of seams.
4. Details of termination points and assemblies, including fixed points.
5. Details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction.
6. Details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counterflashings as applicable.
7. Details of special conditions.
8. Details of connections to adjoining work.

D. Samples for Initial Selection: For each type of sheet metal flashing, trim, and accessory indicated with factory-applied color finishes involving color selection.

E. Qualification Data: For qualified fabricator.

F. Maintenance Data: For sheet metal flashing, trim, and accessories to include in maintenance manuals.

G. Warranty: Sample of special warranty.

1.04 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

B. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.

C. Preinstallation Conference: Conduct conference at Project site.
1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, unit skylights, and roof-mounted equipment.
2. Review methods and procedures related to sheet metal flashing and trim.
3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
4. Review special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect sheet metal flashing.
5. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

1.06 WARRANTY

A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows 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 Hunter units when tested according to ASTM D 2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
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

2.01 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.

B. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.
1. As-Milled Finish: Mill finish.
2. Surface: Smooth, flat.
3. Clear Anodic Finish, Coil Coated: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.
4. Exposed Coil-Coated Finishes:
a. Two-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
5. Color: As selected by Architect from manufacturer's full range.
6. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

C. Stainless-Steel Sheet: ASTM A 240 or ASTM A 666, Type 304, dead soft, fully annealed.
1. Finish: 2D (dull, cold rolled).
2. Surface: Smooth, flat.

2.02 UNDERLAYMENT MATERIALS

A. Felt: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, nonperforated.

B. Self-Adhering, High-Temperature Sheet: Minimum 30 to 40 mils thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
1. Thermal Stability: ASTM D 1970; stable after testing at 240 deg F.
2. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 deg F.
3. Products: Subject to compliance with requirements, provide one of the following:
a. Carlisle Coatings & Waterproofing Inc.; CCW WIP 300HT.
b. Grace Construction Products, a unit of W. R. Grace & Co.; Ultra.
c. Henry Company; Blueskin PE200 HT.
d. Metal-Fab Manufacturing, LLC; MetShield.
e. Owens Corning; WeatherLock Metal High Temperature Underlayment.

C. Slip Sheet: Building paper, 3-lb/100 sq. ft. minimum, rosin sized.

2.03 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal

flashing and trim installation and recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
   1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
      a. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
      b. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
   2. Fasteners for Zinc-Tin Alloy-Coated Copper Sheet: Copper, hardware bronze or Series 300 stainless steel.
   3. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
   4. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.

C. Solder:
   1. For Stainless Steel: ASTM B 32, Grade Sn60, with an acid flux of type recommended by stainless-steel sheet manufacturer.
   2. For Zinc-Tin Alloy-Coated Copper: ASTM B 32, 100 percent tin.

D. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.

E. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

G. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

H. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.04 MANUFACTURED SHEET METAL FLASHING AND TRIM

A. Reglets: Units of type, material, and profile indicated, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with factory-mitered and -welded corners and junctions.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Cheney Flashing Company.
      b. Fry Reglet Corporation.
      c. Heckmann Building Products Inc.
      d. Hickman, W. P. Company.
      e. Hohmann & Barnard, Inc.; STF Sawtooth Flashing.
      f. Keystone Flashing Company, Inc.
   2. Material: Aluminum, 0.024 inch thick.
   3. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
   4. Stucco Type: Provide with upturned fastening flange and extension leg of length to match thickness of applied finish materials.

5. Concrete Type: Provide temporary closure tape to keep reglet free of concrete materials, special fasteners for attaching reglet to concrete forms, and guides to ensure alignment of reglet section ends.
6. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
7. Accessories:
   a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
   b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing lower edge.
8. Finish: Mill.

2.05 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.
   1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
   2. Obtain field measurements for accurate fit before shop fabrication.
   3. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
   4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.

B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

C. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant.

D. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

E. Fabricate cleats and attachment devices of sizes as recommended by SMACNA's "Architectural Sheet Metal Manual" [and by FMG Loss Prevention Data Sheet 1-49] for application, but not less than thickness of metal being secured.

F. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

G. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. [Rivet joints where necessary for strength.]

H. Do not use graphite pencils to mark metal surfaces.

2.06 WALL SHEET METAL FABRICATIONS

A. Through-Wall Flashing: Fabricate continuous flashings in minimum 96-inch- long, but not exceeding 12-foot- long sections under copings, at shelf angles, and where indicated. Fabricate discontinuous lintel, sill, and similar flashings to extend 6 inches beyond each side of wall openings. Form with 2-inch- high, end dams where flashing is discontinuous. Fabricate from the following materials:
   1. Stainless Steel: 0.016 inch thick.
   2. Zinc-Tin Alloy-Coated Copper: 16 oz. /sq. ft.

B. Opening Flashings in Wood or Cold-Formed Frame Construction: Fabricate head, sill,[jamb,] and similar flashings to extend 4 inches beyond wall openings. Form head and sill flashing with 2-inch- high, end dams. Fabricate from the following materials:
   1. Aluminum: 0.032 inch thick.
   2. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch thick.
   3. Stainless Steel: 0.016 inch thick.
   4. Zinc-Tin Alloy-Coated Copper: 16 oz. /sq. ft.

2.07 MISCELLANEOUS SHEET METAL FABRICATIONS

A. Equipment Support Flashing: Fabricate from the following materials:
   1. Stainless Steel: 0.019 inch thick.
   2. Zinc-Tin Alloy-Coated Copper: 16 oz. /sq. ft.

B. Overhead-Piping Safety Pans: Fabricate from the following materials:
   1. Galvanized Steel: 0.040 inch thick.
   2. Aluminum-Zinc Alloy-Coated Steel: 0.040 inch thick.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of the Work.
   1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 UNDERLAYMENT INSTALLATION

A. Felt Underlayment: Install felt underlayment with adhesive for temporary anchorage to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.

B. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Apply primer if required by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer rather than nails for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Roll laps with roller. Cover underlayment within 14 days.

3.03 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
   1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
   2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

3. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
4. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
5. Install sealant tape where indicated.
6. Torch cutting of sheet metal flashing and trim is not permitted.
7. Do not use graphite pencils to mark aluminum surfaces.

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.
1. Coat back side of uncoated aluminum and stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet.

C. 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.

D. Fastener Sizes: Use fasteners of sizes as follows:
1. Penetrate wood sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws
2. Penetrate metal decking not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

E. Seal joints as shown and as required for watertight construction.
1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
2. Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants."

F. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches, except reduce pre-tinning where pre-tinned surface would show in completed Work.
1. Do not solder metallic-coated steel and aluminum sheet.
2. Pre-tinning is not required for zinc-tin alloy-coated copper.
3. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
4. Stainless-Steel Soldering: Tin edges of uncoated sheets using solder recommended for stainless steel and acid flux. Promptly remove acid flux residue from metal after tinning and soldering. Comply with solder manufacturer's recommended methods for cleaning and neutralization.

G. Rivets: Rivet joints in uncoated aluminum where indicated and where necessary for strength.

3.04 WALL FLASHING INSTALLATION

A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

B. Reglets: Installation of reglets is specified in Division 03 Section "Cast-in-Place Concrete".

C. Opening Flashings in Frame Construction: Install continuous head, sill, jamb, and similar flashings to extend 4 inches beyond wall openings.

3.05 MISCELLANEOUS FLASHING INSTALLATION

A. Overhead-Piping Safety Pans: Suspend pans independent from structure above as indicated on Drawings. Pipe and install drain line to plumbing waste or drainage system.

B. Equipment Support Flashing: Coordinate installation of equipment support flashing with installation of roofing and equipment. Weld or seal flashing with elastomeric sealant to equipment support member.

3.06 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.07 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder.

C. Clean off excess sealants.

D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.

E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 077100
ROOF SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Manufactured roof specialties, including copings, fascias, vents, expansion joints, and scuppers.

B. Roof control and expansion joint covers.

1.02 RELATED REQUIREMENTS

A. Section 077200 - Roof Accessories: Manufactured Roof hatches.

1.03 REFERENCE STANDARDS

A. ANSI/SPRI ES1 - Wind Test Design Standard For Edge Systems Used With Low Slope Roofing Systems.

B. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2020.

C. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2020, with Errata (2022).

D. ANSI/SPRI/FM 4435/ES-1 - Test Standard for Edge Systems Used with Low Slope Roofing Systems; 2022.

E. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2018).

F. NRCA (RM) - The NRCA Roofing Manual; 2026.

G. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.04 SUBMITTALS

A. See Section 013300 - Submittal Procedures.

B. Product Data: Provide data on shape of components, materials and finishes, anchor types and locations.

C. Shop Drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected work.

D. Samples: Submit two appropriately sized samples showing full range of coping and fascia colors for selections.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Roof Edge Flashings, Fascia and Copings:
   1. Johns Manville: Basis of Design: www.jm.com/#sle.
   2. Equivalent Approved Equal.

B. Control and Expansion Joint Covers:
   1. Johns Manville: Basis of Design: www.jm.com/#sle.
   2. Equivalents: Approved equal.

C. Pipe and Penetration Flashings:
   1. Johns Manville: Basis of Design: www.jm.com/#sle.
   2. Elmdor Stonemen: www.elmdorstoneman.com/#sle.
   3. Portals Plus: www.portalsplus.com/#sle.
   4. Equivalents: Approved Equal.

D. Counterflashings:

1. Johns Manville: Basis of Design: www.jm.com/#sle.
2. ATAS International, Inc: Two piece counterflashing;www.atas.com/#sle.
3. Hickman Edge Systems: www.hickmanedgesystems.com/#sle.
4. Metal-Era Engineered Roofing Solutions: Two piece counterflashing; www.metalera.com/#sle.
5. Equivalents: Approved Equal.

2.02 COMPONENTS

A. Roof Edge Flashings: Factory fabricated to sizes required; corners mitered and welded; concealed fasteners.
   1. Configuration: Fascia, and edge securement for roof membrane.
   2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test methods RE-1 and RE-2 to positive and negative design wind pressure as defined by New York State Building Code.
   3. Exposed Face Height: As indicated on drawings.
      a. Provide exposed extension piece of same material and thickness, where indicated on drawings.
   4. Material: Extruded aluminum, 0.040 inch thick, minimum.
   5. Provide manufacturer's typical overflow scupper configuration with downspout as indicated on drawing.
      a. .Material and thickness to match fascia.
   6. Finish: 70 percent polyvinylidene fluoride (PVDF).
   7. Color: As selected by Architect from manufacturer's standard range.
   8. Products:
      a. Johns Manville: Presto-Tite Fascia System www.jm.com/#sle.
      b. Equivalent: Approved Equal

B. Copings: Factory fabricated to sizes required; corners mitered and welded; concealed fasteners.
   1. Configuration: Concealed continuous hold down cleat at both legs; internal splice piece at joints of same material, thickness, and finish as cap; concealed stainless steel fasteners.
   2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test method RE-3 to positive and negative design wind pressure as defined by New York State Building Code.
   3. Wall Width: As indicated on drawings.
   4. Outside Face Height: As indicated on drawings.
   5. Inside Face Height: As indicated on drawings.
   6. Material: Extruded aluminum sheet, 0.040 inch thick, minimum.
   7. Finish: 70 percent polyvinylidene fluoride.
   8. Color: As selected by Architect from manufacturer's standard range.
   9. Products:
      a. Johns Manville: Presto Lock Coping System: www.jm.com/#sle.
      b. Equivalent: Approved Equal

C. Control and Expansion Joint Covers: Composite construction of flexible EPDM flashing of black color with closed cell urethane foam backing, each edge seamed to aluminum sheet metal flanges, designed for nominal joint width of 1 inch. Include special formed corners, tees, intersections, and wall flashings, each sealed watertight.
   1. Products:
      a. Hickman Edge Systems; PermaSpan Expansion Joint: www.hickmanedgesystems.com/#sle.
      b. Metal-Era; Perma-Tite Expansion Joint: www.metalera.com/#sle.

c. Johns Manville: Basis of Design www.jm.com/#sle.
d. Equivalent: Approved Equal

D. Pipe and Penetration Flashing: Base of rounded aluminum, compatible with EPDM roof systems, and capable of accomodating pipes sized between 3/8 inch and 12 inch.
1. Caps: EPDM.
2. Color: Manufacturer's Standard.
3. Products:
a. Menzies Metal Products; Plumbing Stack Spun Aluminum: www.menzies-metal.com/#sle.
b. Johns Manville: Basis of Design www.jm.com/#sle.
c. Equivalent: Approved Equal

E. Counterflashing:
1. Counterflashings: Factory fabricated and finished sheet metal that overlaps top edges of base flashing by at least 4 inches, and designed to snap into reglets with lapped joints.
a. Material: Formed aluminum sheet, 0.032 inch thick, minimum.
b. Finish: Fluoropolymer coating (High Performance).
c. Color: To be selected by Architect from manufacturer's standard range.

2.03 FINISHES

A. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system; color as selected from manufacturer's standard colors.

2.04 ACCESSORIES

A. Sealant for Joints in Linear Components: As recommended by component manufacturer.

B. Adhesive for Anchoring to Roof Membrane: Compatible with roof membrane and approved by roof membrane manufacturer.

C. Asphalt Roof Cement: ASTM D4586/D4586M, Type I, asbestos-free.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that deck, curbs, roof membrane, base flashing, and other items affecting work of this Section are in place and positioned correctly.
1. See Section 077200 for information on roofing related accessories.

3.02 INSTALLATION

A. Install components in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.

B. Seal joints within components when required by component manufacturer.

C. Anchor components securely.

D. Coordinate installation of components of this section with installation of roofing membrane and base flashings.

E. Coordinate installation of sealants and roofing cement with work of this section to ensure water tightness.

F. Coordinate installation of flashing flanges into reglets.

END OF SECTION 077100

This page intentionally left blank

SECTION 077200
ROOF ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Equipment rails.

B. Roof Hatches with guardrails.

C. Non-penetrating pedestals.

1.02 RELATED REQUIREMENTS

A. Section 077100 - Roof Specialties: Other manufactured roof specialty items.

1.03 REFERENCE STANDARDS

A. ANSI/SPRI ES1 - Wind Test Design Standard For Edge Systems Used With Low Slope Roofing Systems.

B. 29 CFR 1910.23 - Ladders; Current Edition.

C. 29 CFR 1910.29 - Fall Protection Systems and Falling Object Protection - Criteria and Practices; Current Edition.

D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.

E. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.

F. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

G. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

1.04 SUBMITTALS

A. See Section 013300 Submittal Procedures.

B. Product Data: Manufacturer's data sheets on each product to be used.
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Maintenance requirements.

C. Shop Drawings: Submit detailed layout developed for this project and provide dimensioned location and number for each type of roof accessory.
   1. Non-penetrating Rooftop Supports: Submit design calculations for loadings and spacings, sealed and signed by a Professional Engineer experienced in design of this type and licensed in the state of New York.
   2. Submit shop drawings sealed and signed by a Professional Engineer experienced in design of this type of work and licensed in the State of New York.

D. Warranty Documentation:
   1. Submit manufacturer warranty.
   2. Ensure that forms have been completed in Owner's name and registered with manufacturer.
   3. Submit documentation that roof accessories are acceptable to roofing manufacturer, and do not limit the roofing warranty.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store products under cover and elevated above grade.

1.06 WARRANTY

A. See Section 017700 - Closeout Procedures.

B. Correct defective Work within a One year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 EQUIPMENT RAILS

A. Equipment Rail Curbs: Straight curbs on each side of equipment, with top of curbs horizontal and level with each other for equipment mounting.
   1. Provide preservative treated wood nailers along top of rails.
   2. Height Above Finished Roof Surface: 8 inches, minimum.
   3. Products:
      a. MKT Metal Manufacturing; Equipment Rails: www.mktduct.com/#sle.
      b. Equivalent: Approved equal..

B. Pipe, Duct, or Conduit Mounting Curbs: Vertical posts, minimum 8 inches square unless otherwise indicated.
   1. Provide pipe roller with strap welded along top edge with adjustable height steel bracket, fabricated to fit item supported.
   2. Height Above Finished Roof Surface: 8 inches, minimum.

2.02 ROOF HATCHES AND VENTS

A. Roof Hatch Manufacturers:
   1. Acudor Products Inc; Galvanized Steel Roof Hatch: www.acudor.com/#sle.
   2. Babcock-Davis; ThermalMAX: www.babcockdavis.com/#sle.
   3. Bilco Company; Type TB (various types and special size): www.bilco.com/#sle.
   4. Substitutions: See Section 016000 - Product Requirements.

B. Frames and Curbs: One-piece curb and frame with integral cap flashing to receive roof flashings; extended bottom flange to suit mounting.
   1. Material: Mill finished aluminum, 11 gauge, 0.0907 inch thick.
   2. Insulation: Manufacturer's standard; 2 inches rigid glass fiber, located on outside face of curb.
   3. Curb Height: As indicated on drawings.

C. Safety Railing System: Roof hatch safety rail system mounted directly to curb without penetration of roofing system.
   1. Railing Size: As indicated on drawings.
   2. Railing: Comply with 29 CFR 1910.23 for ladder safety, with a safety factor of two.
   3. Self-Closing Gate: Comply with 29 CFR 1910.29 for safe egress and fall protection through hatch opening.
   4. Posts and Rails: Aluminum tubing.
   5. Gate: Same material as railing; automatic closing with latch.
   6. Finish:
   7. Gate Hinges and Post Guides: ASTM B221 (ASTM B221M), 6063 alloy, T5 temper aluminum.
   8. Products:
      a. BILCO Company; Bil-Guard 2.0: www.bilco.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.

D. Hardware: Steel, zinc coated and chromate sealed, unless otherwise indicated or required by manufacturer.
   1. Lifting Mechanisms: Compression or torsion spring operator with shock absorbers that automatically opens upon release of latch; capable of lifting covers despite 10 psf load.

2. Hinges: Heavy duty pintle type.
3. Hold open arm with vinyl-coated handle for manual release.
4. Latch: Upon closing, engage latch automatically and reset manual release.
5. Manual Release: Pull handle on interior.
6. Locking: Padlock hasp on interior.

2.03 NON-PENETRATING ROOFTOP SUPPORTS/ASSEMBLIES

A. Non-Penetrating Rooftop Support/Assemblies: Manufacturer-engineered and factory-fabricated, with pedestal bases that rest on top of roofing membrane, and not requiring any attachment to roof structure and not penetrating roofing assembly.
   1. Design Loadings and Configurations: As required by applicable codes.
   2. Height: Provide minimum clearance of 8 inches under supported items to top of roofing.
   3. Support Spacing and Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
   4. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.
   5. Hardware, Bolts, Nuts, and Washers: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A153/A153M.
   6. Products:
      a. Portals Plus: www.portalsplus.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.

B. Non-Penetrating Pedestals: Steel pedestals with square, round, or rectangular bases.
   1. Bases: High density polypropylene.
   2. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
   3. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.
   4. Products:
      a. Substitutions: See Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using methods recommended by manufacturer for achieving acceptable results for applicable substrate under project conditions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions, in manner that maintains roofing system weather-tight integrity.

3.04 CLEANING

A. Clean installed work to like-new condition.

3.05 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION 077200

This page intentionally left blank

SECTION 078400
FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Firestopping systems.

B. Firestopping of joints and penetrations in fire-resistance-rated and smoke-resistant assemblies, whether indicated on drawings or not, and other openings indicated.

1.02 REFERENCE STANDARDS

A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2026.

B. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2026.

C. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems; 2024.

D. ASTM E2174 - Standard Practice for On-Site Inspection of Installed Firestop Systems; 2020a.

E. ASTM E2307 - Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-Story Test Apparatus; 2025b.

F. ASTM E2393 - Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers; 2024.

G. FM (AG) - FM Approval Guide; Current Edition.

H. FM 4991 - Examination Standard for Firestop Contractors; 2026.

I. ITS (DIR) - Directory of Listed Products; Current Edition.

J. SCAQMD 1168 - Adhesive and Sealant Applications; 1989, with Amendment (2022).

K. UL (DIR) - Online Certifications Directory; Current Edition.

L. UL (FRD) - Fire Resistance Directory; Current Edition.

M. UL 1479 - Standard for Fire Tests of Penetration Firestops; Current Edition, Including All Revisions.

N. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems; Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. See Section 013323 for submittal requirements.

B. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.

C. Product Data: Provide data on product characteristics, performance ratings, and limitations.

D. Sustainable Design Submittal: Submit VOC content documentation for nonpreformed materials.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Manufacturer's qualification statement.

G. Installer's qualification statement.

1.04 QUALITY ASSURANCE

A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
   1. Listing in UL (FRD) will be considered as constituting an acceptable test report.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

C. Installer Qualifications: Company specializing in performing the work of this section and:
   1. Trained by manufacturer.
   2. Approved by Factory Mutual Research Corporation under FM 4991, or meeting any two of the following requirements:
   3. Verification of minimum three years documented experience installing work of this type.
   4. Verification of at least five satisfactorily completed projects of comparable size and type.
   5. Licensed by local authorities having jurisdiction (AHJ).

1.05 FIELD CONDITIONS

A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Firestopping Manufacturers:
   1. 3M Fire Protection Products: www.3m.com/firestop/#sle.
   2. Hilti, Inc: www.us.hilti.com/#sle.
   3. HoldRite, a Brand of Reliance Worldwide Corporation; HydroFlame: www.holdrite.com/#sle.
   4. RectorSeal, a CSW Industrials Company: www.rectorseal.com/firestop-solutions/#sle.
   5. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.

2.02 MATERIALS

A. Firestopping Materials: Any materials meeting requirements.

B. Volatile Organic Compound (VOC) Content: Provide products having VOC content lower than that required by SCAQMD 1168.

C. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.

D. Fire Ratings: Refer to drawings for required systems and ratings.

2.03 FIRESTOPPING ASSEMBLY REQUIREMENTS

A. Perimeter Fire Containment Firestopping: Use system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of floor assembly.
   1. Movement: Provide systems that have been tested to show movement capability as indicated.

B. Floor-to-Floor (FF), Floor-to-Wall (FW), Head-of-Wall (HW), and Wall-to-Wall (WW) Joints, Except Perimeter, Where Both Are Fire-Rated: Use system that has been tested according to ASTM E1966 or UL 2079 to have fire resistance F Rating equal to required fire rating of the assembly in which the joint occurs.
   1. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

C. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
   1. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

2.04 FIRESTOPPING FOR PERIMETER CONTAINMENT

2.05 FIRESTOPPING FOR FLOOR-TO-FLOOR, FLOOR-TO-WALL, HEAD-OF-WALL, AND WALL-TO-WALL JOINTS

A. Concrete and Concrete Masonry Walls and Floors:
   1. Floor-to-Floor Joints:
      a. 2 Hour Construction: UL System FF-D-0024; RectorSeal MetaCaulk 150+.
      b. 2 Hour Construction: UL System FF-D-1013; Hilti CFS-SP WB Firestop Joint Spray and CP 672.
      c. 2 Hour Construction: UL System FF-D-1085; Tremco, TREMstop Acrylic Firestop Sealant.
   2. Head-of-Wall Joints at Concrete/Concrete Masonry Wall to Concrete Floor:
      a. 2 Hour Construction: UL System HW-D-0268; Hilti CP 606 Flexible Firestop Sealant.
      b. 2 Hour Construction: UL System HW-D-0312; Specified Technologies Inc. SIL Silicone Sealant.
   3. Concrete/Concrete Masonry Wall-to-Wall Joint Systems That Have Not Been Tested For Movement Capabilities (Static-S):
      a. 2 Hour Construction: UL System WW-S-1025; RectorSeal MetaCaulk 835+.
      b. 2 Hour Construction: UL System WW-S-1038; RectorSeal MetaCaulk 835+.

B. Gypsum Board Walls:
   1. Head-of-Wall Joints at Underside of Flat Concrete:
      a. 2 Hour Construction: UL System HW-D-0798; RectorSeal Blaze Foam.
      b. 2 Hour Construction: UL System HW-D-1068; Hilti CFS-SP WB Firestop Joint Spray and CP 672.
      c. 2 Hour Construction: UL System HW-D-0757; Hilti CFS-TTS Top Track Seal.
      d. 2 Hour Construction: UL System HW-D-0016; Tremco, TREMstop Acrylic Firestop Sealant.
      e. 2 Hour Construction: UL System HW-D-0017; Tremco, TREMstop Acrylic Firestop Sealant.
      f. 2 Hour Construction: UL System HW-D-1072; Tremco, TREMstop Acrylic Firestop Sealant.
      g. 1 Hour Construction: UL System HW-D-1068; Hilti CFS-SP WB Firestop Joint Spray and CP 672.
      h. 1 Hour Construction: UL System HW-D-0757; Hilti CFS-TTS Top Track Seal.
      i. 1 Hour Construction: UL System HW-D-0016; Tremco, TREMstop Acrylic Firestop Sealant.

2.06 FIRESTOPPING PENETRATIONS THROUGH CONCRETE AND CONCRETE MASONRY CONSTRUCTION

A. Blank Openings:
   1. In Floors or Walls:
      a. 2 Hour Construction: UL System C-AJ-0090; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      b. 2 Hour Construction: UL System C-AJ-0015; Specified Technologies Inc. SSM Mortar.
      c. 2 Hour Construction: UL System C-AJ-0171; HoldRite HydroFlame 100 Intumescent Firestop Sealant.

B. Penetrations Through Floors or Walls By:
   1. Multiple Penetrations in Large Openings:
      a. 2 Hour Construction: UL System C-AJ-8143; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      b. 2 Hour Construction: UL System C-AJ-8042; RectorSeal MetaCaulk 1000.

c. 2 Hour Construction: UL System C-AJ-8129; RectorSeal MetaCaulk 1200 Spray.
d. 2 Hour Construction: UL System C-AJ-8149; RectorSeal MetaCaulk 1000.
e. 2 Hour Construction: UL System C-AJ-8171; RectorSeal MetaCaulk Wrap Strip.

2. Uninsulated Metallic Pipe, Conduit, and Tubing:
   a. 2 Hour Construction: UL System C-AJ-1036; RectorSeal MetaCaulk 950.
   b. 2 Hour Construction: UL System C-AJ-1090; Specified Technologies Inc. SSP Firestop Putty.
   c. 2 Hour Construction: UL System C-AJ-1186; RectorSeal MetaCaulk 950.
   d. 2 Hour Construction: UL System C-AJ-1226; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   e. 2 Hour Construction: UL System C-AJ-1425; Hilti CFS-S SIL GG Firestop Silicone Sealant Gun-Grade.
   f. 1 Hour Construction: UL System C-AJ-1039; RectorSeal MetaCaulk 950.
3. Uninsulated Non-Metallic Pipe, Conduit, and Tubing:
   a. 2 Hour Construction: UL System C-AJ-2047; RectorSeal MetaCaulk 1000.
   b. 2 Hour Construction: UL System C-AJ-2167; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   c. 2 Hour Construction: UL System C-AJ-2109; Hilti CP 643N/644 Firestop Collar.
   d. 2 Hour Construction: UL System C-AJ-2348; RectorSeal MetaCaulk 150+.
   e. 2 Hour Construction: UL System C-AJ-2707; RectorSeal MetaCaulk 1000.
   f. 2 Hour Construction: UL System C-BJ-2021; Hilti CP 643N Firestop Collar.
4. Electrical Cables Not In Conduit:
   a. 2 Hour Construction: UL System C-AJ-3216; Hilti CFS-PL Firestop Plug.
   b. 2 Hour Construction: UL System C-AJ-3283; Hilti CP653 Speed Sleeve.
   c. 2 Hour Construction: UL System C-AJ-3283; Hilti CFS-SL SK Firestop Sleeve Kit.
   d. 2 Hour Construction: UL System C-AJ-3283; Hilti CFS-SL SK Firestop Sleeve Kit with Hilti CFS-SL GP Gangplate.
   e. 2 Hour Construction: UL System W-J-3198; Hilti CFS-SL RK Retrofit Sleeve Kit for Existing Cables.
   f. 2 Hour Construction: UL System W-J-3199; Hilti CFS-SL SK Firestop Sleeve Kit.
5. Cable Trays with Electrical Cables:
   a. 2 Hour Construction: UL System C-AJ-4094; Hilti CFS-BL Firestop Block.
6. Insulated Pipes:
   a. 2 Hour Construction: UL System C-AJ-5091; Hilti FS-ONE IMAX Intumescent Firestop Sealant.
   b. 2 Hour Construction: UL System C-AJ-5138; Specified Technologies Inc. LCI Intumescent Firestop Sealant.
7. HVAC Ducts, Uninsulated:
   a. 2 Hour Construction: UL System C-AJ-7111; Hilti FS-ONE MAX Intumescent Firestop Sealant.

C. Penetrations Through Floors By:
1. Multiple Penetrations in Large Openings:
   a. 2 Hour Construction: UL System F-A-0021; RectorSeal Cast-in-Place Firestop Device.
   b. 2 Hour Construction: UL System F-A-8012; Hilti CFS-S SIL GG Firestop Silicone Sealant Gun-Grade or CFS-S SIL SL Firestop Silicone Sealant Self-Leveling.
2. Uninsulated Metallic Pipe, Conduit, and Tubing:
   a. 2 and 3 Hour Construction: UL System F-A-1222; Hilti CFS-CID U Firestop Cast-In Device.
   b. 2 Hour Construction: UL System F-A-1110; Specified Technologies Inc. CID Cast-In Device.

c. 2 Hour Construction: UL System F-A-1129; Specified Technologies Inc. Closet Flange Firestop Gasket.

3. Uninsulated Non-Metallic Pipe, Conduit, and Tubing:
   a. 2 and 3 Hour Construction: UL System F-A-2411; Hilti CFS-CID U Firestop Cast-In Device.
   b. 2 and 3 Hour Construction: UL System F-A-2412; Hilti CFS-CID U Firestop Cast-In Device.
   c. 2 Hour Construction: UL System F-A-2213; Hilti CFS-DID Drop-In Device.
   d. 2 Hour Construction: UL System F-A-2216; Specified Technologies Inc. Closet Flange Firestop Gasket.
   e. 2 Hour Construction: UL System F-A-2246; Specified Technologies Inc. CID Cast-In Device.
4. Electrical Cables Not In Conduit:
   a. 2 and 3 Hour Construction: UL System F-A-3091; Hilti CFS-CID U Firestop Cast-In Device.
   b. 2 Hour Construction: UL System F-A-3032; Specified Technologies Inc. Ready Split Sleeve.
   c. 2 Hour Construction: UL System F-A-3058; Specified Technologies Inc. EZ-Path Series 44 Fire-Rated Pathway.
5. Insulated Pipes:
   a. 2 and 3 Hour Construction: UL System F-A-5083; Hilti CFS-CID U Firestop Cast-In Device.
   b. 2 and 3 Hour Construction: UL System F-A-5084; Hilti CFS-CID U Firestop Cast-In Device.
   c. 2 and 3 Hour Construction: UL System F-A-5043; HoldRite HydroFlame HFP-Px, or HFP-PxB Cast-In Device.
   d. 2 Hour Construction: UL System F-A-5041; Specified Technologies Inc. CID Cast-In Device.

D. Penetrations Through Walls By:
1. Uninsulated Metallic Pipe, Conduit, and Tubing:
   a. 2 Hour Construction: UL System W-J-1067; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   b. 1 Hour Construction: UL System W-J-1067; Hilti FS-ONE MAX Intumescent Firestop Sealant.
2. Electrical Cables Not In Conduit:
   a. 2 Hour Construction: UL System W-J-3090; Specified Technologies Inc. SSP Firestop Putty.
3. Insulated Pipes:
   a. 2 Hour Construction: UL System C-AJ-5090; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   b. 2 Hour Construction: UL System C-AJ-5091; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   c. 1 Hour Construction: UL System C-AJ-5090; Hilti FS-ONE MAX Intumescent Firestop Sealant.
4. HVAC Ducts, Uninsulated:
   a. 2 Hour Construction: UL System W-J-7109; Hilti FS-ONE MAX Intumescent Firestop Sealant, or CP 606 Flexible Firestop Sealant.
5. HVAC Ducts, Insulated:
   a. 2 Hour Construction: UL System W-J-7112; Hilti FS-ONE MAX Intumescent Firestop Sealant.

2.07 FIRESTOPPING PENETRATIONS THROUGH GYPSUM BOARD WALLS

A. Blank Openings:
   1. 1 Hour Construction: UL System W-L-0032; Specified Technologies Inc. FP Intumescent Firestop Plug.
   2. 1 Hour Construction: UL System W-L-3334; Hilti CP 653 Speed Sleeve.

B. Penetrations By:
   1. Multiple Penetrations in Large Openings:
      a. 2 Hour Construction: UL System W-L-1408; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      b. 2 Hour Construction: UL System W-L-8013; Hilti CFS-BL Firestop Block.
      c. 2 Hour Construction: UL System W-L-8071; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      d. 2 Hour Construction: UL System W-L-8079; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      e. 1 Hour Construction: UL System W-L-1408; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      f. 1 Hour Construction: UL System W-L-8013; Hilti CFS-BL Firestop Block.
      g. 1 Hour Construction: UL System W-L-8071; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      h. 1 Hour Construction: UL System W-L-8073; Specified Technologies Inc. Composite Sheet.
      i. 1 Hour Construction: UL System W-L-8079; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   2. Uninsulated Metallic Pipe, Conduit, and Tubing:
      a. 2 Hour Construction: UL System W-L-1054; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      b. 2 Hour Construction: UL System W-L-1164; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      c. 2 Hour Construction: UL System W-L-1506; Hilti CFS-D Firestop Cable Disc.
      d. 1 and 2 Hour Construction: UL System W-L-1558; HoldRite HydroFlame 100 Intumescent Firestop Sealant.
      e. 1 Hour Construction: UL System W-L-1049; Specified Technologies Inc. SSS Intumescent Firestop Sealant.
      f. 1 Hour Construction: UL System W-L-1054; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      g. 1 Hour Construction: UL System W-L-1164; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      h. 1 Hour Construction: UL System W-L-1506; Hilti CFS-D Firestop Cable Disc.
   3. Uninsulated Non-Metallic Pipe, Conduit, and Tubing:
      a. 2 Hour Construction: UL System W-L-2078; Hilti CP 643N/644 Firestop Collar.
      b. 2 Hour Construction: UL System W-L-2128; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      c. 1 and 2 Hour Construction: UL System W-L-2710; HoldRite HydroFlame 200 Intumescent Firestop Sealant.
      d. 1 Hour Construction: UL System W-L-2048; Specified Technologies Inc. SSW Wrap Strips.
      e. 1 Hour Construction: UL System W-L-2078; Hilti CP 643N/644 Firestop Collar.
      f. 1 Hour Construction: UL System W-L-2128; Hilti FS-ONE MAX Intumescent Firestop Sealant.
      g. 1 Hour Construction: UL System W-L-2237; Specified Technologies Inc. LCC Intumescent Firestop Collars.

4. Electrical Cables Not In Conduit:
   a. 2 Hour Construction: UL System W-L-3024; Specified Technologies Inc. SSP Firestop Putty.
   b. 2 Hour Construction: UL System W-L-3065; Hilti FS-ONE MAX Intumescent Firestop Sealant, CP 606 Flexible Firestop Sealant, CD 601S Elastomeric Firestop Sealant, or CP 618 Firestop Putty Stick.
   c. 2 Hour Construction: UL System W-L-3334; Hilti CP 653 Speed Sleeve.
   d. 2 Hour Construction: UL System W-L-3393; Hilti CFS-SL RK Retrofit Sleeve Kit for Existing Cables.
   e. 2 Hour Construction: UL System W-L-3395; Hilti CP653 Speed Sleeve.
   f. 2 Hour Construction: UL System W-L-3395; Hilti CFS-SL SK Firestop Sleeve Kit.
   g. 2 Hour Construction: UL System W-L-3395; Hilti CFS-SL SK Firestop Sleeve Kit with Hilti CFS-SL GP Gangplate.
   h. 2 Hour Construction: UL System W-L-3414; Hilti CFS-D Firestop Cable Disc.
   i. 1 and 2 Hour Construction: UL System W-L-3453; HoldRite HydroFlame 200 Intumescent Firestop Sealant.
   j. 1 Hour Construction: UL System W-L-3024; Specified Technologies Inc. SSP Firestop Putty.
   k. 1 Hour Construction: UL System W-L-3065; Hilti FS-ONE MAX Intumescent Firestop Sealant, CP 606 Flexible Firestop Sealant, CD 601S Elastomeric Firestop Sealant, or CP 618 Firestop Putty Stick.
   l. 1 Hour Construction: UL System W-L-3334; Hilti CP 653 Speed Sleeve.
   m. 1 Hour Construction: UL System W-L-3393; Hilti CFS-SL RK Retrofit Sleeve Kit for Existing Cables.
   n. 1 Hour Construction: UL System W-L-3414; Hilti CFS-D Firestop Cable Disc.
5. Insulated Pipes:
   a. 2 Hour Construction: UL System W-L-5028; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   b. 2 Hour Construction: UL System W-L-5029; Hilti FS-ONE Intumescent Firestop Sealant.
   c. 1 Hour Construction: UL System W-L-5028; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   d. 1 Hour Construction: UL System W-L-5029; Hilti FS-ONE Intumescent Firestop Sealant.
   e. 1 Hour Construction: UL System W-L-5121; Specified Technologies Inc. LCI Intumescent Firestop Sealant.
   f. 1 and 2 Hour Construction: UL System W-L-5357; HoldRite HydroFlame 200 Intumescent Firestop Sealant.
6. HVAC Ducts, Insulated:
   a. 2 Hour Construction: UL System W-L-7156; Hilti FS-ONE MAX Intumescent Firestop Sealant.
   b. 1 Hour Construction: UL System W-L-7164; Specified Technologies Inc. FyreFlange HVAC Firestop Angle.
   c. 1 Hour Construction: UL System W-L-7156; Hilti FS-ONE MAX Intumescent Firestop Sealant.

2.08 FIRESTOPPING SYSTEMS

A. Firestopping: Any material meeting requirements.
   1. Fire Ratings: Use system that is listed by UL (FRD) and tested in accordance with ASTM E814, ASTM E119, or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other specified requirements.

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.

B. Remove incompatible materials that could adversely affect bond.

C. Install backing materials to prevent liquid material from leakage.

3.03 INSTALLATION

A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

B. Do not cover installed firestopping until inspected by authorities having jurisdiction.

C. Install labeling required by code.

3.04 FIELD QUALITY CONTROL

A. Independent Testing Agency: Inspection agency employed and paid by Owner, will examine penetration firestopping in accordance with ASTM E2174 and ASTM E2393.

B. Repair or replace penetration firestopping and joints at locations where inspection results indicate firestopping or joints do not meet specified requirements.

3.05 CLEANING

A. Clean adjacent surfaces of firestopping materials.

3.06 PROTECTION

A. Protect adjacent surfaces from damage by material installation.

END OF SECTION 078400

SECTION 079200
JOINT SEALANTS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Silicone joint sealants.
   2. Non-staining silicone joint sealants.
   3. Mildew-resistant joint sealants.
   4. Latex joint sealants.

1.02 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

D. Joint-Sealant Schedule: Include the following information:
   1. Joint-sealant application, joint location, and designation.
   2. Joint-sealant manufacturer and product name.
   3. Joint-sealant formulation.
   4. Joint-sealant color.

1.03 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Product Test Reports: For each kind of joint sealant, for tests performed by a qualified testing agency.

C. Sealant, Waterproofing, and Restoration Institute (SWRI) Validation Certificate: For each sealant specified to be validated by SWRI's Sealant Validation Program.

D. Sample Warranties: For special warranties.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.
   1. Sealant and Waterproofing Specialist: Engage an experienced sealant and waterproofing firm to perform work of this Section. Firm shall have completed work similar to extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing sealants is insufficient experience for this work.
      a. Field Supervision: Sealant and waterproofing specialist firms shall maintain experienced full-time supervisors on Project site during times that sealant and waterproofing work is in progress.
   2. Provide a list of a minimum of 5 projects where sealant and waterproofing work was successfully installed

B. Product Testing: Test joint sealants using a qualified testing agency.
   1. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

2. Test according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.

C. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.05 FIELD CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.06 WARRANTY

A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
1. Warranty Period: 20 years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 JOINT SEALANTS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. VOC Content: Sealants and sealant primers shall comply with the following:
1. Architectural sealants shall have a VOC content of 250 g/L or less.
2. Sealants and sealant primers for nonporous substrates shall have a VOC content of 250 g/L or less.
3. Sealants and sealant primers for porous substrates shall have a VOC content of 775 g/L or less.

C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.02 SILICONE JOINT SEALANTS

A. Silicone, S, NS, 50, NT: Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Dow Corning Corporation.

1) Product :791
b. GE Construction Sealants; Momentive Performance Materials Inc.
1) Product: SCS2000 SillPruf
c. Sika Corporation; Joint Sealants.
1) Product: Sikasill WS-295

2.03 NONSTAINING SILICONE JOINT SEALANTS

A. Nonstaining Joint Sealants: No staining of substrates when tested according to ASTM C 1248.

B. Silicone, Nonstaining, S, NS, 50, NT: Nonstaining, single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Dow Corning Corporation.
1) Product : Dowsil 795
b. GE Construction Sealants; Momentive Performance Materials Inc.
1) Product : Sillpruf NB
c. Tremco Incorporated.
1) Product : Spectrem 3

C. Silicone, Nonstaining, M, NS, 50, T, NT: Nonstaining, multicomponent, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type M, Grade NS, Class 50, Use NT.
1. Manufacturers: Subject to compliance with requirements, provide products by the following:
a. Tremco Incorporated.
1) Product : Tremco Spectrum 4-TS

2.04 MILDEW-RESISTANT JOINT SEALANTS

A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.

B. Silicone, Mildew Resistant, Acid Curing, S, NS, 25, NT: Mildew-resistant, single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, acid-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Dow Corning Corporation.
1) Product :786-M
b. GE Construction Sealants; Momentive Performance Materials Inc.
1) Product :Sanitary SCS1700
c. Tremco Incorporated.
1) Product :Tremsil 200

2.05 LATEX JOINT SEALANTS

A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Pecora Corporation.
1) Product: AC-20s
b. Sherwin-Williams Company (The).
1) Product: Bolt Quick Dry.
c. Tremco Incorporated.

1) Product: Tremflex 834

2.06 JOINT-SEALANT BACKING

A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. BASF Corporation; Construction Systems.
   2. Construction Foam Products; a division of Nomaco, Inc.

C. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.07 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
   1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
    a. Concrete.
    b. Masonry.
    c. Unglazed surfaces of ceramic tile.
    d. Exterior insulation and finish systems.
3. Remove laitance and form-release agents from concrete.
4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
    a. Metal.
    b. Glass.
    c. Porcelain enamel.
    d. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.03 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
   1. Remove excess sealant from surfaces adjacent to joints.
   2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
   3. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

3.04 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.05 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.06 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
   1. Joint Locations:
      a. Construction joints in cast-in-place concrete.
      b. Joints between plant-precast architectural concrete units.
      c. Control and expansion joints in unit masonry.
      d. Joints in dimension stone cladding.
      e. Joints in glass unit masonry assemblies.
      f. Joints in exterior insulation and finish systems.
      g. Joints between metal panels.
      h. Joints between different materials listed above.
      i. Perimeter joints between materials listed above and frames of doors, windows and louvers.
      j. Control and expansion joints in ceilings, and other overhead surfaces.
      k. Other joints as indicated on Drawings.
   2. Joint Sealant: Silicone, S, NS, 50, NT.
   3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

B. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
   1. Joint Locations:
      a. Construction joints in cast-in-place concrete.
      b. Joints between plant-precast architectural concrete units.
      c. Control and expansion joints in unit masonry.
      d. Joints in dimension stone cladding.
      e. Joints in glass unit masonry assemblies.
      f. Joints in exterior insulation and finish systems.
      g. Joints between metal panels.
      h. Joints between different materials listed above.

i. Perimeter joints between materials listed above and frames of doors, windows and louvers.
j. Control and expansion joints in ceilings and other overhead surfaces.
k. Other joints as indicated on Drawings.

2. Joint Sealant: Silicone, Non-staining, S, NS, 50, NT.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

C. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal traffic and nontraffic surfaces.
1. Joint Locations:
a. Exterior and interior joints in Concrete Slabs and Sidewalk
b. Other joints as indicated on Drawings.
2. Joint Sealant: Silicone, non-staining, S, NS, 50, T, NT.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

D. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement.
1. Joint Locations:
a. Control joints on exposed interior surfaces of exterior walls.
b. Perimeter joints between interior wall surfaces and frames of interior doors, windows and elevator entrances.
c. Other joints as indicated on Drawings.
2. Joint Sealant: Acrylic latex.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

E. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
b. Tile control and expansion joints where indicated.
c. Other joints as indicated on Drawings.
2. Joint Sealant: Silicone, mildew resistant, acid curing, S, NS, 25, NT.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION 079200

This page intentionally left blank

SECTION 081213
HOLLOW METAL FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated hollow metal frames for non-hollow metal doors.

B. Fire-rated hollow metal frames for non-hollow metal doors.

C. Interior glazed borrowed lite frames.

1.02 RELATED REQUIREMENTS

A. Section 081416 - Flush Wood Doors : Non-hollow metal door for hollow metal frames.

B. Section 087100 - Door Hardware: Hardware, silencers, and weatherstripping.

C. Section 088000 - Glazing: Glazed borrowed lites.

D. Section 099123 - Interior Painting: Field painting.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2026.

C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2023.

D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2025.

E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.

F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2026.

G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2025.

H. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames; 2016.

I. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

J. ITS (DIR) - Directory of Listed Products; Current Edition.

K. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.

L. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2024.

M. NAAMM HMMA 840 - Guide Specifications for Receipt, Storage and Installation of Hollow Metal Doors and Frames; 2024.

N. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2014.

O. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025, with Amendment (2024).

P. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2026.

Q. UL (DIR) - Online Certifications Directory; Current Edition.

R. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 013300 - Sumittal Procedures.

B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.

C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.

D. Manufacturer's qualification statement.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Provide hollow metal frames from SDI Certified manufacturer: https://steeldoor.org/sdi-certified/#sle.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store in accordance with applicable requirements and in compliance with standards and/or custom guidelines as indicated.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Hollow Metal Frames:
1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com/#sle.
2. Curries, an Assa Abloy Group company: www.assaabloydss.com/#sle.
3. Republic Doors, an Allegion brand: www.republicdoor.com/#sle.
4. Steelcraft, an Allegion brand: www.allegion.com/#sle.
5. Substitutions: See Section 016000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

A. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.

B. Accessibility: Comply with ICC A117.1 and ADA Standards.

C. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior frame that is also indicated as being sound-rated must comply with the requirements specified for exterior frames and for sound-rated frames; where two requirements conflict, comply with the most stringent.

D. Hardware Preparations, Selections and Locations: Comply with BHMA A156.115, NAAMM HMMA 830, NAAMM HMMA 831 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

E. Frames for Interior Glazing or Borrowed Lites: Construction and face dimensions to match door frames, and as indicated on drawings.

F. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches high to fill opening without cutting masonry units.

G. Frames Wider than 48 Inches: Reinforce with steel channel fitted tightly into head of frame, and flush with top.

2.03 HOLLOW METAL DOOR FRAMES WITH INTEGRAL CASINGS

A. Frame Finish: Factory primed and field finished.

B. Interior Door Frames, Non-Fire Rated: Knock-down type.

1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
   a. Level 2 - Heavy-duty.
   b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
   c. Frame Metal Thickness: , minimum.

C. Fire-Rated Door Frames: Full profile/continuously welded type.
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
   a. Level 2 - Heavy-duty.
   b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
   c. Frame Metal Thickness: 16 gauge, 0.053 inch, minimum.
2. Fire Rating: As indicated on Door and Frame Schedule, tested in accordance with UL 10C or NFPA 252 ("positive pressure fire tests").
3. Provide units listed and labeled by ITS (DIR) or UL (DIR).
   a. Attach fire rating label to each fire rated unit.

2.04 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

2.05 ACCESSORIES

A. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 INSTALLATION

A. Install frames in accordance with manufacturer's instructions and related requirements of specified frame standards or custom guidelines indicated.

B. Install fire rated units in accordance with NFPA 80.

C. Coordinate frame anchor placement with wall construction.

D. Comply with glazing installation requirements of Section 088000.

E. Install door hardware as specified in Section 087100.

F. Coordinate installation of electrical connections to electrical hardware items.

G. Touch up damaged factory finishes.

3.03 TOLERANCES

A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.

B. Maximum Diagonal Distortion: 1/16 inch measured with straight edges, crossed corner to corner.

END OF SECTION 081213

This page intentionally left blank

SECTION 081416
FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; flush configuration; fire-rated and non-rated.

1.02 RELATED REQUIREMENTS

A. Section 081213 - Hollow Metal Frames.

B. Section 088000 - Glazing.

1.03 REFERENCE STANDARDS

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).

B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2026.

C. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2022.

D. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives; 2025.

E. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

F. WDMA I.S. 1A - Interior Architectural Wood Flush Doors; 2021, with Errata (2022).

1.04 SUBMITTALS

A. See Section 013300 - Submittal Procedures.

B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.

C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
   1. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).

D. Samples: Submit two samples of door veneer, 4" x 4" in size illustrating wood grain, stain color, and sheen match to existing adjacent doors.

E. Specimen warranty.

F. Warranty, executed in Owner's name.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than three years of documented experience.
   1. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.

B. Woodwork Quality Assurance Program:
   1. Provide labels indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Package, deliver and store doors in accordance with specified quality standard.

B. Accept doors on site in manufacturer's packaging, and inspect for damage.

C. Protect doors with resilient packaging sealed with heat shrunk plastic; do not store in damp or wet areas or areas where sunlight might bleach veneer; seal top and bottom edges with tinted sealer if stored more than one week, and break seal on site to permit ventilation.

1.07 WARRANTY

A. See Section 017700 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide manufacturer's warranty on interior doors for the life of the installation. Complete forms in Owner's name and register with manufacturer.
   1. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Wood Veneer Faced Doors:
   1. Masonite Architectural; Aspiro Select Wood Veneer Doors: Basis of Design: www.architectural.masonite.com/#sle.
   2. VT Industries, Inc: www.vtindustries.com/#sle.
   3. Substitutions: See Section 016000 - Product Requirements.

2.02 DOORS

A. Doors: See drawings for locations and additional requirements.
   1. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with WDMA I.S. 1A.
   2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.

B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
   1. Provide solid core doors at each location.
   2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with UL 10C - Positive Pressure; Underwriters Laboratories Inc (UL) labeled without any visible seals when door is open.
   3. Wood veneer facing with factory transparent finish.

2.03 DOOR AND PANEL CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type structural composite lumber core (SCLC), plies and faces as indicated.

B. Fire-Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.

2.04 DOOR FACINGS

A. Veneer Facing for Transparent Finish: Match existing door species, , cut, with matching between leaves to match existing doors.
   1. Vertical Edges: Any option allowed by quality standard for grade.
   2. "Running Match" each pair of doors and doors in close proximity to each other.
   3. Door stain and cut: Match existing adjacent doors.

B. Facing Adhesive: Type I - waterproof.

2.05 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with stiles and rails:
   1. Provide solid blocks at lock edge for hardware reinforcement.
   2. Provide solid blocking for other throughbolted hardware.

C. Where supplementary protective edge trim is required, install trim after veneer facing has been applied full-width.

D. Glazed Openings: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.

E. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

F. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.

G. Provide edge clearances in accordance with the quality standard specified.

2.06 FINISHES - WOOD VENEER DOORS

A. Finish work in accordance with WDMA I.S. 1A for grade specified and as follows:
   1. Transparent:
      a. System - TR-4, Conversion Varnish.
      b. Stain: Match existing doors.
      c. Sheen: Satin.

B. Factory finish doors in accordance with approved sample.

C. Seal door top edge with color sealer to match door facing.

2.07 ACCESSORIES

A. Hollow Metal Door Frames: See Section 081113.

B. Door Window Frames: Door window frames with glazing securely fastened within door opening.
   1. Frame Material: 18 gauge, 0.0478 inch, galvanized steel.
   2. Metal Finish: Dark Bronze polyester powder coating.
   3. Glazing thickness varies: Coordinate Window Frames with Glazier and Section 088000.
   4. Manufacturers:
      a. All Metal Stamping: www.allmetalstamping.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.

C. Glazing: See Section 088000.

D. Glazing Stops: Rolled steel channel shape, butted corners; prepared for countersink style tamper proof screws. Paint to match door finish color.

E. Astragals and Edges for Double Doors: Pairs of doors astragals, and door edge sealing and protection devices.
   1. UL listed products in compliance with requirements of authorities having jurisdiction.
   2. Provide surface mounted astragal to cover or fill space for full door height between pair of doors or door and adjacent jamb.
   3. Astragal Type: Split, two parts, and with automatic locking, cutouts for other door hardware, and sealing gasket.
   4. Edge Type: Beveled edge
   5. Material: Manufacturers standard.
   6. Metal Finish: Dark Bronze powder coating.
   7. Manufacturers:
      a. All Metal Stamping: www.allmetalstamping.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.

F. Door Hardware: See Section 087100.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.
   1. Install fire-rated doors in accordance with NFPA 80 requirements.
   2. Install smoke and draft control doors in accordance with NFPA 105 requirements.

B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

C. Use machine tools to cut or drill for hardware.

D. Coordinate installation of doors with installation of frames and hardware.

E. Coordinate installation of glazing.

3.03 TOLERANCES

A. Comply with specified quality standard for fit and clearance tolerances.

B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

END OF SECTION 081416

SECTION 081613
FIBERGLASS DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fiberglass/Aluminum Hybrid doors with aluminum frames.

1.02 RELATED REQUIREMENTS

A. Section 087100 - Door Hardware.

1.03 REFERENCE STANDARDS

A. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections; 2009.

B. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights; 2022, with Errata (2023).

C. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics; 2024.

D. ASTM D570 - Standard Test Method for Water Absorption of Plastics; 2022.

E. ASTM D635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position; 2022.

F. ASTM D638 - Standard Test Method for Tensile Properties of Plastics; 2022.

G. ASTM D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials; 2025.

H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2026a.

I. ASTM E2112 - Standard Practice for Installation of Exterior Windows, Doors and Skylights; 2023.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Obtain hardware templates from hardware manufacturer prior to starting fabrication.

1.05 SUBMITTALS

A. See Section 013300 - Submittal Procedures.

B. Product Data: Provide manufacturer's standard details, installation instructions, hardware and anchor recommendations.

C. Shop Drawings: Indicate layout and profiles; include assembly methods.
   1. Indicate product components, including hardware reinforcement locations and preparations, accessories, finish colors, patterns, and textures.
   2. Indicate wall conditions, door and frame elevations, sections, materials, gauges, finishes, location of door hardware by dimension, and details of openings; use same reference numbers indicated on drawings to identify details and openings.

D. Selection Samples: Submit two complete sets of color chips, illustrating manufacturer's available finishes, colors, and textures for both fiberglass and aluminum finishes.

E. Test Reports: Submit certified test reports from qualified independent testing agency indicating doors comply with specified performance requirements.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Mark doors with location of installation, door type, color, and weight.

B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Deliver pre-assembled doors and frames with braces, spreaders, and packaging as required to prevent damage.

D. Store materials in original packaging, under cover, protected from exposure to harmful weather conditions and from direct contact with water.
   1. Store at temperature and humidity conditions recommended by manufacturer.
   2. Do not use non-vented plastic or canvas shelters.
   3. Immediately remove wet wrappers.

E. Store in position recommended by manufacturer, elevated minimum 4 inches above grade, with minimum 1/4 inch space between doors.

1.08 WARRANTY

A. See Section 017700 - Closeout Procedures for additional warranty requirements.

B. Provide limited lifetime manufacturer warranty covering materials and workmanship including corner joinery, core deterioration, and delamination or bubbling of door skin and corrosion of all-fiberglass products for original installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Pultruded Fiberglass Reinforced Plastic (FRP) Doors with aluminum stiles and rails:
   1. Special-Lite, Inc: SL-20: Basis of Design: www.special-lite.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

2.02 DOOR AND FRAME ASSEMBLIES

A. Door and Frame Assemblies: Factory-fabricated, prepared and machined for hardware.
   1. Screw-Holding Capacity: Tested to 890 pounds, minimum.
   2. Surface Burning Characteristics: Flame spread index (FSI) of 0 to 25, Class A, and smoke developed index (SDI) of 450 or less, when tested in accordance with ASTM E84.
   3. Flammability: Self-extinguishing when tested in accordance with ASTM D635.
   4. Per 2025 BCNYS 2603.4.1.7 for non-rated swinging doors with plastic foam cores, provide a thermal barrier of not less than 0.032" thick aluminum or steel with basic thickness of not less than 0.016" between between the foam core and FRP skin, unless the standard construction of the door assembly passes an independent test in conformance with 2025 BCNYS 2603.9.
   5. Clearance Between Door and Frame: 1/8 inch, maximum.
   6. Clearance Between Meeting Stiles of Pairs of Doors: 1/8 inch, maximum.
   7. Clearance Between Bottom of Door and Finished Floor: 3/4 inch, maximum; not less than 1/4 inch clearance to threshold.
   8. Provide frame anchors that allow for variation in rough opening size; field cutting of doors or frames to fit is not permitted.

2.03 COMPONENTS

A. Doors: Fiberglass construction with reinforced core.
   1. Type: As indicated on drawings, including swinging and sliding doors.
   2. Thickness: 1-3/4 inch, nominal.
   3. Core Material: Urethane foam.
   4. Construction:

a. Fiberglass faces 0.120 inches thick, attached to aluminun extruded stiles and rails with an applied gel coating on each side.

5. Face Sheet Texture: Sandstone.
6. Face Sheet Class:
   a. Interior: Class A
   b. Exterior: Class C
7. Door Panel: Flush door.
8. Subframe and Reinforcements: aluminum and steel.
9. Corners: Mitered and secured with 3/8" tie rods connecting splines at top and bottom.
10. Top Rail: Aluminum with interlocking continuous extruded aluminum flush cap.
11. Bottom Rail: Aluminum with interlocking manually adjustable door bottom with double nylon brush weatherstripping .
12. Meeting Stiles: Aluminum with Integral weatherstripping pocket.
13. Waterproof Integrity: Provide factory fabricated edges, cut-outs, and hardware preparations integral to fiberglass reinforced plastic (FRP) face sheets; provide cut-outs with joints sealed independently of glazing, louver inserts, or trim.
14. Hardware Preparations: Factory reinforce, machine, and prepare for door hardware including field installed items; provide extruded aluminum blocking; field cutting, drilling or tapping is not permitted; obtain manufacturer's hardware templates for preparation as necessary.

B. Door Frames: Provide type in compliance with performance requirements specified for doors.
1. Type: Knock-down type for field assembly.
2. Profiles: 2 inch face x 4-1/2 inch depth.
3. Door Stop: 5/8 inch wide, by 2-1/4 inches deep.
4. Removable stop on secure side.
5. Non-Fire-Rated:
   a. Aluminum, 1/8 inch minimum wall thickness; natural anodized finish.
6. Corner Joints: Mitered with concealed corner blocks or angles of same material as frame; fiberglass and aluminum joined with screws; steel and stainless steel spot welded; sealed watertight with silicone sealant, .
7. Hardware Cut-outs: Provide continuous backing or mortar guards of same material as frame, with watertight seal.
8. Frame Anchors: Stainless steel, Type 304; provide three anchors in each jamb for heights up to 84 inches with one additional anchor for each additional 24 inches in height.
9. Reinforcing: Provide aluminum at hinge, strike and closer and Aluminum reinforcing at all other locations.

2.04 PERFORMANCE REQUIREMENTS

A. Provide door assemblies that have been designed and fabricated in compliance with specified performance requirements.

B. Fiberglass Doors: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific door type:
1. Performance Class (PC): R.

C. Design and size components to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of side hinged doors.

D. Design Pressure (DP):
1. As indicated on Drawings.

E. Air Leakage: Maximum of 0.26 cfm per square foot at 6.29 psf differential pressure, when tested in accordance with ASTM E283.

F. Thermal Transmittance, Exterior Doors: AAMA 1503, U-value of 0.37, maximum, measured on exterior door in size required for this project.

G. Fiberglass Reinforced Plastic (FRP) Face Sheet Properties:
   1. Izod Impact Resistance: ASTM D256, 3.9 foot-pound force per inch of width, minimum, with notched izod.
   2. Tensile Strength at Break: ASTM D638, 79000 psi, minimum.
   3. Water Absorption: ASTM D570, 0.49 percent, maximum, after 24 hours at 74 degrees F.
   4. Flexural Strength: ASTM D790, 27,000 psi, minimum.
   5. Barcol Hardness: ASTM D2583, minimum of 38 units.

2.05 FINISHES

A. Gel Coating: Ultraviolet (UV) stabilized polyester finish.
   1. Thickness: Minimum 15 mils, 0.015 inch wet thickness, plus/minus 3 mils, 0.003 inch.
   2. Color: As selected by Architect from manufacturer's standard line of colors.

B. Aluminum: Aluminum extrusions made 6063 aluminum alloys
   1. Sheet and plate to conform to ASTM-B209.

2.06 HARDWARE

A. Door Hardware: See Section 087100.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify actual dimensions of openings by field measurements before door fabrication; show recorded measurements on shop drawings.

B. Do not begin installation until substrates have been properly prepared.

3.02 PREPARATION

A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

B. Clean and prepare substrate in accordance with manufacturer's directions.

C. Protect adjacent work and finish surfaces from damage during installation.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions; do not penetrate frames with anchors.

B. Install exterior doors in accordance with ASTM E2112.

C. Install door hardware as specified in Section 087100.

D. Set units plumb, level, and true-to-line, without warping or racking doors, and with specified clearances; anchor in place.

E. Set thresholds in continuous bed of sealant.

F. In masonry walls, install frames prior to laying masonry; anchor frames into masonry mortar joints; fill jambs with grout as walls are laid up.

G. In stud walls, install frames prior to building walls; anchor frames to studs using concealed anchors.

H. Separate aluminum and other metal surfaces from sources of corrosion of electrolytic action at points of contact with other materials.

I. Repair or replace damaged installed products.

3.04 ADJUSTING

A. Lubricate, test, and adjust doors to operate easily, free from warp, twist or distortion, and to fit watertight for entire perimeter.

B. Adjust hardware for smooth and quiet operation.

C. Adjust doors to fit snugly and close without sticking or binding.

3.05 CLEANING

A. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance.

3.06 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION 081613

This page intentionally left blank

SECTION 083100
ACCESS DOORS AND PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wall- and ceiling-mounted access units.

1.02 RELATED REQUIREMENTS

A. Section 099000: Painting and Coatings Field paint finish.

B. Section 233300 - Air Duct Accessories: Access doors in ductwork.

1.03 REFERENCE STANDARDS

A. UL (FRD) - Fire Resistance Directory; Current Edition.

1.04 SUBMITTALS

A. See Section 013300 - Submittal Procedures.

B. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.

C. Shop Drawings: Indicate exact position of each access door and/or panel unit.

D. Project Record Documents: Record actual locations of each access unit.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

PART 2 PRODUCTS

2.01 ACCESS DOORS AND PANELS ASSEMBLIES

A. Wall-Mounted Units in Gypsum Board Partitions:
   1. Location: As indicated on drawings or required on drawings or in specifications..
   2. Panel Material: Aluminum extrusions with gypsum board inlay.
   3. Size: As indicated or as required for use intended..
   4. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
   5. Gypsum Board Mounting Criteria: Provide drywall bead frame with door surface recessed for infill with wall finish.

B. Wall-Mounted Units in Masonry Partitions:
   1. Location: As indicated on drawings or required on drawings or in specifications..
   2. Panel Material: Stainless steel, Type 304.
   3. Size: As indicated or as required for use intended..
   4. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
   5. Masonry Mounting Criteria: Provide surface-mounted frame with door surface flush with frame surface.

C. Wall-Mounted Units in Wet Areas:
   1. Location: As indicated on drawings or required on drawings or in specifications..
   2. Panel Material: Stainless steel, Type 304.
   3. Size: As indicated or as required for use intended.
   4. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
   5. Wall Mounting Criteria: Provide surface-mounted face frame and door surface flush with frame surface.

D. Fire-Rated Wall-Mounted Units:
   1. Location: Where indicated in Dwgs. and Specifications..
   2. Wall Fire-Rating: As indicated on drawings.

3. Panel Material: Steel, hot-dipped zinc, or zinc-aluminum-alloy coated.
4. Size: As indicated or as required for use intended..
5. Door/Panel: Uninsulated single-surface panel, with tool-operated spring or cam lock and no handle.

E. Ceiling-Mounted Units:
1. Location: As indicated in Drawings and Specifications..
2. Panel Material: Aluminum extrusion with gypsum board inlay.
3. Size:: As indicated or required for intended use..
4. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.

F. Fire-Rated Ceiling-Mounted Units:
1. Location: As indicated in Drawings and Specifications..
2. Ceiling Fire-Rating: As indicated on drawings.
3. Panel Material: Steel, hot-dipped zinc, or zinc-aluminum-alloy coated.
4. Size: As indicated or required for intended use..
5. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.

2.02 WALL- AND CEILING-MOUNTED ACCESS UNITS

A. Manufacturers:
1. ACUDOR Products Inc: www.acudor.com/#sle. Basis-of-Design
2. Babcock-Davis: www.babcockdavis.com/#sle.
3. Best Access Doors: www.bestaccessdoors.com/#sle.
4. MIFAB, Inc: www.mifab.com/#sle.
5. Milcor, Inc: www.milcorinc.com/#sle.

B. Wall- and Ceiling-Mounted Units: Factory-fabricated door and frame, fully assembled units with corner joints welded, filled and ground flush; square and without rack or warp; coordinate requirements with type of installation assembly being used for each unit.
1. Material: Aluminum extrusions with gypsum board inlay.
2. Style: .
   a. Gypsum Board Mounting Criteria: Use drywall bead type frame.
3. Door Style: Recessed to accept drywall inlay.
4. Units in Fire-Rated Assemblies: Fire rating as required by applicable code for fire-rated assembly that access doors are being installed.
   a. Provide products listed by UL (FRD) as suitable for purpose indicated.
   b. Provide certificate of compliance from authorities having jurisdiction indicating approval of fire rated doors.
5. Primed and Factory Finish: Polyester powder coat; color white.
6. Door/Panel Size: As indicated on drawings or as required..
7. Hardware:
   a. Hardware for Fire-Rated Units: As required for listing.
   b. Hinges for Non-Fire-Rated Units: Continuous piano hinge.
   c. Latch/Lock: Tamperproof tool-operated cam latch.
   d. Number of Locks/Latches Required: As recommended by manufacturer for size of unit.
   e. Inside Latch Release: Mechanism that allows door/panel to be opened from inside.
   f. Gasketing: Extruded neoprene, around perimeter of door panel.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that rough openings are correctly sized and located.

B. Begin installation only after substrates have been properly prepared, and if the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to proceeding with this work.

B. Prepare surfaces using methods recommended by manufacturer for applicable substrates in accordance with project conditions.

3.03 INSTALLATION

A. Install units in accordance with manufacturer's instructions.

B. Install frames plumb and level in openings, and secure units rigidly in place.

C. Position units to provide convenient access to concealed equipment when necessary.

END OF SECTION 083100

This page intentionally left blank

SECTION 085113
ALUMINUM WINDOWS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Extruded aluminum windows with fixed sash and operating sash, thermally broken

B. Factory glazing.

C. Operating hardware.

D. Insect screens.

1.02 RELATED REQUIREMENTS

A. Section 055000 - Metal Fabrications: Steel lintels.

B. Section 061000 - Rough Carpentry: Wood perimeter shims.

C. Section 079200 - Joint Sealants: Sealing joints between window frames and adjacent construction.

D. Section 088000 - Glazing.

1.03 REFERENCE STANDARDS

A. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum; 2025.

B. AAMA 611 - Specification for Anodized Architectural Aluminum; 2026.

C. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections; 2009.

D. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site; 2015.

E. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights; 2022, with Errata (2023).

F. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.

G. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

H. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

I. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.

J. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2016).

K. ASTM F588 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact; 2017.

L. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

1.04 SUBMITTALS

A. See Section 013300 - Submittal Procedures.

B. Product Data: Include component dimensions, information on glass and glazing, internal drainage details, and descriptions of hardware and accessories.

C. Shop Drawings: Indicate opening dimensions, elevations of different types, framed opening tolerances, method for achieving air and vapor barrier seal to adjacent construction, anchorage locations, and installation requirements.

D. Samples: Submit two samples, appropriate in size in size illustrating typical .finishes.

E. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:
   1. Evidence of AAMA Certification.
   2. Evidence of WDMA Certification.
   3. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.

F. Test Reports: Prior to submitting shop drawings or starting fabrication, submit test report(s) by independent testing agency showing compliance with performance requirements in excess of those prescribed by specified grade.

G. Specimen warranties.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of AAMA CW-10.

B. Protect finished surfaces with wrapping paper or strippable coating during installation. Do not use adhesive papers or sprayed coatings that bond to substrate when exposed to sunlight or weather.

1.06 FIELD CONDITIONS

A. Do not install sealants when ambient temperature is less than 40 degrees F.

B. Maintain this minimum temperature during and 24 hours after installation of sealants.

1.07 WARRANTY

A. See Section 017700 - Closeout Submittals for additional warranty requirements

B. Correct defective work within a one year period after Date of Substantial Completion.

C. Manufacturer Warranty: Provide 5 year extended manufacturer warranty against defects in material and workmanship. Complete forms in Owner's name and register with manufacturer.

D. Manufacturer Warranty: Provide 10 year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units. Complete forms in Owner's name and register with manufacturer.

E. Manufacturer Warranty: Provide 20-year manufacturer warranty against excessive degradation of exterior finish-Organic Coating. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with manufacturer.

F. Provide ten year manufacturer warranty against excessive degradation of exterior finish-anodic finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS -

2.01 MANUFACTURERS

A. Aluminum Window Manufacturers:
   1. Efco Corporation: Basis of Design: www.efcocorp.com/#sle
   2. Approved equal.

2.02 BASIS OF DESIGN - AW PERFORMANCE CLASS WINDOWS

A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 having Performance Class of AW, and Performance Grade PG50.

B. Hung Windows, Vertically Sliding; with Matching Fixed Units:

2.03 ALUMINUM WINDOWS

A. Aluminum Windows: Extruded aluminum frame and sash, factory fabricated, factory finished, with operating hardware, related flashings, and anchorage and attachment devices.
   1. Operable Units: Double weatherstripped.
   2. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for operating hardware and imposed loads.
   3. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
   4. Movement: Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
   5. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
   6. Thermal Movement: Design to accommodate thermal movement caused by 180 degrees F surface temperature without buckling stress on glass, joint seal failure, damaging loads on structural elements, damaging loads on fasteners, reduction in performance or other detrimental effects.

B. Single-Hung Type: Basis of Design: HX32 Series
   1. Construction: Thermally broken.
   2. Provide screens.
   3. Exterior Finish: Class I natural anodized.
   4. Interior Finish: Class I natural anodized.

2.04 PERFORMANCE REQUIREMENTS

A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type:
   1. Performance Class (PC): AW.
   2. Performance Grade (PG): 45, Equivalent to or greater than specified design pressure.

B. Design Pressure (DP):
   1. Positive Design Wind Load: As indicated on drawings.
   2. Negative Design Wind Load: As indicated on drawings.

C. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.

D. Water Leakage: No uncontrolled leakage on interior face when tested in accordance with ASTM E331 at differential pressure of 15 psf.

E. Air Leakage: 0.30 cfm/sq ft maximum leakage per unit area of outside window frame dimension when tested at 1.57 psf pressure difference in accordance with ASTM E283/E283M.

F. Condensation Resistance Factor of Frame: 67, measured in accordance with AAMA 1503.

G. Forced Entry Resistance: Tested to comply with ASTM F588 requirements for performance level of Grade 40 for specific window style required.

2.05 COMPONENTS

A. Frames: Profile, of 0.062 inch thick section flush glass stops of screw fastened type.
   1. Single and double hung windows: 3 1/2 inch deep profile.

B. Glazing: See Section 088000.

C. Sills: .094 inch thick, extruded aluminum; sloped for positive wash; fit under sash leg to 1/2 inch beyond wall face; one piece full width of opening; jamb angles to terminate sill end.

D. Insect Screens: Extruded aluminum frame with mitered and reinforced corners; screen mesh taut and secure to frame; secured to window with adjustable hardware allowing screen removal without use of tools.
   1. Half frames at sliding and single-hung windows, full frames at double hung windows.
   2. Hardware: Spring loaded steel pins; four per screen unit.
   3. Screen Mesh: Vinyl-coated fiberglass, window manufacturer's standard mesh.
   4. Frame Finish: Same as frame and sash.

E. Operable Sash Weatherstripping: Wool pile; permanently resilient, profiled to achieve effective weather seal.

F. Fasteners: Stainless steel.

G. Glazing Materials: See Section 088000.

H. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.
   1. See Section 079200 for additional requirements.

2.06 MATERIALS

A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

B. Concealed Steel Items: Profiled to suit mullion sections; galvanized in accordance with ASTM A123/A123M.

2.07 HARDWARE

A. Double and single hung windows
   1. Sash lock: Sweep latch with lock.
      a. Provide pole handle when sill is over 5 feet above grade.

2.08 FINISHES

A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41, clear anodic coating not less than 0.7 mil thick.

B. Operator and Exposed Hardware: Enameled to color as selected from manufacturer's standard line.

C. Apply one coat of bituminous coating to concealed aluminum and steel surfaces in contact with dissimilar materials.

D. Shop and Touch-Up Primer for Steel Components: Zinc oxide, alkyd, linseed oil primer appropriate for use over hand cleaned steel.

E. Touch-Up Primer for Galvanized Steel Surfaces: SSPC-Paint 20, zinc rich.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall openings and adjoining water-resistive barrier materials are ready to receive aluminum windows; see Section 072500.

3.02 PRIME WINDOW INSTALLATION

A. Install windows in accordance with manufacturer's instructions.

B. Install window assembly in accordance with AAMA/WDMA/CSA 101/I.S.2/A440.

C. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.

D. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

E. Install sill and sill end angles.

F. Set sill members and sill flashing in continuous bead of sealant.

G. Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

H. Install operating hardware not pre-installed by manufacturer.

3.03 TOLERANCES

A. Maximum Variation from Level or Plumb: 1/16 inches every 3 ft non-cumulative or 1/8 inches per 10 ft, whichever is less.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for independent field testing and inspection requirements, and requirements for monitoring quality of specified product installations.

3.05 ADJUSTING

A. Adjust hardware for smooth operation and secure weathertight closure.

3.06 CLEANING

A. Remove protective material from factory finished aluminum surfaces.

B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.

C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

D. Remove excess glazing sealant by moderate use of mineral spirits or other solvent acceptable to sealant and window manufacturer.

END OF SECTION 085113

This page intentionally left blank

SECTION 087100
DOOR HARDWARE

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 mechanical door hardware for swinging doors.
B. Field verification, preparation and modification of existing doors and frames to receive new door hardware.
C. Hardware shall comply with New York State Education Department 1998 Edition of the Manual of Planning Standards S105 – Door Hardware and NFPA 101-Life Safety Code.

1.3 RELATED SECTIONS:

A. Division 08 section "hollow metal frames"
B. Division 08 section “Flush Wood Doors”
C. Division 08 section “Fiberglass Doors and Frames”
D. Division 28 section "access control" for access control devices installed at door openings and provided as part of a security system.

1.4 REFERENCES

A. UL LLC
   1. UL 10B – Fire Test of Door Assemblies
   2. UL 10C – Positive Pressure Test of Fire Door Assemblies
   3. UL 1784 – Air Leakage Tests of Door Assemblies
   4. UL 305 – Panic Hardware

B. DHI – Door and Hardware Institute
   1. Sequence and Format for the Hardware Schedule
   2. Recommended Locations for Builders Hardware
   3. Keying Systems and Nomenclature
   4. Installation Guide for Doors and Hardware

C. NFPA – National Fire Protection Association
   1. NFPA 70 – National Electric Code
   2. NFPA 80 – 2016 Edition – Standard for Fire Doors and Other Opening Protectives
   3. NFPA 101 – Life Safety Code
   4. NFPA 105 – Smoke and Draft Control Door Assemblies
   5. NFPA 252 – Fire Tests of Door Assemblies

D. ANSI – American National Standards Institute
   1. ANSI A117.1 – 2017 Edition – Accessible and Usable Buildings and Facilities
   2. ANSI/BHMA A156.1 – A156.29, and ANSI/BHMA A156.31 – Standards for Hardware and Specialties
   3. ANSI/BHMA A156.28 – Recommended Practices for Keying Systems
   4. ANSI/WDMA I.S. 1A – Interior Architectural Wood Flush Doors
   5. ANSI/SDI A250.8 – Standard Steel Doors and Frames

1.5 SUBMITTALS

A. Product data: for each item of hardware indicated furnish manufacturer’s catalog sheets highlighting information pertaining specifically to product(s) submitted. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop drawings: details of electrified door hardware, indicating the following:
   1. Wiring diagrams: for power, signal, and control wiring and including the following:
      a. Details of interface of electrified door hardware and building safety and security systems.
   2. Operation narrative: describe the operation of doors controlled by electrified door hardware.

C. Other action submittals:
   1. Door hardware schedule: prepared by or under the supervision of installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
      a. Format: comply with scheduling sequence and vertical format in dhi's "sequence and format for the hardware schedule." double space entries, and number and date each page.
      b. Content: include the following information:
         1) Identification number, location, hand, fire rating, size, and material of each door and frame.
         2) Locations of each door hardware set, cross-referenced to drawings on floor plans and to door and frame schedule.
         3) Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
         4) Description of electrified door hardware sequences of operation and interfaces with other building control systems.
         5) Fastenings and other pertinent information.
         6) Explanation of abbreviations, symbols, and codes contained in schedule.
         7) Mounting locations for door hardware.
         8) List of related door devices specified in other sections for each door and frame.
         9) Door index – cross referencing door number with page and/or set number. If the sets are not in numerical order the door number, set number and page number are required. The hardware set number shown in a door submittal does not qualify as the door index for hardware.

   2. Keying schedule: prepared by or under the supervision of installer, 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.

D. Qualification data: for installer and architectural hardware consultant.

E. Product certificates: for electrified door hardware, from the manufacturer.
   1. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.

F. Product test reports: for compliance with accessibility requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.

G. Maintenance data: for each type of door hardware to include in maintenance manuals. Include final hardware and keying schedule.

H. Warranty: special warranty specified in this section.

1.6 QUALITY ASSURANCE

A. Installer qualifications: supplier of products and an employer of workers trained and approved by product manufacturers and an architectural hardware consultant who is available during the course of the work to consult with contractor, architect, and owner

about door hardware and keying.

B. Architectural hardware consultant qualifications: a person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this project.

C. Source limitations: obtain each type of door hardware from a single manufacturer.

D. Fire-rated door assemblies: where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10c, unless otherwise indicated.

E. Smoke- and draft-control door assemblies: where smoke- and draft-control door assemblies are required, provide door hardware that meet requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
   1. Air leakage rate: maximum air leakage of 0.3 cfm/sq. Ft. At the tested pressure differential of 0.3-inch wg of water.

F. Electrified door hardware: listed and labeled as defined in NFPA 70, article 100, by a testing agency acceptable to authorities having jurisdiction.

G. Means of egress doors: latches do not require more than 15 lb/f to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

H. Accessibility requirements: for door hardware on doors in an accessible route, comply with the U.S. Architectural & transportation barriers compliance board's ADA-ABA accessibility guidelines and ICC/ANSI 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 lb/f.
   2. Comply with the following maximum opening-force requirements:
      a. Interior, non-fire-rated hinged doors: 5 lb/f applied perpendicular to door.
      b. Sliding or folding doors: 5 lb/f applied parallel to door at latch.
      c. 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 high.
   4. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.

I. Pre-installation Meetings

1. Keying Conference
   a. Conduct conference at project site to comply with requirements in Division 01 section “Project Management and Coordination”. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
      1) Function of building, flow of traffic, purpose of each area, degree of security required
      2) Plans for future expansion.
      3) Preliminary key system schematic diagram.
      4) Requirements for key control system.
      5) Requirements for access control.
      6) Address for delivery of keys.

2. Pre-installation Conference: Conduct conference at project site.
   a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   b. Inspect and discuss preparatory work performed by other trades.
   c. Inspect and discuss electrical roughing-in for electrified door hardware.
   d. Review sequence of operation for each type of electrified door hardware.
   e. Review required testing, inspecting, and certifying procedures.
   f. Review questions or concerns related to proper installation and adjustment of door hardware.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up 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.

1.8 COORDINATION

A. Installation templates: distribute 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.

1.9 WARRANTY

A. Special warranty: manufacturer's standard form in which 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:
2. Structural failures including excessive deflection, cracking, or breakage.
3. Faulty operation of doors and door hardware.
4. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

B. Warranty period: three years from date of substantial completion, unless otherwise indicated.
1. Exit devices: three (3) years from date of substantial completion.
2. Manual closers: twenty-five (25) years from date of substantial completion.
3. Locksets: ten (10) years from date of substantial completion.
4. Continuous hinges: lifetime of opening

1.10 MAINTENANCE SERVICE

A. Maintenance tools and instructions: furnish a complete set of specialized tools and maintenance instructions for owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Provide door hardware for each door as scheduled on drawings with hardware sets scheduled in part 3 “door hardware schedule” article to comply with requirements in this section.

1. Door Hardware sets: provide quantity, item, size, finish or color indicated and named manufacturers’ products.

2. Sequence of operation: provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.

B. Designations: requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in part 3 “door hardware schedule” article. Products are identified by using door hardware designations, as follows:

1. Named manufacturers products: manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements.

C. Approval of alternate manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category are only to be considered by official substitution request in accordance with section 012500.

D. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.

E. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.2 MATERIALS

A. Fabrication
1. Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. provide screws according to manufacturer’s recognized installation standards for application intended.
2. Finish exposed screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
3. Provide concealed fasteners wherever possible for hardware units exposed when door is closed. Coordinate with “Metal Doors and Frames”, “Flush Wood Doors”, “Stile and Rail Wood Doors” to ensure proper reinforcements. Advise the Architect where visible fasteners, such as thru bolts, are required.

B. Modification and Preparation of Existing Doors: Where existing door hardware is indicated to be removed and reinstalled.
   1. Provide necessary fillers, Dutchmen, reinforcements, and fasteners, compatible with existing materials, as required for mounting new opening hardware and to cover existing door and frame preparations.
   2. Use materials which match materials of adjacent modified areas.
   3. When modifying existing fire-rated openings, provide materials permitted by NFPA 80 as required to maintain fire-rating.

C. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
   1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

D. Cable and Connectors:
   1. Where scheduled in the hardware sets, provide each item of electrified hardware and wire harnesses with number and gauge of wires enough to accommodate electric function of specified hardware.
   2. Provide Molex connectors that plug directly into connectors from harnesses, electric locking and power transfer devices.
   3. Provide through-door wire harness for each electrified locking device installed in a door and wire harness for each electrified hinge, electrified continuous hinge, electrified pivot, and electric power transfer for connection to power supplies.

2.3 SCHEDULED DOOR HARDWARE

A. Provide door hardware for each door as scheduled on drawings with hardware sets scheduled in part 3 "door hardware schedule" article to comply with requirements in this section.
   1. Door hardware sets: provide quantity, item, size, finish or color indicated, and named manufacturers' products.
   2. Sequence of operation: provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.

B. Designations: requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in part 3 "door hardware schedule" article. Products are identified by using door hardware designations, as follows:
   1. Named manufacturers' products: manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements.

2.4 HINGES

A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.
   1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. Stanley Commercial Hardware; Div. of Stanley Black & Decker
      b. McKinney Products Company; an ASSA ABLOY Group Company.
      c. Hager Companies.
      d. Ives 5BB Series

B. Requirements:
1. Provide hinges conforming to ANSI/BHMA A156.1.
2. Provide five knuckles, ball bearing hinges.
3. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
   a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
   b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high
4. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
   a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
   b. Interior: Heavy weight, steel, 5 inches (127 mm) high
5. 2 inches or thicker doors:
   a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
   b. Interior: Heavy weight, steel, 5 inches (127 mm) high
6. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
7. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
8. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
9. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
   a. Steel Hinges: Steel pins
   b. Non-Ferrous Hinges: Stainless steel pins
   c. Out-Swinging Exterior Doors: Non-removable pins
   d. Out-Swinging Interior Lockable Doors: Non-removable pins
   e. Interior Non-lockable Doors: Non-rising pins
10. Provide hinges with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component. Provide mortar guard for each electrified hinge specified.

2.5 CONTINUOUS HINGES

A. Continuous hinges: BHMA A156.26; minimum 0.120-inch- thick, hinge leaves with minimum overall width of 4 inches; fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete.

B. Continuous, gear-type hinges: extruded-aluminum, pinless, geared hinge leaves joined by a continuous extruded-aluminum channel cap; with concealed, self-lubricating thrust bearings.
1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
   a. Select Products, Ltd.
   b. Hager Companies.
   c. Pemko Mfg. Co.; an Assa Abloy Group Company.
   d. Ives Hardware; an Ingersoll-Rand Company.

2.6 ELECTRIC POWER TRANSFER

A. Manufacturers:
   1. Scheduled Manufacturer and Product:
      a. Von Duprin EPT-10

B. Requirements:
   1. Provide power transfer with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
   2. Locate electric power transfer per manufacturer's template and UL requirements, unless interference with operation of door or other hardware items.

2.7 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. Bored locks: minimum 1/2-inch latchbolt throw.
   2. Mortise locks: minimum 3/4-inch latchbolt throw.
   3. Deadbolts: minimum 1-inch bolt throw.

C. Lock backset: 2-3/4 inches, unless otherwise indicated.

D. Lock trim:
   1. Description: as indicated in door hardware schedule
   2. Levers: zinc alloy
   3. Escutcheons (roses): wrought

E. Strikes: provide manufacturer's standard strike for each latch bolt 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 latch bolts, as recommended by manufacturer.
   2. Extra-long-lip strikes: for locks used on frames with applied wood casing trim.

F. Mortise locks: BHMA A156.13; grade 1; Series 1000.

   1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. Oak Security Locks (Match Existing - No Substitution)

2.8 ELECTRIC STRIKES

A. Electric strikes: BHMA A156.31; grade 1; with faceplate to suit lock and frame.
   1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. HES; an ASSA ABLOY Group Company.
      b. Trine Access Technology.
      c. Von Duprin; an Allegion Company.

2.9 MANUAL FLUSH BOLTS

A. Manual flush bolts: BHMA A156.16; minimum 3/4-inch throw; designed for mortising into door edge.

   1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

a. Rockwood; an ASSA ABLOY Group Company
b. Door Controls International, Inc.
c. Ives Hardware; an Ingersoll-Rand Company.

2.10 AUTOMATIC AND SELF-LATCHING FLUSH BOLTS

A. Automatic and self-latching flush bolts: BHMA A156.16; minimum 3/4-inch throw; designed for mortising into door edge.
   1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. Rockwood; an ASSA ABLOY Group Company
      b. Ives Hardware; an Ingersoll-Rand Company.
      c. Door Controls International, Inc.

2.11 EXIT DEVICES AND AUXILIARY ITEMS

A. Exit devices and auxiliary items: BHMA A156.3.
   1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. Precision Hardware, Inc.; a Dormakaba Holding, Inc. Company
      b. Von Duprin; an Allegion Company
      c. Sargent Manufacturing Company; an ASSA ABLOY Group Company.

B. Requirements:
   1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
   2. Cylinders: Refer to "KEYING" article, herein.
   3. Provide smooth touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
   4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
   5. Provide exit devices with dead latching feature for security and for future addition of alarm kits and/or other electrified requirements.
   6. Provide exit devices with weather resistant components that can withstand harsh conditions of various climates and corrosive cleaners used in outdoor pool environments.
   7. Provide flush end caps for exit devices.
   8. Provide exit devices with manufacturer's approved strikes.
   9. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
   10. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
   11. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
   12. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
   13. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
   14. Provide electrified options as scheduled.
   15. Top latch mounting: double- or single-tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.
   16. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

2.13 LOCK CYLINDERS

A. Lock cylinders: tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.
   1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. Oak Security Locks (to match existing - no substitutions)

B. Standard lock cylinders: BHMA A156.5; grade 1; permanent cores that are interchangeable; face finished to match lockset.

C. Construction cores: provide cylinders with Oak Security Locks keyed alike construction cores. Cores shall be painted a color for easy identification (blue, orange, etc.). Construction cores shall be returned to the hardware supplier. Provide ten (10) construction master keys and two construction control keys for removing temporary cores.

D. Provide final permanent cores with visual key control for all locksets and cylinders. Stamp keys and (in a concealed location) stamp cores with keyset symbol.

E. Requirements:
   1. Provide cylindrical locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3-hour fire doors.
   2. Cylinders: Refer to "KEYING" article, herein.
   3. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2-inch latch throw. Provide proper latch throw for UL listing at pairs.
   4. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
   5. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
   6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
   7. Provide electrified options as scheduled in the hardware sets.
   8. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.

2.14 POWER SUPPLIES

A. Manufacturers and Products:
   1. Scheduled Manufacturer and Product:
      a. Schlage/Von Duprin PS900 Series

B. Requirements:
   1. Provide power supplies approved by manufacturer of supplied electrified hardware.
   2. Provide appropriate quantity of power supplies necessary for proper operation of electrified locking components as recommended by manufacturer of electrified locking components with consideration for each electrified component using power supply, location of power supply, and approved wiring diagrams. Locate power supplies as directed by Architect.
   3. Provide regulated and filtered 24 VDC power supply, and UL class 2 listed.
   4. Provide power supplies with the following features:
      a. 12/24 VDC Output, field selectable.
      b. Class 2 Rated power limited output.
      c. Universal 120-240 VAC input.
      d. Low voltage DC regulated and filtered.
      e. Polarized connector for distribution boards.
      f. Fused primary input.
      g. AC input and DC output monitoring circuit w/LED indicators.
      h. Cover mounted AC Input indication.
      i. Tested and certified to meet UL294.
      j. NEMA 1 enclosure.
      k. Hinged cover w/lock down screws.
      l. High voltage protective cover.

2.15 KEYING

A. Keying system: factory registered, integrated with existing Best access control key system, complying with guidelines in BHMA A156.28, appendix a. Incorporate decisions made in keying conference.
   1. Existing system:
      a. Master key or grand master key locks to owner's existing Best Access Systems key system.

B. Keys: nickel silver.
   1. Stamping: permanently inscribe each key with a visual key control number and include the following notation:
      a. Notation: "Do Not Duplicate."
   2. Quantity: in addition to one extra key blank for each lock, provide the following unless otherwise directed by owner:
      a. Control keys / Cylinder change keys: three
      b. Master keys: five of each
      c. Grandmaster keys: five of each

2.16 ACCESSORIES FOR PAIRS OF DOORS

A. General: provide accessories for pairs of doors as indicated on schedule.

B. Coordinators: BHMA A156.3; consisting of active-leaf, hold-open lever and inactive-leaf release trigger; fabricated from steel with nylon-coated strike plates; with built-in, adjustable safety release; and with internal override.

C. Carry-open bars: BHMA A156.3; prevent the inactive leaf from opening before the active leaf; provide polished brass or bronze carry-open bars with strike plate for inactive leaves of pairs of doors unless automatic or self-latching bolts are used.

D. Astragals: BHMA A156.22.

2.17 SURFACE CLOSERS

A. Surface closers: 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 recommendations 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.

   1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. Dorma Architectural Hardware; a Dormakaba Holding, Inc. Company
      b. Sargent Manufacturing Company; an ASSA ABLOY Group Company.
      c. LCN 4050A series; an Allegion Company

B. Requirements:
1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with cast aluminum cylinder.
3. Closer Body: 1-1/2-inch (38 mm) diameter with 11/16-inch (17 mm) diameter heat-treated pinion journal and full complement bearings.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and all weather requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and back check.
7. Pressure Relief Valve (PRV) Technology: Not permitted.
8. Provide stick on templates, special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.18 MECHANICAL STOPS AND HOLDERS

A. Wall- and floor-mounted stops: BHMA A156.16; polished cast brass, bronze, or aluminum base metal.
1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
a. Rockwood; an ASSA ABLOY Group Company
b. Burns Manufacturing Incorporated.
c. Ives Hardware; an Allegion Company.

2.19 ELECTROMAGNETIC STOPS AND HOLDERS

A. Electromagnetic door holders: BHMA A156.15, grade 1; wall-mounted or floor-mounted electromagnet unit with strike plate attached to swinging door; coordinated with fire detectors and interface with fire alarm system for labeled fire-rated door assemblies.
1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
a. Rixson; an ASSA ABLOY Group Company
b. Architectural Builders Hardware Mfg., Inc.
c. LCN Closers; an Allegion Company

2.20 OVERHEAD STOPS AND HOLDERS

A. Overhead stops and holders: BHMA A156.8.
1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
a. Glynn-Johnson; an Ingersoll-Rand Company.
b. Sargent Manufacturing Company; an ASSA ABLOY Group Company.
c. Architectural Builders Hardware Mfg., Inc.

2.21 DOOR GASKETING

A. Door gasketing: BHMA A156.22; air leakage not to exceed 0.50 cfm per foot of crack length for gasketing other than for smoke control, as tested according to astm e 283; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.
1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
a. Pemko Manufacturing Co.; an ASSA ABLOY Group Company.

b. National Guard Products.
c. Zero International; an Allegion Company

2.22 THRESHOLDS

A. Thresholds: BHMA A156.21; fabricated to full width of opening indicated.
   1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. Pemko Manufacturing Co.; an ASSA ABLOY Group Company.
      b. National Guard Products.
      c. Zero International; an Allegion Company

B. Requirements:
   1. Provide thresholds, weather-stripping, and gasketing systems as specified and per architectural details. Match finish of other items.
   2. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
   3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
   4. Size thresholds 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width unless otherwise specified in the hardware sets or detailed in the drawings.

2.23 METAL PROTECTIVE TRIM UNITS

A. Metal protective trim units: BHMA A156.6; fabricated from 0.050-inch- thick stainless steel as scheduled; with four beveled edges and countersunk screw holes with manufacturer's standard machine or self-tapping screw fasteners.
   1. Basis-of-design product: subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
      a. Rockwood; an ASSA ABLOY Group Company
      b. Burns Manufacturing Incorporated.
      c. Ives Hardware; an Allegion Company.

2.24 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-rated 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 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, except aluminum fasteners are not permitted.

   1. Fire-rated applications:
      a. Wood or machine screws: for the following:
         1. Hinges mortised to doors or frames; use threaded-to-the-head wood screws for wood doors and frames.
         2. Strike plates to frames.
         3. Closers to doors and frames.
      b. Steel through bolts: do not use through bolts for installation where bolt head or nut on opposite face is exposed unless noted or it is the only means of securely attaching the door hardware and approved by architect.
         1. Where through bolts are used on hollow door and frame construction,

provide sleeves for each through bolt.

2. Verify that blocking is provide for the following:
   a. Surface hinges to doors.
   b. Closers to doors and frames.
   c. Surface-mounted exit devices.
3. Spacers or sex bolts: for through bolting of hollow-metal doors.
4. Fasteners for wood doors: comply with requirements in DHI wdhs.2, "recommended fasteners for wood doors."
5. Gasketing fasteners: provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.25 FINISHES

A. Provide finishes complying with 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.

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 according to ANSI/SDI A250.6.

B. Wood doors: comply with DHI WDHS.5 "Recommended hardware reinforcement locations for mineral core wood flush doors."

C. Where on-site modification of doors and frames is required:
   1. Carefully remove existing door hardware and components being reused. Clean, protect, tag, and store in accordance with storage and handling requirements specified herein.
   2. Field modify and prepare existing doors and frames for new hardware being installed.
   3. When modifications are exposed to view, use concealed fasteners, when possible.
   4. Prepare hardware locations and reinstall in accordance with installation requirements for new door hardware and with:
      - Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
      - Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
      - Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

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.
   2. Wood doors: DHI WDHS.3, "Recommended locations for architectural hardware for wood flush doors."

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 specified in division 09 sections. 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 substrates as necessary for proper installation and operation.
   2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards. Hand tightened screws and fasteners, use of power tools must be limited to preliminary driving screws if permitted by the door and hardware manufacturer.

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 of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

D. Door Closers & Auto Operators: Mount closers/operators on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers/operators so they are not visible in corridors, lobbies and other public spaces unless approved by Architect. Door closers shall be installed to obtain the greatest degree swing allowed by field conditions. Follow manufacturer's instructions for proper door closer adjustment for spring power, back check, closing and latching speed.

E. Lock cylinders: install construction cores to secure building and areas during construction period.

1. Replace construction cores with permanent cores as indicated in keying schedule.

F. Provide and install all low voltage control wiring from power supply to all door hardware. Provide and install 120v power wiring from EC-provided junction box to power supply (supplied under this section). Provide wiring as recommended by device manufacturer.

G. Boxed power supplies: locate power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with architect.
1. Configuration: provide one power supply for each door opening with electrified door hardware.

H. Thresholds: set thresholds for exterior and interior doors in full bed of sealant complying with requirements specified in division 07 section "joint sealants."

I. 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.

J. Perimeter gasketing: apply to head and jamb, forming seal between door and frame.

K. Meeting stile gasketing: fasten to meeting stiles, forming seal when doors are closed.

L. Door bottoms: apply to bottom of door, forming seal with threshold when door is closed.

M. Wiring: Coordinate with Division 26, ELECTRICAL and Division 28 ELECTRONIC SAFETY AND SECURITY sections for:
1. Conduit, junction boxes and wire pulls.
2. Connections to and from power supplies to electrified hardware.
3. Connections to fire/smoke alarm system and smoke evacuation system.
4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
5. Connections to panel interface modules, controllers, and gateways.
6. Testing and labeling wires with Architect's opening number.

N. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

O. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.

3.4 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. Spring hinges: adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees.
2. Electric strikes: adjust horizontal and vertical alignment of keeper to properly engage

lock bolt.

3. Door closers: adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

B. Occupancy adjustment: approximately three months after date of substantial completion, installer's architectural hardware consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.5 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.

3.6 DOOR HARDWARE SCHEDULE

A. Supplier shall assume full responsibility for examination of the drawings and shall be responsible for the accuracy of the quantities, size, finish and proper hardware whether specifically mentioned or not. Hardware not listed specifically must be furnished to match other hardware in similar openings.

B. All existing conditions shall be measured and/or verified prior to submission of hardware schedule. ***It shall be noted on the hardware submittal that this requirement has been met.***

C. Provide all required accessories and options necessary for complete installation of each hardware component, to ensure proper operation of the product.

D. Modify existing doors and/or frames as required for new hardware. Patch and fill exposed existing screw holes of removed hardware if not covered by new hardware.

E. Where a new lockset is replacing an existing lockset, GC shall field modify door as required, drilling new thru bolt holes, etc.

F. Centerline of lock shall align with latch bolt hole cutout of strike on existing frames. If existing frames have other than standard 4-7/8” or 2-3/4” high strikes, provide custom strike to fit existing frame cutout.

G. Remove silencers from existing frames specified to have new smoke seal.

H. GC is to confirm the salvage status of all removed hardware with the Owner prior to disposal. Turn over to Owner any hardware items identified for salvage and dispose of the balance.

I. Hardware for aluminum and FRP doors shall be shipped to the door manufacturer’s factories for installation with the exception of door closers and thresholds, if required or requested.

J. Hardware Sets:

Abbreviation	Name
BYO	By Others
GLY	Glynn-Johnson Corp
IVE	H.B. Ives
LCN	Lcn Commercial Division
SCE	Schlage Electronic Security
SCH	Schlage Lock Company
SGT	Sargent
VON	Von Duprin
PMK	Pemko
ZER	Zero International Inc
MCK	McKinney
BST	Best
SPLT	Special-Lite
RKW	Rockwood
DK	Dormakaba
OAK	Oak Security Locks

Door Hardware Schedule

1. Hardware Set 1: New Interior Double Wood Doors
   Doors: NMES 119A & 119B

QTY	-	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3 PAIRS	EA	HINGE	TA2714 (4-1/2"x4-1/2")	US26D	MCK
1	EA	LOCKSET	ENL. ANSI F04 WITH INTERIOR THUMB TURN. HF2 ESCUTCHEON LEVER SET	626	OAK
1		SURFACE MOUNTED DOOR CLOSER (ON ACTIVE DOOR)	1461 DEL	689	LCN
1	EA	CYLINDER	CYLINDER AS REQUIRED	626	OAK
1	EA	CYLINDER CORE	TO MATCH THE EXISTING	626	OAK
3	EA	SILENCERS	SR64		IVES
2	EA	SURFACE BOLTS (TOP & BOTTOM OF INACTIVE DOOR)	SB453 8" LONG	US26D	IVES
1	EA	KICK PLATE	8400- BHMA	630	IVES

2. Hardware Set 2: New FRP Exterior Door.
   Doors:NMES 01, 02, + 03

QTY	-	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	HINGE	TA2714 (1.5 PAIRS) 5"x4.5"	26D	MCK
1	EA	LOCKSET	SUD. ANSI F14. HF2 ESCUTCHEON LEVER SET	626	OAK
1	EA	CLOSER	4050A	689	LCN
1	EA	CYLINDER	CYLINDER AS REQUIRED	626	OAK
1	EA	CYLINDER CORE	TO MATCH THE EXISTING	626	OAK
1	EA	OVERHEAD STOP	81 SERIES	652	GLY
1	EA	THRESHOLD	656D-226	A	ZER
1	EA	SMOKE SEAL	S44D		PMK
1	EA	RECESSED DOOR PULL	SPECIAL-LITE SL-82 PULL		SPLT

3. Hardware Set 3: New WD Interior Door.
   Doors: NMES 111, 112, 113, 114A, 114B, 115A, 116, 117, 118, 124, 126, 127, 128A, 128B, 129, 130, 131, 302, 303, 303A, 304, 307, 308, 309

QTY	-	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	HINGE	TA2772 (1.5 PAIRS)	26D	MCK
1	EA	LOCKSET	ENL. ANSI F04 WITH INTERIOR THUMB TURN. HF2 ESCUTCHEON LEVER SET	626	OAK
1	EA	CLOSER	1461 DEL ARM	689	LCN
1	EA	CYLINDER CORE	TO MATCH THE EXISTING	626	OAK
1	EA	OVERHEAD STOP W/OUT HOLDER	81 SERIES	652	GLY
3	EA	SILENCERS	SR64		IVE
1	EA	KICK PLATE	8400 – BHMA 630-B4E	26D	IVE

END OF SECTION 087100

SECTION 088000
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.

B. Glass coatings.

C. Glazing compounds.

1.02 RELATED REQUIREMENTS

A. Section 079200 - Joint Sealants: Sealants for other than glazing purposes.

B. Section 085113 - Aluminum Windows: Glazing provided by window manufacturer.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).

C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).

E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

F. ASTM C1036 - Standard Specification for Flat Glass; 2021.

G. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.

H. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.

I. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2021a.

J. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2016.

K. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.

L. GANA (GM) - GANA Glazing Manual; 2008.

M. GANA (LGRM) - Laminated Glazing Reference Manual; 2019.

N. GANA (SM) - GANA Sealant Manual; 2008.

O. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

P. IGMA TM-3000 - North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial & Residential Use; 1990 (Reaffirmed 2016).

Q. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2020.

R. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2020.

S. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2020.

T. UL (DIR) - Online Certifications Directory; Current Edition.

1.04 SUBMITTALS

A. See Section 013300 - Submittal Procedures.

B. Product Data on Insulating Glass Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

D. Certificate: Certify that products of this section meet or exceed specified requirements.

E. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with GANA (GM), GANA (SM), GANA (LGRM), and IGMA TM-3000 for glazing installation methods.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
   1. Provide certified glass products through ANSI accredited certifications that include plant audits and independent laboratory performance testing.
      a. Insulating Glass Certification Council (IGCC).
      b. Safety Glazing Certification Council (SGCC).

1.06 FIELD CONDITIONS

A. Do not install glazing when ambient temperature is less than 40 degrees F.

B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Insulating Glass Units: Provide a 20 year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Glass Fabricators:
   1. Basis-of-Design-Guardian Glass, LLC
   2. Viracon, Inc: www.viracon.com/#sle.

B. Equivalents: Approved Equal.

C. Float Glass Manufacturers:
   1. Guardian Glass, LLC: www.guardianglass.com/#sle.
   2. Pilkington North America Inc: www.pilkington.com/na/#sle.
   3. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.
   4. Equivalent: Approved Equal.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
   1. Design Pressure:
      a. Positive Design Pressure: As indicated on drawings.

b. Negative Design Pressure: As indicated on drawings.

2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
3. Seismic Loads: Design and size glazing components to withstand seismic loads and sway displacement in accordance with the requirements of ASCE 7
4. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
5. Glass thicknesses listed are minimum.

B. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
2. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
3. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.
4. Tinted Type: ASTM C1036, Class 2 - Tinted, Quality - Q3, with color and performance characteristics as indicated.
5. Thicknesses: As indicated; provide greater thickness as required for exterior glazing wind load design.

2.04 INSULATING GLASS UNITS

A. Manufacturers:
1. Guardian Glass, LLC; Basis of Design: www.guardianglass.com/#sle.
2. Pilkington North America Inc: www.pilkington.com/na/#sle.Pilkington North America Inc: www.pilkington.com/na/#sle.
3. Viracon, Apogee Enterprises, Inc: www.viracon.com/#sle.
4. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.
5. Equivalent: Approved equal.

B. Fabricator: Certified by glass manufacturer for type of glass, coating, and treatment involved and capable of providing specified warranty.

C. Insulating Glass Units: Types as indicated.
1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
3. Metal-Edge Spacers: Aluminum, bent and soldered corners.
4. Spacer Color: Black.
5. Edge Seal:
a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
b. Color: Black.
6. Purge interpane space with dry air, hermetically sealed.

D. Type G1 - Insulating Glass Units: Vision glass, double glazed, safety glass.
   1. Applications: Exterior glazing where indicated on drawings.
   2. Space between lites filled with argon.
   3. Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
   4. Coating on second : Basis of Design: Guardian Glass Sunguard SNX 51/23
      a. Tint: Clear.
      b. Coating: Sunguard SNX 51/23, on #2 surface.
   5. Metal edge spacer.
   6. Inboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
      a. Tint: Clear.
   7. Total Thickness: 1 inch.
   8. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.27, nominal.
   9. Visible Light Transmittance (VLT): 51% percent, nominal.
   10. Solar Heat Gain Coefficient (SHGC): .23, nominal.
   11. Visible Light Reflectance, Outside: 14% percent, nominal.
   12. Glazing Method: Dry glazing method, gasket glazing.

2.05 GLAZING COMPOUNDS

A. Type GC-1 - Glazing Putty: Polymer modified latex recommended by manufacturer for outdoor use, knife grade consistency; gray color.

B. Type GC-2 - Butyl Sealant: Single component; ASTM C920 Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.

C. Type GC-3 - Polysulfide Sealant: Two component; chemical curing, nonsagging type; ASTM C920 Type M, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

D. Type GC-4 - Polyurethane Sealant: Single component, chemical curing, nonstaining, nonbleeding; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 20 to 35; color as selected.

E. Type GC-5 - Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; nonbleeding, nonstaining; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

F. Manufacturers:
   1. BASF Corporation: www.basf.com/#sle.
   2. Bostik Inc: www.bostik-us.com/#sle.
   3. Dow Corning Corporation: www.dowcorning.com/construction/#sle.Dow Corning Corporation: www.dowcorning.com/construction/#sle.
   4. Pecora Corporation: www.pecora.com/#sle.
   5. Tremco Commercial Sealants & Waterproofing; Proglaze: www.tremcosealants.com/#sle.

2.06 ACCESSORIES

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.

B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Minimum 3 inch long by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.

C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.
   1. Width: As required for application.

2. Thickness: As required for application.
3. Spacer Rod Diameter: As required for application.
4. Manufacturers:
   a. Pecora Corporation: www.pecora.com/#sle.
   b. Tremco Global Sealants: www.tremcosealants.com/#sle.
   c. Equivalent: Approved equal.

D. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

E. Glazing Clips: Manufacturer's standard type.

F. Rescue Window/Glazing Unit Markings: Adhesive backed markings affixed to manually operable windows in classrooms to identify units intended for emargency evacuation of students in comliance with New York State Requirements.

2.07 SOURCE QUALITY CONTROL

A. See Section 014000 - Quality Requirements for additional requirements.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that the minimum required face and edge clearances are being provided.

C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

D. Verify that sealing between joints of glass framing members has been completed effectively.

E. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.

E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.

F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, and paint.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.

B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - DRY GLAZING METHOD (TAPE AND GASKET SPLINE GLAZING)

A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.

B. Cut glazing tape to length; install on glazing pane. Seal corners by butting tape and sealing junctions with butyl sealant.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

D. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.

E. Install removable stops without displacing glazing spline. Exert pressure for full continuous contact.

F. Carefully trim protruding tape with knife.

3.06 INSTALLATION - DRY GLAZING METHOD (TAPE AND TAPE)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

D. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.

E. Place glazing tape on free perimeter of glazing in same manner described above.

F. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.

G. Carefully trim protruding tape with knife.

3.07 INSTALLATION - WET GLAZING METHOD (SEALANT AND SEALANT)

A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.

B. Place setting blocks at 1/4 points and install glazing pane or unit.

C. Install removable stops with glazing centered in space by inserting spacer shims both sides at 24 inch intervals, 1/4 inch below sight line.

D. Fill gaps between glazing and stops with type sealant to depth of bite on glazing, but not more than 3/8 inch below sight line to ensure full contact with glazing and continue the air and vapor seal.

E. Apply sealant to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.08 INSTALLATION - WET/DRY GLAZING METHOD (PREFORMED TAPE AND SEALANT)

A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.

B. Cut glazing tape to length and set against permanent stops, 3/16 inch below sight line. Seal corners by butting tape and dabbing with butyl sealant.

C. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.

D. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

E. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.

F. Install removable stops, with spacer strips inserted between glazing and applied stops 1/4 inch below sight lines.
   1. Place glazing tape on glazing pane of unit with tape flush with sight line.

G. Fill gap between glazing and stop with type sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch below sight line.

H. Apply cap bead of type sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.09 INSTALLATION - WET/DRY GLAZING METHOD (TAPE AND SEALANT)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch above sight line.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

D. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.

E. Install removable stops, spacer shims inserted between glazing and applied stops at 24 inch intervals, 1/4 inch below sight line.

F. Fill gaps between pane and applied stop with type sealant to depth equal to bite on glazing, to uniform and level line.

G. Carefully trim protruding tape with knife.

3.10 INSTALLATION - BUTT JOINT GLAZING METHOD (SEALANT ONLY)

A. Application - Interior Glazed: Set glazing infills from exterior side of building.

B. Temporarily brace glass in position for duration of glazing process; mask edges of glass at adjoining glass edges and between glass edges and framing members.

C. Temporarily secure a small diameter nonadhering foamed rod on back side of joint.

D. Apply sealant to open side of joint in continuous operation; thoroughly fill joint without displacing foam rod, and then tool sealant surface smooth to concave profile.

E. Permit sealant to cure then remove foam backer rod, and then apply sealant to opposite side, tool smooth to concave profile.

F. Remove masking tape.

3.11 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for additional requirements.

B. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.

C. Monitor and report installation procedures and unacceptable conditions.

3.12 CLEANING

A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

B. Remove nonpermanent labels immediately after glazing installation is complete.

C. Clean glass and adjacent surfaces after sealants are fully cured.

D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.13 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION 088000

SECTION 092116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Performance criteria for gypsum board assemblies.

B. Acoustic insulation.

C. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Wood blocking product and execution requirements.

B. Section 078400 - Firestopping: Top-of-wall assemblies at fire-resistance-rated walls.

C. Section 079200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

D. Section 092216 - Non-Structural Metal Framing .

1.03 REFERENCE STANDARDS

A. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2018.

B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2019.

C. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017 (Reapproved 2022).

D. ASTM C514 - Standard Specification for Nails for the Application of Gypsum Board; 2004 (Reapproved 2020).

E. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2024.

F. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2020.

G. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2025.

H. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2022.

I. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2022.

J. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2019.

K. ASTM C1178/C1178M - Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel; 2018.

L. ASTM C1278/C1278M - Standard Specification for Fiber-Reinforced Gypsum Panel; 2017.

M. ASTM C1288 - Standard Specification for Fiber-Cement Interior Substrate Sheets; 2023.

N. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units; 2025.

O. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.

P. ASTM C1629/C1629M - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels; 2024.

Q. ASTM C1658/C1658M - Standard Specification for Glass Mat Gypsum Panels; 2019 (Reapproved 2024).

R. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.

S. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2026a.

T. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.

U. ASTM E413 - Classification for Rating Sound Insulation; 2022.

V. GA-216 - Application and Finishing of Gypsum Panel Products; 2024.

W. GA-226 - Application of Gypsum Board to Form Curved Surfaces; 2025.

X. UL (FRD) - Fire Resistance Directory; Current Edition.

Y. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate the installation of gypsum board assemblies with size, location, and installation of service utilities.

B. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

C. Sequencing: Install service utilities in an orderly and expeditious manner.

1.05 SUBMITTALS

A. See Section 013300 - Submittal Procedures.

B. Product Data: Provide data on gypsum board, accessories, and joint finishing system.
   1. Provide data on gypsum board, accessories, and joint finishing system.

C. Shop Drawings: Indicate special details associated with acoustic seals and firestopping at head of partitions.

D. Installer's Qualification Statement.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum 5 years of experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store gypsum products and accessories indoors and keep above freezing. Elevate boards above floor, on nonwicking supports, in accordance with manufacturer's recommendations.

B. Store metal products to prevent corrosion.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.

B. Fire-Resistance-Rated Assemblies: Provide completed assemblies as indicated on drawings
   1. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL (FRD).

2.02 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:
   1. American Gypsum Company: www.americangypsum.com/#sle.

2. CertainTeed Corporation: www.certainteed.com/#sle.
3. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.
4. National Gypsum Company: www.nationalgypsum.com/#sle.
5. USG Corporation: www.usg.com/#sle.
6. Substitutions: See Section 016000 - Product Requirements.

B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   a. Mold-resistant board is required whenever board is being installed before the building is enclosed and conditioned.
   b. Mold resistant board is required where indicated on drawings..
3. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
4. Thickness:
   a. Vertical Surfaces: 5/8 inch unless otherwise indicated on drawings..
   b. Ceilings: 1/2 inch unless otherwise indicated on drawings..
   c. Multi-Layer Assemblies: Thicknesses as indicated on drawings.
5. Paper-Faced Products:
   a. American Gypsum Company; LightRoc Gypsum Wallboard: www.americangypsum.com/#sle.
   b. American Gypsum Company; FireBloc Type X Gypsum Wallboard: www.americangypsum.com/#sle.
   c. American Gypsum Company; FireBloc Type C Gypsum Wallboard: www.americangypsum.com/#sle.
   d. CertainTeed Corporation; Type C Drywall: www.certainteed.com/#sle.
   e. CertainTeed Corporation; Type X Drywall: www.certainteed.com/#sle.
   f. Georgia-Pacific Gypsum; ToughRock: www.buildgp.com/#sle.
   g. Georgia-Pacific Gypsum; ToughRock Fireguard X: www.buildgp.com/#sle.
   h. Georgia-Pacific Gypsum; ToughRock Fireguard C: www.buildgp.com/#sle.
   i. Gold Bond Building Products, LLC provided by National Gypsum Company; Gold Bond Fire-Shield Gypsum Board: www.goldbondbuilding.com/#sle.
   j. USG Corporation; Sheetrock Brand EcoSmart Panels Firecode X 5/8 in. (15.9 mm): www.usg.com/#sle.
   k. USG Corporation; Sheetrock Brand Firecode X Panels 5/8 in. (15.9 mm): www.usg.com/#sle.
   l. Substitutions: See Section 016000 - Product Requirements.
6. Mold-Resistant, Paper-Faced Products:
   a. American Gypsum Company; M-Bloc: www.americangypsum.com/#sle.
   b. American Gypsum Company; M-Bloc Type X: www.americangypsum.com/#sle.
   c. American Gypsum Company; M-Bloc Type C: www.americangypsum.com/#sle.
   d. CertainTeed Corporation; M2Tech 5/8" Type X Moisture & Mold Resistant Drywall: www.certainteed.com/#sle.
   e. Georgia-Pacific Gypsum; ToughRock Mold-Guard: www.buildgp.com/#sle.
   f. Georgia-Pacific Gypsum; ToughRock Fireguard X Mold-Guard: www.buildgp.com/#sle.
   g. Gold Bond Building Products, LLC provided by National Gypsum Company; Gold Bond XP Gypsum Board: www.goldbondbuilding.com/#sle.
   h. USG Corporation; Sheetrock Brand EcoSmart Panels Mold Tough Firecode X 5/8 in. (15.9 mm): www.usg.com/#sle.
   i. Substitutions: See Section 016000 - Product Requirements.

C. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Ceilings, unless otherwise indicated.
   2. Thickness: 1/2 inch.
   3. Edges: Tapered.
   4. Products:
      a. CertainTeed Corporation; Interior Ceiling Drywall: www.certainteed.com/#sle.
      b. USG Corporation; Sheetrock Brand UltraLight Panels 1/2 in. (12.7 mm): www.usg.com/#sle.
      c. Substitutions: See Section 016000 - Product Requirements.

2.03 GYPSUM BOARD ACCESSORIES

A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness: To match partition thickness.

B. Sound Isolation Tape: Elastomeric foam tape for sound decoupling.
   1. Surface Burning Characteristics: Provide assemblies with flame spread index of 75 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
   2. Tape Thickness: 1/4 inch.
   3. Products:
      a. Armacell LLC: www.armacell.us/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.

C. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
   1. Products:
      a. Franklin International, Inc; Titebond Acoustical Smoke & Sound Sealant: www.titebond.com/#sle.
      b. Liquid Nails, a brand of PPG Architectural Coatings: www.liquidnails.com/#sle.
      c. Specified Technologies Inc; Smoke N Sound Acoustical Sealant: www.stifirestop.com/#sle.
      d. Substitutions: See Section 016000 - Product Requirements.

D. Water-Resistive Barrier: See Section 072500.

E. Finishing Accessories:
   1. Types: As detailed or required for finished appearance.
   2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.
   3. Products:
      a. Same manufacturer as framing materials.
      b. Phillips Manufacturing Co: www.phillipsmfg.com/#sle.
      c. Trim-tex, Inc: www.trim-tex.com/#sle.
      d. Substitutions: See Section 016000 - Product Requirements.

F. Decorative Metal Trim:
   1. Material: Extruded aluminum alloy 6063-T5 temper.
   2. Finish: Anodized, clear.
   3. Type: Profile as selected from manufacturer's standard range.
   4. Corner Trim:
      a. Products:
         1) As indicated on drawings..
         2) Schluter Systems.

3) Substitutions: See Section 016000 - Product Requirements.

5. Reveal Trim:
   a. Products:
      1) As indicated on drawings..
      2) Schluter Systems.
      3) Substitutions: See Section 016000 - Product Requirements.
6. Molding:
   a. Products:
      1) As indicated on Drawings.
      2) Schluter Systems.
      3) Substitutions: See Section 016000 - Product Requirements.

G. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
   1. Fiberglass Tape: 2 inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
   2. Paper Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
   3. Products:
      a. Continental Building Products: www.continental-bp.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.
   4. Joint Compound: Drying type, vinyl-based, ready-mixed.
      a. Products:
         1) Continental Building Products: www.continental-bp.com/#sle.
         2) Substitutions: See Section 016000 - Product Requirements.
   5. Joint Compound: Setting type, field-mixed.

H. Finishing Compound: Surface coat and primer, takes the place of skim coating.
   1. Products:
      a. CertainTeed Corporation; Quick Prep Plus Interior Prep Coat: www.certainteed.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.

I. High Build Drywall Surfacer: Vinyl acrylic latex-based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.
   1. Products:
      a. CertainTeed Corporation; Level V Wall and Ceiling Primer/Surfacer with M2Tech: www.certainteed.com/#sle.
      b. USG Corporation; USG Sheetrock Brand Tuff-Hide Primer-Surfacer: www.usg.com/#sle.
      c. Substitutions: See Section 016000 - Product Requirements.

J. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.

K. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.

L. Nails for Attachment to Wood Members: ASTM C514.

M. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B. Sound Isolation Tape: Apply to vertical studs and top and bottom tracks/runners in accordance with manufacturer's instructions.

C. Acoustic Sealant: Install in accordance with manufacturer's instructions.
   1. Place continuous bead at perimeter of each layer of gypsum board.
   2. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

3.03 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
   1. Exception: Tapered edges to receive joint treatment at right angles to framing.

C. Double-Layer, Nonrated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.

D. Fire-Resistance-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.

E. Exposed Gypsum Board in Interior Wet Areas: Seal joints, cut edges, and holes with water-resistant sealant.

F. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

G. Installation on Metal Framing: Use screws for attachment of gypsum board except face layer of nonrated double-layer assemblies, which may be installed by means of adhesive lamination.

H. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA-226.

3.04 INSTALLATION OF TRIM AND ACCESSORIES

A. Corner Beads: Install at external corners, using longest practical lengths.

B. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

C. Decorative Trim: Install at locations shown on drawings and in accordance with manufacturer's instructions.

3.05 JOINT TREATMENT

A. Glass Mat Faced Gypsum Board and Exterior Glass Mat Faced Sheathing: Use fiberglass joint tape, embed and finish with setting type joint compound.

B. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.

C. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas specifically indicated.
   2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   3. Level 3: Walls to receive textured wall finish.
   4. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
   5. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.

D. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch.

E. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

F. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.06 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION 092116

This page intentionally left blank

SECTION 092216
NON-STRUCTURAL METAL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal partition, ceiling, and soffit framing.

B. Framing accessories.

1.02 RELATED REQUIREMENTS

A. Section 055000 - Metal Fabrications: Metal fabrications attached to stud framing.

B. Section 061000 - Rough Carpentry: Wood blocking within stud framing.

C. Section 079200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

D. Section 083100 - Access Doors and Panels.

E. Section 092116 - Gypsum Board Assemblies: Execution requirements for anchors for attaching work of this section.

1.03 REFERENCE STANDARDS

A. AISI S201 - North American Standard for Cold-Formed Steel Framing - Product Data; 2017.

B. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing; 2020.

C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.

E. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members; 2015.

F. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2018a.

G. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2020.

H. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2022.

I. ASTM C1513 - Standard Specification for Steel Tapping Screws for Cold-Formed Steel Framing Connections; 2024.

J. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.

K. ASTM E413 - Classification for Rating Sound Insulation; 2022.

1.04 SUBMITTALS

A. See Section 013300 - Submittal Procedures.

B. Shop Drawings:
   1. Indicate prefabricated work, component details, stud layout, framed openings, anchorage to structure, acoustic details, type and location of fasteners, accessories, and items of other related work.
   2. Describe method for securing studs to tracks, splicing, and for blocking and reinforcement of framing connections.

C. Product Data: Provide data describing framing member materials and finish, product criteria, load charts, and limitations.

D. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section with minimum five years documented experience and approved by manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Framing, Connectors, and Accessories:
   1. ClarkDietrich: www.clarkdietrich.com/#sle.
   2. Marino: www.marinoware.com/#sle.
   3. Substitutions: See Section 016000 - Product Requirements.

2.02 FRAMING MATERIALS

A. Fire-Resistance-Rated Assemblies: Comply with applicable code and as indicated on drawings.

B. Loadbearing Studs: As specified in Section 054000.

C. Material and Product Requirements: AISI S201 and AISI S220.

D. Nonstructural Framing System Components: Sheet steel, of size and properties necessary for spacing indicated on drawings, with maximum wall framing deflection of L/120 at 10 psf.
   1. Studs: C-shaped with flat faces.
      a. Products:
         1) Super Stud Building Products, Inc; The EDGE: www.buysuperstud.com/#sle.
         2) Substitutions: See Section 016000 - Product Requirements.
   2. Runners: U-shaped, sized to match studs.
   3. Ceiling Channels: U-shaped.
   4. Furring: Hat-shaped sections, minimum depth of 7/8 inch.
   5. Resilient Furring Channels: Single or double leg configuration; 1/2 inch channel depth.
      a. Products:
         1) ClarkDietrich; RC Deluxe Resilient Channel: www.clarkdietrich.com/#sle.
         2) Substitutions: See Section 016000 - Product Requirements.

E. Partition Head to Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and braced with continuous bridging on both sides.

F. Deflection and Firestop Track: Intumescent strip factory-applied to track flanges expands when exposed to heat or flames to provide a perimeter joint seal.
   1. Products:
      a. ClarkDietrich; BlazeFrame Firestop Deflection Track: www.clarkdietrich.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.

G. Preformed Top Track Firestop Seal:
   1. Provide components UL-listed for use in UL-listed fire-resistance-rated head of partition joint systems indicated on drawings.
   2. Products:
      a. Hilti, Inc; Top Track Seal CFS TTS: www.us.hilti.com/#sle.
      b. Specified Technologies Inc; SpeedFlex TTG Track Top Gasket: www.stfirestop.com/#sle.
      c. Substitutions: See Section 016000 - Product Requirements.

H. Nonstructural Framing Accessories:
   1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.

2. Partial Height Wall Framing Support: Provides stud reinforcement and anchored connection to floor.
    a. Materials: ASTM A1011/A1011M sheet steel support member with factory-welded ASTM A36/A36M steel plate base.
        1) Height: 23-5/8 inches.
3. Framing Connectors: ASTM A653/A653M steel clips; secures cold rolled channel to wall studs for lateral bracing.
    a. Products:
        1) ClarkDietrich; FastBridge Clip (FB33): www.clarkdietrich.com/#sle.
        2) Substitutions: See Section 016000 - Product Requirements.
4. Flexible Wood Backing: Fire-retardant-treated wood with sheet steel connectors.
    a. Products:
        1) ClarkDietrich; Danback: www.clarkdietrich.com/#sle.
        2) Substitutions: See Section 016000 - Product Requirements.
5. Sheet Metal Backing: 25 gauge, 0.0209 inch thick.
6. Fasteners: ASTM C1513 self-piercing, self-tapping screws.
7. Anchorage Devices: Powder actuated.

2.03 FABRICATION

A. Fabricate assemblies of framed sections to sizes and profiles required.

B. Fit, reinforce, and brace framing members to suit design requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that rough-in utilities are in proper location.

3.02 INSTALLATION OF STUD FRAMING

A. Install non-structural members in accordance with ASTM C754.

B. Extend partition framing to structure where indicated and to ceiling in other locations.

C. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.

D. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs as indicated.

E. Align and secure top and bottom runners at 16 inches on center.

F. At partitions indicated with an acoustic rating:
    1. Provide components and install as required to produce STC ratings as indicated, based on published tests by manufacturer conducted in accordance with ASTM E90 with STC rating calculated in accordance with ASTM E413.
    2. Place one bead of acoustic sealant between runners and substrate , studs and adjacent construction.
    3. Place one bead of acoustic sealant between studs and adjacent vertical surfaces.
    4. Sound Isolation Tape: Apply to vertical studs and top and bottom tracks/runners in accordance with manufacturer's instructions.

G. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.

H. Align stud web openings horizontally.

I. Secure studs to tracks using fastener method. Do not weld.

J. Fabricate corners using a minimum of three studs.

K. Install double studs at wall openings, door and window jambs, not more than 2 inches from each side of openings.

L. Brace stud framing system rigid.

M. Coordinate erection of studs with requirements of door frames; install supports and attachments.

N. Coordinate installation of bucks, anchors, and blocking with electrical, mechanical, and other work to be placed within or behind stud framing.

O. Blocking: Use wood blocking secured to studs. Provide blocking for support of plumbing fixtures, toilet partitions, wall cabinets, toilet accessories, hardware, and opening frames.

P. Furring: Install at spacing and locations shown on drawings. Lap splices a minimum of 6 inches.

Q. Use sheet metal backing for reinforcement where indicated on drawings..

3.03 CEILING AND SOFFIT FRAMING

A. Comply with requirements of ASTM C754.

B. Install furring after work above ceiling or soffit is complete. Coordinate the location of hangers with other work.

C. Install furring independent of walls, columns, and above-ceiling work.

D. Securely anchor hangers to structural members or embed them in structural slab. Space hangers as required to limit deflection to criteria indicated. Use rigid hangers at exterior soffits.

E. Space main carrying channels at maximum 72 inches on center, and not more than 6 inches from wall surfaces. Lap splice securely.

F. Securely fix carrying channels to hangers to prevent turning or twisting and to transmit full load to hangers.

G. Place furring channels perpendicular to carrying channels, not more than 2 inches from perimeter walls, and rigidly secure. Lap splices securely.

H. Reinforce openings in suspension system that interrupt main carrying channels or furring channels with lateral channel bracing. Extend bracing minimum 24 inches past each opening.

I. Laterally brace suspension system.

3.04 TOLERANCES

A. Maximum Variation From True Position: 1/8 inch in 10 feet.

B. Maximum Variation From Plumb: 1/8 inch in 10 feet.

END OF SECTION 092216

SECTION 095100
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

1.02 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025a.

B. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.

C. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2019.

D. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2024a.

E. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2023.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.

B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

A. See Section 013300 - Submittal Procedures.

B. Product Data: Provide data on suspension system components and acoustical units.

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

1.05 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acoustic Tiles/Panels:
   1. Armstrong World Industries, Inc; Basis of Design: www.armstrongceilings.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

B. Suspension Systems:
   1. Armstrong World Industries, Inc; Basis of Design: www.armstrongceilings.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

2.02 ACOUSTICAL UNITS

A. Acoustical Units - General: ASTM E1264, Class A.

B. Acoustical Panels: Mineral fiber with membrane-faced overlay, with the following characteristics:
   1. Classification: ASTM E1264 Type A.

a. Pattern: Fissured.
b. Fire Class: Class A-Flame spread rating of 25 or less, Smoke developed index of 50 or less, per ASTM E84.

2. Size: 24 by 24 inches.
3. Thickness: 5/8 inches.
4. Light Reflectance: 82 percent, determined in accordance with ASTM E1264.
5. Ceiling Attenuation Class (CAC): 33, determined in accordance with ASTM E1264.
6. Panel Edge: Square.
7. Color: White.
8. Suspension System: Exposed grid.
9. Products:
   a. Armstrong World Industries, Inc; Random Textured Contractor White-Model 934A: www.armstrongceilings.com/#sle.
   b. Substitutions: See Section 016000 - Product Requirements.

2.03 SUSPENSION SYSTEMS

A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold-down clips, stabilizer bars, clips, and splices as required.
   1. Materials:
      a. Steel Grid: ASTM A653/A653M, G30 coating, unless otherwise indicated.

B. Exposed Suspension System: Hot-dipped galvanized steel grid and cap.
   1. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
   2. Profile: Tee; face width to match existing suspension system.
   3. Finish: Baked enamel.
   4. Color: To match suspension system.
   5. Products:
      a. Armstrong Industries; Prelude XL 15/16 inch Acoustical Suspension System. Basis-of-Design..
      b. Substitutions: See Section 016000 - Product Requirements.

2.04 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.

B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.

C. Hold-Down Clips: Manufacturer's standard clips to suit application.

D. Perimeter Moldings: Same metal and finish as grid.
   1. Size: As required for installation conditions and specified Seismic Design Category.
   2. Angle Molding: L-shaped, for mounting at same elevation as face of grid.
   3. Shadow Molding: Shaped to create a perimeter reveal.
   4. Channel Molding: U-shaped, for hold-down type installations.
   5. Acoustical Sealant For Perimeter Moldings: Non-hardening, non-skinning, for use in conjunction with suspended ceiling system.

E. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 PREPARATION

A. Install after major above-ceiling work is complete.

B. Coordinate the location of hangers with other work.

3.03 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions, as supplemented in this section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

C. Lay out system to a balanced grid design with edge units no less than 50 percent of acoustical unit size.

D. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
   1. Use longest practical lengths.

E. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

H. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

I. Do not eccentrically load system or induce rotation of runners.

3.04 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

E. Cutting Acoustical Units:
   1. Cut to fit irregular grid and perimeter edge trim.
   2. Make field cut edges of same profile as factory edges.
   3. Double cut and field paint exposed reveal edges.

F. Where round obstructions occur, provide preformed closures to match perimeter molding.

G. Install hold-down clips on panels within 20 ft of an exterior door.

3.05 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION 095100

SECTION 096500
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient base.

B. Installation accessories.

1.02 REFERENCE STANDARDS

A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2019a, with Editorial Revision (2020).

B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2022.

C. ASTM F1344 - Standard Specification for Rubber Floor Tile; 2021a.

D. ASTM F1700 - Standard Specification for Solid Vinyl Floor in Modular Format such as Tile(s) or Plank(s); 2025.

E. ASTM F1861 - Standard Specification for Resilient Wall Base; 2021 (Reapproved 2025).

F. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2023.

G. ASTM F2169 - Standard Specification for Resilient Stair Treads; 2015 (Reapproved 2025).

H. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.

I. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2023.

J. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; 2018.

1.03 SUBMITTALS

A. See Section 013300 - Submittal Procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Wall Base: 5% of each type and color.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum three years documented experience.

B. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.

B. Store all materials off of the floor in an acclimatized, weather-tight space.

C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

D. Protect roll materials from damage by storing on end.

1.06 FIELD CONDITIONS

A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 RESILIENT BASE

A. Resilient Base: ASTM F1861, Type TS rubber, vulcanized thermoset.
   1. Manufacturers:
      a. Tarkett Company; DuracoveBasis of Design: www.tarkett.com/#sle
      b. Equivalent: Approved equal.
   2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
   3. Smoke density Class B less than 450, when tested in accordance with ASTM E84
   4. Profile: As indicated on Drawings.
   5. Height: As indicated on Drawings.
   6. Thickness: 0.125 inch.
   7. Finish: Satin.
   8. Length: 4 foot sections.
   9. Color: As indicated on drawings.

2.02 ACCESSORIES

A. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.
   1. VOC Content Limits: As specified in Section 016116.

B. Filler for Coved Base: Plastic.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

3.02 PREPARATION

A. Clean substrate.

B. Apply primer as required to prevent "bleed-through" or interference with adhesion by substances that cannot be removed.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install in accordance with manufacturer's written instructions.

C. Adhesive-Applied Installation:
   1. Spread only enough adhesive to permit installation of materials before initial set.
   2. Fit joints and butt seams tightly.

3.04 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.

B. Miter internal corners. At external corners, follow manufacturer's instructions.

C. Install base on solid backing. Bond tightly to wall and floor surfaces.

D. Scribe and fit to door frames and other interruptions.

3.05 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean in accordance with manufacturer's written instructions.

END OF SECTION 096500

This page intentionally left blank

SECTION 099000
PAINTING AND COATING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Interior painting and coating systems.

C. Exterior painting and coating systems.

D. Scope:
   1. Finish surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
      a. Exterior:
         1) Concrete: common brick, stucco, precast, and cast-in-place concrete.
         2) Masonry: Concrete masonry units or concrete brick.
         3) Concrete: Non-vehicular floors, patios, porches, steps, and platforms.
         4) Metal, Miscellaneous: Iron, ornamental iron, structural iron and steel, and other ferrous metal.
         5) Vinyl siding, EIFS, stucco.
      b. Interior:
         1) Concrete, Walls and Ceilings: Cast-in-place concrete, precast concrete, unglazed brick, fiber cement board, and plaster.
         2) Concrete Masonry Units: smooth .
         3) Metal: Galvanized and Primed steel.
         4) Metal: Structural steel columns, joists, trusses, beams, miscellaneous and ornamental iron, structural iron, and other ferrous metal.
         5) Wood: Walls, ceilings, doors, and trim.
         6) Drywall: Walls, ceilings, gypsum board, and similar items.

1.02 RELATED REQUIREMENTS

A. Section 055000 - Metal Fabrications: Shop-primed items.

1.03 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; Current Edition.

B. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

C. SSPC-SP 2 - Hand Tool Cleaning; 2024.

D. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

E. SSPC-SP 13 - Surface Preparation of Concrete; 2018.

1.04 SUBMITTALS

A. See Division 01 for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Product characteristics.
   2. Surface preparation instructions and recommendations.
   3. Primer requirements and finish specification.
   4. Storage and handling requirements and recommendations.
   5. Application methods.
   6. Clean-up information.

C. Samples: Submit three paper draw down samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.

D. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

E. Maintenance Data: Submit coating maintenance manual including finish schedule showing where each product/color/finish was used, product technical data sheets, safety data sheets (SDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Division 01 for additional provisions.
   2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
   3. Label each container with color in addition to manufacturer's label.

1.05 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 3 years experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, product name, product code, color designation, VOC content, batch date, environmental handling, surface preparation, application, and use instructions.

C. Paint Materials: Store at a minimum of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

D. Handling: Maintain a clean, dry storage area to prevent contamination or damage to materials.

1.07 FIELD CONDITIONS

A. Do not apply materials when environmental conditions are outside the ranges required by manufacturer.

B. Follow manufacturer's recommended procedures for producing the best results, including testing substrates, moisture in substrates, and humidity and temperature limitations.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design Products: Subject to compliance with requirements, provide Sherwin-Williams Company (The) products indicated; www.sherwin-williams.com/#sle.

B. Behr Process Corporation: www.Behr.com/#sle.

C. PPG Paints: www.ppgpaints.com/#sle.

2.02 PAINTINGS AND COATINGS

A. General:
   1. Provide factory-mixed coatings unless otherwise indicated.
   2. Do not reduce, thin, or dilute coatings or add materials to coatings unless specifically indicated in manufacturer's instructions.

B. Volatile Organic Compound (VOC) Content:
   1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
      a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.

2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site, or other method acceptable to authorities having jurisdiction.

C. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

2.03 PAINT SYSTEMS - EXTERIOR

A. Concrete: common brick, stucco, precast, and poured-in-place cement.
1. Elastomeric System: Not including cementitious siding, Flexboard, Transite board or non-roof shingles.
2. Textured and Smooth Systems:
a. Textured Finish, Solvent Based:
1) 1st Coat: Sherwin-Williams UltraCrete Smooth Waterproofing Masonry Coating, B46 Series: www.sherwin-williams.com/#sle.
(a) 100 to 160 sq ft/gal.
2) 2nd Coat: Sherwin-Williams Conflex UltraCrete Solvent Textured Waterproofing Masonry Coating, CF18W850 Series: www.sherwin-williams.com/#sle.
(a) 50 to 80 sq ft/gal.
(b) Textured Finish: Fine.

B. Masonry: Concrete masonry units (CMU), cinder or concrete block.
1. Latex Systems:
a. Semi-Gloss Finish:
1) 1st Coat: Sherwin-Williams PrepRite Block Filler, B25W25: www.sherwin-williams.com/#sle.
(a) 75 to 125 sq ft/gal.
2) 2nd and 3rd Coat: Sherwin-Williams Pro Industrial Acrylic Semi-Gloss, B66-650 series: www.sherwin-williams.com/#sle.
(a) 6 to 12 mils wet, 2 to 4 mils dry per coat.

C. Metal, Miscellaneous: Iron, ornamental iron, structural iron and steel, ferrous metal.
1. Alkyd Systems, Water-Based:
a. Semi-Gloss Finish:
1) 1st Coat: Sherwin-Williams Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series: www.sherwin-williams.com/#sle.
(a) 5 mils wet, 2 mils dry per coat.
2) 2nd and 3rd Coat: Sherwin-Williams Pro Industrial Water Based Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series: www.sherwin-williams.com/#sle.
(a) 4 to 5 mils wet, 1.4 to 1.7 mils dry per coat.

D. Vinyl Siding, EIFS, Stucco:
1. Latex Systems:
a. Semi-Gloss Finish:
1) 1st and 2nd Coat: Sherwin-Williams Pro Industrial Acrylic Semi-Gloss, B66-650 Series: www.sherwin-williams.com/#sle.
(a) 2 to 4 mils dry per coat.

2.04 PAINT SYSTEMS - INTERIOR

A. Masonry CMU: Concrete, split face, scored, smooth, high density, low density, and fluted.
1. Latex Systems:
a. Eg-Shel/Satin Finish High Performance (HP):
1) 1st Coat: Sherwin-Williams PrepRite Block Filler, B25W25: www.sherwin-williams.com/#sle.
(a) 75 to 125 sq ft/gal.

2) 2nd and 3rd Coat: Sherwin-Williams ProMar 200 HP Zero VOC Eg-Shel, B20-1950 Series: www.sherwin-williams.com/#sle.
(a) 4 mils wet, 1.7 mils dry per coat.

2. Epoxy Systems, Water-Based:
a. Eg-Shel/Low Luster Finish:
1) 1st Coat: Sherwin-Williams Loxon Block Surfacer, LX01W200: www.sherwin-williams.com/#sle.
(a) 50 to 100 sq ft/gal.
2) 2nd and 3rd Coat: Sherwin-Williams Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45 Series: www.sherwin-williams.com/#sle.
(a) 4 mils wet, 1.5 mils dry per coat.

B. Metal: Galvanized.
1. Latex Systems:
a. Semi-Gloss Finish:
1) 1st Coat: Sherwin-Williams Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series: www.sherwin-williams.com/#sle.
(a) 5 mils wet, 2 mils dry per coat.
2) 2nd and 3rd Coat: Sherwin-Williams Pro Industrial Acrylic Semi-Gloss, B66-650 Series: www.sherwin-williams.com/#sle.
(a) 2 to 4 mils dry per coat.

C. Metal: Structural steel columns, joists, trusses, beams, miscellaneous and ornamental iron, structural iron, and ferrous metal.
1. Latex Systems:
a. Semi-Gloss Finish:
1) 1st Coat: Sherwin-Williams Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series: www.sherwin-williams.com/#sle.
(a) 5 mils wet, 2 mils dry per coat.
2) 2nd and 3rd Coat: Sherwin-Williams Pro Industrial Acrylic Semi-Gloss, B66-650 Series: www.sherwin-williams.com/#sle.
(a) 2 to 4 mils dry per coat.

D. Wood: Walls, ceilings, doors, and trim.
1. Latex Systems:
a. Semi-Gloss Finish:
1) 1st Coat: Sherwin-Williams Premium Wall and Wood Primer, B28W8111: www.sherwin-williams.com/#sle.
(a) 4 mils wet, 1.8 mils dry per coat.
2) 2nd and 3rd Coat: Sherwin-Williams ProClassic Waterborne Acrylic Semi-Gloss, B31 Series: www.sherwin-williams.com/#sle.
(a) 4 mils wet, 1.3 mils dry per coat.

E. Drywall and Plaster: Walls, ceilings, gypsum board, and similar items.
1. Latex Systems:
a. Eg-Shel Finish High Performance (HP):
1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600: www.sherwin-williams.com/#sle.
(a) 4 mils wet, 1.5 mils dry per coat.
2) 2nd and 3rd Coat: Sherwin-Williams ProMar 200 HP Zero VOC Eg-Shel, B20-1950 Series: www.sherwin-williams.com/#sle.
2. Epoxy Systems, Water-Based:
a. Semi-Gloss Finish:

1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600: www.sherwin-williams.com/#sle.
   (a) 4 mils wet, 1.5 mils dry per coat.
2) 2nd and 3rd Coat: Sherwin-Williams Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46 Series: www.sherwin-williams.com/#sle.
   (a) 4 mils wet, 1.5 mils dry per coat.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove mildew from impervious surfaces by scrubbing with solution of water and bleach. Rinse with clean water and allow surface to dry.

D. Concrete:
   1. Remove release agents, curing compounds, efflorescence, and chalk.
   2. Fill bug holes, air pockets, and other voids with cement patching compound.
   3. Prepare concrete according to SSPC-SP 13.

E. Masonry: Remove efflorescence and chalk.

F. Gypsum Board: Fill minor defects with filler compound; sand smooth and remove dust prior to painting.

G. Plaster: Fill hairline cracks, small holes, and imperfections with patching plaster. Make smooth and flush with adjacent surfaces. Treat textured, soft, porous, or powdery surfaces in accordance with manufacturer's instructions.

H. Aluminum: Remove surface contamination and oil; wash with solvent according to SSPC-SP 1.

I. Galvanized Surfaces:
   1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
   2. Prepare surface according to SSPC-SP 2.

J. Ferrous Metal:
   1. Solvent clean according to SSPC-SP 1.
   2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Prime bare steel surfaces.
   3. Remove rust, loose mill scale, and other foreign substances using methods recommended by paint manufacturer and blast cleaning according to SSPC-SP 6. Protect from corrosion until coated.

K. Wood: Remove dust, grit, and foreign matter. Scrape, sand, and spot prime knots and pitch streaks. Fill nail holes and imperfections with wood filler and sand smooth.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Apply products in accordance with manufacturer's written instructions.

C. Apply coatings at spread rate required to achieve manufacturer's recommended dry film thickness.

3.04 PRIMING

A. Apply primer to all surfaces unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

B. Primers specified in painting schedules may be omitted on items factory primed or factory finished items if acceptable to top coat manufacturers.

3.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

B. Clean surfaces immediately of overspray, splatter, and excess material.

C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

3.06 PROTECTION

A. Protect finished coatings from damage until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION 099000