Volume 1 of 1
Project Manual
Issued for Bid

East Lyme High School-
Aquatic Center Roof Replacement
30 Chesterfield Road
East Lyme, CT

Owner:
Town of East Lyme/
East Lyme Public Schools
165 Boston Post Road P.O. Box 220
East Lyme, CT
06333-0176

Prepared By:
Lothrop Associates Architects D.P.C.P.C
333 Westchester Ave.
White Plains, NY
10604

Project Manual Date: February 11, 2026

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Building Rates

County	Town	Classification	Hourly Rate	Hourly Benefit
New London	Colchester	11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	$50.58	36.30
New London	Colchester	12) Well Digger, Pile Testing Machine	$37.26	24.05 + a
New London	Colchester	13) Roofer (composition)	$45.15	22.44
New London	Colchester	14) Roofer (slate & tile)	$45.65	22.44
New London	Colchester	15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	$44.70	44.38
New London	Colchester	16) Pipefitter (Including HVAC work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4, G-1, G-2, G-8 & G-9)	$50.58	36.30
New London	Colchester	------TRUCK DRIVERS------		
New London	Colchester	17) Block Truck	$37.48	32.68 + a
New London	Colchester	17a) 2 Axle	$36.16	32.68 + a
New London	Colchester	17ab) Helpers	$34.66	32.68 + a
New London	Colchester	17b) 3 Axle, 2 Axle Mixer	$36.27	32.68 + a
New London	Colchester	17c) 3 Axle Mixer	$36.33	32.68 + a
New London	Colchester	17d) 4 Axle	$36.39	32.68 + a
New London	Colchester	17e) 4 Axle Mixer	$37.19	32.68 + a
New London	Colchester	17ef) 5 Axle	$36.39	32.68 + a
New London	Colchester	17eg) 5 Axle Mixer	$37.19	32.68 + a
New London	Colchester	17f) Heavy Duty Trailer (40 Tons and Over)	$38.66	32.68 + a
New London	Colchester	17g) Euclids and Semi-Trailer	$36.44	32.68 + a
New London	Colchester	17h) Heavy Duty Trailer up to 40 tons	$37.39	32.68 + a
New London	Colchester	17i) Snorkle Truck	$36.54	32.68 + a
New London	Colchester	17j) Swivel Dump and Tack Truck	$36.39	32.68 + a
New London	Colchester	18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	$53.76	33.44 + a
New London	Colchester	19) Theatrical Stage Journeyman	$25.76	7.34
New London	East Lyme	1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters.**See Laborers Group 7**		
New London	East Lyme	1c) Asbestos Worker/Heat and Frost Insulator	$48.81	34.05
New London	East Lyme	2) Boilermaker	$48.21	30.01
New London	East Lyme	3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	$42.61	34.89 + a

As of: July 1, 2025

Building Rates

County	Town	Classification	Hourly Rate	Hourly Benefit
New London	East Lyme	3b) Tile Setter	$40.00	32.75
New London	East Lyme	3c) Tile and Stone Finishers	$33.00	27.43
New London	East Lyme	3d) Marble & Terrazzo Finishers	$34.20	26.23
New London	East Lyme	3e) Plasterer	$44.52	29.63
New London	East Lyme	3f) Terrazzo Mechanics & Marble Setters	$40.60	34.93
New London	East Lyme	------LABORERS------		
New London	East Lyme	4) Group 1: General laborers, carpenter tenders, concrete specialists, wrecking laborers and fire watchers.	$35.70	28.85
New London	East Lyme	4) Group 1a: Acetylene Burners (Hours worked with a torch)	$36.70	28.85
New London	East Lyme	4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofer/mixer/nozzleman (Person running mixer and spraying fireproof only).	$35.95	28.85
New London	East Lyme	4b) Group 3: Jackhammer operators/pavement breaker, mason tender (brick), mason tender (cement/concrete), forklift operators and forklift operators (masonry).	$36.20	28.85
New London	East Lyme	4c) **Group 4: Pipelayers: Licensed P6 -P7 (one or two employees of the total crew who primary task is to perform mating of pipe sections).	$36.70	28.85
New London	East Lyme	4d) Group 5: Air track operator, sand blaster and hydraulic drills.	$36.45	28.85
New London	East Lyme	4e) Group 6: Blasters, nuclear and toxic waste removal.	$38.70	28.85
New London	East Lyme	4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped).	$38.70	28.85
New London	East Lyme	4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew.	$36.20	28.85
New London	East Lyme	4h) Group 9: Top men on open air caisson, cylindrical work and boring crew.	$35.70	28.85
New London	East Lyme	4i) Group 10: Traffic Control Signalman	$21.42	28.85
New London	East Lyme	4j) Group 11: Toxic Waste Removers A or B With PPE	$38.70	28.85
New London	East Lyme	5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers.	$42.03	29.19
New London	East Lyme	5a) Millwrights	$43.25	29.13
New London	East Lyme	5b) Carpenter - Welder	$42.53	29.19
New London	East Lyme	5c) Carpenter: Working with creosote lumber or acid	$43.03	29.19
New London	East Lyme	6) Electrical Worker (including low voltage wiring) (Trade License required: E1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	$46.40	36.66+3% of gross wage
New London	East Lyme	7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	$66.72	38.435+a+b
New London	East Lyme	-----OUTSIDE LINE CONSTRUCTION----		
New London	East Lyme	Groundman	$30.87	13.91

As of: July 1, 2025

Building Rates

County	Town	Classification	Hourly Rate	Hourly Benefit
New London	East Lyme	Linemen/Cable Splicer	$56.12	32.85
New London	East Lyme	8) Glazier (Trade License required: FG-1,2)	$43.13	26.50+ a
New London	East Lyme	9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	$45.25	43.62 + a
New London	East Lyme	----OPERATORS----		
New London	East Lyme	Group 1: Crane Handling or Erecting Structural Steel or Stone; Hoisting Engineer (2 drums or over). (Trade License Required)	$58.19	29.80 + a
New London	East Lyme	Group 1a: Front End Loader (7 cubic yards or over); Work Boat 26 ft. and Over	$53.33	29.80 + a
New London	East Lyme	Group 2: Cranes (100 ton rate capacity and over); Bauer Drill/Caisson. (Trade License Required)	$57.78	29.80 + a
New London	East Lyme	Group 2a: Cranes (under 100 ton rated capacity).	$56.79	29.80 + a
New London	East Lyme	Group 2b: Excavator over 2 cubic yards; Pile Driver ($3.00 premium when operator controls hammer)	$52.92	29.80 + a
New London	East Lyme	Group 3: Excavator; Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Finegrade. (slopes, shaping, laser or GPS, etc.). (Trade License Required)	$51.92	29.80 + a
New London	East Lyme	Group 4: Trenching Machines; Lighter Derrick; CMI Machine or Similar; Koehring Loader (Skooper); Goldhofer.	$51.42	29.80 + a
New London	East Lyme	Group 5: Specialty Railroad Equipment; Asphalt Spreader, Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24 mandrel).	$50.63	29.80 + a
New London	East Lyme	Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	$50.63	29.80 + a
New London	East Lyme	Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	$50.22	29.80 + a
New London	East Lyme	Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under mandrel).	$49.77	29.80 + a
New London	East Lyme	Group 8: Mechanic; Grease Truck Operator; Hydroblaster; Barrier Mover; Power Stone Spreader; Welding; Work Boat Under 26 ft.; Transfer Machine; Rigger Foreman.	$49.25	29.80 + a
New London	East Lyme	Group 9: Front End Loader (under 3 cubic yards); Skid Steer Loader regardless of attachments; (Bobcat or Similar); Forklift, Power Chipper; Landscape Equipment (including Hydroseeder); Vacuum Excavation Truck and Hydrovac Excavation Truck (27 HG pressure or greater).	$48.67	29.80 + a
New London	East Lyme	Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	$45.96	29.80 + a
New London	East Lyme	Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	$45.96	29.80 + a
New London	East Lyme	Group 12: Wellpoint Operator.	$45.87	29.80 + a
New London	East Lyme	Group 13: Compressor Battery Operator.	$45.12	29.80 + a
New London	East Lyme	Group 14: Elevator Operator; Tow Motor Operator (solid tire no rough terrain).	$43.60	29.80 + a
New London	East Lyme	Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	$43.06	29.80 + a
New London	East Lyme	Group 16: Maintenance Engineer.	$42.20	29.80 + a

As of: July 1, 2025

Building Rates

County	Town	Classification	Hourly Rate	Hourly Benefit
New London	East Lyme	Group 17: Portable Asphalt Plant Operator; Portable Crusher Plant Operator; Portable Concrete Plant Operator; Portable Grout Plant Operator; Portable Water Filtration Plant Operator.	$47.91	29.80 + a
New London	East Lyme	Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (Minimum for any job requiring a CDL license); Rigger; Signalman.	$44.70	29.80 + a
New London	East Lyme	Surveyor: Chief of Party	$48.16	29.80 + a
New London	East Lyme	Surveyor: Assistant Chief of Party	$44.41	29.80 + a
New London	East Lyme	Surveyor: Instrument Man	$42.73	29.80 + a
New London	East Lyme	Surveyor: Rodman or Chainman	$36.78	29.80 + a
New London	East Lyme	------PAINTERS (Including Drywall Finishing)------		
New London	East Lyme	10a) Brush and Roller	$39.57	26.50
New London	East Lyme	10b) Taping Only/Drywall Finishing	$40.32	26.50
New London	East Lyme	10c) Paperhanger and Red Label	$40.07	26.50
New London	East Lyme	10d) Spray	$42.57	26.50
New London	East Lyme	10e) Spray Helper	$40.57	26.50
New London	East Lyme	10f) Blast	$44.57	26.50
New London	East Lyme	10g) Blast Helper	$40.57	26.50
New London	East Lyme	11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	$50.58	36.30
New London	East Lyme	12) Well Digger, Pile Testing Machine	$37.26	24.05 + a
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As of: July 1, 2025

Building Rates

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New London	East Lyme	17eg) 5 Axle Mixer	$37.19	32.68 + a
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New London	Franklin	3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	$42.61	34.89 + a
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New London	Franklin	------LABORERS------		
New London	Franklin	4) Group 1: General laborers, carpenter tenders, concrete specialists, wrecking laborers and fire watchers.	$35.70	28.85
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New London	Franklin	4d) Group 5: Air track operator, sand blaster and hydraulic drills.	$36.45	28.85
New London	Franklin	4e) Group 6: Blasters, nuclear and toxic waste removal.	$38.70	28.85

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Schedule 2: Corporate Resolution
Schedule 3: List of Required Bid Submission Documents
Schedule 4: Standard Bid Bond Form
Schedule 5: Insurance Requirements
Schedule 6: Statement of Qualifications
Schedule 7: Certificate of Compliance Re Connecticut General Statutes Section 31-57b
Schedule 8: Form of Contract: AIA A101-2017 Agreement, as modified by the Owner

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END OF SECTION

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SECTION 000115
LIST OF DRAWINGS

THE LIST OF DRAWINGS DATED FEBRUARY 11, 2026, INDICATED BELOW CONTAIN, IN ADDITION TO THE WORK OUTLINED IN THE SPECIFICATIONS SECTIONS OF THE PROJECT MANUAL, INFORMATION REQUIRED TO PERFORM THE WORK OF THE CONTRACT.

LIST OF DRAWINGS:

NUMBER	TITLE	DATE
A000	COVER SHEET	2-11-2026
A001	ROOF KEY PLAN	2-11-2026
A002	SITE PLAN	2-11-2026
A110	DEMOLITION FIRST FLOOR PLAN	2-11-2026
A110.1	DEMOLITION MEZZANINE FLOOR PLAN/CEILING PLAN	2-11-2026
A111	CONSTRUCTION FIRST FLOOR PLAN	2-11-2026
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A121.2	CONSTRUCTION ROOF PLAN	2-11-2026
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S101	ROOF FRAMING CONSTRUCTION PLAN	2-11-2026
S200	STRUCTURAL DETAILS	2-11-2026
P001	PLUMBING NOTES, LEGEND, DETAILS AND SPECIFICATIONS	2-11-2026
PD100	PLUMBING MEZZANINE DEMO RCP	2-11-2026
P100	PLUMBING FIRST FLOOR CONSTRUCTION PLAN	2-11-2026
P101	PLUMBING MEZZANINE CONSTRUCTION RCP	2-11-2026
M001	MECHANICAL SYNBOLS, NOTES AND LEGEND	2-11-2026
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M100	MECHANICAL MEZZANINE & 1ST FL. CONSTRUCTION PLAN	2-11-2026
M200	MECHANICAL DETAILS	2-11-2026
E001	ELECTRICAL NOTES & SYMBOLS	2-11-2026
ED100	ELECTRICAL DEMO 1ST FL. RCP	2-11-2026
ED101	ELECTRICAL MEZZANINE DEMO PLAN	2-11-2026
E100	ELECTRICAL FIRST FLOOR PLAN	2-11-2026

E100.1	ELECTRICAL CONSTRUCTION RCP	2-11-2026
E101	ELECTRICAL MEZZANINE CONSTRUCTION PLAN	2-11-2026
E102	ELECTRICAL ROOF CONSTRUCTION PLAN	2-11-2026
E200	ELECTRICAL ONE LINE DIAGRAM AND PANEL SCHEDULES	2-11-2026

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LEGAL NOTICE

INVITATION TO BID
Town of East Lyme
East Lyme Public Schools
East Lyme High School – Aquatic Center Roof Replacement
Invitation to Bid # 2026-01

The Town of East Lyme ("Town"), through the East Lyme School Building Committee ("ELSBC") is soliciting sealed bids from responsible qualified contractors for construction and related services for roof replacement and associated work at the East Lyme High School-Aquatic Center (the "Property") located at 30 Chesterfield Road, East Lyme, Connecticut 06333 (the "Project"). Bidders are required to be pre-qualified by the Connecticut Department of Administrative Services ("DAS") for work in the "roofing" prequalification classification.

Sealed bids with the words "**EAST LYME HIGH SCHOOL–AQUATIC CENTER ROOF REPLACEMENT – BID# 2026-01**" and the bidder's name and address all clearly marked on the outer envelope, must be received by received by the ELSBC at the office of the Director of Facilities and Technology of East Lyme Public Schools District Central Office Building, 165 Boston Post Road, East Lyme, CT 06333, no later than **2:00 p.m. EST on Tuesday, March 17, 2026,** at which time bids received will be publicly opened and read aloud. In the event of the closure of the East Lyme Public Schools Central Office Building on **Tuesday, March 17, 2026,** bids will be opened and read aloud at 2:00 p.m. EST on the next business day that the Central Office Building is open. Any bid received after the time and date specified shall not be considered. Bid submissions must be delivered in hard copy by mail, or by hand delivery, and shall include an original and three (3) copies.

The Work for the Project generally consists of replacing the existing standing seam metal roof, structural purlins, acoustical insulation, removal and reinstallation of all interior and exterior items connected to the existing roof and all associated work of the roof systems as shown on the Bidding Documents for the Project.

The Invitation to Bid, Instructions to Bidders, drawings, specifications, and other Bidding Documents (as defined in the Instructions to Bidders) may be accessed on the Department of Administrative Services (DAS) website ttps://portal.ct.gov/das/ctsource/bidboard under the State Procurement Marketplace, State Contracting Portal ("DAS Website"). To access the documents, click on the Contracting Organization, "East Lyme, Town of" and "East Lyme, Public Schools." Bidding Documents will also be available on the East Lyme Public School District website at https://www.eastlymeschools.org/departments/business/purchasing-bids-and-rfps-clone-2025 ("District Website"). Each bidder is responsible for checking the District Website and/or the DAS Website to determine if any addenda to the Bidding Documents have been issued.

A Mandatory Pre-bid Project site visit will be conducted at the Project site on **Thursday, February 19,** at **11:00 AM**, at the East Lyme High School located at 30 Chesterfield Road, East Lyme, Connecticut 06333, for all interested bidders. The Project site visit will begin at the main entry of the Aquatic Center. Please confirm attendance at the site visit and request instructions for the site visit by email to Diane Nazarko at Diane.Nazarko@elpsk12.org

Any questions and official Requests for information (RFI) by interested bidders regarding this Invitation to Bid shall be submitted in writing in accordance with the Instruction to Bidders and other Bidding Documents. Please see the Instruction to Bidders and other Bidding Documents for details regarding bid questions and/or RFIs. Except as otherwise expressly provided in the Instructions to bidders, a Bid Bond in an amount equal to ten

percent (10%) of the total Bid amount must be submitted with each Bid. The selected contractor shall be required to provide performance and labor and material payment bonds each in the amount of the total contract price.

This Project is subject to the prevailing wage law requirements of Connecticut General Statutes (CGS) Section 31-53, et seq. Current prevailing wage rate information is included with the Bidding Documents.

This Project is subject to the prevailing wage requirements of CGS Section 31-53, et seq. This contract is subject to state contract compliance requirements, including spending allocation goals (25% SBE and 6.25% M/W/DBE) and non-discrimination requirements enforced by the Commission on Human Rights and Opportunities.

The Town and East Lyme Public School (ELPS) District reserve the right to amend or withdraw this Invitation to Bid for any reason, to accept or reject any or all Bids, to waive any informalities or non-material deficiencies or irregularities in any Bid, and to make such award (or make no award) of a contract in connection with this Invitation to Bid all as determined by the Town or ELSBC, in their discretion, to be in the best interest of the Town and the East Lyme Public Schools.

A Bid may be rejected for irregularities of any kind, including without limitation, alteration of form, additions not called for, conditional proposals, and incomplete Bids. The foregoing provisions are for illustrative purposes and shall in no way limit the right of the Town or ELPS to reject any or all Bids, in whole or in part. Any contract awarded in connection with this Invitation to Bid shall be awarded to the lowest responsible qualified bidder.

The Town of East Lyme and East Lyme Public Schools District is an Affirmative Action/Equal Opportunity Employer. Minority Business Enterprises (MBE) and Women's Business Enterprises (WBE) are encouraged to bid.

BID Announcement Posted
February 11, 2026

INSTRUCTIONS TO BIDDERS

1. PROJECT DESCRIPTION

The Work for the Project generally consists of roof replacement of the existing standing seam metal roof, roof deck and structural purlin system at all areas as shown on the Bidding Documents for the Project and associated work including the support and protection of existing equipment and systems at the East Lyme High School Aquatic Center (the "Property") located at 30 Chesterfield Road, East Lyme Connecticut 06333, and will include all labor, materials, equipment, and incidentals necessary to complete the construction of the Project in accordance with, and more particularly described in, and as may be reasonably inferable from the Bidding Documents. The specific work for this Project will be defined and included within the Contract Documents.

2. PROJECT SCHEDULE

It is anticipated that the successful bidder awarded a contract for the Project (the "Contractor") will commence construction of the Work no later than April 6, 2026 to prepare the construction safety zones and Contractor staging areas at the Project site and that the Contractor must begin coordination and submit shop drawings and submittals for approval of ordering equipment and materials prior to that date; achieve substantial completion of the entirety of the Work no later than December 4, 2026; and that final completion of the Work and the entirety of Project will be achieved, including punch list and demobilization, no later than December 18, 2026.

The Contractor will be encouraged to commence acquisition of all materials needed to perform the Work immediately after execution of the contract for construction for the Project between the Owner and the Contractor (the "Contract" as defined in Section 14 of these Instructions to Bidders"), to ensure all materials are on hand when on site construction begins. It is anticipated that the Notice to Proceed will be issued by the Owner at the time of the Contract is awarded and executed.

The Contractor will be permitted to perform the Work at the Project site during the work hours of 0700 a.m. to 5:000 p.m., Monday through Friday, excluding holidays; provided that requests to perform the Work outside of the normal hours Work may be a requested by the Contractor and coordinated with the Owner. Construction activities will be confined to the immediate work area at the Project site only, and additional areas that may be designated by the Owner upon request by the Contractor.

Each bidder shall include as part of its Bid submission a complete and realistic proposed construction schedule, including the trades activities, equipment, and materials for the Work consistent with the Owner's anticipated schedule for the Project.

3. IMPORTANT DATES

Advertisement of Invitation To Bid:	February 11, 2026
Mandatory Project site visit with interested bidders:	February 19, 11:00 a.m.
Deadline for Submission of Questions and Requests for Information:	March 5, 2026 3:00 p.m.

Responses to Requests for Information:	By March 10, 2026, 3:00 p.m.
Deadline for Bid Submission:	**March 17 2026, 2:00 p.m.**
Interviews of Prospective Bidders:	TBD
Selection of Successful Bidder/Letter of Intent to Award:	TBD
Contract Execution:	TBD
Commencement of Work:	By April 6, 2026
Final Completion:	By December 18, 2026
Submission of Final Payment Application:	By December 18, 2026

4. BIDDING DOCUMENTS

The Bidding Documents shall include the Invitation to Bid, these Instructions to Bidders and all Schedules to these Instructions to Bidders listed below, all addenda issued prior to the opening of Bids, and all other documents identified as "Bidding Documents" in these Instructions to Bidders (the "Bidding Documents"). The Bidding Documents include, without limitation:

1. Advertisement for Bids/Invitation to Bid (Section 001113)
2. Instructions to Bidders (Section 002113) with included Schedules:
   - Schedule 1: Non-Collusion Affidavit
   - Schedule 2: Corporate Resolution
   - Schedule 3: List of Required Bid Submission Documents
   - Schedule 4: Standard Bid Bond Form
   - Schedule 5: Insurance Requirements
   - Schedule 6: Statement of Qualifications
   - Schedule 7: Certificate of Compliance Re Connecticut General Statutes Section 31-57b
   - Schedule 8: Form of Contract for Construction: AIA A101-2017 Agreement, as modified by the Owner
3. Bid Form (Section 002113.1)
4. General Conditions Section 007200 (AIA A201, as modified by Owner)
5. Prevailing Wage Rates Section 000108
6. All Specifications listed on the Table of Contents Section 000110
7. All Drawings listed on the List of Drawings Section 000115
8. All Addenda issued by the Owner and ELSBC prior to the Bid Submission Deadline

All Bidding Documents may be accessed on the Department of Administrative Services (DAS) website ttps://portal.ct.gov/das/ctsource/bidboard under the State Procurement Marketplace, State Contracting Portal ("DAS Website"). To access the documents, click on the Contracting Organization, "East Lyme, Town of" and "East Lyme, Public Schools." Bidding Documents will also be available on the East Lyme Public School District website at https://www.eastlymeschools.org/departments/business/purchasing-bids-and-rfps-clone-2025 ("District Website").

Each bidder is responsible for checking the District Website and/or the DAS Website to determine if any addenda to the Bidding Documents have been issued. Electronic copies of the Bidding Documents may

also be obtained by interested bidders by written request submitted via email to Diane Nazarko at Diane.Nazarko@elpsk12.org. Bidders shall use complete sets of Bidding Documents in preparing Bids. The Owner and ELSBC assume no responsibility for errors or misinterpretations resulting from a a bidder's use of incomplete Bidding Documents.

The Owner and ELSBC reserve the right to amend the Bidding Documents by issuance of Addendum as deemed necessary, appropriate, or otherwise in the best interest of the Owner and the East Lyme Public School District.

5. NON-COLLUSION STATEMENTS

In order for any Bid to be considered, a non-collusion affidavit must be submitted with the Bid. A sample non-collusion affidavit is included as part of the Bidding Documents attached, provided, bidders may elect to submit their own notarized non-collusion affidavit.

6. PROJECT PRICING – LUMP SUM AND UNIT PRICE WORK

The compensation to be paid to the Contractor for the performance of the Work for the Project shall be based on a lump sum price. Town of East Lyme permit fees are waived. However, as the Work progresses, the Owner or the Contractor may identify additional Work or repairs required for the Project, as noted. On each bidder's Bid Form, the bidder shall provide a lump sum price for the designated Work as the Base Bid Amount, unit prices for possible additional work that may be identified during the course of construction of the Project as the Unit Price Bid Amounts, as well as Allowance Bid Amounts and Alternates Bid Amounts for the Work as set forth on the Bid Form. The selected Contractor shall not conduct any additional work or Unit Price Work without prior approval written approval of the Owner.

7. CHANGE ORDERS

Any deviations from, additions to, or deductions from either scope of the Work under the Contract or the Contract Sum thereunder, or changes in the scope of the Work involving unit price work items, shall be submitted by the selected Contractor to the Owner in accordance with Contract and the Contract Documents. All changes in scope of Work involving unit price work items shall be governed by the Unit Price Bid Amounts established the Contract between the Owner and the Contractor. Refer to the General Conditions Section 007200 and Section 012600 "Contract Modification Procedures".

8. RETAINAGE

Retainage in the amount of five percent (5%) shall be withheld by the Owner from all progress payments, and five percent (5%) of the final contract price for a period not to exceed ninety (90) days after the date of final acceptance of the Project by the Owner.

9. BID SUBMISSIONS

A. Sealed bids with the words **"EAST LYME HIGH SCHOOL – AQUATIC CENTER ROOF REPLACEMENT– BID# 2026-01"** and the and address all clearly marked on the outer envelope, must be received by received by the ELSBC at the office of the Director of Facilities and Technology of The East Lyme Public School District Central Office Building, 165 Boston Post Road, East Lyme, CT 06333, no later than 2:00 p.m. EST on **2:00 p.m. EST on Tuesday, March 17, 2026,** ("**Bid Submission Deadline**"), at which time bids received will be publicly opened and read aloud. In the event of the closure of the East Lyme Public Schools Central Office Building on **March 17, 2026,** bids will be opened and read aloud at 2:00 p.m. EST on the next business day that the Central Office Building is open. Any bid received after the time and date specified shall not be considered. Bid submissions must be delivered in hard copy by mail, or by hand delivery, and shall include an original and three (3) copies. Bids received after the Bid Submission Deadline (as it may be adjusted by Addenda) will not be considered and will be returned unopened.

B. Bid submissions must be enclosed in a sealed envelope addressed as described above, and clearly marked **"EAST LYME HIGH SCHOOL – AQUATIC CENTER ROOF REPLACEMENT– BID# 2026-01"** along with name of the bidder and their address clearly marked on the outer envelope. All Bids must be submitted on forms included or identified in these Instructions to Bidders or the other Bidding Documents. The Owner reserves the right to reject any Bid submission which reflects omissions, alterations of form, additions not called for, conditional or alternate Bids, or irregularities of any kind. All blank spaces in the Bid Form included in the Bidding Documents a Section 004113 - Bid Form, must be filled in (typed or printed in ink) completely, correctly and legibly, and all prices and quantities must be inserted where indicated. If any price or quantity is omitted, the Bid may be rejected. "Ditto" marks are not considered writing or printing and shall not be used. All Bids must be based on the exact materials and/or equipment specified in the Bidding Documents and referenced on the Bid Form. Bids containing different materials or equipment models than those specified will be considered non-responsive. A properly authorized representative of the bidder must sign the Bid submission where indicated. If the proposal is made by an individual, the individual's name and mailing address must be listed. If made by a partnership, limited liability company or a corporation, the Bid must be signed by an official of the partnership, limited liability company or corporation authorized to sign contracts, and must reflect the mailing address of the partnership, limited liability company or corporation. Bids may not be submitted and will not be accepted if made orally (e.g. via telephone), by facsimile, or by e-mail bids.

   Bidders are encouraged to "double check" and verify all pricing submitted as part of their Bid. An award of the contract to the selected Contractor based on unit prices or other pricing submitted by a bidder in error, will be nonetheless be deemed by the Owner to be a firm Bid by the bidder. "Adjustments" to correct any errors in Bid pricing may not be made to any Bid after the Bid is opened.

C. All Bid submissions must include one (1) original, three (3) paper copies of the documents listed on **Schedule 3 - List of Required Bid Submission Documents**. Any Bid which fails to include all the required documents and information may be deemed non-responsive and invalid.

D. All Bids must be submitted in the form and manner required by the Bidding Documents. Any Bid not submitted in the form and manner required by the Bidding Documents, or Bid which contains information, statements, conditions, or qualifications which place conditions or qualifications on a Bid for purposes of making an award of the Contract, or Bid which purports to alter any Bid Form terms, conditions, specifications, or forms that are part of the Bidding Documents, or Bid which fails to comply with all applicable legal requirements, shall be deemed non-responsive and invalid. Any Bid that does not fully respond to and comply with all requirements of the Bidding Documents for the submissions of Bids, may be deemed non-responsive and rejected by the Owner. The Owner and ELSBC shall not be responsible for any errors or omissions of any bidder in their Bid.

E. The Owner and ELSBC reserve the right to reject any Bid in which unit prices or other pricing are, in the sole opinion of the Owner and ELSBC, unbalanced.

10. QUESTIONS, INTERPRETATIONS & ADDENDA

Any questions and requests for interpretation or information (collectively, "RFIs") from any prospective bidder regarding the Invitation to Bid, these Instructions to Bidders, or other Bidding Documents, must be submitted in writing and, to be given consideration, must be received no later than later than 3:00 p.m. EST, on Thursday, March 5, 2026. Responses to all RFIs will be provided by written Addenda to the Bidding Documents. Addenda including such responses will be published on the DAS Website and the District Website no later than 3:00 p.m. EST, on Tuesday March 10, 2026. Addenda, once published, will become a part of the Bidding Documents.

RFIs shall be submitted in writing via e-mail to shall be submitted in writing via email to Diane Nazarko, East Lyme Public School District Project Manager at Diane.Nazarko@elpsk12.org, no later than later than later than 3:00 p.m. EST, on Thursday, March 5, 2026 to be considered. RFIs that are not submitted in accordance with this Section 10 will not be answered. RFIs answered other than by formal written Addenda published in accordance with this Section 10 will not be binding on the Owner and will be without legal effect.

EX-PARTE COMMUNICATION: To ensure the bidding process for the Project is accordance with applicable law, the Owner prohibits ex parte communication between any prospective bidder or bidder with any officer, consultant or employee of the Owner, ELSBC, East Lyme Public School District, or East Lyme Board of Education involved in the evaluation of Bids or award of the Contract to the selected Contractor which relates to the Bidding Documents or the Project, other than communications for the submission of an RFI, from the date of the Invitation to Bid until a decision to award a contract in connection with the Invitation to Bid (or to award no contract) has been made. Prohibited ex parte communications may be grounds for disqualifying the offending bidder from consideration of their Bid.

Addenda to the Bidding Documents will be issued by the Owner in accordance with the timeline included in Section 3, above, as it may be adjusted in the discretion of the Owner. Addenda will become part of the Bidding Documents on the date published. It is the responsibility of each prospective bidder to check

the DAS Website and the District Website from time to time to confirm whether any Addenda have been published. Lack of knowledge of a bidder of any Addenda that have been published as described above, shall not relieve the bidder from its obligations under its Bid submission.

Each bidder shall confirm in writing as required on the Bid Form submitted as part of its Bid that the bidder is aware of and has reviewed all Addenda issued.

11. SITE CONDITIONS/PRE-BID PROJECT SITE VISIT

A mandatory pre-bid Project site visit will be conducted at the Project site **on 11:00 a.m., Thursday, February 19, 2026**, at the East Lyme High School Aquatic Center located at 30 Chesterfield Road, East Lyme, Connecticut 06333, for all interested bidders. The site visit will begin at the main entry of the Aquatic Center. Interested parties should meet at the entrance of the Aquatic Center at the security desk to sign in and collect temporary badges. Visitor parking spaces are available. No visitors will be allowed on the school Property without an escort. No bid shall be considered responsive by the Owner unless the bidder shall have attended the mandatory pre-bid Project site visit.

Each bidder shall fully inform themself prior to bidding as to the existing conditions for the Project site. By submission of its Bid, each bidder represents that the bidder has: (i) made an examination of the Project Site; (ii) satisfied itself as to actual conditions of the Project Site and the requirements and scope of the Work required to be performed for the Project; (iii) considered Federal, State and local laws and regulations that may affect cost, progress, performance or furnishing of the work for the Project; and (iv) reviewed and become thoroughly familiar with the Bidding Documents including, without limitation, the Drawings and Specifications for the Project included in the Bidding Documents.

12. MODIFICATIONS/WITHDRAWALS OF BIDS

Bid Withdrawal: Bids may be withdrawn at any time prior to the Bid Submission Deadline (as it may be adjusted by Addenda), by submitting a written request to withdraw to Dr. Christian R. Lund, Director of Facilities and Technology, East Lyme Public School District. Upon receipt of such request, if timely, the original Bid will be made available, unopened, to the bidder at the Office of the Director of Facilities and Technology. Bids withdrawn prior to the Bid Submission Deadline may be resubmitted up to the Bid Submission Deadline provided such resubmitted Bids are then fully in conformance with these Instructions to Bidders. After the opening of Bids, no bidder may withdraw its Bid for a period of sixty (60) days thereafter.

Bid Modification: Bids may be modified by written notice signed by the bidder prior to the Bid Submission Deadline. Such notice shall be accepted only if duly executed and submitted in the same manner as required in these Instruction to Bidders for the submission of Bids.

Bid Clarification: The Board reserves the right to request clarifications from any bidder. Such clarifications shall be provided at the bidder’s sole cost and expense.

13. SELECTION PROCESS

A. Basis for Section

1. Lowest Responsible and Qualified Bidder - It is the intent of the Owner to award the Contract for the Project to the "lowest responsible and qualified bidder" which is the bidder (i) whose Total Lump Sum Base Bid Amount set forth in its Bid Form is the lowest of those bidders possessing the skill, ability and integrity necessary to faithful performance of the Work based on objective criteria considering past performance and financial responsibility; and (ii) whose Bid was submitted in accordance with the requirements set forth in the Bidding Documents. The bidder will be required to establish to the satisfaction of the Owner and the ELSBC that the persons or entities proposed to furnish and perform the Work described in the Bidding Documents are reliable, responsible, and capable. To the extent that the Bid Form asks for alternate bids, the Owner's and ELSBC's determination of the lowest Bid will be based on the sum of the Base Bid Amount and the Alternate Bid Prices for the alternates that are selected by the Owner for acceptance as determined by the Owner and ELSBC to be in the best interest of the Owner and the East Lyme Public School District.

2. Statement of Qualifications – It is the intent of the Owner to award the contract for the Project to a contractor that specializes in the construction of roof systems, having broad experienced in the type of roof construction Work required by the Bidding Documents. To assist the Owner in its determination as to whether a bidder is qualified to perform the Work for the Project, **each bidder shall submit a Statement of Qualifications including the information set forth in Schedule 6 to these Instructions to Bidders along with all required supporting documentation**. Qualifications for the Project will include, without limitation, that:

   i. Bidder's experience includes successfully completing, as general contractor and/or roofing contractor, a minimum of five (5) similar roofing projects in Connecticut, within the past ten (10) years, which projects were of similar size, scope and complexity, as the Project.
   ii. All project personnel to be engaged in the Work shall be trained in accordance with OSHA Regulations applicable to the Work of the Project.
   iii. Bidder must be registered, as an entity, to do business in the State of Connecticut and employ individuals that are properly licensed to perform the Work.
   iv. **Bidder must be prequalified as provided in Section 19 of these Instructions to Bidders.**
   v. Bidder must be in good standing as a contractor with, and certified by, the roofing manufacturer specified in the Bidding Documents.

3. Selection Criteria

   i. Bidder's experience as a general contractor and/or roofing in the successful completion of projects of similar scope, complexity and size as the Project, within budget, and on time, and with integrity and reliability; or the bidder's its inability to do so;
   ii. Bidder's capacity to perform the Project considering bidder's ongoing and future

obligations;
iii. Bidder's credit history and financial stability;
iv. The experience of the bidder's project team proposed to be used for the Project in the successful completion of projects of similar scope and size within budget and on time;
v. The ability of the bidder to provide the required surety bonds;
vi. The ability and capacity of the bidder to perform the Work based on an evaluation of the character, integrity, reputation, and experience of the bidder.
vii. The financial resources of the bidder and the bidder's ability to secure any required bonds and/or insurance;
viii. Compliance by the bidder with all applicable federal, state, and local laws, including any licensing requirements and/or contract compliance requirements;
ix. Delivery or completion time;
x. Cost; and
xi. Involvement in litigation.

4. Investigation – The Board reserves the right to make any investigation to further determine the ability of any bidder to perform and complete the obligations of the selected contractor under the contract and other Bidding Documents, and any bidder shall furnish to the Owner and ELSBC all such information and data for this purpose as are required under the Bidding Documents.

5. Interviews – The Owner and ELSBC reserve the right to conduct interviews with one or more of the bidders at a time and date to be determined by the Owner or ELSBC. If a bidder is requested by the Owner or ELSBC to attend an interview, the attendees representing the bidder shall include one or more representatives of the bidder capable of responding to questions regarding the Bid submitted as well as the proposed superintendent/project manager for the Project.

B. Selection and Award

1. The bidder selected for the Project, if any, will be the bidder determined by the Owner and ELSBC to be the lowest responsible qualified bidder, qualified and capable of performing the work for the Project in accordance with the requirements of the Bidding Documents, based on the Selection Criteria set forth in Section 10(A) and the entirety of such bidder's Bid submission.

2. Upon identifying the successful bidder, the ELSBC will send a written notice of intent to award to such bidder. Notwithstanding receipt of such notice of intent to award, the Owner shall have no obligation to such bidder until such time as a Contract (as defined in Section 14 hereof) is fully executed and delivered.

3. The Owner and ELSBC reserve the right to do any of the following without liability, as deemed by the Owner and ELSBC to be in the best interest of the Owner and the East Lyme Public School District:

a. Reject any and all Bids, in whole or in part, for misrepresentation or if the Bidder is deemed to be not qualified or responsible to perform the Project, or if the bidder's Bid limits, conditions or modifies any of the terms and conditions and/or specifications of the Bid;
b. Cancel the award to the lowest responsible qualified bidder, or, not to execute the Contract subsequent to award;
c. Terminate or cancel the Invitation to Bid and reject all Bids, and/or rebid the Project by advertising for new bids;
d. Waive technical defects, irregularities and omissions in a Bid if, in the Owner's or ELSBC's discretion, the best interest of the Owner and East Lyme Public School District would be served;
e. Revoke the award of the Contract if such award was made on the basis of inaccuracies and clerical errors; and
f. Reject a Bid as non-responsive if the bidder does not make all required pre-award submittals within the timeframes designated by the Owner and ELSBC.

14. FORM OF CONTRACT

The Owner intends to use as the Form of Contract for the Contract for Construction, and the selected Contractor will be expected to execute, a modified version of AIA Document A101-2017 Agreement (as so modified, the "Agreement") with an Exhibit A (Insurance Requirements), and a modified version of AIA Document A201-2017 General Conditions (as so modified, the "General Conditions"), and exhibits and other documents designated therein as "Contract Documents." **The form of Agreement and General Conditions are included as part of the Bidding Documents.** Bidders should review the aforementioned documents. By submitting a Bid, the bidder warrants and certifies that if the bidder is awarded the contract for this Project, the bidder will execute the aforementioned Contract Documents without condition, modification, or exception, except as required to incorporate the acceptable terms of the selected Contractor's Bid (the "Contract"). The selected Contractor shall execute the Contract within five (5) days after presentation thereof by the Owner to the selected Contractor and the Contractor shall include the provisions of the Contract in each subcontract issued by the Contractor for the Project, with the applicability of terms to be adjusted appropriately. Notwithstanding the foregoing, the Owner and ELSBC reserve the right to modify the Form of Contract prior to execution of the Contract as deemed by the Owner and ELSBC to be in the best interest of the Owner and the East Lyme Public School District. If the selected Contractor fails to execute the Contract within five (5) days after presentation of the Contract by the Owner, the selected Contractor shall forfeit its Bid Security and, at the option of the Owner, the award of the Contract shall be withdrawn and become null and void. The Owner may then proceed to award the Contract to the next lowest responsible qualified bidder.

15. BID SECURITY

Except as otherwise provided in this Section 12, each Bid must be accompanied by a bid bond in the form attached hereto as Schedule 4, in an amount equal to Ten Percent (10%) of the Base Bid Amount set forth on the Bid Form submitted by the bidder, executed by the bidder and a surety authorized issue

surety bonds in the State of Connecticut, that is listed on the current U.S. Department of Treasury's Listing of Approved Sureties, and that has a rating of A- or better by A.M. Best. In lieu of a Bid Bond, a bidder may submit a certified check, cashier's check, Treasurer's check, or money order in the same amount as required for a Bid Bond, payable to the "Town of East Lyme."

If the bidder is a small contractor or a minority business enterprise as defined by Connecticut General Statutes (CGS) Section 4a-60g, the bidder may, in lieu of providing a Bid Bond, certified check, cashier's check, Treasurer's check, or money order as bid security, provide a letter of credit in an amount equal to ten percent (10%) of the Base Bid Amount if the Base Bid Amount is less than One Hundred Thousand Dollars ($100,000), or an amount equal to twenty-five percent (25%) if the Base Bid Amount exceeds One Hundred Thousand Dollars ($100,000.00).

Bids submitted without bid security in accordance with this Section 12 will be deemed nonresponsive and invalid.

All forms of Bid Security submitted by bidders other than those determined be the lowest three (3) bidders, will be returned within ten (10) days after the date of opening of Bids.

Bid Security submitted with Bids by bidders determined to be among the three (3) lowest bidders will be retained by the Owner until one (1) of the three (3) lowest bidders is awarded and executes a contract with the Owner for the Project, or until all Bids are rejected. If the bidder selected as the Contractor fails or refuses to execute the Contract in accordance with its Bid and the Bidding Documents after notice by the Owner or ELSBC that the Contract has been awarded to the selected bidder, an amount of the bidder's Bid Security shall be deemed forfeited by the bidder to the Owner and/or the bidder and its surety issuing a Bid Bond shall be required to perform their obligations under such Bid Bond.

The Owner shall not be liable for the accrual of interest on any certified deposit check submitted in lieu of a Bid Bond.

Subject to the Owner's rights to retain Bid Security as a forfeiture by the selected Contractor and/or enforce such Bid Security, all Bid Security not already returned or refunded to bidders will be refunded or returned to the unselected bidders after the earlier of (1) the Owner's withdrawal and/or cancellation of the Invitation to Bid; (2) the award and execution of the Contract by the Owner to and with a bidder selected as the Contractor, (3) or sixty (60) days after the date of opening of Bids.

16. TAXES

The Project is tax exempt. Upon request, the Owner will furnish the successful bidder a sales tax exemption letter.

Certain materials and supplies incorporated in the Work for this Project are exempt from Connecticut sales and use tax. State sales and use taxes are excluded except for taxes on rentals, tools, and other incidentals as determined by the State Department of Revenue and for which the successful bidder is responsible. The successful bidder shall familiarize themself with current regulations of the State of

Connecticut Department of Revenue Services. The tax on materials or supplies exempted by such regulations shall not be included as part of the Bid.

17. PAYMENT BOND AND PERFORMANCE BOND REQUIREMENTS

A. Except as provided in subparagraph C of this Section 14, the Contractor will be required to provide a performance bond and labor and material payment bond, in an amount not less than 100% of the total contract price set forth in the Contract. The bonds must be issued by a surety rated A- or better by A.M. Best and listed on the U.S. Department of Treasury's Listing of Approved Sureties. The bonds must be submitted to the Owner prior to or upon the execution of the Contract. The cost of such bonds shall be separately identified on the Bid Form but included in the total Bid amount.

B. The bonds shall comply with the following requirements:
1. It is preferred that the bonds be written on the AIA Document A312-2010 forms. Both bonds shall be written in the full amount of the Contract Sum.
2. The bonds shall be dated the same date as the Contract.
3. The Town of East Lyme shall be named as the obligee on all bonds provided for the Project.
4. The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

C. If the Contractor is a small contractor or a minority business enterprise as defined by CGS Section 4a-60g, the Contractor may: (1) in lieu of providing performance bond, provide a letter of credit in an amount equal to ten percent (10%) of the Contract Price if the Contract Price is less than One Hundred Thousand Dollars ($100,000.00), or an amount equal to twenty-five percent (25%) if the Contract Price if the Contract Price exceeds One Hundred Thousand Dollars ($100,000.00), and; (2) in lieu of providing a labor and material payment bond, provide a letter of credit in an amount equal to ten percent (10%) of the Contract Price if the Contract Price is less than One Hundred Thousand Dollars ($100,000.00), or an amount equal to twenty-five percent (25%) if the Contract Price if the Contract Price exceeds One Hundred Thousand Dollars ($100,000.00).

D. Each bidder shall furnish with its Bid, satisfactory evidence from its surety of such bidder's ability to obtain the required performance bond and labor and materials payment bond, in the full amount of the bidder's total Base Bid Amount, or, satisfactory evidence that it is a small contractor or a minority business enterprise as defined by CGS Section 4a-60g together with satisfactory evidence of its ability to provide to the Owner a letter of credit in lieu of the required performance bond and/or a letter of credit in lieu of the required labor and material payment bond.

F. A labor and material payment bond will be required from all subcontractors, except that in accordance with CGS Section 49-41(a), a labor and material payment bond shall not be required to be furnished in relation to any sub-bid in which the total estimated cost of labor and materials under the subcontract with respect to which such sub-bid is submitted is less than One Hundred Thousand Dollars ($100,000.00).

18. LIQUIDATED DAMAGES
(None)

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19. NON-DISCRIMINATION AND EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCE REQUIREMENTS

A. This Contract will be partially funded by a Non-Priority List school building project grant from the State of Connecticut under the DAS school construction grant program for public schools. The contractor who is selected to perform this State project must comply with CGS Sections 4a-60, 4a-60g, and 46a-68b through 46a-68f, inclusive, and Sections 46a-68j-21 through 43 of the Regulations of Connecticut State Agencies (RCSA).

B. In the Contract, the Contract will be required to agree, pursuant to CGS Section 4a-60, as follows:

"(1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, sexual orientation, gender identity or expression, status as a veteran, status as a victim of domestic violence, status as a victim of sexual assault or status as a victim of trafficking in persons, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the state of Connecticut; and the contractor further agrees to take affirmative action to ensure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, sexual orientation, status as a veteran, status as a victim of domestic violence, status as a victim of sexual assault or status as a victim of trafficking in persons, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved;
(2) The contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission on Human Rights and Opportunities ("CHRO");
(3) The contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;
(4) The contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to sections 46a-56, 46a-68e, 46a-68f and 46a-86; and

(5) The contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor as relate to the provisions of this section and section 46a-56."

It shall be the responsibility of each bidder to be familiar with and knowledgeable about the non-discrimination Requirements.

C. Spending Allocation Goal Participation: The Contract will be subject to State contract compliance requirements, including nondiscrimination statutes and spending allocation goals. The Contractor who is selected to perform this State project must comply with CONN. GEN. STAT. §§ 4a-60, 4a-60g, and 46a-68b through 46a-68f. Connecticut State law requires a minimum spending allocation goal of twenty-five (25%) percent of the state-funded portion of the contract for award to subcontractors holding current certification from the Connecticut Department of Administrative Services under the provisions of CONN. GEN. STAT. § 4a-60g. (25% of the total state-funded value with DAS-certified Small Businesses and 6.25% of the total state-funded value with DAS-certified Minority-, Women-, and/or Disabled-owned Businesses.) The Contractor must demonstrate good faith effort to meet the spending allocation goals. The Contractor is responsible for ensuring the SBE/MBE firms that have been selected are eligible contractors. A Good Fatih Efforts Plan must be filed by the contractor who is selected to perform this project with the CHRO within thirty (30) days following the intent to award notice, and must be approved by the CHRO prior to the award of the construction Contract. If required by CHRO, the contractor must file a written or electronic non-discrimination certification with the CHRO. Information and required forms can be found at: https://portal.ct.gov/chro/contract-compliance/contract-compliance/contract-compliance-forms-and-reports

D. All provisions of all applicable State Labor Standards must be complied with under the Contract. The Town of East Lyme and East Lyme Public School District are an Affirmative Action Equal Opportunity Employer. The selected Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, sex, gender identity or expression, marital status, national origin, ancestry, present or past history of mental disability, intellectual disability, learning disability, physical disability, including, but not limited to, blindness or status as a veteran except as permitted by law in the case of a bona fide occupational qualification or need. The selected Contractor shall provide CHRO with such information requested by the CHRO concerning the employment practices and procedures of the selected Contractor. The Bidder confirms and represents that it is an Affirmative Action/Equal Opportunity Employer.

E. The selected Contractor shall provide any/all additionally required, affirmative action statements, fair employment plans and non-discrimination programs and statement as might be required by the Owner and ELSBC. In connection with the execution of its Bid, subsequent purchase orders, and/or contracts in connection with the Project, the selected contractor shall not discriminate against any employee or applicant for employment on the grounds of race, color, religious creed, age, sex, gender identity or expression, marital status, national origin, ancestry, present or past

history of mental disability, intellectual disability, learning disability, physical disability, including, but not limited to, blindness or status as a veteran except as permitted by law in the case of a bona fide occupational qualification or need, and shall otherwise comply with all laws and regulations of the State of Connecticut applicable to equal employment opportunities as pertains to municipalities.

20. PREVAILING WAGE REQUIREMENTS

A. Prevailing wages are required on this Project in accordance with the rates included in the Bidding Documents at Section 000108 or otherwise, pursuant to CGS Section 31-53 (a) through (h), as amended. For further information on prevailing wage requirements, visit the Connecticut Department of Labor's website.

B. The selected Contractor and each subcontractor performing any Work for the Project shall be required to comply with the provisions of the CGS Section 31-53 and CGS Section 31-55a concerning annual adjustments to prevailing wages.

C. The selected contractor and all subcontractors shall be responsible for identifying any adjustments made to Connecticut Department of Labor prevailing wage rate requirements throughout the life of the Contract. Such prevailing wage adjustments shall not be considered a matter for any Contract amendment or adjustment to the Contract Price. No escalation clauses shall be included in any Bid submission. Wage Rates will be posted each July 1st on the Department of Labor website: https://portal.ct.gov/dol/divisions/wage-and-workplace-standards/prevailing-wage?language=en_US

D. The Contract shall provide, and the selected Contractor and subcontractors for the Project shall comply with the following: "The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the Work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in subsection (i) of Connecticut General Statutes Section 31-53, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the Town of East Lyme. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day."

E. Certified Payrolls: In accordance with CGS Section 31-53, Certified Payrolls with a statement of compliance shall be submitted monthly by the Contractor to the Owner's representative and certified payrolls for the Contractor and all subcontractors working during the period shall be submitted with each Application for Payment submitted by the Contractor, covering all activities relating to such Application for Payment. The selected contractor shall provide pay scale verification as may be required by the Connecticut Department of Labor.

F. Each bidder shall confirm prior to submission of its Bid that the bidder is carrying in its Bid and Bid Amount(s) the proper trade classification for all Work required for the Project including composite crews of different trade classifications if needed, as required by the Connecticut Department of Labor and/or union agencies if applicable.

G. Forms and additional information can be found on the Connecticut Department of Labor's website.

21. NON-RESIDENT CONTRACTORS

Any bidder that is a Non-Resident Contractor shall be prepared, if identified as the selected contractor, to provide upon award of the Contract, a certificate from the Connecticut Commissioner of Revenue Services which evidences that the bidder has complied with the requirements of CGS Section 12-430(7). For further information, contact the Connecticut Department of Revenue Services.

22. DAS CONTRACTOR PREQUALIFICATION CERTIFICATION

Each bidder shall be prequalified by the Connecticut DAS as an roofing Contractor for any project greater than $500,000 and shall hold a current "DAS Contractor Prequalification Certificate" (not a predetermination letter) from the Connecticut DAS according to and as required by CGS Section 4a-100, CGS Section 4b-101 and CGS Section 4b-91. **Each bidder shall submit with its bid, unless noted otherwise, a "DAS Contractor Prequalification Certificate" along with a current "Update (bid) Statement.**" Any Bid submitted without a copy of the DAS Prequalification Certificate and an Update (Bid) Statement shall be deemed nonresponsive and invalid.

23. INSURANCE REQUIREMENTS

The bidder selected as the Contractor will be required to purchase and maintain, without interruption, from the date of commencement of the Work until the date of final payment, and for the additional periods specified in the Bidding Documents, insurance in accordance with the requirements set forth in Schedule 5 to these Instructions to Bidders, and all insurance that may otherwise be required under any applicable laws. The selected Contractor shall submit to the Owner, certificates of insurance or other evidence of compliance with the insurance requirements set forth in Schedule 5 to these Instructions to Bidders, at the time and in the manner set forth in Schedule 5 or on the Contract Documents.

The cost of the required insurance to the extent attributable to the Project shall be separately identified on the Bid Form but included in the Base Bid Amount of each bidder's Bid.

24. BACKGROUND CHECKS

The selected contractor shall comply with all applicable laws including, without limitation, CGS Section 10-222c, as applicable. To the extent permitted by law, the selected contractor shall perform (or cause to be performed) as regards all of its employees, agents, and representatives (each, a "Contractor Employee"), and all of the employees, agents, and representatives of subcontractors and sub-

subcontractors (each, a "Subcontractor Employee"), who will be physically present at the Project site in connection with the Project, appropriate background checks on all such Contractor Employees and Subcontractor Employees. Such background checks shall include, at a minimum and without limitation, a search of both the Connecticut Department of Emergency Services and Public Protection's sexual offender registry and the Abuse and Neglect Registry of the Connecticut Department of Children and Families.

SCHEDULE 1
BIDDER NON-COLLUSION AFFIDAVIT

STATE OF _____)
) ss: _____
COUNTY OF_____)

I, _____ (affiant), being first duly sworn, deposes and says that:
(name)

1. I am over the age of 18 and understand the obligations of an oath;
2. I am the owner, partner, officer, representative or agent _____ (name of bidder) ("Bidder"), the Bidder that has submitted the attached Bid to the Town of East Lyme and East Lyme School Building Committee;
3. I am fully informed regarding the preparation and contents of the attached Bid and of all pertinent circumstances regarding such Bid;
4. Such Bid(s) is genuine and is not a collusive or sham Bid;
5. Neither the said Bidder nor any of its officers, partners, owner, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived, or agreed, directly or indirectly with any other bidder, firm or person to submit a collusive or sham bid in connection with the contract for which the attached Bid has been submitted or to refrain from bidding in connection with such contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage with the Town of East Lyme, East Lyme School Building Committee, East Lyme Board of Education and/or East Lyme Public School District and/or any person interested in the proposed contract;
6. The price(s) quoted in the attached Bid are fair and proper and are not tainted by collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest; and
7. That no officer, agent, employee or consultant for the Town of East Lyme, East Lyme School Building Committee, East Lyme Board of Education and/or East Lyme Public School District is directly or indirectly interested in the Bid, or in supplies, materials, equipment, work or labor to which it relates, or in any of the profits thereof.

Signed: _____

Name: _____
(print name)
Title: _____

Subscribed and sworn to before me, the undersigned officer, this ____ day of _____, 202___.

_____
Notary Public
My Commission expires:
Commissioner of the Superior Court

SCHEDULE 2
CORPORATE RESOLUTION
(Must be submitted on corporate letterhead if Bidder is a Corporation)

I_____(name of Corporation's Secretary), Secretary of _____(legal name of Corporation), a Corporation duly organized and operating under the laws of _____ (State) do hereby certify that the following is a true, correct and accurate copy of a Resolution duly adopted at a meeting of the Board of Directors of such Corporation, duly convened and held on_____ _____, at which meeting a duly constituted quorum of the Board of Directors was present and voted in favor of such Resolution. I further CERTIFY that such Resolution has not been modified, rescinded, or revoked since the date on which it was enacted, and it is present in full force and effect:_____.

RESOLVED: That the following Officers of this Corporation, or any one of them:

_____

_____
(Name and Title of Officer or Officers)

is empowered to execute and deliver in the name and on the behalf of this Corporation contracts, bids, and other documents to the Town of East Lyme and East Lyme School Building Committee, and are further authorized to affix the Corporate Seal to such documents and to bind the Corporation to such contracts, bids or other documents.

IN WITNESS WHEREOF, the undersigned has affixed his signature and Corporate Seal of the Corporation, this ___ day of _____, 202___.

(Affix Corporate Seal Below)

_____
SIGNATURE OF SECRETARY

_____
(Typed Name of Corporation's Secretary

SCHEDULE 3
LIST OF REQUIRED BID SUBMISSION DOCUMENTS

The following forms and documents must be completed and submitted as part of each Bid:

1. Completed and Executed Bid Form)(use the Bid Form at Specification Section 002113.1)

2. Completed and executed Non-Collusion Affidavit

3. Completed Corporate Resolution (if Bidder is a corporation)

4. Bid Security: Executed Bid Bond (use Schedule 4) or certified check, cashier's check, Treasurer's check, or money order (letter of credit as bid security to the extent permitted in the Instructions to Bidders)

5. Bidder's Statement of Qualifications

6. Completed and executed Certificate of Compliance with C.G.S Sec. 31-57b (use Schedule 7)

7. Bidder's Contractor Prequalification Certificate and the Update (Bid) Statement issued by CTDAS

8. Evidence from the bidder's bonding company evidencing that the bidder, if awarded the Contract, can obtain the required performance bond and labor and materials payment bonds in the full amount of the Base Bid Amount (or evidence that bidder it is a small contractor or a minority business enterprise as defined by CGS Section 4a-60g together with satisfactory evidence of its ability to provide to a letter of credit in lieu of the required performance bond and/or a letter of credit in lieu of the required labor and material payment bond).

9. A complete and realistic proposed construction schedule, including the trades activities, equipment, and materials for the Work consistent with the Owner's anticipated schedule for the Project.

SCHEDULE 4
STANDARD BID BOND FORM

KNOW ALL MEN BY THESE PRESENTS, That we _____ (hereinafter "Principal"), as principal, and, _____ (hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____, and duly authorized to transact a surety business in the State of Connecticut, as surety, are held and firmly bound unto **Town of East Lyme**, as Obligee, in the penal sum of ten (10) percent of the amount of the bid set forth in a proposal hereinafter mentioned, lawful money of the United States of America, for the payment of which, well and truly to be made to the Obligee, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, That, whereas the Principal has submitted or is about to submit a bid to the Obligee related to a contract for a project for roof replacement and associated work at the Lillie B. Haynes Elementary School located at 29 Society Road, Niantic, Connecticut 06357.

NOW, THEREFORE, if the said contract be awarded to the Principal and the Principal shall, within such time as may be specified, enter into the said contract in writing with the Town of East Lyme and give the required bonds, with surety acceptable to the Obligee, or if the Principal shall fail to do so, pay to the Obligee the damages which the Obligee may suffer by reason of such failure not exceeding the penalty of this bond, then this obligation shall be void, otherwise to remain in full force and effect.

SIGNED, SEALED AND DELIVERED this ___ day of _____, 2026

Principal: _____ (Name of Contractor)
By_____ (Contractor as Principal)
Name: _____ (Print Name)
Title: _____

Surety: _____ (Name of Surety)
By_____
Name: _____ (Print Name)
Title: _____

SCHEDULE 5
INSURANCE REQUIREMENTS

I. Contractor's Insurance Requirements

Before commencement of construction of the Work at the Project site, the Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the State of Connecticut. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the AIA A201-General Conditions contained in the Bidding Documents, except that the Contractor shall maintain its Commercial General Liability Policy for seven (7) years after the date of Substantial Completion of the Work.

Insurance requirements set forth in this Schedule 5 will be independent of, and in addition to, the Contractor's liability under the Contract Documents. Nothing in the Contract Documents shall be deemed to limit Contractor's liability under the Contract Documents to the limits of coverage of insurance required hereunder. The Contractor shall be solely responsible for payment of all deductible or retention amounts pertaining to any insurance required hereunder. The limit and coverages set forth herein are the minimum requirements under the Contract Documents. The inclusion of these minimum requirements shall not be interpreted to restrict the rights of the additional insureds to the stated minimum coverage amounts in the event the Contractor maintains coverage at higher limits.

A. Commercial General Liability

Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than One Million Dollars ($1,000,000) each occurrence, Two Million Dollars ($2,000,000) general aggregate, and Two Million Dollars ($2,000,000) aggregate for products-completed operations hazard, providing coverage for claims including

(1) damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;

(2) personal injury and advertising injury;

(3) damages because of physical damage to or destruction of tangible property, including the loss of use of such property;

(4) bodily injury or property damage arising out of completed operations;

(5) the Contractor's indemnity obligations under Section 3.18 of the AIA A201-General Conditions contained in the Bidding Documents; and

(6) electronic data liability (under endorsement ISO CG 04 37 or its equivalent).

The Contractor's Commercial General Liability policy shall not contain an exclusion or restriction of coverage for the following:

(1) Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim;

(2) Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor;

(3) Claims for bodily injury other than to employees of the insured;
(4) Claims for indemnity under Section 3.18 of the AIA A201-General Conditions contained in the Bidding Documents arising out of injury to employees of the insured;
(5) Claims or loss excluded under a prior work endorsement or other similar exclusionary language;
(6) Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language;
(7) Claims related to roofing, if the Work involves roofing;
(8) Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces;
(9) Claims related to earth subsidence or movement, where the Work involves such hazards;
(10) Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

The Commercial General Liability coverage general aggregate limit shall apply separately to each project on a per-project basis and shall be unimpaired at commencement of the Work. The Commercial General Liability coverage shall be written on the most recent ISO occurrence form (CG 00 01) or a substitute occurrence-based form providing equivalent coverage, and shall include coverage for liability arising from premises, operations, independent contractors, products/completed operations covering construction means and methods to be maintained for no less than a period of seven (7) years after completion of the Work, personal and advertising injury, contractual liability (without requiring privity of contract), and liability assumed under an insured contract (including the tort liability of another assumed in a business contract). The Commercial General Liability coverage shall apply to, and not exclude coverage for: joint negligence of the Contractor and other persons; acts and/or omissions of Subcontractors and Subcontractors' sub-subcontractors; and completed operations. In addition, such policy shall contain a broad form contractual liability endorsement or similar wording within the policy form, if applicable.

The Town of East Lyme, East Lyme School Building Committee, East Lyme Public School District, the East Lyme Board of Education, and their members, affiliates, employees, volunteers, directors, and officers, shall be included as additional insureds under the Commercial General Liability policy, to the extent commercially available using an endorsement with coverage no less than that provided under CG 20 10 07 04, CG 20 37 07 04, and, with respect to Lothrop Architects Associates D.P.C.P.C. (the "Architect"), and the Architect's consultants, CG 20 32 07 04. Insurance for additional insureds shall be as broad as the coverage provided for the named insured. Commercial General Liability coverage shall apply as primary and non-contributory insurance before any other insurance or self-insurance, including any deductible maintained by or provided to the additional insureds.

B. Commercial Automobile Liability insurance written on the most recent ISO form CA 00 01 or its equivalent, covering vehicles owned, hired vehicles, and non-owned vehicles, including trailers, used by the Contractor and/or used in connection with the Work, with policy limits of not less than One Million Dollars ($1,000,000) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any

other statutorily required automobile coverage. If vehicles are used to transport hazardous material then ISO CA 99 48 (broadened pollution) and an MCS90 endorsement will be included unless Pollution Liability coverage as described in Section I.H is applicable to operations and vehicles being used.

C. Umbrella or Excess liability insurance on an occurrence basis in excess of the coverages and limits required for the primary liability insurance required under Sections I.A, I.B, and I.F (Contractor's Commercial General Liability insurance, Commercial Automobile Liability insurance, and Employer's Liability insurance), in an amount not less than One Million Dollars ($1,000,000) per occurrence and One Million Dollars ($1,000,000) unimpaired general aggregate per policy year. Umbrella or Excess coverage shall be follow form on a primary and non-contributory basis. The Umbrella or Excess insurance policies shall provide the same or greater coverage as the Contractor's Commercial General Liability insurance, Commercial Automobile Liability insurance, and Employer's Liability insurance, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The Umbrella or Excess insurance policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers. Umbrella or Excess coverage must include as additional insureds all entities that are additional insureds on the Commercial General Liability coverage, Automobile Liability, and Employer's Liability insurance required under Sections I.A, I.B, and I.F, and Umbrella or Excess coverage for such additional insureds shall apply as primary and non-contributory before any other insurance or self-insurance or self-insured retention, including any deductible maintained by or provided to the additional insured, and shall apply without the need for privity of contract as to any additional insured.

D. The Contractor may achieve the required limits and coverage for Commercial General Liability insurance, Automobile Liability insurance, and Employers' Liability insurance, through a combination of primary and excess or umbrella "follow form" liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Sections I.A, I.B, and I.F, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers, and aggregate limits of liability shall apply separately with respect to the Work.

E. Workers' Compensation at statutory limits.
In addition to any other requirements related to worker's compensation insurance, if Contractor is a sole proprietor, a single member limited liability company or otherwise has no employees, Contractor shall maintain Worker's Compensation Insurance as if it were an "employer" as such term is defined in and in accordance with Connecticut's General Statutes.

F. Employers' Liability insurance with policy limits not less than One Million Dollars ($1,000,000) each accident, One Million Dollars ($1,000,0000) each employee, and One Million Dollars ($1,000,000) policy limit.

G. If the Contractor is required to furnish professional services as part of the Work, including without

limitation, surveying, geotechnical investigation, design, engineering, stamping of drawings or specifications, consulting, programing or development of software, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than One Million Dollars ($1,000,000) per occurrence or claim and One Million Dollars ($1,000,000) in the aggregate. If Professional Liability insurance procured and maintained is on claims-made basis, the insurance policy shall have a retroactive date which shall precede the commencement of the Work and which date is no later than the policy inception date, and coverage shall be continuously maintained until at no less than seven (7) years after Substantial Completion of the Project.

H. If the Work involves the handling, abatement, clean-up, removal, transport, dissemination, use, or release of pollutants or hazardous materials, including but not limited to asbestos, PCBs, contaminated soils, and lead-based paint, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than One Million Dollars ($1,000,000) per occurrence and One Million Dollars ($1,000,000) in the aggregate. The policy shall provide coverage for pollution, lead, mold and asbestos liability. The policy must specifically include coverage for "asbestos, lead paint, and other hazardous building materials such as PCB's, abatement operations" and have the "Pollution Exclusion" eliminated or modified so as not to apply to any bodily injury, including but not limited to asbestos, lead paint, and other hazardous building materials such as PCB's abatement, handling, transport or disposal. All policies shall be written on an "occurrence" basis. Coverage shall include first party, third party, clean-up, legal and claim expense including transit and disposal. Full policy forms and endorsements are subject to review by the Owner.

I. Coverage under Section I.G and I.H may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than Two Million Dollars ($2,000,000) per claim and Two Million Dollars ($2,000,000) in the aggregate.

J. The Contractor's Commercial General Liability, Umbrella/Excess Liability, Automobile Liability, and Worker's Compensation Insurance policies shall include a waiver of subrogation endorsement in favor of Town of East Lyme, East Lyme School Building Committee, East Lyme Public School District, the East Lyme Board of Education, and their members, affiliates, employees, volunteers, directors, and officers.

K. Additional Insured Obligations.

1. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage, automobile liability coverage, and excess or umbrella coverage to include (1) the Town of East Lyme, East Lyme School Building Committee, East Lyme Public School District, the East Lyme Board of Education, and their members, affiliates, employees, volunteers, directors, and officers, the Architect, and the Architect's consultants, as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) Town of East Lyme, East Lyme School Building Committee, East Lyme Public School District, the East Lyme Board of Education, and their members, affiliates, employees, volunteers, directors, and officers, as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during

completed operations. The additional insured coverage shall be primary and non-contributory to any general liability insurance policies maintained by the Owner or any other additional insured and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

2. The Town of East Lyme, East Lyme School Building Committee, East Lyme Public School District, the East Lyme Board of Education, and their members, affiliates, employees, volunteers, directors, and officers, the Architect, and the Architect's consultants, and all of their affiliates, subsidiaries and respective partners, officers, directors, agents, employees and servants, shall be named as an additional insured on the insurance policies described in Sections I.A, I.B, I.C, I.F, I.H, and I.I, without a requirement for privity of contract. The additional insured coverage in such policies procured by the Contractor, as named insured, shall not limit coverage thereunder to vicarious liability of the additional insured or liability arising out of only the named insured's negligence.

L. All insurance policies maintained by the Contractor shall be deemed primary and non-contributory to insurance maintained by any additional insured, up to and including the limits of any Umbrella or Excess coverage, in the event of loss arising out of the Contractor's performance of the Work, and all such insurance policies shall provide that where there is more than one insured thereunder the policy will apply to each insured separately as if there were a separate policy covering each insured except with respect to the policy limits of such policy. The Contractor shall obtain certificates for each policy which evidence that coverage is in accordance with these requirements.

M. To the fullest extent permitted by law, the Contractor, for itself and its insurers, shall waive all rights of recovery and all rights of subrogation against the Town of East Lyme, East Lyme School Building Committee, East Lyme Public School District, the East Lyme Board of Education, and their members, affiliates, employees, volunteers, directors, and officers, the Architect, and the Architect's consultants, and their subsidiaries, affiliates, employees, volunteers, directors and officers, and any other person designated by the Owner or with whom the Owner has agreed to waive its rights in the event of loss including loss which should have been covered by the insurance required pursuant to the Contract to be procured and maintained by the Contractor, for losses within the scope of any liability insurance policy which the Contractor is required to purchase and maintain pursuant to the Contract and/or covered by any liability insurance policy which the Contractor in-fact purchases and maintains.

N. To the extent commercially available, all insurance policies required to be procured by the Contractor pursuant to the this Schedule 5 and/or the Contract and/or which the Contractor in-fact procures in connection with the Work and/or which otherwise apply to the Work or the Project, shall not prohibit and shall permit the Contractor to waive rights of subrogation against, and shall include a waiver of subrogation endorsement in favor of the Town of East Lyme, East Lyme School Building Committee, East Lyme Public School District, the East Lyme Board of Education, and their members, affiliates, employees, volunteers, directors, and officers, the Architect, and the Architect's

consultants, and its subsidiaries, affiliates, employees, volunteers, directors, officers and agents.

O. Limits of coverage stated above for any insurance are minimum required amounts, and if higher limits of coverage are maintained for any coverage such higher limits will become those required by this Schedule 5 and/or the Contract. Minimum coverage limits required for insurance required to be procured and maintained by the Contractor may be satisfied through any combination of primary and umbrella or excess coverage, provided there shall be no gaps in the form or limits between primary and umbrella or excess coverage. Policy limits available to any additional insured shall be the full policy limits maintained by the named insured. The amounts of insurance specified herein and agreed to by the parties are minimum requirements only and shall in no way limit the liability of the Contractor, nor the applicability or availability of the Contractor's insurance.

II. Additional General Insurance Requirements

A. Certificates of Insurance. The Contractor shall provide current certificates of insurance acceptable to the Owner evidencing compliance with the insurance requirements set forth herein and the other Bidding Documents at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section I, above. The certificates will show Town of East Lyme, East Lyme School Building Committee, East Lyme Public School District, the East Lyme Board of Education, and their members, affiliates, employees, volunteers, directors, and officers as additional insureds on the Contractor's Commercial General Liability, Automobile Liability, and excess or umbrella liability policy or policies. The Contractor's policies shall be written by insurance companies licensed to do business in the State of Connecticut, with an AM Best rating of no less than A-, or otherwise acceptable to the Owner. The Contractor and its insurer(s) for each liability insurance policy required under this Schedule 5 and/or the Contract shall give the Owner and any additional insured under any such policy, no less than thirty (30) days' prior written notice in advance of any termination, expiration, cancellation, or reduction or other change in coverage, and in advance the date by which renewal is required to continue coverage under any such policy, and (10) days' prior written notice of a termination or cancellation of a policy for non-payment. All certificates of insurance and notices required pursuant to the Contract and Contract Documents shall be sent by certified or registered mail to:

East Lyme School Building Committee
c/o Dr. Christian R. Lund, Director of Facilities and Technology
East Lyme Public School
165 Boston Post Road
P.O. Box 220
East Lyme, CT 06333

B. The Contractor shall provide evidence of coverage that meets the requirements of the Contract (including without limitation this Schedule 5) by providing to the Owner certificates of insurance for

each policy, and if requested by the Owner redacted certified copies of such polices or any part thereof deemed necessary in the sole opinion of the Owner to demonstrate compliance with the Contractor's obligations under the Contract. The Owner's acceptance of evidence of insurance shall in no way constitute or be construed as the Owner's affirmation that the Contractor has fully satisfied any or all of such obligations or the Owner's waiver of any right or claim arising out of or relating to the Contract Documents. As soon as possible after the execution of the Contract, and in no event later than seven (7) days prior to the commencement of the Work, the Contractor shall provide to the Owner certificates of insurance and/or certified copies of the policies requested by the Owner as evidence that all insurance coverage required pursuant to the Contract to be procured and maintained by the Contractor during performance of the Work has been so procured. The Contractor nor any Subcontractor may perform activities for construction of the Work at or on the Project site prior to Contractor's delivery of such evidence to the Owner, and no failure to or delay in delivering such evidence to the Owner shall constitute a basis for any increase to the Contract Sum or the Contract Time.

C. Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self- insured retentions applicable to any insurance required to be provided by the Contractor. Any retention or deductible applicable on any insurance policy procured and maintained by the Contractor shall be clearly stated and shall be the sole responsibility of the Contractor together with any applicable premium charge, claim cost, penalties, assessment, tax or other costs associated with the Contractor's risk funding obligations. Self-insured retention or any deductible in excess of $100,000 shall require the Owner's prior written approval.

D. The Contractor shall ensure that all Subcontractors maintain insurance policies, written by insurance companies licensed to do business in the State of Connecticut with an AM Best rating of no less than A-, or as otherwise acceptable to Owner, which policies are consistent with the requirements set forth in this Schedule 5 and otherwise in the Contract, including without limitation, the naming of additional insureds as provided and required in Section I, above, with coverage limits not less than those required for the insurance policies required to be procured and maintained by the Contractor or such lower limits as are agreed to by the Owner in writing on a case-by-case basis for a specific Subcontractor. The Contractor shall include in all subcontract agreements the obligation of the Subcontractors to comply with these insurance requirements. The Contractor shall not permit any Subcontractor or sub-subcontractor to perform any Work on the Project site until such time as the Contractor has obtained satisfactory evidence from such Subcontractors and sub-subcontractors that the foregoing insurance requirements have been satisfied.

E. The Contractor shall require all its Subcontractors and their insurers to waive all rights of recovery against against the Town of East Lyme, East Lyme School Building Committee, East Lyme Public School District, the East Lyme Board of Education, and their members, affiliates, employees, volunteers, directors, and officers, and the Architect, and the Architect's consultants, and their subsidiaries, affiliates, employees, volunteers, directors and officers, and any other person designated by the Owner or with whom the Owner has agreed to waive its rights in the event of loss, for losses covered by any policy of liability insurance which any such Subcontractor is required to purchase and maintain pursuant to the Contract Documents and/or their Subcontract with the Contractor in

connection with the Work, and/or which the Subcontractor in-fact purchases and maintains in connection with the Project and/or the Work.

F. If, as a result, in whole or in part, of the negligence (or other act for which there is legal liability) of the Contractor, its employees, agents, or subcontractors of any tier, any person (including employees of the Contractor) injury or death occurs or any property is damaged, lost or destroyed, or any other loss occurs, the Contractor assumes the liability therefor and agrees, to the fullest extent permitted by law, to indemnify, defend, and hold the Owner and its affiliates, subsidiaries, partners, directors, officers, members, managers, agents, servants, employees, and volunteers harmless from any and all such injury, death, property damage or other loss, including reasonable attorneys' fees incurred in connection therewith. The foregoing obligations are independent from, and not limited in any manner by, the Contractor's insurance coverage obtained pursuant to the Contract or otherwise. The Contractor shall not be required to defend, indemnify or hold harmless an indemnitee against claims for bodily injury or property damage solely caused by or resulting from the negligence of such indemnitee.

SCHEDULE 6
STATEMENT OF QUALIFICATIONS

1. A Letter of Transmittal signed by a principal of the bidder, not to exceed two (2) pages, describing in narrative form the company and the company's qualifications for the Project.

2. Company Overview:
   a. Name and location, including the office location that will be serving the Owner
   b. Number of years the company has been in the business of providing the services or performing the work upon which they are bidding
   c. Number of employees and how many of them will be dedicated to the Project
   d. Evidence of the company's licensing/authority to do business in the State of Connecticut

3. Client Base:
   a. Names and contact information for the three references for whom or which the bidder has provided services or performed work for school districts in the last 2 years in connection with projects similar in size and scope to the services and/or work upon which they are bidding. Provide Owner name and telephone number for each Project.
   b. Provide a description of each of the three projects and the contractor's role in each project.

4. Company Information:
   a. Name, email and telephone number of the bidder's contact person.
   b. A list of the subcontractors that the bidder would engage for the Project
   c. A list of projects for which the company has provided services in the last five years which projects have similar challenges to the Project and indicate if any claims, disputes, arbitration or litigation proceedings have occurred on any of these projects. If so, identify if they were between Owner/Contractor or Contractor/Subcontractor and give the status of each.

5. Litigation/Disputes:
   Provide information concerning any suits filed, judgments entered or claims made against your company during the last five (5) years with respect to contractual services provided by your company, or any declaration of default or termination for cause against your company with respect to such services.

6. Additional information, not included above, that the company feels may be useful and applicable to this Project and helpful to the Owner's and ELSBC's evaluation of the bidder (limit response to two pages).

SCHEDULE 7
CERTIFICATE OF COMPLIANCE WITH
CONNECTICUT GENERAL STATUTES SECTION 31-57b

I, the undersigned, hereby certify that all the statements herein contained below have been examined by me and to the best of my knowledge and belief are true and correct.

_____ (bidder name):

1. [ ] has [ ] has not: been cited for three or more wilful or serious violations of any occupational safety and health act or of any standard, order or regulation promulgated pursuant to such act, during the three-year period preceding the Bid, provided such violations were cited in accordance with the provisions of any state occupational safety and health act or the Occupational Safety and Health Act of 1970, and not abated within the time fixed by the citation and such citation has not been set aside following appeal to the appropriate agency or court having jurisdiction;

2. [ ] has [ ] has not: received one or more criminal convictions related to the injury or death of any employee in the three-year period preceding the Bid.

The list of violations (if applicable) is as follows:

_____
_____
_____
_____

BIDDER NAME: _____

Signed: By_____ _____
Date

Its _____ (Title)

Subscribed and sworn to before me, the undersigned officer, on this _____ day of _____, 202__.

_____
Notary Public
Commissioner of the Superior Court
My Commission expires:

SCHEDULE 8
FORM OF CONTRACT
AIA A101-2017 Agreement as modified by Owner

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BID FORM

PROJECT IDENTIFICATION
Town of East Lyme/East Lyme Public Schools
East Lyme High School -Aquatic Center Roof Replacement
Invitation to Bid # 2026-01

BID PROPOSAL SUBMITTED BY: _____
(Name and Address of Bidder)

Contact Person:_____
Tel. No._____
Email Address:_____

THIS BID IS SUBMITTED TO: Town of East Lyme School Building Committee ("ELSBC") on behalf of the Town of East Lyme ("Owner"), 165 Boston Post Road, East Lyme, CT 06333-0176: ATTN: Dr. Christian R. Lund, Director of Facilities and Technology, East Lyme Public Schools.

The undersigned Bidder proposes and agrees, if this Bid is accepted by the Owner, to enter into a contract with Owner in the form included in the Bidding Documents to perform and furnish all work described in and reasonably inferable from the Bidding Documents ("Work") within the times set forth in the Bidding Documents for the above-referenced Project and in accordance with the other terms and conditions of the Bidding Documents, for the following sums of money:

Base Bid Amount (Lump Sum): _____ ($_____)

Alternates Bid Amounts – In ADDITION to lump sum above per Section 012300

Alternate 1: Provide Replacement Ductwork at Pool Area:_____($_____)

The Bid Amounts proposed above include all labor, materials, equipment, fixtures, systems, supplies, tools, temporary facilities, temporary transportation, supervision and other services necessary to complete the Work for the Project as described in the Bidding Documents inclusive of, without limitation all charges such as overhead, profit, general conditions, general requirements, insurance and permits.

PROVIDE THREE REFERENCES FROM PREVIOUS SIMILAR WORK

	NAME	ORGANIZATION	CONTACT #
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____

Bidder accepts all terms and conditions of the Invitation to Bid, Instructions to Bidders and all other Bidding Documents (as defined) in the Instructions to Bidders, including, without limitation those relating to the disposition of Bid Security. This Bid will remain subject to acceptance by the Owner **for sixty (60) days** after the Bids are opened. Bidder will sign and deliver the required number of counterparts of the Contract along with the required payment and performance bonds and other documents required by the Bidding Documents within five (5) days after the Contract is presented by the Owner to the Bidder for signature.

In submitting this Bid, Bidder represents and acknowledges that:

1. Bidder has examined and carefully studied the Bidding Documents and the following Addenda;
2. Bidder′s failure to gain familiarity with the Bidding Documents, if any, shall in no way relieve Bidder of responsibility for all aspects of its Bid and the obligations set forth in the Bidding Documents;
3. The Bidder understands the requirements of the Bidding Documents and the scope of Work represented by the Bidding Documents to be performed by or on behalf of a Bidder;
4. Bidder has visited the Project site and become familiar with and is satisfied as to the general, local and site conditions under which the Work is to be performed, that may affect cost, progress, performance and furnishing of the Work and have correlated Bidder′s personal observations with the requirements of the Bidding Documents;
5. Bidder is familiar with and agrees to comply with all federal, state, and local Laws and regulations, ordinances, codes and orders that relate to the Project and/or performance of the Work described in the Bidding Documents and/or which may affect cost, progress, performance and furnishing of the Work;
6. Bidder has given the Owner, ELSBC, and the Architect written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents and the written resolution thereof by Architect is acceptable to Bidder, and Bidder acknowledges that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted;
7. Bidder has checked all of the amounts set forth in this Bid and the Schedules attached hereto and understands that neither Owner nor ELSBC will be responsible for any errors or omissions on the part of the Bidder in preparing this Bid;
8. The Base Bid Amount, Allowance Bid Amounts, Unit Price Bid Amounts, and Alternates Bid Amounts, set forth in this Bid Form includes all labor, materials, equipment, fixtures, systems, supplies, tools, temporary facilities, transportation, supervision and other services necessary to complete the Work for the Project as described in the Bidding Documents, inclusive of, without limitation, overhead, profit, general conditions, general requirements and insurance and bond costs, all without exception or qualification;
9. Bidder has confirmed and incorporated into its Bid and Bid Amounts the proper prevailing wage rate for its industry;
10. In submitting this Bid, it is understood that the right is reserved by the Owner and ELSBC to reject any or all Bids and waive all technicalities and informalities in connection therewith, including negotiating with the selected Bidder, all as may be in the best interest of the Owner and the East Lyme Public School District. It is agreed that this Bid may not be withdrawn for a period of sixty (60) days after the actual date the Bids are opened;

11. Bidder will complete the Work in accordance with the Bidding Documents for the prices set forth above in the Base Bid Amount and Unit Price Bid Amounts, plus the Allowance Bid Amounts and Alternates Bid Amounts for Add Alternative Items agreed to by the Owner on the Contract;
12. Bidder agrees that the Work will be substantially completed and ready for final payment in accordance with the Bidding Documents on or before the dates or within the number of calendar days indicated in the Bidding Documents;
13. Bidder received all the Bidding Documents and following addenda, receipt all of which is hereby acknowledged by the Bidder (list Addenda by Addendum number and date):

Invitation to Bid:	Date: _____	Initials: _____
Instructions to Bidders:	Date: _____	Initials: _____
Project Manual/Specifications:	Date: _____	Initials: _____
Bid Drawings:	Date: _____	Initials: _____
Addendum #: _____	Date: _____	Initials: _____
Addendum #: _____	Date: _____	Initials: _____
Addendum #: _____	Date: _____	Initials: _____

14. The following documents are attached to and made a part of this Bid:

(1) This Bid Form

(2) Completed and executed Non-Collusion Affidavit

(3) Completed Corporate Resolution (if Bidder is a corporation)

(4) Bid Security:

[ ] Executed Bid Bond

[ ] Certified Check, Cashier's Check, Treasurer's check, or Money Order

[ ] Letter of Credit (small contractor or minority business enterprise only)

(5) Completed and executed Certification re: CGS Section 31-57b

(6) Bidder's Contractor Qualification Statement

(7) [ ] Evidence of Bidder's Ability To Obtain Performance Bond and Labor and Materials Payment Bond
or
[ ] Evidence of Bidders Ability to Provide Letters of Credit in Lieu of Performance Bond and Payment Bond (small contractor or minority business enterprise only)

Communications by the Board to the Bidder concerning this Bid shall be addressed to the contact person for the Bidder identified on the first page of this Bid Form.

Bidder certifies, under the penalty of false statement, that: (1) the information in this Bid Form and its Bid is true and accurate; (2) that the copy of any Bid Bond submitted with this Bid Form is a true, accurate and unmodified copy of the original bond issued by the Bidder's surety for the Project; (3) that there has been no substantial change in the Bidder's financial position or corporate structure since the Bidder's most recent

prequalification certificate was issued or renewed, other than those changes noted in the update statement; and (4) that the Bid was made without fraud or collusion with any person.

In submitting this Bid, it is understood that the right is reserved by Owner and the ELSBC to reject any or all Bids and waive all technicalities and informalities in connection therewith, including negotiating with the selected Bidder or Bidders, all as may be in the best interest of the Owner and the East Lyme Public School District. It is agreed that this Bid may not be withdrawn for a period of sixty (60) days after the actual date the Bids are opened.

The undersigned declares that the person or persons signing this Bid is/are fully authorized to sign on behalf of the Bidder.

Signed this day ___ of _____, 2026

_____(Name of Bidder)

By:_____ (Signature of individual signing on behalf of Bidder)
_____(Print name of individual signing on behalf of Bidder)
Its _____(Title)

AIA® Document A101® – 2017

Standard Form of Agreement Between Owner and Contractor *where the basis of payment is a Stipulated Sum*

AGREEMENT made as of the __ day of _____ in the year 2026
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Town of East Lyme ("Owner")
165 Boston Post Road
East Lyme, CT 06333

and the Contractor:
(Name, legal status, address and other information)

NAME
STREET ADDRESS
CITY, STATE, ZIP

for the following Project:
(Name, location and detailed description)

East Lyme High School-Aquatic Center Roof Replacement
30 Chesterfield Road
East Lyme , CT 06333 (the "Project")
East Lyme Public Schools Invitation to Bid #2026-01

The Architect:
(Name, legal status, address and other information)

Lothrop Associates Architects D.P.C.P.C.
333 Westchester Avenue
White Plains, NY 10604

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:
The author of this document may have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101®–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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TABLE OF ARTICLES

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ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, AIA Document A201-2017 General Conditions of the Contract for Construction as modified by the Owner and appended hereto (as so modified, referred to hereinafter as the "AIA Document A201-2017"), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement as Contract Documents, all of which form the Contract for Construction between the Owner and the Contractor (the "Contract") and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the Owner and the Contractor relating to the subject matter of this Agreement and supersedes prior negotiations, representations, or agreements, either written or oral, verifiable or alleged. If anything in the other Contract Documents, other than a Modification, is inconsistent with this Agreement, this Agreement shall govern. An enumeration of the Contract Documents, other than a Modification, appears in Article 9. No alteration, modification, or amendment to this Agreement shall be binding upon the parties hereto unless by written instrument, signed by the Owner and the Contractor. This Agreement may be amended only by written instrument signed by both Owner and the Contractor, by written Change Order, or writing as otherwise expressly permitted and provided in this Agreement or the other Contract Documents.

ARTICLE 2 THE WORK OF THIS CONTRACT

§ 2.1 The Contractor shall fully execute the Work described in, reasonably inferable from and as necessary to produce the results intended by, the Contract Documents including, but not limited to, the furnishing of (1) all materials, supplies, equipment, fixtures, tools, implements, and other items and facilities required for, or in connection with, or for inclusion or incorporation into, the Project and (2) all labor, supervision, transportation, utilities, storage and all other services required for or in connection with the Project, except as specifically indicated in the Contract Documents to be the responsibility of others.

§ 2.2 CONTRACTOR'S STANDARD OF CARE, CONDITIONS AND LEGAL REQUIREMENTS

§ 2.2.1 The Contractor shall be responsible for the performance of the Work as an independent contractor and in a good and workmanlike manner (i) consistent with the Contract Documents; (ii) consistent with the instructions, guidance and direction of the Owner and Architect; (iii) consistent with prevailing applicable professional and industry standards; (iv) consistent with sound practices; (v) as expeditiously as is consistent with such professional skill and care and the orderly progress of the Work and with the Contract Documents and the instructions, guidance and direction of the Owner and Architect; and (vi) in a manner that will not exceed the Contract Sum as set forth in the Contract (the standards of this Section 2.2.1 shall be referred to herein as the "Contractor's Standard of Care"). The Contractor shall exercise the Contractor's Standard of Care in performing all aspects of the Work. All references in the Contract Documents to the knowledge, inference, reliance, awareness, determination, belief, observation, recognition or discovery of or by the Contractor or reference to any similar term shall include the constructive knowledge, inference, reliance, awareness, determination, belief, observation, recognition attributed to the Contractor ("Constructive Knowledge"). Such Constructive Knowledge shall include the knowledge, inference, reliance, awareness, determination, belief, observation and recognition the Contractor would have obtained upon the exercise of the Contractor's Standard of Care.

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§ 2.2.2 The Contractor shall be responsible for the performance of the Work in accordance with the Contract Documents, and the Conditions (as defined hereinafter), and the Contractor shall obtain and post all necessary permits at the site. The term "Conditions" shall mean and include all "**Legal Requirements**" (as defined in Section 3.7.2 of the AIA Document A201-2017) and/or all guidelines, standards and conditions of funding imposed on the Work and/or Project by the Agencies, as defined hereinafter.

§ 2.2.3 The "Agencies" or an "Agency" mean and include the Connecticut Department of Administrative Services ("DAS") and all other governmental authorities having regulatory or administrative jurisdiction over the Work and/or the Project, and all representatives or designees of DAS and such other governmental authorities.

§ 2.2.4 Legal Requirements and Agency Requirements

§ 2.2.4.1 Without limiting the responsibility of the Contractor under other provisions of the Contract Documents, the Contractor shall comply with and conduct the Work in accordance with all Legal Requirements, which shall include, without limitation, compliance with the requirements of Connecticut Regulation Sections 16a-38k-1 through 9 ("High Performance Building Requirements") to the extent such High Performance Building Requirements are specified in the Contract Documents, including without limitation any waste stream management requirements**.**

§ 2.2.4.2 Notwithstanding anything to the contrary in this Agreement, the Contractor shall attend such meetings and site-visits, and make such submissions, as are necessary to comply with applicable Legal Requirements.

§ 2.2.4.3.1 Contractor shall provide Change Orders and supporting documents and other required documentation in the form required by DAS and any other Agencies. Contractor shall also maintain records and reports as required by DAS and other Agencies.

§ 2.2.4.3.2 Contractor shall preserve and maintain financial books and records relating to this Contract and the Contractor's performance of the Work for a period of five (5) years after the date of final payment, or for such longer period as may be required by Legal Requirements or the Conditions, and upon request by the Owner or an Agency, shall make such records available to the Owner and/or such Agency as needed to address any audit by an Agency, including without limitation by DAS or the State of Connecticut Commission on Human Rights and Opportunities ("CHRO"). Such records shall include, without limitation, the Contractor's accounting records including complete documentation to support accounting entries, books, job cost reports, correspondence, instructions, drawings, receipts, subcontracts, Subcontractor bids, Subcontractor or supplier invoices, purchase orders, vouchers, memoranda, written policies and procedures, Change Order files (including documentation covering negotiated settlements), back charge logs and supporting documentation, general ledger entries detailing cash and trade discounts earned, insurance rebates and dividends; electronic or computer data, any other supporting evidence deemed necessary to substantiate charges, and other data relating to this Contract reasonably requested by the Owner or an Agency. Upon request by the Owner and/or any Agency, the Contractor shall deliver to the Owner such records, or any other records or items as are reasonably requested by the Owner in connection with any audit of the Project by the Owner or DAS in connection with any grant or financial assistance from the State of Connecticut for the Project ("DAS Grants"). The Contractor shall comply with all accounting procedures and record retention policies reasonably requested by the Owner and/or required by Legal Requirements or other Conditions, including without limitation DAS's rules and regulations relating to the DAS Grant.

§ 2.2.4.3.3 Upon request of the Owner or the Architect, the Contractor will cooperate with and assist the Owner and Architect with any audit of the Project conducted by the Owner or an Agency at any time after Substantial Completion. Such cooperation shall be at no cost to the Owner unless such cooperation is (1) in connection with an audit other than an audit by CHRO or the audit to be conduct by DAS for the Project in connection with DAS Grants, (2) provided after the close-out of the Project and demobilization by the Contractor and its Subcontractors, in which case the Contractor shall be entitled to reasonable compensation determined in the manner provided under Section 7.3.3 of AIA Document A201-2017.

§ 2.2.4.4 Any information obtained by the Contractor from the Owner or Architect may not be used, published, distributed, sold or divulged by the Contractor, its Subcontractors, or any Sub-subcontractors for such party's own purposes or for the benefit of any person, firm, corporation or other entity other than the Owner, without the prior written consent of the Owner. Any information obtained by the Contractor or its Subcontractors or any Sub-subcontractors that is designated by the Owner in accordance with applicable Legal Requirements as confidential shall not be disclosed to any other parties without the prior written consent of the Owner.

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§ 2.2.4.5 The Contractor shall comply with Legal Requirements applicable to its performance under this Contract, including all equal employment opportunity programs, and other programs as may be required by governmental and quasi-governmental authorities (including without limitation that identified or referenced in Sections 2.2.4.6, 8.8.3, 8.8.4, or 8.8.5 of this Agreement). The Contractor shall be responsible for all fines and penalties assessed against the Owner or the Contractor by any Agency to the extent such fines and penalties arise from the violation of any of the foregoing by the Contractor, any Subcontractor or Sub-subcontractor (as defined in Section 5.1 of the AIA Document A201-2017) or anyone for whom or which any of them is responsible.

§ 2.2.4.6 The Contractor shall be solely responsible for assuring that the procurement and award of Subcontracts for the Work is conducted in a manner consistent with applicable Legal Requirements and the Contract Documents.

§ 2.2.4.7 In procuring any Subcontracts with Subcontractors for performance of any portion of Work, the Contractor shall:

- **.1** Coordinate all processes for the solicitation of bids, selection of successful bidders, and award of Subcontracts
- **.2** Incorporate applicable requirements and regulations of the Owner and East Lyme School Builidng Committee, as applicable, and of Agencies, as required into bid documents, including without limitation, project labor agreements, compliance with prevailing wage laws and regulations, compliance with local hiring ordinances, compliance CHRO regulations and rules, and compliance with rules and requirements of DAS
- **.3** Develop and prepare bid packages in compliance with all Legal Requirements and the rules and requirements of DAS
- **.4** Solicit and engage Subcontractors with the qualifications and ability to perform the Work and complete the Project
- **.5** Lead and coordinate all pre-bid meetings and Project walk-throughs with the Owner
- **.6** Coordinate with the Owner and the Architect to manage the collection and response to question from prospective bidders
- **.7** Evaluate all bid submissions to determine qualifications and scope and recommend the lowest responsible bidder.
- **.8** Ensure state CHRO requirements are met and provide required site reporting.

§ 2.3 THE CONTRACTOR'S PROJECT TEAM

§ 2.3.1 The Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Contractor's reasonable skill and judgment in furthering the interests of the Owner. The Contractor agrees to furnish efficient business administration and supervision and to use Contractor's best efforts to furnish, at all times, an adequate supply of skilled workers and materials, and to perform the Work in the most expeditious and economical manner consistent with the Owner's interests.

§ 2.3.2 The Contractor's project team ("Project Team") will consist of, at a minimum, the following:
Project Executive: _____
Project Manager: _____
Superintendent: _____

The Contractor acknowledges that, in entering into this Agreement, the Owner is relying upon the fact that each of the members of the Project Team will continue to perform their services throughout the entirety of the performance of the Work. No change will be made in the membership of the Contractor's Project Team without the Owner's prior written approval, which approval shall not be unreasonably withheld. The Contractor will, upon reasonable notice from the Owner, replace any member of the Project Team whom the Owner reasonably deems unsatisfactory.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[ ] The date of this Agreement.

[X] A date set forth in a notice to proceed issued by the Owner.

[ ] Established as follows:

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(Insert a date or a means to determine the date of commencement of the Work.)

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check one of the following boxes and complete the necessary information.)

[ ] Not later than ( ) calendar days from the date of commencement of the Work.

[X] By the following date: **December 4, 2026**

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5. **TIME IS OF THE ESSENCE** in the completion of the Work.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be [**XXXXXXXX and XX/100 Dollars ($ X,XXX,XXX.XX**), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price

§ 4.4 Unit prices applicable to the Work, if any, are set forth below (the "Unit Prices"). Unit Prices shall be valid for the life of the Project and are inclusive of all costs associated with the complete performance, furnishing, and installation of the portion of the Work subject to Unit Prices including, without limitation, labor, materials, equipment, machinery, services,

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engineering, transportation, taxes and insurance as well as overhead and profit. Unit Prices shall be applicable to both additions to and deductions from the Work:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

§ 4.5 Liquidated damages, if any:
None.

§ 4.6 Other:
(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

None.

§ 4.6.1 The Contractor represents and warrants that the Drawings and Specifications and other materials and information furnished to the Contractor are sufficiently detailed to enable the Contractor to firmly establish the Contract Sum, subject to clarifications and assumptions (if any) expressly herein set forth.

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect and Owner by the Contractor and Certificates for Payment issued by the Architect, the Owner shall, upon its determination that the Work or a portion of the Work, as applicable, has been completed in a manner consistent with the Contract Documents, make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

§ 5.1.3 Each month on or before the last business day of such month, the Contractor shall submit to the Architect and the Owner a final version of the Contractor's Application for Payment along with all required Supporting Documentation (as defined in and in accordance with Section 9.3 of AIA Document A201-2017) for all Work properly performed in the prior month. The Owner shall, subject to the provisions of Section 9.6.8 of AIA Document A201-2017, make payment to the Contractor of the amount certified by the Architect to be due and payable to the Contractor under such Application for Payment not later than thirty (30) days after the date the Architect receives the final version of the Application for Payment and all required Supporting Documentation.

§ 5.1.3.1 Commencing with the second Application for Payment, and continuing with each Application for Payment submitted thereafter, Supporting Documentation shall include, without limitation, a properly executed release and waiver of claims and mechanic's liens from the Contractor and each Subcontractor and material supplier whose Work was included on the previous Application for Payment for which payment by Owner was made to the Contractor. In addition to the foregoing, commencing with the first Application for Payment and continuing with each Application for Payment submitted thereafter, the Contractor shall provide a properly executed conditional release and waiver of claims and mechanic's liens, in form acceptable to the Owner, from the Contractor and each Subcontractor and material or equipment supplier whose Work is included on the Application for Payment subject only to receipt of payment under such Application for Payment.

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents and approved by the Owner and the Architect pursuant to Section 9.2 of the AIA Document A201-2017 (the "Schedule of Values"). The Schedule of Values shall allocate the entire Contract Sum among the various portions of the Work. The Schedule of Values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This Schedule of Values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment. Each Application for Payment shall include a statement showing the status of

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all pending change orders, other pending change directives and approved changes to the Contract. Such statement shall identify the pending change orders and other pending change directives, and shall include the date such change orders and directives were initiated, the costs associated with their performance, and a description of any Work completed.

§ 5.1.6 In accordance with AIA Document A201-2017, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

.1 That portion of the Contract Sum properly allocable to completed Work based on the Schedule of Values;

.2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and

.3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

.1 The aggregate of any amounts previously paid by the Owner;

.2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;

.3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;

.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017;

.5 Retainage withheld pursuant to Section 5.1.7;

.6 In addition to retainage withheld pursuant to Section 5.1.7, unless the Contactor is exempted by CHRO from the requirements of, or compliance with, Connecticut General Statutes Section 46a-68e, the Owner shall withhold from each progress payment to the Contractor an amount equal to two percent (2%) of the amount otherwise due (the "CHRO Holdback"), until such time as the Contractor has filed with CHRO and caused all Subcontractors to file with CHRO all compliance reports required by CHRO pursuant to General Statutes Section 46a-68e, and such reports have been approved by the executive director of CHRO or the executive director's designee or deemed by CHRO deficient without consequence.

.7 In addition to retainage withheld pursuant to Section 5.1.7, any additional amounts required by law to be withheld or retained by the Owner due to the Contractor's failure to comply with its obligations under Connecticut General Statutes Sections 4a-60, 4a-60g, 4a-60h, or Sections 46a-68c, 46a-68d, 46a-68e and/or 46a-68f, inclusive, or as required by an order of CHRO made pursuant to Connecticut General Statutes Section 46a-56.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

Five percent (5%)

§ 5.1.7.1.1 The following items are not subject to retainage:

(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

Not applicable

§ 5.1.7.2 Intentionally omitted.

(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such

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modifications.)

§ 5.1.7.3 Upon Substantial Completion of the Work and such acceptance, and consent of surety if any, the Owner may, in its sole and absolute discretion, release and make payment of all or a portion of retainage as applicable to the Work that is complete in accordance with the Contract Documents. The Owner shall not, however, be obligated to release any portion of retainage held by the Owner until the Contractor has fulfilled all of its obligations under, and in accordance with, the Contract Documents.
(Insert any other conditions for release of retainage upon Substantial Completion.)

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, any Subcontractor, Sub-subcontractor or any other person or entity for whom or which any of them is responsible, the Owner shall pay the Contractor any additional amounts to the extent required under Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.1.10 The Contractor shall use payments made under this Agreement solely for the purpose of paying for the performance of the Work pursuant to the Contract Documents. Contractor shall pay for all labor and services performed and materials, equipment and machinery supplied by others in connection with the performance of the Work in accordance with the Contract Documents and as required by applicable Legal Requirements.

§ 5.1.11 The Contractor shall pay any amounts due a Subcontractor or supplier or other person or entity providing or performing Work, whether for labor or services performed or materials, equipment or machinery furnished, not later than ten (10) days after the date the Contractor receives payment from the Owner which encompasses such labor or services performed or materials, equipment or machinery furnished by such Subcontractor or supplier or other person or entity providing or performing Work. Payment shall be the amount to which the Subcontractor or supplier or other person or entity is entitled, reflecting percentages actually retained by the Owner from payments to the Contractor on account of the portion of the Work performed by the Subcontractor or supplier or other person or entity.

The Contractor shall, by appropriate agreement with each Subcontractor or supplier or other person or entity providing or performing Work for the Contractor, require each person or entity providing or performing such Work to make payments to subconsultants or Sub-subcontractors in a similar manner. The Contractor shall include in each subcontract entered into by the Contractor with any Subcontractor or supplier or other person or entity in connection with the Work, a provision requiring the Subcontractor or supplier or other person or entity to pay any amounts due any of their Sub-subcontractors or suppliers, whether for labor or services performed or materials, equipment or machinery furnished, within thirty (30) days after such Subcontractor or supplier or other person or entity receives a payment from the Contractor which encompasses labor or services performed, or materials, equipment or machinery furnished by such sub-subcontractor or supplier.

§ 5.1.11 Retainage withheld by the Contractor on amounts due any Subcontractor or supplier or other person or entity performing or providing the Work shall not exceed five percent (5%) of such amount due.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- **.1** the Contractor has fully performed the Work and all of its obligations under the Contract Documents except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment;
- **.2** the Contractor has submitted a final Application for Payment together with all required Supporting Documentation; and
- **.3** a final Certificate for Payment has been issued by the Architect in accordance with Section 9.10 of AIA Document A201-2017.

§ 5.2.2 The Owner's final payment to the Contractor, including retainage withheld pursuant to Section 5.1.7, shall be made no

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later than **[Ninety] (90)** days after the Owner's acceptance of all Work required by the Contract Document and issuance of the Architect's final Certificate for Payment. The Architect's final Certificate for Payment shall not be issued unless and until all required Supporting Documentation required by the Contract Documents, and such additional information as is reasonably requested by the Owner, have been submitted to the Architect by the Contractor.

§ 5.2.2.1 Notwithstanding anything to the contrary set forth herein or in any other Contract Documents, Owner shall not be required to make final payment until the Contractor has submitted all documentation required by the Contract Documents to the Owner and the Owner has accepted the same, including without limitation, all warranties and guarantees associated with the Work and "as built" surveys in form acceptable to the Owner.

§ 5.2.2.2 In the discretion of the Owner, the Owner may make final payment to the Contractor by joint checks made payable in each case to the Contractor and the appropriate Subcontractor or supplier. The Contractor acknowledges and agrees that such payment by joint check shall constitute payment by Owner to the Contractor.

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest only to the extent required by Connecticut law and, if so required, at the minimum required rate.

§ 5.4 Any provision herein to the contrary notwithstanding, the Owner shall not be obligated to make payment to the Contractor hereunder to the extent any one or more of the following conditions exist:

.1 The Contractor is in default of any of its obligations hereunder or otherwise is in default under any of the Contract Documents;

.2 Any part of such payment is attributable to Work which the Owner or the Architect determines that, because of the fault or neglect of the Contractor, is defective or not performed in accordance with the Contract Documents; provided, however, such payment shall be made as to the part thereof attributable to the Work which is performed in accordance with the Contract Documents and is not otherwise defective; or

.3 The Contractor has failed to make payments properly to Subcontractors or for material or labor used in the Work for which the Owner has made payment to the Contractor.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

[ ] Arbitration pursuant to Section 15.4 of AIA Document A201–2017

[X] Litigation in a court of competent jurisdiction

[ ] Other *(Specify)*

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§ 6.3 Choice of Law/Forum Selection/Waiver of Jury Trial

This Agreement, the Contract, and the Contract Documents shall be governed by and construed in accordance with the laws of the State of Connecticut, without regard to its choice of law or conflict of law principles which would result in the application of the laws of any jurisdiction other than the State of Connecticut and applicable federal law of the United States.

The Owner and the Contractor expressly agree and acknowledge that any action or legal proceeding by the Owner or Contractor against the other, which action or legal proceeding arises from or relates to the Contract, shall be commenced in the Superior Court of the State of Connecticut, Judicial District of Hartford at Hartford and maintained therein or in the Complex Litigation Docket at the Judicial District of Hartford, which shall be the exclusive forum and venue for any such action or legal proceeding.

THE CONTRACTOR HEREBY WAIVES THE RIGHT TO TRIAL BY JURY IN ANY ACTION OR LEGAL PROCEEDING ARISING FROM OR RELATING TO THE CONTRACT, AND AS TO ANY AND ALL CLAIMS, DISPUTES, AND/OR CAUSES OF ACTION AGAINST OR WITH OWNER WHICH ARISE OUT OF, OR ARE IN CONNECTION WITH, THE CONTRACT AND/OR THE PROJECT.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor as provided in Article 14 of AIA Document A201-2017.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:
(Name, address, email address, and other information)
Diane Nazarko, Project Manager
East Lyme Facilities Department
165 Boston Post Road
East Lyme, CT 06333
Email: Diane.Nazarko@elpsk12.org
Tel: 860-691-0040

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)
NAME/TITLE
STREET ADDRESS
CITY, STATE, ZIP
Email:
Tel:

§ 8.4 The Contractor's representative shall not be changed without at least ten (10) days' prior notice to the Owner and Architect.

§ 8.5 The Architect's representative:
Andrew Claar, RA
Lothrop Associates D.P.C.P.C.

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White Plains, NY 10604
E-mail: aclaar@lothropassociates.com
Tel: (914) 234-8427

§ 8.6 Insurance

§ 8.6.1 The Owner and the Contractor shall purchase and maintain insurance as required and set forth in **Exhibit A** attached hereto, and elsewhere in the Contract Documents.

§ 8.6.2 The Contractor shall provide surety bonds as set forth in Section 8.6.3 and elsewhere in the Contract Documents.

§ 8.6.3.1 Contractor Performance Bond and Payment Bond

Except as set forth in subsection 8.6.3.2, the Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds
in the State of Connecticut with an AM Best rating of no less than A-, XI or who are otherwise acceptable to the Owner, as follows:

.1 a Payment Bond in the amount of 100% of the Contract Sum, for the protection of persons supplying labor or materials in the prosecution of the Work for the use of each such person; and

.2 a Performance Bond in the amount of 100% of the Contract Sum.

Payment and Performance Bonds shall be AIA Document A312-2010™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312-2010™.

§ 8.6.3.2 Letter of Credit In Lieu of Surety Bonds

If the Contractor is a small contractor or a minority business enterprise as defined by Connecticut General Statutes Section 4a-60g, the Contractor may:

.1 in lieu of providing a Payment Bond in accordance with Section 8.6.3.1.1, provide a letter of credit in an amount equal to twenty-five percent (25%) if the Contract Sum; and

.2 in lieu of providing a Performance Bond in accordance with Section 8.6.3.1.2, provide a provide a letter of credit in an amount equal to twenty-five percent (25%) if the Contract Sum.

§ 8.6.3.3 Subcontractor Payment Bonds

The Contractor shall obtain from each Subcontractor with whom the Contractor enters into a Subcontract having a Subcontract value or price of One Hundred Thousand Dollars ($100,000.00) or more, a Payment Bond for the protection of persons supplying labor or materials in the prosecution of the Work for the use of each such person, from a company or companies lawfully authorized to issue surety bonds in the State of Connecticut with an AM Best rating of no less than A-VII or who are otherwise acceptable to the Owner and the Contactor, which bond shall be in the amount of 100% of the amount of such Subcontract. Such Payment Bond shall be AIA Document A312-2010™, Payment Bond or contain provisions identical thereto.

§ 8.7 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with a building information modeling exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with a building information modeling exhibit, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

Notice pursuant to Section 1.6.1 of the AIA Document A201-2017 may be delivered by electronic mail to the email address for the recipient's representative identified in Sections 8.2, 8.3, and 8.5 above, as applicable. The subject line of the email shall include the address of the Project and be electronically flagged as "urgent."

§ 8.8 Other provisions:

§ 8.8.1 The Contractor hereby represents and warrants (in addition to other representations and warranties contained in the Contract Documents), as an inducement to the Owner to enter into the Contract, which representations and warranties shall survive the final completion of the Work:

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.1 that it is financially solvent, able to pay its debts as they mature and possessed of sufficient working capital to complete the Work and perform its obligations under the Contract Documents;

.2 that it, through its Subcontractors or otherwise, is able to furnish the tools, materials, supplies, equipment and labor required to complete the Work and perform its obligations hereunder in a timely manner and has sufficient experience and competence to do so;

.3 the Contractor is authorized to do business in the State of Connecticut and is properly licensed by all necessary governmental authorities having jurisdiction over the Contractor and the Project; and

.4 the Contractor has visited the site of the Project and become familiar with the condition of the site and the Contract Documents, and knows of no reason why the Work cannot be performed as set forth in, and in the timeframe required by, the Contract Documents.

§ 8.8.2.1 Execution in Counterparts. This Agreement and any of the other Contract Documents requiring signature of the parties may be signed in two or more separate counterparts, each of which shall be treated as an original but which, when taken together, shall constitute one and the same instrument, provided such instrument not be effective until each party has executed and exchanged at least one counterpart. Exchange by fax, or by email attaching an executed copy of this Agreement or other Design-Build Document so-executed, and/or in Adobe Portable Document Format (".pdf"), will be considered to be a valid and binding obligation of the executing party.

§ 8.8.2.2 Electronic Signatures. Each party agrees that the parties may, to the extent that it is permissible under applicable law, sign this Agreement or other Contract Documents requiring signature of the parties, by way of electronic signature (such as DocuSign, AdobeSign, etc.), and that that method of signature is as conclusive of each party's intent to be bound by this Agreement or other Contract Documents so-executed, as if it had been signed by each party's manual "wet ink" signature.

§ 8.8.3 Nondiscrimination Affirmation.

The Contractor affirms that, by signing this Agreement, the Contractor certifies (i) that the Contractor has reviewed Connecticut General Statutes Sections 4a-60 (portions of which are set forth in Section 3.1.7 of AIA Document A201-2017), (ii) that the Contractor understands its obligations pursuant to Section 3.1.7 of AIA Document A201-2017 and Connecticut General Statutes Section 4a-60, and (iii) that the Contractor will maintain a policy for the duration of the Contract to assure that the Contract will be performed in compliance with the nondiscrimination requirements set forth in Section 3.1.7 of AIA Document A201-2017 and Connecticut General Statutes Section 4a-60(b).

§ 8.8.4 Utilization of Small Business and Minority Business Enterprises

This Contract and the Project are subject to compliance with Connecticut General Statutes Section 4a-60g and State of Connecticut law requirements for spending allocation goals ("SAGs") established by CHRO for the award of subcontracts to small contractor and/or minority business enterprises. Connecticut law requires a minimum SAG of twenty-five (25%) percent of the total state-funded portion of the Contract for award to Subcontractors holding current certification from the Connecticut Department of Administrative Services under the provisions of Connecticut General Statutes Section 4a-60g as Small Business Enterprises ("SBE"), and a minimum of 6.25% of the total state-funded portion of the Contract for award to Subcontractors holding current certification from the Connecticut Department of Administrative Services under the provisions of Connecticut General Statutes Section 4a-60g as Minority-, Women-, and/or Disabled-owned businesses ("MBEs"). The Contractor must demonstrate good faith effort to meet the SAGs for the Project.

§ 8.8.4.1 The Contractor shall perform under this Contract in accordance with Connecticut General Statutes Sections 4a-60, 4a-60g and 4a-60h in the procurement of Subcontractors to perform the Work.

§ 8.8.4.2 Determination of the Contractor's good faith efforts shall include, but shall not be limited to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices, including without limitation the Contractor's utilization of reasonable steps and best suggested practices established by CHRO to achieve SAGs; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as CHRO may prescribe that are designed to promote the participation of SBEs and MBEs in public works projects.

§ 8.8.4.3 The Contractor shall develop and maintain adequate documentation, in a manner prescribed by CHRO, of its good faith efforts.

§ 8.8.5 Equal Employment Opportunity. The Contractor agrees and warrants that in the performance of the Contract, it will not discriminate or permit discrimination against any person, or group of persons, on the grounds of race, color, religious creed,

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age, marital status, national origin, sex, sexual orientation, physical disability, including but not limited to blindness, unless it is shown by the Contractor that such disability prevents performance of the Work involved, in any manner prohibited by the laws of the United States or the State of Connecticut. The Contractor shall provide to the Owner such information that Owner requests concerning the employment practices and procedures of the Contractor as relates to the provisions of this Section 8.8.5. For the purpose of the aforesaid provision, performance of the Contract shall include, but not be limited to, the following: advertising, recruitment, layoff, termination, rates of pay or other forms of compensation, conditions or privileges of employment, selection for apprenticeship, selection for retention of subcontractors, or in the procurement of materials, equipment or services.

§ 8.8.5.1 The Contractor shall hereinafter post on the Project site, in conspicuous places available for employees and applicants for employment, notices setting forth its non-discrimination requirements.

§ 8.8.5.2 In all contracts between the Contractor and any Subcontractor or supplier, either for Work to be performed under a Subcontract or the procurement of materials, equipment or services, each consultant, Subcontractor or supplier shall be notified in writing by the Contractor of the Contractor's obligations under this Contract relating to non-discrimination, and each, by their contracting agent, shall agree to and be bound by the such terms of this Contract.

§ 8.8.5.3 Nothing in this Section 8.8.5 shall be deemed to relieve the Contractor from compliance with all applicable federal, state and municipal law concerning equal employment opportunity, non-discrimination, good faith efforts to award subcontracts to small contractors and minority business enterprises, and related subjects during the term of the Contract.

§ 8.8.6 Compliance with Connecticut General Statutes Section 31-52a. In the employment of labor to perform the Work specified under the Contract Documents, preference shall be given by the Contractor to residents of the State of Connecticut, who are, and continuously for at least six (6) months prior to the date of this Agreement have been, residents of the State of Connecticut, and if no such person is available then to residents of other states.

§ 8.8.7 Prevailing Wage. The Contractor shall comply with, and cause all Subcontractors and Sub-subcontractors providing labor for performance of the Work and/or off-site custom fabrication for the Work to comply with Connecticut General Statutes Section 31-53. The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the Work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in subsection (i) of Connecticut General Statutes Section 31-53, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the Town of East Lyme. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day. For purposes of this Section 8.8.7, "off-site custom fabrication" means the fabrication of mechanical systems that are fabricated at a site located within the State of Connecticut other than the location of the Project, but are fabricated specifically for the Project, including plumbing systems, heating systems, cooling systems, pipefitting systems, ventilation systems or exhaust duct systems; provided, "off-site custom fabrication" does not include components or materials that are stock shelf items or readily available.

§ 8.9 Successors and Assigns

The Owner and the Contractor, respectively, bind themselves, their partners, successors, assigns, and legal representatives to the covenants, agreements, and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract. All terms and provisions of this Agreement shall be binding upon, inure to the benefit of, and be enforceable by, the Owner and the Contractor, and their respective administrators, legal representatives, directors, officers, employees, agents, successors and permitted assigns.

§ 8.10 Capitalization

Terms capitalized in this Agreement and the other Contract Documents include those that are (1) defined within the Contract Documents, (2) the titles of numbered articles, or (3) the titles of other AIA Contract Documents.

§ 8.11 Interpretation

§ 8.11.1 Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

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§ 8.11.2 The invalidity of any provision of any of the Contract Documents shall not invalidate this Agreement or its remaining provisions, or any other provision of any other of the Contract Documents. If it is determined by a court of competent jurisdiction or arbitrator(s) that any provision of this Agreement or any of the other Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be deemed revised to the extent necessary to make that provision legal, and/or valid and enforceable. In such case the Contract shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing this Agreement, and the invalidity of any part or provision of the Contract Documents shall not impair or affect in any manner the validity, enforceability or effect of the remaining parts and provisions of the Contract Documents.

§ 8.12 Headings. Section headings in the Contract Documents are intended solely for convenience or reference, and they shall be given no effect in the construction or interpretation of the Contract.

§ 8.13 Rights and Remedies. The rights and remedies of the Owner that are provided for in this Agreement, and all other rights and remedies that are available to the Owner at law or in equity, are, to the extent permitted by applicable law, cumulative and are not exclusive of any other right or remedy now or hereafter available at law or in equity to the Owner. Neither the Owner's assertion of a right nor employment of a remedy shall preclude the Owner from concurrently asserting any other right or the employment of any other remedy.

§ 8.14 No action or failure to act by the Owner to enforce any provision of the Contract shall constitute a waiver of a right or duty afforded the Owner under the Contract or constitute approval of or acquiescence of the Owner in a breach by the Contractor hereunder, except as the Owner may specifically agree in writing, nor shall such action or failure to act by the Owner constitute a waiver of any such provision or a limitation upon of the right of Owner to subsequently enforce strict compliance with all provisions, terms and conditions of the Contract.

§ 8.15 Exhibits and Conflicts. To the extent that there is any conflict or inconsistency between the provisions of this Agreement and the provisions of any other Contract Document, the provisions of this Agreement shall control, unless the provisions of the concerned other Contract Document explicitly acknowledge such a conflict and explicitly state that it is the parties' intent that such provisions of the other Contract Document control with respect to the involved topic.

§ 8.16 Entire Agreement/Modifications. There are no oral agreements between the Owner and the Contractor affecting this Agreement, and this Agreement sets forth all of the covenants and agreements between the Owner and the Contractor with regard to the performance of the Work and the subject-matter of this Agreement. This Agreement, in all of its parts, represents the entire and integrated agreement between the parties hereto relating to the subject-matter of this Agreement and the Project, and supersedes and replaces all prior negotiations, representations, and agreements, oral or written, verifiable or alleged. This Agreement may be modified only by written amendment, signed by both of the Owner and the Contractor, or by written Change Order or writing as otherwise expressly permitted and provided in this Agreement. No alteration, modification, or amendment to this Agreement shall be binding upon the Parties hereto unless by written instrument.

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- **.1** This Agreement
- **.2** **Exhibit A** - Insurance Requirements
- **.3** AIA Document A201-2017, as modified by the Owner
- **.4** Building information modeling exhibit, dated as indicated below:
  (Insert the date of the building information modeling exhibit incorporated into this Agreement.)
- **.5** Drawings

TOWN OF EAST LYME, EAST LYME PUBLIC SCHOOLS, EAST LYME HIGH SCHOOL-AQUATIC CENTER ROOF REPLACEMENT, 30 CHESTERFIELD ROAD EAST LYME, CT 06333, FEBRUARY 11, 2026 ISSUED FOR BID, ARCHITECT: LOTHROP ASSOCIATES ARCHITECTS D.P.C.P.C. 333 WESTCHESTER AVENUE, WHITE PLAINS, NY 10604

NUMBER	TITLE	DATE
A000	COVER SHEET	2-11-2026
A001	ROOF KEY PLAN	2-11-2026

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A002	SITE PLAN	2-11-2026
A110	DEMOLITION FIRST FLOOR PLAN	2-11-2026
A110.1	DEMOLITION MEZZANINE FLOOR PLAN/CEILING PLAN	2-11-2026
A111	CONSTRUCTION FIRST FLOOR PLAN	2-11-2026
A111.1	CONSTRUCTION MEZZANINE FLOOR PLAN/CEILING PLAN	2-11-2026
A112	DEMOLITION REFLECTED CEILING PLAN	2-11-2026
A113	CONSTRUCTION REFLECTED CEILING PLAN	2-11-2026
A120.1	DEMOLITION ROOF FRAMING PLAN	2-11-2026
A120.2	DEMOLITION ROOF PLAN	2-11-2026
A121.1	CONSTRUCTION ROOF FRAMING PLAN	2-11-2026
A121.2	CONSTRUCTION ROOF PLAN	2-11-2026
A301	DEMOLITION SECTIONS AND INTERIOR ELEVATIONS	2-11-2026
A311	CONSTRUCTION SECTIONS AND INTERIOR ELEVATIONS	2-11-2026
A501	ROOF DETAILS I	2-11-2026
A502	ROOF DETAILS II	2-11-2026
S001	STRUCTURAL NOTES I	2-11-2026
S002	STRUCTURAL NOTES II	2-11-2026
S100	ROOF DEMOLITION PLAN	2-11-2026
S101	ROOF FRAMING CONSTRUCTUION PLAN	2-11-2026
S200	STRUCTURAL DETAILS	2-11-2026
P001	PLUMBING NOTES, LEGEND, DETAILS AND SPECIFICATIONS	2-11-2026
PD100	PLUMBING MEZZANINE DEMO RCP	2-11-2026
P100	PLUMBING FIRST FLOOR CONSTRUCTION PLAN	2-11-2026
P101	PLUMBING MEZZANINE CONSTRUCTION RCP	2-11-2026
M001	MECHANICAL SYNBOLS, NOTES AND LEGEND	2-11-2026
MD100	MECHANICAL MEZZANINE & 1ST FL. DEMO PLAN	2-11-2026
M100	MECHANICAL MEZZANINE & 1ST FL. CONSTRUCTION PLAN	2-11-2026
M200	MECHANICAL DETAILS	2-11-2026
E001	ELECTRICAL NOTES & SYMBOLS	2-11-2026
ED100	ELECTRICAL DEMO 1ST FL. RCP	2-11-2026
ED101	ELECTRICAL MEZZANINE DEMO PLAN	2-11-2026
E100	ELECTRICAL FIRST FLOOR PLAN	2-11-2026
E100.1	ELECTRICAL CONSTRUCTION RCP	2-11-2026
E101	ELECTRICAL MEZZANINE CONSTRUCTION PLAN	2-11-2026
E102	ELECTRICAL ROOF CONSTRUCTION PLAN	2-11-2026
E200	ELECTRICAL ONE LINE DIAGRAM AND PANEL SCHEDULES	2-11-2026

.6 Specifications

.1 VOLUME 1 OF 1 PROJECT MANUAL – ISSUED FOR BID EAST LYME HIGH SCHOOL-AQUATIC CENTER ROOF Replacement 30 Chesterfield Road, East Lyme, CT, Owner: Town of East Lyme/East Lyme Public Schools, prepared by Lothrop Associates Architects D.P.C.P.C. 333 Westchester Avenue, White Plains, NY 10604 Project Manual Date: February 11, 2026

SECTION	TITLE	DATE	PAGES

.7 Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

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.8 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

.1 Exhibit B – Contractor's Completed Bid Form, dated [MONTH, DAY, YEAR]
.2 Exhibit C – Connecticut Department of Labor Wage Rates - Annual Adjusted July 1st Rates, July 1, 2025
.5 Exhibit D - VOLUME 1 OF 1 PROJECT MANUAL – ISSUED FOR BID EAST LYME HIGH SCHOOL-AQUATIC CENTER ROOF REPLACEMENT 30 Chesterfield Road, East Lyme, CT, Owner: Town of East Lyme/East Lyme Public Schools, prepared by Lothrop Associates Architects D.P.C.P.C. 333 Westchester Avenue, White Plains, NY 10604 Project Manual Date: February 11, 2026
.6 Exhibit E - Addenda No. 2 to Invitation to Bid #[ ], dated [MONTH, DAY, YEAR]
.7 Exhibit F - Addenda No. 3 to Invitation to Bid #[ ], dated [MONTH, DAY, YEAR]

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
NAME/TITLE	NAME/TITLE
(Printed name and title)	*(Printed name and title)*

DRAFT

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EXHIBIT A
to A101-2017 Agreement dated [DATE] between
Town of East Lyme as Owner and _____ as Contractor

INSURANCE REQUIREMENTS

I. Contractor's Insurance Requirements

Before commencement of construction of the Work at the Project site, the Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the State of Connecticut. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the AIA A201-General Conditions contained in the Bidding Documents, except that the Contractor shall maintain its Commercial General Liability Policy for seven (7) years after the date of Substantial Completion of the Work.

Insurance requirements set forth in this Exhibit A are independent of, and in addition to, the Contractor's liability under the Contract Documents. Nothing in the Contract Documents shall be deemed to limit Contractor's liability under the Contract Documents to the limits of coverage of insurance required hereunder. The Contractor shall be solely responsible for payment of all deductible or retention amounts pertaining to any insurance required hereunder. The limit and coverages set forth herein are the minimum requirements under the Contract Documents. The inclusion of these minimum requirements shall not be interpreted to restrict the rights of the additional insureds to the stated minimum coverage amounts in the event the Contractor maintains coverage at higher limits.

A. Commercial General Liability

Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than One Million Dollars ($1,000,000) each occurrence, Two Million Dollars ($2,000,000) general aggregate, and Two Million Dollars ($2,000,000) aggregate for products-completed operations hazard, providing coverage for claims including

(1) damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
(2) personal injury and advertising injury;
(3) damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
(4) bodily injury or property damage arising out of completed operations;
(5) the Contractor's indemnity obligations under Section 3.18 of the AIA A201-General Conditions contained in the Bidding Documents; and
(6) electronic data liability (under endorsement ISO CG 04 37 or its equivalent).

The Contractor's Commercial General Liability policy shall not contain an exclusion or restriction of coverage for the following:

(1) Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim;
(2) Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor;
(3) Claims for bodily injury other than to employees of the insured;
(4) Claims for indemnity under Section 3.18 of the AIA A201-General Conditions contained in the Bidding Documents arising out of injury to employees of the insured;
(5) Claims or loss excluded under a prior work endorsement or other similar exclusionary language;

(6) Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language;
(7) Claims related to roofing, if the Work involves roofing;
(8) Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces;
(9) Claims related to earth subsidence or movement, where the Work involves such hazards;
(10) Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

The Commercial General Liability coverage general aggregate limit shall apply separately to each project on a per-project basis and shall be unimpaired at commencement of the Work. The Commercial General Liability coverage shall be written on the most recent ISO occurrence form (CG 00 01) or a substitute occurrence-based form providing equivalent coverage, and shall include coverage for liability arising from premises, operations, independent contractors, products/completed operations covering construction means and methods to be maintained for no less than a period of seven (7) years after completion of the Work, personal and advertising injury, contractual liability (without requiring privity of contract), and liability assumed under an insured contract (including the tort liability of another assumed in a business contract). The Commercial General Liability coverage shall apply to, and not exclude coverage for: joint negligence of the Contractor and other persons; acts and/or omissions of Subcontractors and Subcontractors' sub-subcontractors; and completed operations. In addition, such policy shall contain a broad form contractual liability endorsement or similar wording within the policy form, if applicable.

Town of East Lyme (the "Owner"), the East Lyme School Building Committee, East Lyme Public School District, and the East Lyme Board of Education, and their members, affiliates, employees, volunteers, directors, and officers, shall be included as additional insureds under the Commercial General Liability policy, to the extent commercially available using an endorsement with coverage no less than that provided under CG 20 10 07 04, CG 20 37 07 04, and, with respect to Lothrop Associates Architects D.P.C.P.C. (the "Architect"), and the Architect's consultants, CG 20 32 07 04. Insurance for additional insureds shall be as broad as the coverage provided for the named insured. Commercial General Liability coverage shall apply as primary and non-contributory insurance before any other insurance or self-insurance, including any deductible maintained by or provided to the additional insureds.

B. Commercial Automobile Liability insurance written on the most recent ISO form CA 00 01 or its equivalent, covering vehicles owned, hired vehicles, and non-owned vehicles, including trailers, used by the Contractor and/or used in connection with the Work, with policy limits of not less than One Million Dollars ($1,000,000) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage. If vehicles are used to transport hazardous material then ISO CA 99 48 (broadened pollution) and an MCS90 endorsement shall be included unless Pollution Liability coverage as described in Section I.H is applicable to operations and vehicles being used.

C. Umbrella or Excess liability insurance on an occurrence basis in excess of the coverages and limits required for the primary liability insurance required under Sections I.A, I.B, and I.F (Contractor's Commercial General Liability insurance, Commercial Automobile Liability insurance, and Employer's Liability insurance), in an amount not less than One Million Dollars ($1,000,000) per occurrence and One Million Dollars ($1,000,000) unimpaired general aggregate per policy year. Umbrella or Excess coverage shall be follow form on a primary and non-contributory basis. The Umbrella or Excess insurance policies shall provide the same or greater coverage as the Contractor's Commercial General Liability insurance, Commercial Automobile Liability insurance, and Employer's Liability insurance, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The Umbrella or Excess insurance policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers. Umbrella or Excess coverage must include as additional insureds all entities that are additional insureds on the Commercial General Liability coverage, Automobile Liability, and Employer's

Liability insurance required under Sections I.A, I.B, and I.F, and Umbrella or Excess coverage for such additional insureds shall apply as primary and non-contributory before any other insurance or self-insurance or self-insured retention, including any deductible maintained by or provided to the additional insured, and shall apply without the need for privity of contract as to any additional insured.

D. The Contractor may achieve the required limits and coverage for Commercial General Liability insurance, Automobile Liability insurance, and Employers' Liability insurance, through a combination of primary and excess or umbrella "follow form" liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Sections I.A, I.B, and I.F, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers, and aggregate limits of liability shall apply separately with respect to the Work.

E. Workers' Compensation at statutory limits.
In addition to any other requirements related to worker's compensation insurance, if Contractor is a sole proprietor, a single member limited liability company or otherwise has no employees, Contractor shall maintain Worker's Compensation Insurance as if it were an "employer" as such term is defined in and in accordance with Connecticut's General Statutes.

F. Employers' Liability insurance with policy limits not less than One Million Dollars ($1,000,000) each accident, One Million Dollars ($1,000,0000) each employee, and One Million Dollars ($1,000,000) policy limit.

G. If the Contractor is required to furnish professional services as part of the Work, including without limitation, surveying, geotechnical investigation, design, engineering, stamping of drawings or specifications, consulting, programing or development of software, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than One Million Dollars ($1,000,000) per occurrence or claim and One Million Dollars ($1,000,000) in the aggregate. If Professional Liability insurance procured and maintained is on claims-made basis, the insurance policy shall have a retroactive date which shall precede the commencement of the Work and which date is no later than the policy inception date, and coverage shall be continuously maintained until at no less than seven (7) years after Substantial Completion of the Project.

H. If the Work involves the handling, abatement, clean-up, removal, transport, dissemination, use, or release of pollutants or hazardous materials, including but not limited to asbestos, PCBs, contaminated soils, and lead-based paint, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than One Million Dollars ($1,000,000) per occurrence and One Million Dollars ($1,000,000) in the aggregate. The policy shall provide coverage for pollution, lead, mold and asbestos liability. The policy must specifically include coverage for "asbestos, lead paint, and other hazardous building materials such as PCB's, abatement operations" and have the "Pollution Exclusion" eliminated or modified so as not to apply to any bodily injury, including but not limited to asbestos, lead paint, and other hazardous building materials such as PCB's abatement, handling, transport or disposal. All policies shall be written on an "occurrence" basis. Coverage shall include first party, third party, clean-up, legal and claim expense including transit and disposal. Full policy forms and endorsements are subject to review by the Owner.

I. Coverage under Section I.G and I.H may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than Two Million Dollars ($2,000,000) per claim and Two Million Dollars ($2,000,000) in the aggregate.

J. The Contractor's Commercial General Liability, Umbrella/Excess Liability, Automobile Liability, and Worker's Compensation Insurance policies shall include a waiver of subrogation endorsement in favor of Town of East Lyme,

the East Lyme School Building Committee, East Lyme Public School District, and the East Lyme Board of Education and their members, affiliates, employees, volunteers, directors, and officers.

K. Additional Insured Obligations.

1. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage, automobile liability coverage, and excess or umbrella coverage to include (1) Town of East Lyme, the East Lyme School Building Committee, East Lyme Public School District, and the East Lyme Board of Education and their members, affiliates, employees, volunteers, directors, and officers, the Architect, and the Architect's consultants, as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) Town of East Lyme, the East Lyme School Building Committee, East Lyme Public School District, and the East Lyme Board of Education and their members, affiliates, employees, volunteers, directors, and officers, as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any general liability insurance policies maintained by the Owner or any other additional insured and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

2. The Owner, the Architect, and the Architect's consultants, and all of their affiliates, subsidiaries and respective partners, officers, directors, agents, employees and servants, shall be named as an additional insured on the insurance policies described in Sections I.A, I.B, I.C, I.F, I.H, and I.I, without a requirement for privity of contract. The additional insured coverage in such policies procured by the Contractor, as named insured, shall not limit coverage thereunder to vicarious liability of the additional insured or liability arising out of only the named insured's negligence.

L. All insurance policies maintained by the Contractor shall be deemed primary and non-contributory to insurance maintained by any additional insured, up to and including the limits of any Umbrella or Excess coverage, in the event of loss arising out of the Contractor's performance of the Work, and all such insurance policies shall provide that where there is more than one insured thereunder the policy shall apply to each insured separately as if there were a separate policy covering each insured except with respect to the policy limits of such policy. The Contractor shall obtain certificates for each policy which evidence that coverage is in accordance with these requirements.

M. To the fullest extent permitted by law, the Contractor, for itself and its insurers, shall waive all rights of recovery and all rights of subrogation against Town of East Lyme, the East Lyme School Building Committee, East Lyme Public School District, and the East Lyme Board of Education and their members, affiliates, employees, volunteers, directors, and officers, the Engineer, and the Engineer's consultants, and their subsidiaries, affiliates, employees, volunteers, directors and officers, and any other person designated by the Owner or with whom the Owner has agreed to waive its rights in the event of loss including loss which should have been covered by the insurance required pursuant to the Contract Documents to be procured and maintained by the Contractor, for losses within the scope of any liability insurance policy which the Contractor is required to purchase and maintain pursuant to the Contract Documents and/or covered by any liability insurance policy which the Contractor in-fact purchases and maintains.

N. To the extent commercially available, all insurance policies required to be procured by the Contractor pursuant to the this Exhibit A and/or the Contract Documents and/or which the Contractor in-fact procures in connection with the Work and/or which otherwise apply to the Work or the Project, shall not prohibit and shall permit the Contractor to waive rights of subrogation against, and shall include a waiver of subrogation endorsement in favor of Town of East Lyme, the East Lyme School Building Committee, East Lyme Public School District, and the East Lyme Board of

Education, and their members, affiliates, employees, volunteers, directors, and officers, the Architect, and the Architect's consultants, and its subsidiaries, affiliates, employees, volunteers, directors, officers and agents.

O. Limits of coverage stated above for any insurance are minimum required amounts, and if higher limits of coverage are maintained for any coverage such higher limits will deemed to be those required by this Exhibit A and/or the Contract. Minimum coverage limits required for insurance required to be procured and maintained by the Contractor may be satisfied through any combination of primary and umbrella or excess coverage, provided there shall be no gaps in the form or limits between primary and umbrella or excess coverage. Policy limits available to any additional insured shall be the full policy limits maintained by the named insured. The amounts of insurance specified herein and agreed to by the parties are minimum requirements only and shall in no way limit the liability of the Contractor, nor the applicability or availability of the Contractor's insurance.

II. Additional General Insurance Requirements

A. Certificates of Insurance. The Contractor shall provide current certificates of insurance acceptable to the Owner evidencing compliance with the insurance requirements set forth herein and the other Bidding Documents at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section I, above. The certificates will show Town of East Lyme, the East Lyme School Building Committee, East Lyme Public School District, and the East Lyme Board of Education and their members, affiliates, employees, volunteers, directors, and officers as additional insureds on the Contractor's Commercial General Liability, Automobile Liability, and excess or umbrella liability policy or policies. The Contractor's policies shall be written by insurance companies licensed to do business in the State of Connecticut, with an AM Best rating of no less than A-, or otherwise acceptable to the Owner. The Contractor and its insurer(s) for each liability insurance policy required under this Exhibit A and/or any other Contract Documents shall give the Owner and any additional insured under any such policy, no less than thirty (30) days' prior written notice in advance of any termination, expiration, cancellation, or reduction or other change in coverage, and in advance the date by which renewal is required to continue coverage under any such policy, and (10) days' prior written notice of a termination or cancellation of a policy for non-payment. All certificates of insurance and notices required pursuant to the Contract Documents shall be sent by certified or registered mail to:

East Lyme School Building Committee
c/o Dr. Christian R. Lund, Director of Facilities and Technology
East Lyme Public School
165 Boston Post Road
P.O. Box 220
East Lyme, CT 06333

B. The Contractor shall provide evidence of coverage that meets the requirements of the Contract Documents (including without limitation this Exhibit A) by providing to the Owner certificates of insurance for each policy, and if requested by the Owner redacted certified copies of such polices or any part thereof deemed necessary in the sole opinion of the Owner to demonstrate compliance with the Contractor's obligations under the Contract. The Owner's acceptance of evidence of insurance shall in no way constitute or be construed as the Owner's affirmation that the Contractor has fully satisfied any or all of such obligations or the Owner's waiver of any right or claim arising out of or relating to the Contract Documents. As soon as possible after the execution of the Contract, and in no event later than seven (7) days prior to the commencement of the Work, the Contractor shall provide to the Owner certificates of

insurance and/or certified copies of the policies requested by the Owner as evidence that all insurance coverage required pursuant to the Contract Documents to be procured and maintained by the Contractor during performance of the Work has been so procured. The Contractor nor any Subcontractor may perform activities for construction of the Work at or on the Project site prior to Contractor's delivery of such evidence to the Owner, and no failure to or delay in delivering such evidence to the Owner shall constitute a basis for any increase to the Contract Sum or the Contract Time.

C. Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self- insured retentions applicable to any insurance required to be provided by the Contractor. Any retention or deductible applicable on any insurance policy procured and maintained by the Contractor shall be clearly stated and shall be the sole responsibility of the Contractor together with any applicable premium charge, claim cost, penalties, assessment, tax or other costs associated with the Contractor's risk funding obligations. Self-insured retention or any deductible in excess of $100,000 shall require the Owner's prior written approval.

D. The Contractor shall ensure that all Subcontractors maintain insurance policies, written by insurance companies licensed to do business in the State of Connecticut with an AM Best rating of no less than A-, which policies are consistent with the requirements set forth in this Exhibit A and otherwise in the Contract, including without limitation, the naming of additional insureds as provided and required in Section I, above, with coverage limits not less than those required for the insurance policies required to be procured and maintained by the Contractor or such lower limits as are agreed to by the Owner in writing on a case-by-case basis for a specific Subcontractor. The Contractor shall include in all subcontract agreements the obligation of the Subcontractors to comply with these insurance requirements. The Contractor shall not permit any Subcontractor or sub-subcontractor to perform any Work on the Project site until such time as the Contractor has obtained satisfactory evidence from such Subcontractors and sub-subcontractors that the foregoing insurance requirements have been satisfied.

E. The Contractor shall require all its Subcontractors and their insurers to waive all rights of recovery against Town of East Lyme, the East Lyme School Building Committee, East Lyme Public School District, and the East Lyme Board of Education and their members, affiliates, employees, volunteers, directors, and officers, and the Architect, and the Architect's consultants, and their subsidiaries, affiliates, employees, volunteers, directors and officers, and any other person designated by the Owner or with whom the Owner has agreed to waive its rights in the event of loss, for losses covered by any policy of liability insurance which any such Subcontractor is required to purchase and maintain pursuant to the Contract Documents and/or their Subcontract with the Contractor in connection with the Work, and/or which the Subcontractor in-fact purchases and maintains in connection with the Project and/or the Work.

F. If, as a result, in whole or in part, of the negligence (or other act for which there is legal liability) of the Contractor, its employees, agents, or subcontractors of any tier, any person (including employees of the Contractor) injury or death occurs or any property is damaged, lost or destroyed, or any other loss occurs, the Contractor assumes the liability therefor and agrees, to the fullest extent permitted by law, to indemnify, defend, and hold the Owner and its affiliates, subsidiaries, partners, directors, officers, members, managers, agents, servants, employees, and volunteers harmless from any and all such injury, death, property damage or other loss, including reasonable attorneys' fees incurred in connection therewith. The foregoing obligations are independent from, and not limited in any manner by, the Contractor's insurance coverage obtained pursuant to the Contract Documents or otherwise. The Contractor shall not be required to defend, indemnify or hold harmless an indemnitee against claims for bodily injury or property damage solely caused by or resulting from the negligence of such indemnitee.

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General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

East Lyme High School-Aquatic Center Roof Replacement
30 Chesterfield Road
East Lyme, CT 06333 (the "Project")
East Lyme Public School District Invitation to Bid #2026-01

THE OWNER:
(Name, legal status and address)

Town of East Lyme ("Owner")
165 Boston Post Road
East Lyme, CT 06333

THE ARCHITECT:
(Name, legal status and address)

Lothrop Associates Architects D.P.C.P.C.
333 Westchester Avenue
White Plains, NY 10604

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, these General Conditions of the Contract for Construction, Supplementary Conditions and/or other Conditions to the Contract for Construction, Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction between the Owner and the Contractor. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor, supplier, or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor.

§ 1.1.3 The Work

The term "Work" means the construction and services required by, reasonably inferable from, and as necessary to produce the results intended by, the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations or to be provided by Subcontractors, material suppliers, Sub-subcontractors or any other entity for whom the Contractor is responsible under or pursuant to the Contract Documents. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams. The Drawings and details for construction and changes to the Work show layouts as taken from available original Drawings and subsequent known changes. The Contractor shall make all necessary adjustments and changes in the construction of the Work required by actual conditions existing on the date of the Agreement, at no cost to the Owner.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

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§ 1.9 Contractor

The term "Contractor" as used in these General Conditions or any of the Contract Documents, shall mean and refer to the person identified as the "Contractor" in the Agreement.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. If the Contractor discovers any inconsistency within or among parts of the Contract Documents which set forth the requirements for the Work, or between the requirements for the Work set forth in Contract Documents and applicable standards, codes or ordinances, the Contractor shall promptly give notice to the Owner and the Architect of such inconsistency and shall, unless otherwise instructed in writing by the Architect or the Owner, provide work or materials that comply with applicable standards, codes or ordinances, and if not in conflict with such standards, codes and ordinances, further provide work or materials of the better quality and/or greater quantity set forth in the Contract Documents as instructed by the Architect or the Owner. In the case of an inconsistency between the Drawings and Specifications, or within either that is not clarified by Addendum, the better quality or greater quantity of Work shall be provided in accordance with the Architect's interpretation.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. When applied to materials and equipment required for the Work, the words "furnish," "install," and "provide" shall be interpreted as follows:

- .1 The word "provide" shall mean to furnish, pay for, deliver, install, adjust, clean, and otherwise make materials and equipment fit and ready for their intended use.
- .2 The word "furnish" shall mean to secure, pay for, deliver to site, unload, and uncrate materials and equipment.
- .3 The word "install" shall mean to place in position, incorporate in the Work, adjust, clean, make fit and ready for use and perform all services except those included under the term "furnish"
- .4 The phrase "furnish and install" shall be equivalent to the word "provide." Each shall be interpreted to mean 'the Contractor shall furnish all labor, material and equipment and install.'
- .5 "As required" shall mean as required to produce a fully completed project or result to the satisfaction of the Architect
- .6 Where discrepancies or conflicts occur:
  - .1 Amendments and Addenda shall take precedence over the Specifications.
  - .2 The Specifications shall take precedence over the Drawings.
  - .3 Stated dimensions shall take precedence over scaled dimensions.
  - .4 Large-scale detail drawings shall take precedence over small-scale drawings.
  - .5 Schedules shall take precedence over other data on the drawings.
- .7 In case of a difference between Drawings or Specifications or within either document itself in describing the Work, the better quality or greater quantity, regardless of cost, will be assumed to be and shall be included in the Work. The Contractor shall not proceed with such Work until the Architect has been contacted for clarification and proper direction.
- .8 Instructions or specifications of a particular manufacturer as referred to herein shall be binding as a part of this Specification. Obtain such written instructions and maintain on the job with the Specification.
- .9 Schedules of materials in various sections of the Specifications are furnished to assist the Contractor. Contractor shall verify the schedules with the Drawings and shall provide any additional materials indicated on the Drawings but not included in the schedules. The greater quantity or highest quality will govern.

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§ 1.2.4 All work shown or referred to in the Contract Documents shall be included in the Work, excepting only those items which are specifically noted not being part of the Work or specifically noted as to be provided by the Owner.

§ 1.2.5 The Contractor shall not take advantage of obvious error or apparent discrepancy in Contract Documents. Notice of discovered error or discrepancy shall immediately be given in writing to the Architect to make such corrections and interpretations as the Architect may deem necessary for completion of the Work in accordance with the requirements of the Contract Documents.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the reserved rights of the Owner in and to such Instruments of Service.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon written protocols governing the transmission and use of, and reliance on, Instruments of Service or any other information or documentation in digital form.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to written protocols governing the use of, and reliance on, the information contained in the model shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in

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Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative. The Owner's representative shall be the person designated as such in the Agreement, or a successor to such person designated by the Owner from time to time, which person shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization, subject to such limitations as the Owner may specify in writing to the Contractor from time to time. Any action taken on the Owner's behalf other than by the representative so designated by Owner will not be binding upon the Owner. The Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative. The Owner will provide written notification to the Contractor of the identity and contact information of any person (other than the person identified in Section 8.2 of the Agreement) that is to serve as a designated representative of the Owner.

§ 2.1.2 Intentionally omitted.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work, upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. If such evidence is so requested, the Contractor shall have no obligation to commence the Work until the Owner provides such evidence.

§ 2.2.2 Intentionally omitted.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits, related fees and filings that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure, file and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities, unless provided otherwise in the Contract Documents.

§ 2.3.2 The Owner shall retain an engineer or architect lawfully licensed to practice professional engineering or architecture, or an entity lawfully practicing professional engineering or architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect or Engineer in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor provided the services of the Architect are still needed for the Project at the time of termination.

§ 2.3.4 The Owner shall furnish surveys describing the general physical characteristics, legal limitations, and utility locations for the site of the Project. The Contractor shall be entitled to rely on the accuracy of such surveys to extent such documents affirmatively describe or identify the general physical characteristics, legal limitations, and utility locations for the site of the Project. Notwithstanding any information contained in any such surveys received by the Contractor, the Contractor shall at all times exercise proper precautions relating to the safe performance of the Work. Any other data provided by the Owner to the Contractor concerning the physical characteristics or measurements of the components that comprise the Project site; access to the Project site or staging and storing at the Project site; present obstructions and conditions of structures on or near the Project site; locations and depths of sewers, conduits, pipes, and gas lines on or near the Project site; positions of sidewalks, curbs and pavements on or near the Project site and other data concerning the conditions of the Project site and its surroundings (collectively, "Site Data"), have been obtained from sources the Owner believes to be reliable. Accuracy of the

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Site Data, however, is not guaranteed and is furnished solely for accommodation of the Contractor.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall furnish such information and services with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish up to one (1) set of Contract Drawings and Specifications, and two (2) copies of each drawing which is issued after the date of the Contract. The Contractor shall pay costs of reproduction for any additional copies of Drawings or Specifications he requires. The Owner shall furnish to the Contractor, without charge, three (3) copies of Drawings and Project Manual. Additional requested by the Contractor will be furnished at the cost of reproduction, postage and handling.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3. The Owner's right to order the Contractor to stop the Work shall not relieve the Contractor of any of its obligations under or pursuant to the Contract Documents.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a five-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect, and all deficiencies in the Work arising therefrom, with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect and the deficiencies in the Work arising therefrom. In such case, an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor for the Owner's cost of correcting the default or neglect and the deficiencies in the Work arising therefrom, including, without limitation, expenses, attorneys' fees, and compensation for the Architect's additional services made necessary by such default, neglect, failure and deficiencies. The Contractor shall also be responsible for all the Owner's other costs, damages, delays, and associated impacts arising in the event that the Owner exercises its rights under this Section 2.5. The Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent necessary to pay the Owner the amounts due under this Section 2.5. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15. The right of the Owner to carry out the Work pursuant to this Section 2.5 shall not give rise to any duties on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity. In performing any work pursuant to this Section 2.5, the Owner shall have the right to take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor or any Subcontractor.

§ 2.6 Additional Rights

The rights stated in this Article 2 shall be in addition to, and not in limitation of, any other rights of the Owner provided in the Contract Documents, or as may be available to the Owner at law or in equity.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor and Subcontractors of all tiers shall be lawfully licensed to the extent and as required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.2.1 Unless explicit quality or standards for materials or workmanship are established in the Contract Documents for any

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portion of the Work with which the Contractor is obligated to comply, the Contractor shall perform such Work in a good and workman like manner, in a manner of good quality for the intended use, and consistent with the quality of the surrounding Work and of the construction of the Project generally.

§ 3.1.2.2 All manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's written or printed directions and instructions unless otherwise specifically indicated in the Contract Documents. The Contractor shall comply with all manufacturer's directions, specifications and recommendations for installation, handling, sorting, adjustment and operation of materials or equipment; provided, the Contractor shall be responsible for determining whether any such directions, specifications and recommendations may safely and suitably be employed in the Work, and for notifying the Owner and Architect in advance, in writing, of any deviation or modification necessary for the safe installation or proper operation of the item of material or equipment.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.1.4 The Contractor shall comply, and shall cause Subcontractors of every tier to comply, with all accounting procedures and record retention policies reasonably requested by the Owner.

§ 3.1.5 Non-Resident Contractor

If the Contractor is a "nonresident contractor" as defined in Section 12-430(7)(A) of the Connecticut General Statutes, as revised, the Contractor shall provide evidence to the Owner prior to commencement of the Work that Contractor has complied fully with the provisions of Section 12-430(7). The Contractor is hereby notified that, if any Subcontractor or supplier performing any part of the Work under the Contract Documents is a nonresident unverified contractor, the Contractor will withhold 5% of all payments to such Subcontractor or supplier unless and until such Subcontractor or supplier provides to the Contractor a Certificate of Compliance issued by the Connecticut Department of Revenue Services as defined in the Connecticut General Statutes Section 12-430(7). A nonresident unverified contractor is a contractor without an office in the State of Connecticut that is continuously maintained, occupied and used by the contractor's regular employees regularly in attendance to carry on the contractor's business in the contractor's own name and which contractor has not been verified pursuant to the requirements of the Connecticut Department of Revenue Services. The amount withheld pursuant to Connecticut General Statutes Section 12-430(7) shall be in addition to, and not in lieu of, the retainage held by the Contractor under its Subcontract with the Subcontractor or supplier.

§ 3.1.6 Notwithstanding anything to the contrary in the Contract Documents, the Contractor shall attend such meetings and site-visits, and make such submissions, as are necessary to comply with applicable Legal Requirements (as defined in the Agreement).

§ 3.1.7 Nondiscrimination

(a) **§ 3.1.7.1** Pursuant to the requirements of Connecticut General Statutes Section 4a-60:(1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, sexual orientation, gender identity or expression, status as a veteran, status as a victim of domestic violence, status as a victim of sexual assault or status as a victim of trafficking in persons, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the Work involved, in any manner prohibited by the laws of the United States or of the state of Connecticut; and the Contractor further agrees to take affirmative action to ensure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, sexual orientation, status as a veteran, status as a victim of domestic violence, status as a victim of sexual assault or status as a victim of trafficking in persons, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the Work involved;

(2) The Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Connecticut Commission on Human Rights and Opportunities;

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(3) The Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Connecticut Commission on Human Rights and Opportunities advising the labor union or worker' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(4) The Contractor agrees to comply with each provision of Section 4a-60 of the Connecticut General Statutes, Connecticut General Statutes Sections 46a-68e and 46a-68f, and with each regulation or relevant order issued by the Connecticut Commission on Human Rights and Opportunities pursuant to Connecticut General Statutes Sections 46a-56, 46a-68e, 46a-68f and 46a-86; and

(5) The Contractor agrees to provide the Connecticut Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of Connecticut General Statutes Sections 4a-56 and 4a-60.

(b) The Contractor agrees and warrants that it will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on the Project.

(c) Pursuant to Connecticut General Statutes Section 4a-60(g), the Contractor shall include the provisions of subsections (a) and (b) of this Section 3.1.7.1 in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state, and in every subcontract entered into in order to fulfill any obligation of a public works contract, and such provisions shall be binding on a subcontractor, vendor or manufacturer, unless exempted by regulations or orders of the Commission on Human Rights and Opportunities. The Contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions, including sanctions for noncompliance in accordance with Connecticut General Statutes Section 46a-56; provided, if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission regarding a state contract, the contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

(d) The Contractor agrees to comply with the regulations referred to in this Section 3.1.7.1 as they exist on the date of the Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor shall constitute a representation that the Contractor has (i) visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents, and (ii) evaluated and satisfied itself and will cause its Subcontractors to satisfy themselves as to the conditions and limitations under which the Work is to be performed, including, without limitation (1) the location, condition, layout and physical conditions of the Project site and surrounding areas, (2) generally prevailing climatic conditions, (3) anticipated labor supply and costs, (4) anticipated availability and costs of materials, tools and equipment, and (5) except as provided in Section 10.3, and subject to the provisions of Section 3.7.4, anticipated soil and subsurface conditions of the Project site. Failure by the Contractor to comply with this Section 3.2.1 and to fully acquaint itself with conditions which may affect the Work and/or the cost thereof, including, but not limited to, conditions relating to transportation, handling, storage of materials, availability of labor, water, other known projects in the region, applicable provisions of law, and the character and availability of equipment and facilities needed preliminary to and during the prosecution the Work, shall not relieve the Contractor of its responsibilities under the Contract Documents and shall not constitute a basis for extension of the Contract Time or any increase in the Contract Sum. The Owner shall not be required to pay any amount, including any increase in the Contract Sum, or make any adjustment in the Contract Time, in connection with any failure by the Contractor or any Subcontractor to comply with the requirements of this Section 3.2.1. Owner assumes no responsibility for any representations concerning conditions made by any of its officers, or employees or representatives, prior to the execution of the Contract, unless such representations are expressly stated in the Contract Documents. The provisions of this Section 3.2.1 shall not be construed to limit the investigative and review responsibilities of the Contractor under any other provisions of the Contract Documents. The provisions of this Section 3.2.1 shall not be

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construed to limit the investigative and review responsibilities of the Contractor under any other provisions of the Contract Documents.

§ 3.2.1.1 Execution of the Contract by the Contractor shall constitute a representation by the Contractor that the Contractor has carefully reviewed the Contract Documents, and that the Contract Documents are sufficiently detailed and complete to permit the Contractor, (i) to complete the Project for an amount not in excess of the Contract Sum; and (ii) complete the Work within the Contract Time and in accordance with the Contract Documents and all applicable Legal Requirements (as defined in Section 3.7.2). The Contractor shall not perform any construction activity it knows constitutes a recognized error, inconsistency, or omission. If the Contractor performs any construction activity knowing it involves a recognized error, inconsistency, or omission in the Contract Documents without reporting the error, inconsistency or omission to the Architect, the Contractor shall assume appropriate responsibility for such performance and shall bear an appropriate amount of the costs of correction.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations and the Contractor shall be responsible for associated delays and impacts. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities. If the Contractor proceeds with such Work without obtaining further Drawings or instructions from the Owner, or without providing prompt prior written notification to the Architect and Owner, the incorrect or improperly completed/attempted Work shall be corrected by the Contractor's at its expense.

§ 3.2.5 If the Contractor fails to fulfill its obligations to report to the Architect or Owner under this Article 3, such failure shall preclude the Contractor from any subsequent Claim arising from or relating to the factors giving rise to the Contractor's obligation to make such report.

§ 3.2.6 The Owner assumes no contractual liability or responsibility for the physical condition or safety of the Project site or of any improvements thereon. Except as set forth in Section 10.3, the Contractor shall be solely responsible for providing safe conditions for the performance of the Work.

§ 3.2.7 If the Contractor shall give the Architect notice of any additional Drawings, Specification or instructions required to define the Work in greater detail, or to permit the proper progress of the Work. Requests for such information shall be made by the Contractor sufficiently in advance of the time such information is needed by the Contractor so as to permit the Architect a reasonable time for responding to such requests without affecting the progress of the Work.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for

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coordinating all portions of the Work under the Contract. In no event shall the Contractor employ construction means, methods, techniques, sequences, or procedures that violate (1) requirements of any warranties applicable to the Work; or (2) any Legal Requirements.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor, Contractor's employees, Subcontractors, Sub-subcontractors, suppliers, and their respective agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 The Contractor shall furnish sufficient forces, plant and equipment as may be necessary to insure the progress of the Work in accordance with the Construction Schedule. If, in the opinion of the Owner, the Contractor has fallen behind the Construction Schedule, the Contractor shall submit its proposal demonstrating the manner in which the desired rate of progress may be achieved and the Contractor shall take such steps as may be necessary to meet the Construction Schedule. Unless the Contractor has fallen behind schedule due to delays which entitle Contractor to an adjustment in the Contract Time in accordance with the terms and conditions of the Contract Documents, the taking of such steps shall be at the sole costs and expense of the Contractor. It shall be the responsibility of the Contractor to maintain its schedule so as not to delay the progress of the Work or the scheduled work of separate contractors.

§ 3.3.5 The Contractor's coordination of Work shall include, without limitation, review of all shop drawings (including, without limitation, architectural, civil, structural, mechanical, and electrical shop drawings) submitted by Subcontractors for various trades or subdivisions of work, as indicated by Contractor's approval in accordance with Section 3.12.

§ 3.3.6 The Contractor shall be solely responsible for properly laying out the Work, and for all lines, elevations, and measurements for all of the Work. Contractor shall verify the figures shown on the Drawings before laying out the Work and will be responsible for any errors or inaccuracies resulting from Contractor's failure to do so. In the event that the Contractor shall, while laying out the Work, become aware of: (1) any conflicts between (a) the Drawings, the Specifications or any Modification to the Drawings or the Specifications and (b) the actual layout of the Work, or (2) any conflicts or inconsistencies in the Drawings, the Specifications or any Modification to the Drawings or the Specifications themselves, Contractor shall promptly notify the Architect. If the Contractor proceeds without the Architect's clarification and instruction on the matter, the Contractor shall proceed at Contractor's own risk.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the written consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 All labor shall be performed by workmen skilled in their respective trades, and workmanship shall be of good quality so that first class work in accordance with the standards of construction set forth in the Contract Documents and the Contractor's Standard of Care will be achieved. The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.4.3.1 The Contractor shall take all necessary steps to ensure harmony between persons performing labor as part of the Work. The Contractor shall perform Work in accordance with Legal Requirements, including regulations, applicable to the Project labor.

§ 3.4.3.2 The Contractor shall be solely responsible for the proper and safe operation and maintenance of all utility systems within the areas of site where the Work is performed, whether supplied by the Owner's distribution system or otherwise, until the Work is complete and accepted by the Owner and the Owner has notified the Contractor that other arrangements for utility

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service have been made. The Contractor shall maintain, protect, and/or operate equipment or facilities within the site construction area which serve the distribution system, subject to periodic inspection by the Owner's on-site personnel. Inspection by any representative or personnel of the Owner shall not relieve the Contractor of responsibilities in connection with operation, maintenance and protection of these facilities and equipment. The Contractor shall notify the Owner's representatives no less than 72 hours in advance of the desire to extend, connect, disconnect, turn on or off any steam, electric, water or other service from the Owner's utility supply systems at the site. The actual operation shall be witnessed and approved by authorized representatives of the Owner. All plumbing, heating and electrical work, including installation of equipment and any other Work to be performed by the Contractor, shall be performed without interference with the Owner's normal operations at the site.

§ 3.4.3.3 The Owner will supply to the Contractor all water and electricity reasonably required for construction of the Work at the Project site. Utilities furnished by the Owner will be discontinued if, in the opinion of the Owner, wastefully used by the Contractor. The Contractor shall supply all hoses, extension cords, etc., necessary for the proper installation of the Work.

§ 3.4.3.4 Adequate toilet facilities for use during construction of the Work shall be provided by the Contractor.

§ 3.4.3.5 The Contractor shall be responsible for materials which are removed from the Work and to be subsequently re-installed as part of the Work. All cost, damage and loss of such materials while removed from the Work shall be the responsibility of the Contractor.

§ 3.4.4.1 As required under Section 31-53 of the Connecticut General Statutes, the wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the Work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in subsection (i) of Connecticut General Statutes Section 31-53, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the Town of East Lyme. If the Contractor or any Subcontractor is not obligated by agreement to make payment or contribution on behalf of such persons to any such employee welfare fund, the Contractor or such Subcontractor pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day.

§ 3.4.4.2 As required pursuant to Connecticut General Statutes Section 31-53b, the Contractor shall furnish proof, and shall cause its Subcontractors to furnish proof, with the weekly certified payroll form for the first week each employee begins work on the Project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under Connecticut General Statutes Section 31-53 on the Project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268 and that any plumber or electrician subject to the continuing education requirements of Connecticut General Statutes Section 20-334d, who has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration five or more years prior to the date such electrician or plumber begins work on the Project, has completed a supplemental refresher training course of at least four hours in duration in construction safety and health taught by a federal Occupational Safety and Health Administration authorized trainer.

§ 3.4.4.3 To the extent consistent with any provision regarding residence requirements contained in a collective bargaining agreement to which the Contractor is a party, in the employment of labor to perform the Work specified under the Contract Documents, preference shall be given by the Contractor to residents of the State of Connecticut, who are, and continuously for at least six (6) months prior to the date of this Agreement have been, residents of the State of Connecticut, and if no such person is available then to residents of other states.

§ 3.4.5 If the Contractor desires to substitute a product or method in lieu of what has been specified or shown in the Contract Documents, the Contractor may propose to do so in a written request delivered to the Architect and the Owner in accordance with the Contract Documents. Any such request shall include all such data as the Architect requires to evaluate products. Any written request for a substitution by the Contractor shall be a representation by the Contractor to the Owner that: (1) the Contractor has investigated the product or method proposed to be substituted and found it to be equivalent to or better than the product or method specified in the Contract Documents, (2) except to the extent otherwise expressly stated in such request, the Contractor is waiving any Claim for additional costs related to such substitution; (3) the Contractor will provide the same

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warranty for the substitution that the Contractor would for that specified; (4) the substitution will not entail changes in detail and construction of related Work; and (5) the Contractor shall coordinate the installation of the accepted substitution, making such changes as may be required for the Work to be complete in all respects. The Architect's decision shall be final. If any requested substitution is so approved by the Architect, the Contractor shall be responsible, at its sole cost and expense, for space requirements of the substitutions, execution of necessary changes in adjacent and relocated Work or affected parts of the building, execution of necessary changes in adjacent and relocated Work which resulting from such substitutions. The Contractor shall be responsible for any delays required for evaluation of proposed substitutions.

§ 3.4.5.1 Substitutions not properly approved and authorized in accordance with the Contract Documents, and work, materials or equipment which fail to perform under proper use and normal wear for intended purposes, may be deemed defective in the discretion of the Owner or the Architect. If required by the Architect or the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment to be incorporated in the Work.

§ 3.4.6 The Owner's prior written approval shall be required for the Contractor to utilize any "equal" materials or equipment other than a particular brand or make of material or equipment or "equal" specified in the Contract Documents.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, a Subcontractor, Sub-subcontractor, supplier or any other person or entity for whom or which any of them is responsible, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 The Contractor shall procure and assign to the Owner at the time of Substantial Completion of the Work any and all Subcontractor, manufacturer and supplier warranties relating to any materials, equipment and labor incorporated in the Work. Such warranties shall supplement the warranties provided by the Contractor in Section 3.5.1. All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.5.3.1 Project Warranty: Unless otherwise specified, Contractor shall warrant (guaranty) all the Work against defects resulting from the use of material, workmanship or equipment which is inferior, defective, or not in accordance with the terms of the Contract. This warranty, unless stated otherwise in a given section of the Specifications, shall be for a period of two (2) years from the date of issuance of the Certificate of Substantial Completion for the Project.

§ 3.5.3.2 Specified Product Warranty is a warranty issued by a manufacturer or fabricator for compliance with requirements of the Contract Documents. Refer to sections of Specifications for requirements of specified warranties. The Contractor shall cause all Specified Product Warranties required by the Contract Documents to be issued for the benefit of the Owner.

§ 3.5.3.3 Coincidental Product Warranty is a warranty available on a product incorporated into the Work, by virtue of manufacturer's publication of warranty, without requiring a warranty application. The Contractor shall identify each Coincidental Product Warranty applicable to the Work.

§ 3.5.3.4 Warranty Obligations. Notwithstanding any other provision in these General Conditions:

.1 the Contractor shall restore, or remove and replace, warrantied Work to its originally specified condition, at such time during the applicable warranty as the Work does not comply with or fulfill the terms of such warranty;

.2 the Contractor shall restore or remove and replace other Work which has been damaged by failure of warrantied Work, or which must be removed and replaced to gain access to warrantied Work;

.3 pay for and be solely responsible for the cost of restoration or removal and replacement of warrantied Work or Work affected by the Contractor's performance of its warranty obligations with respect to the Work, without regard to whether the Owner has already benefited from use of failing Work;

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.5 upon restoration or removal and replacement of warrantied Work, the Contractor shall reinstate the applicable warranty by issuing newly executed warranty documents for at least the remaining period of time of the original warranty, provided such warranty period shall not be less than half of the original warranty period;

.6 warranties and warranty periods shall not diminish implied warranties, and shall not deprive the Owner of any rights or remedies otherwise available for the Contractor's failure to fulfill the requirements of the Contract Documents;

.7 Owner reserves the right to reject Coincidental Product Warranties which conflict with or are less than the requirements of the Contract Documents;

.8 the Contractor shall furnish fully executed warranties to the Owner in accordance with these General Conditions and the Contract Documents, including without limitation Specification Section 017700.

§ 3.5.4 The Contractor further agrees that each Subcontract shall contain a warranty of the portion of the Work performed thereunder in the same form as the above stated warranty of Contractor. Included in said warranty shall be the statement that it shall be enforceable directly by the Owner if the Owner so elects. The warranty of any Subcontractor shall not relieve the Contractor of its warranty as set forth above and the Owner may look to the Contractor, directly, and in the first instance to correct any defects in the Work.

§ 3.5.5 The representations and warranties under this Section 3.5 shall be in addition to, and not a substitute for, any other rights of the Owner under the Contract Documents or existing in law or equity.

§ 3.5.6 The representations and warranties set forth in this Section 3.5 shall survive final payment and termination of the Contract.

§ 3.6 Taxes

The Owner is exempt from the payment of sales, use and similar taxes. The Contractor shall be familiar with the current regulations of the Connecticut Department of Revenue Services and the sales or use tax on materials or supplies exempted by such regulations shall not be included in the Contract Sum. A sales tax certificate will be provided to the Contractor by the Owner upon request.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, certifications and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and required by applicable Legal Requirements as of the effective date of this Contract. The Contractor shall provide the Owner and Architect with reproductions of all permits, licenses, permissions, certifications, and receipts for payments and, upon submission of the final Application for Payment, shall deliver all originals of such documents to the Owner with copies to the Architect.

§ 3.7.2 The Contractor shall comply with, be responsible for performance of the Work in accordance with, and give notices required by all applicable local, state and federal laws, statutes, ordinances, codes, building codes, rules, regulations, permits, and lawful orders enacted, promulgated, issued or ordered by any governmental body or public or quasi-public authority having jurisdiction over the Work, the Contractor and/ or the site of the Project (collectively, the "**Legal Requirements**"). Legal Requirements shall include, without limitation, those relating to equal opportunity, labor, wages and employment laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to the Project, the Contract, any Subcontract and/or the performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable Legal Requirements, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or

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decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains, or encounters or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- **.1** allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- **.2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- **.3** whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site at all times during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed upon written request in each case. The Contractor shall provide the Owner with after-hours telephone numbers by which the superintendent may be contacted in the event of an emergency.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection; provided, however, the Contractor shall assign an alternate superintendent upon the reasonable request of the Owner.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed. The list of all supervisory personnel, including the project manager and superintendent that the Contractor intends to use on the Project shall be submitted to the Owner for approval prior to the commencement of the Work. The Contractor shall not engage supervisory personnel other than as approved by Owner. The Contractor shall not change and/or replace such personnel without prior written notice to and approval from the Owner (except in the case where such personnel's employment with Contractor has terminated), and shall not change or replace such supervisory personnel with any individual who does not have equivalent or superior experience and qualifications than the person to be replaced by such individual.

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§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, and no later than the Project pre-construction conference, shall submit for the Owner's and Architect's approval, a proposed construction schedule for the Work. The proposed construction schedule (i) shall comply with all of the applicable requirements of, and shall not exceed time limits current under, the Contract Documents, (ii) shall be in such form and detail and include such content as required by the Owner, (iii) shall be related to the entire Project to the extent required by the Contract Documents, (iv) shall provide for expeditious and practicable execution of the Work for completion within the time limits current under the Contract Documents; (v) shall include the date of commencement of the Work, interim schedule milestone dates, and the date required for Substantial Completion; and (vi) shall include an apportionment of the Work by construction activity and the time required for completion of each portion of the Work. If the Owner requires a precedence-style critical path method (CPM) schedule, the proposed construction schedule shall also: (a) provide a graphic representation of all activities and events that will occur during performance of the Work: (b) identify each phase of construction and occupancy (if applicable): and (c) set forth dates that are critical in ensuring the timely and orderly completion of the Work (hereinafter referred to as "Milestone Dates"). If the proposed construction schedule is not accepted by the Owner, the Contractor shall promptly modify the proposed construction schedule in accordance with the recommendations of the Owner and the Architect and resubmit the revised schedules for acceptance. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent construction schedules submitted to and approved by the Owner and Architect (as so approved, the "Construction Schedule").

§ 3.10.4 The Contractor shall monitor the progress of the Work for conformance with the requirements of the Construction Schedule and shall promptly advise the Owner of any delays or potential delays. The Construction Schedule shall be updated to reflect actual conditions ("Progress Reports") (which updated schedule shall be subject to the approval of the Owner and the Architect) at appropriate intervals as determined by the Contractor and as required by the conditions of the Work and the Project (but in no event less frequently than weekly) or as otherwise requested by the Owner. In the event any Progress Report indicates any delays, the Contractor shall propose an affirmative plan to correct the delay, including overtime and/or additional labor, if necessary. In no event shall any Progress Report constitute an adjustment in the Contract Time, any Milestone Date or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to a Change Order.

§ 3.10.5 In the event the Owner determines that the performance of the Work as of a Milestone Date has not progressed or reached the level of completion required by the Contract Documents, the Owner shall have the right, but not the obligation, to order the Contractor to take corrective measures necessary to expedite the progress of construction, including, without limitation, (1) working additional shifts or overtime, (2) supplying additional manpower, equipment, and facilities, and (3) other similar measures (hereinafter referred to collectively as "Extraordinary Measures"). Such Extraordinary Measures shall continue until the progress of the Work complies with the stage of completion required by the Contract Documents. The Owner's right to require Extraordinary Measures is solely for the purposes of ensuring the Contractor's compliance with the accepted construction schedule as adjusted for time extensions granted pursuant to Section 8.3. Except as provided in Section 8.3, the Contractor shall not be entitled to an adjustment in the Contract Sum in connection with Extraordinary Measures required by the Owner pursuant to this Section 3.10.5. The Owner may exercise the rights furnished the Owner under or pursuant to this Section 3.10.5 as frequently as the Owner deems necessary to ensure that that Contractor's performance of the Work will comply with any Milestone Date or the Substantial Completion Date, as the same may be extended by Change Order.

§ 3.10.6 The Owner shall have the right to direct a postponement or rescheduling of any date or time for the performance of any part of the Work that may interfere with the Owner's operations. Any postponement, rescheduling or performance of the Work under this Section 3.10.6 may be grounds for an extension of the Contract Time, if permitted under Section 8.3, and an equitable adjustment in the Contract Sum, to the extent permitted under the Contract Documents, if: (1) the performance of

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the Work was properly scheduled by the Contractor in compliance with the requirements of the Contract Documents and (2) such rescheduling or postponement is requested by or required for the convenience of the Owner. Without limiting the foregoing, the Contractor will not be entitled to an extension of the Contract Time or an adjustment of the Contract Sum to the extent the interfering Work so interferes as a result of the negligent act or omission of the Contractor or any Subcontractor or Sub-subcontractor or the failure of any of the same to perform the Work in a manner consistent with the Contract Documents, including Section 3.10.3 hereof.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including a record set of Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. The record set of documents shall reflect all deviations from the Drawings and Specifications and shall be updated in detail from time to time to reflect the actual progress of the Work. The Owner and the Architect shall have free and complete access to such documents during the construction of the Work. Upon Substantial Completion of the Work, the Contractor shall furnish to the Owner through the Architect one set of "as built" plans in such form as the Owner shall require. Such plans shall completely record all Work in place and serve as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. Submittals shall be marked as reviewed by the Contractor for compliance with the Contract Documents and approved by the Contractor. Those that are not so marked may be returned by the Architect without action. The Contractor shall meet with the Architect in a timely fashion to discuss the schedule of submittals required under Section 3.10.2 and shall thereafter timely prepare and submit for approval by the Architect a schedule of submittals for the Work. The Owner and Architect shall be entitled to rely upon the accuracy and completeness of all calculations and certifications required by the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings,

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Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, who has been approved by the Owner and that carries such professional liability insurance coverage as required by the Owner and whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by applicable Legal Requirements and the Contract Documents, and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.2 The Contractor shall locate, protect, and save from damage or disruption utilities and utility services lines of all kinds, either above or below grade found in the areas affected by the Work. The Contractor shall be responsible for all damage caused to such utilities by the operation of equipment or machinery, the delivery of materials, or as the direct or indirect result of any of the Work, and shall repair all such damage at its expense and as part of the Work included in the Contract Documents.

§ 3.13.3 The Contractor shall use only specifically assigned areas for parking, storage of materials, and construction operations, and such other areas as are authorized by the Owner. The Contractor shall comply with all Legal Requirements, including without limitation local municipal regulations, applicable to the use of and parking on public streets.

§ 3.13.4 The Contractor shall repair streets, drives, curbs, sidewalks, landscaping, and the other existing improvements at the site that are disturbed or damaged by the Contractor's construction operations, and restore the same to an equal condition as existed prior to any such disturbance or damage.

§ 3.13.5 The Contractor shall provide its own access to the existing building, and shall neither block nor interfere with the Owner's ordinary building operations, traffic, or parking facilities at the site, except as authorized in writing by the Owner.

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§ 3.13.6 The Contractor shall be assigned, and shall use, and single point of access to the site of the Project, which shall be clearly posted with a Project sign approved by the Owner.

§ 3.13.7. Schedule for Contractor's Use of the Site.

§ 3.13.7.1 The Contractor shall perform construction of the Work on-site during the following hours: Monday through Friday, 7:00 a.m. through 6:00 p.m., EST. While school is in session at the Project site, the Contractor shall restrict Work activities to paved areas adjacent to the building, shall restrict deliveries and trucking to the building drive entrance to the Work area (southeast laydown area), and shall keep all public ways near the building clear of materials and traffic between the hours of 7:30a.m. through 8:15 a.m. to allow for student drop off, and 1:30 p.m. through 2:15 p.m. for student pick-up.

§ 3.13.7.2 The Contractor shall not have access to the Project site on May 8, 2026 or June 15, 2026, due to student testing in the school building. Weekend or holiday Work on the Project site shall not be allowed unless previously approved by the Owner.

§ 3.13.7.2 The Contractor shall comply with all local noise ordinances in the performance of the Work.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.14.3 Unless authorized in writing by the Owner and the Architect, structural elements of the Work shall not be cut, patched, or otherwise altered or repaired. Existing work that is cut, damaged, disturbed, or otherwise interfered with by the Contractor, a Subcontractor, or anyone for whom any of them is responsible shall be fully, properly and carefully repaired by the responsible Contractor or Subcontractor. All such repairs shall be completed to the satisfaction of the Architect, and shall match similar existing adjoining work.

§ 3.14.4 The Contractor shall install all required sleeves and inserts for any built-in building component required for the Work, and shall not cut any existing finished materials or structural elements at the site unless and until the Contractor submits appropriate detail drawings to the Architect and Owner, and the Architect and Owner provide their written approval. Cutting and patching of all building elements caused by failure to provide or properly locate sleeves, forms and inserts, incorrect location of work or failure to cooperate with other trades, shall be performed by the Contractor at no additional cost to the Owner. Such repair work shall be carried out by mechanics skilled in the repair trade concerned, with due regard to trade practices, and with suitable protection of existing Work, all at no cost to the Owner.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.15.3 The Contractor shall remove all stains, spots, marks, debris and dirt resulting from construction operations from all surfaces of the existing building, and shall clean the entire site and Project grounds upon completion of the Work to the satisfaction of the Owner.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

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§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights, or failure to pay such royalty and license fees, and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold harmless the Owner, the East Lyme School Building Committee, East Lyme Public School District, East Lyme Board of Education, the Architect, the Architect's consultants, and all of their respective directors, members of governing boards, officials, officers, partners, employees, shareholders, members, managers, beneficiaries, agents and representatives (each an "Indemnitee") from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, but only to the extent caused by the negligent acts or omissions, violations of Legal Requirements, or breach of contract by the Contractor, a Subcontractor, Sub-subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable. The obligations of the Contractor under the foregoing indemnity shall include, without limitation, to the fullest extent permitted by law, any and all claims (including attorneys' fees resulting therefrom) directly or indirectly arising or alleged to arise (1) out of the performance of or the failure to perform the Work, or the condition of the Work, the job site, adjoining land or driveways, or streets or alleys used in connection with the performance of the Work, and from any and all claims by workmen, suppliers or Subcontractors who are involved in the performance of the Work, and (2) under any scaffolding, structural work or safe place law or any law with respect to the protection of adjacent landowners. These indemnification obligations are not intended to include liability for damage arising out of bodily injury to person or damage to property to the extent caused by or resulting from the negligence of the indemnitee, such indemnitee's agents or employees, nor shall such obligations be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, a Sub-subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor or a Sub-subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

§ 3.18.3 To the fullest extent permitted by law, the Contractor shall further indemnify, defend and hold harmless each Indemnitee from and against (1) all claims for payment by any Subcontractor or supplier of any tier, (2) any and all actions, lawsuits, claims and proceedings brought against the Indemnitee as a result of liens filed against the Work, the Project site or any improvements thereon (referred to collectively as "Liens") by the Contractor, any Subcontractor, Sub-subcontractor or anyone claiming by, through or under them, and (3) all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any Lien, claim or other claim for payment by any Subcontractor or supplier of any tier. The Contractor shall pay any judgment or Lien resulting from any such actions, lawsuits, or proceedings. Upon receipt of notice of a Lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the Lien or other claim for payment has been asserted. The Contractor's obligations under this Section 3.18.3 are conditioned upon Owner having fulfilled its payment obligations to the Contractor with respect to the Work that is the subject of the Lien or claim and for which indemnification is sought.

§ 3.18.4 The Contractor shall bear any and all reasonable expenses incurred by any Indemnitee because of any claim or other matter indemnified against under this Section 3.18, including without limitation, attorneys' and consultants' fees and expenses, court costs, and costs related to the defense of, or preparing for the defense against, any such claim. If any such claim has not been settled or discharged or bonded at the time of final completion of the Work, and if such claim is not covered in full by a policy of insurance then in effect from a reputable and financially sound insurance company which has not declined or reserved the right to decline coverage of such claim, the Owner may withhold an amount equal to two hundred percent (200%) of the outstanding claim until any such claim is paid or settled or the Contractor provides a bond, acceptable to the Owner, to satisfy such claim.

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§ 3.19 Meetings

§ 3.19.1 A qualified representative of the Contractor shall attend periodic progress meetings held at such time and as such place as the Architect or the Owner shall designate.

§ 3.19.2 The Contractor shall schedule and conduct progress meetings at the Project site on a weekly basis. Attendance is required of each Subcontractor, supplier, or other entity whose portion of the Work is currently the subject of concern or discussion or planning of future construction activities. Contractor shall provide the Owner and Architect with forty-eight (48) hours prior notice of each such progress meeting and be permitted to attend and participate in the meetings.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect, if retained by the Owner to do so, will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents. All of the Architect's Contract administration services described in this Section 4.2 and otherwise described in the Contract Documents will be performed by the Architect if retained to do so by the Owner. If the Owner does not retain the Architect for these services, the Owner shall provide written notice to the Contractor of the person(s) who shall perform these Contract administration services.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that such portion of the Work is, and when the Work is fully completed the entirety of the Work will be, in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences, or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents. The Owner may elect to have an observer, in addition to the Architect's, present during the Work, who will record and report to the Owner any deviation in the Work from the requirements of the Contract Documents, and the progress of the Work. The observer shall have no authority to act on behalf of the Owner with respect to the Contract or Project, and no authority to change the Work or the requirements of the Contract Documents, to direct the Work, suspend the Work, or approve Submittals or Shop Drawings.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

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§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed, or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work. Any such rejection of Work shall not relieve the Contractor of the responsibility for maintaining protection of the Work and the Owner's property.

§ 4.2.7 The Architect will review and comment, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract Documents and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the names of and any change in the duties, responsibilities, and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

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ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site and, unless expressly provided otherwise, refers to subcontractors or any and all tiers other than Subcontractors. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design plus such other information as required under the Agreement. Unless otherwise provided in the Agreement, within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.1.1 The Contractor shall solicit bids for the performance of the Work from, and award subcontracts to, Subcontractors all in accordance with the requirements set forth in the Agreement and in compliance with applicable Legal Requirements.

§ 5.2.1.2 If requested by the Owner, the Contractor shall provide to the Owner copies of all Subcontracts and supply agreements entered into by the Contractor for the Work.

§ 5.2.2 The Contractor shall not enter into any subcontract with a proposed person or entity for such person or entity to perform any of the Contractor's obligations under the Contract, for whom the Owner has not provided its express prior written approval.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution. If the Contractor wishes to substitute a different person or entity for a person or entity previously selected and approved as a Subcontractor pursuant to this Section 5.2, the procedure set forth in this Section 5.2 and as may be provided in the Agreement shall be followed.

§ 5.3 Subcontractual Relations

Any part of the Work performed by a Subcontractor shall be pursuant to a written Subcontract between the Contractor and Subcontractor, which form of Subcontract shall be reasonably satisfactory to the Owner in all respects. Copies of all Subcontractor bids or proposals shall, upon request of Owner, be submitted to the Owner and Architect. All Subcontracts shall provide that each Subcontractor, to the extent of the Work to be performed by the Subcontractor, be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar

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agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each Subcontract and supply agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner pursuant to and in accordance with Section 14 of these General Conditions and only for those Subcontract and supply agreements that the Owner accepts by notifying the Subcontractor or supplier and the Contractor; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the Subcontract to the extent such rights and obligations arise subsequent to Owner's acceptance of the assignment. The Contractor agrees to execute any and all other documents required to effect this assignment.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 60 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the Subcontract and/or supply agreement to a successor contractor or other entity.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the contract documents comprising each such separate contract shall, in each case, mean the contractor who executes each separate contract with the Owner.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Intentionally omitted.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects discovered in the construction or operations by the Owner or Separate Contractor that render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects discovered prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or

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Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, disruption of the work of such Separate Contractor, improperly timed activities or defective construction. The Owner shall have the right to off-set such costs against any amounts owed to the Contractor by the Owner. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, Separate Contractor's disruption of the Work, improperly timed activities, damage to the Work or defective construction provided that the Contractor promptly notifies the Owner of such delays, disruption, activities, damage or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.2.6 Upon the Owner's request, the Contractor shall defend any proceedings brought against the Owner by any Separate Contractor on account of any damage alleged to have been caused by the Contractor which arises from the Contractor's failure to comply with the terms and conditions of Sections 6.1 and 6.2.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible, as the Architect deems appropriate in its sole discretion.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, only by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.1.4 In the case of a change in the Work proposed by the Owner or a proposed Change Order submitted by the Contractor, upon the request of the Owner or the Architect (with the Owner's approval), the Contractor shall submit to the Architect, in such form as the Architect may require, an accurate written estimate of the cost of any proposed extra Work or change in the Work. Such estimates shall be provided without cost to the Owner. The Contractor's estimate shall indicate the description, quantity, and unit cost of each item of material, and the number of hours of work and hourly rate for each class of labor, as well as all other costs chargeable under the terms of this Article 7. Unit labor costs for the installation of each item of materials shall be provided if required by the Architect. The Contractor shall promptly revise and resubmit such estimate if the Architect determines that it is not in compliance with the requirements of this Section 7.1.4, or that it contains errors of fact or mathematical errors. If required by the Architect, in order to establish the exact cost of new Work added or of previously required Work omitted, the Contractor shall obtain and furnish to the Architect bona fide proposals from recognized suppliers for furnishing any material included in such Work. Such estimates shall be furnished promptly so as to occasion no delay in the Work. The Contractor shall also state in the estimate any change in the Contract Time that would result from the change or extra work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect

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stating their agreement upon all of the following:

.1 The change in the Work;

.2 The amount of the adjustment, if any, in the Contract Sum; and

.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 A Change Order executed by the Owner and the Contractor shall constitute a final settlement of all matters relating to the subject matter of the Change Order including, without limitation, compensation to be paid to the Contractor in connection with any change in the Work required by the Change Order (provided that the Work that is the subject of such change is performed in a manner consistent with the provisions of the Contract Documents and the applicable Change Order), including but not limited to all direct and indirect costs, profit, overhead, extended overhead, loss of productivity and general conditions associated with such change, and any and all adjustments to the Contract Sum, the Construction Schedule, and to the Contract Time. In the event a Change Order affects an increase in the Contract Sum, Contractor shall include the work covered by such the Change Order in Applications for Payment for such work as if the work were originally part of the Work as set forth in the Contract Documents.

§ 7.2.3 Notwithstanding anything to the contrary set forth in these General Conditions, if the Agreement sets forth the methodology for calculating adjustments in the Contract Sum associated with a change in the Work, and if, under the terms of the Contract Documents, an adjustment in the Contract Sum would be required, then the adjustment will be based on such methodology unless otherwise mutually agreed by the parties. This paragraph shall be applicable in the case of a change in the Work effected by a Change Order as well as a Construction Change Directive.

§ 7.2.4 Unless otherwise instructed by the Owner, Change Orders shall be prepared on the form AIA G-701.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

(i) Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

(ii) Unit prices stated in the Contract Documents or subsequently agreed upon;

(iii) Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

(iv) As provided in Section 7.3.4.

§ 7.3.3.1 Notwithstanding anything to the contrary contained in the foregoing provisions of this Section 7.3, in the case of a change in the Work for which the Contractor is entitled to an adjustment in the Contract Sum under the terms and conditions of the Contract Documents, such adjustment shall be limited as follows:

(i) For that portion of the change in the Work that is self-performed by the Contractor, the Contractor's overhead and profit on such Work shall not exceed fifteen percent (15%) of the net increase in the Contractor's direct costs incurred in the performance of such Work;

(ii) For that portion of the change in the Work that is performed by Subcontractors, the Contractor's markup for overhead and profit on such subcontracted Work shall not exceed five percent (5%) of the amount invoiced to the Contractor by the Subcontractors for that Work;

(iii) For that portion of the change in the Work that is performed by a first-tier Subcontractor, that Subcontractor's overhead and profit on its portion of the change in the Work shall not exceed ten percent (10%) of the net increase in the Subcontractor's costs incurred in the performance of such Work directly by such Subcontractor

(iv) For that portion of the change in the Work that is performed by a first-tier Subcontractor, that Subcontractor's markup for overhead and profit on its portion of the Change in the Work shall not exceed five percent (5%) of

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the amount invoiced to that Subcontractor by Sub-subcontractors or suppliers for that Work; and

(v) The aggregate markup of Contractor, Subcontractors and Sub-subcontractors in connection with any change in the Work shall not exceed twenty percent (20%) of the net increase in the Cost of the Work for labor, materials and/or equipment arising from such change.

These limitations set forth in this Section 7.3.3.1 shall apply to both additions to and deductions from the Contract Sum.

For change order Work that is the subject of Unit Prices under the Contract Documents, there will be no markup permitted on the applicable Unit Prices.

The Contractor shall include the markup limitations set forth in this Section 7.3.3.1 in all Subcontracts and require in all Subcontracts that the Subcontractors include such limitations in all lower tier Subcontracts.

§ 7.3.3.2 All Change Orders and Construction Change Directives shall provide itemized accounting that provides a detailed break-out of all materials and labor rates applicable thereto, including:

(i) Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

(ii) Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

(iii) Fair market rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others provided, if rented from the Contractor, such rental and the rental rates have been approved by the Owner;

(iv) Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work;

(v) Additional costs of supervision and field office personnel directly attributable to the change to the extent permitted under the Contract Documents.

§ 7.3.3.3 The costs described in Section 7.3.3.2 shall not include any of the following:

(i) Salaries and other compensation of the Contractor's personnel stationed at the Contractor's principal office or offices other than the site office, except as specifically approved by the Owner;

(ii) Expenses of the Contractor's principal office and offices other than the site office;

(iii) Overhead and general expenses, except as may be expressly included in Section 7.3.3.1;

(iv) The Contractor's capital expenses, including interest on the Contractor's capital employed for the Work;

(v) Costs due to the negligence or failure of the Contractor, Subcontractors and suppliers or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable to fulfill a specific responsibility of the Contract Documents; or

(vi) Any cost not described in Section 7.3.3.2.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement and subject to the limitations set forth in Section 7.3.3.1. In such case, and also under Section 7.3.3(iii), the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;

.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs (not to exceed fair market rental costs) of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others provided, if rented from the Contractor, such rental and the rental rates have been approved by the Owner;

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and

.5 Costs of supervision and field office personnel directly attributable to the change to the extent permitted under the Contract Documents.

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§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and, prior to proceeding with such Work, advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost to the Owner of a Construction Change Directive, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment actual costs incurred by the Contractor in the performance of the work under a Construction Change Directive which are substantiated to the reasonable satisfaction of the Architect; provided that such costs are of the type included in the Cost of the Work as described in the Contract Documents and such Construction Change Directive is not made necessary by the negligent act or omission of the Contractor, a Subcontractor or anyone for whom any of them is responsible. This interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date Substantial Completion is achieved as provided in Section 9.8.1.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the

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Contractor confirms that the Contract Time is a reasonable period for performing the Work and that the Contractor is capable of completing the Work within the Contract Time.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion of the Work in accordance with the Contract Documents within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) changes ordered in the Work by the Owner, which changes were not necessitated by the fault of the Contractor, a Subcontractor, a Sub-subcontractor, a material or equipment supplier or anyone for whom any of them is responsible; (3) area-wide labor disputes not directed at the Contractor or any of its Subcontractors, or by illegal labor actions or disputes; (4) fire, unusual and unanticipated delay in deliveries, unavoidable casualties, abnormally adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (5) delay authorized by the Owner pending mediation and binding dispute resolution; or (6) other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine; provided that (i) any such delay has the effect of delaying completion of components of the Work on any critical path indicated in the Construction Schedule, (ii) any such delay is not caused by, or could not have been avoided by the exercise of reasonable efforts of the Contractor, (iii) any such delay could not be limited or avoided by the Contractor's timely notice to the Owner of the delay, and (iv) such delay has an impact of at least one (1) day.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 No Damage For Delay. Notwithstanding anything to the contrary set forth in the Contract Documents, the Owner shall not be liable to the Contractor or any Subcontractor for Claims or damages of any nature caused by or arising out of delays. The sole remedy against the Owner for delays shall be the allowance of additional time for completion of the Work, the amount of which shall be subject to the procedures set forth in the Contract Documents. Except to the extent, if any, expressly prohibited by law, the Contractor expressly agrees not to make and hereby waives any Claim for damages for any delay, including, but not limited to, those resulting from increased labor or material costs; directions given or not given by the Owner or Architect, including scheduling and coordination of the Work; the Architect's preparation of drawings and specifications or review of shop drawings and requests for instruction(s); or, on account of any delay, obstruction or hindrance for any cause whatsoever by the Owner, Architect, or any other contractor on the Project, whether or not foreseeable or anticipated. The Contractor agrees that its sole right and remedy therefore shall be an extension of the Contract Time, if appropriate.

§ 8.3.4 It is expressly understood that notwithstanding anything to the contrary set forth in the Contract Documents, no Subcontractor shall be entitled to make any Claim for additional compensation, costs or damages against the Contractor (nor may the Contractor assert against Owner such Claims as pass-through claims of Subcontractor or otherwise) for delay. Unless agreed by Owner in writing, Contractor shall include in every Subcontract a 'No-Damage-For-Delay' provision in a form reasonably approved by the Owner.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 Intentionally omitted.

§ 9.2 Schedule of Values

The Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, upon the approval thereof by the Owner and the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of

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values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1.1 Not later than seven (7) calendar days before the date established for submission of a final version of an Application for Payment pursuant to the Agreement, the Contractor shall submit to the Architect and the Owner for review and consideration a draft itemized Application for Payment prepared in accordance with the Contract Documents and the Schedule of Values for portions of the Work completed and projected to be completed during such month. The draft Application shall be submitted along with all data, information and documentation substantiating the Contractor's right to payment as required under the Contract Documents and as may otherwise be required by the Owner or Architect (collectively, the "Supporting Documentation"). Within five (5) days of the Contractor's submission of a draft Application for Payment, the Architect and Owner shall notify the Contractor of any necessary changes to be included in the Contractor's final version of the Application for Payment. Subsequent to the Architect's and the Owner's review and comment, the Contractor shall make all necessary changes to the draft Application for Payment and resubmit a final version of the Application for Payment to the Architect and the Owner for payment as provided in Section 9.3.1 and Article 5 of the Agreement.

§ 9.3.1.2 "Supporting Documentation" may include, without limitation, payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, releases and waivers of liens and claims from the Contractor, Subcontractors, Sub-subcontractors and suppliers, and other evidence required by the Owner or Architect to demonstrate that cash disbursements already made by the Contractor to others on account of the Contractor's cost of performing the Work equal or exceed progress payments already received by the Contractor.

§ 9.3.1.3 No later than the fifth (5th) business day of each month, the Contractor shall submit to the Architect an itemized final version of an Application for Payment prepared in accordance with the Schedule of Values for portions of the Work completed during the preceding month, inclusive of the value of materials delivered and suitably stored at the Project site during the month covered by such Application for Payment. The Application for Payment shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of claims and liens from Subcontractors, Sub-subcontractors, and suppliers, and shall reflect retainage as provided for in the Contract Documents. Within five (5) days of submission of the final version of the Application for Payment and Supporting Documentation, the Architect shall approve or deny the Application for Payment as described by Section 9.4.1 below. Within thirty (30) days of Contractor's submission of a final version of an Application for Payment and Supporting Documentation, the Owner shall make payment to the Contractor of the amount certified by the Architect in a Certificate for Payment to be paid to the Contractor.

§ 9.3.1.4 Applications for Payment shall reflect retainage as provided for in the Contract Documents.

§ 9.3.1.5 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.6 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents or prohibited by an Agency (as defined in the Agreement) or any person or entity providing funding for the Project, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. The Contractor shall protect such stored materials and equipment from fire, theft, vandalism, weather and other damage and such items shall be available at all times for inspection by the Owner and the Architect. If approved in advance by the Owner, and not prohibited by an Agency or any person or entity providing funding for the Project, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance (which insurance shall include coverage naming the Owner, the East Lyme School Building Committee, East Lyme Public School District, East Lyme Board of Education, and such others as may be identified by the Owner from time to time, if any, as additional insureds,

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and which shall specify and relate to the address where the stored materials and equipment are located including, if applicable, the Project site), storage, and transportation to the site, for such materials and equipment stored off the site. The Contractor shall be responsible for protection of all such materials from loss or damage, at no additional cost to the Owner, until such materials are incorporated into the Work on-site, whether or not paid for by the Owner.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.3.3.1 Commencing with the second Application for Payment, and continuing with each Application for Payment submitted thereafter, the Contractor shall furnish to the Owner a properly executed release and waiver of claims in a form acceptable to the Owner, from the Contractor and each Subcontractor and material supplier whose Work was included on the previous Application for Payment for which payment by Owner was made to the Contractor. In addition to the foregoing, if requested by the Owner, commencing with the first Application for Payment and continuing with each Application for Payment submitted thereafter, the Contractor shall also provide a properly executed conditional release and waiver of claims in form acceptable to the Owner from the Contractor and each Subcontractor and material or equipment supplier whose Work is included on the Application for Payment subject only to receipt of payment under such Application for Payment.

§ 9.3.4 Unless otherwise required by the Owner, Applications for Payment shall be on AIA Documents G702 and G703.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within ten(10) days after receipt of the final version of Contractor's Application for Payment and Supporting Documentation submitted therewith, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment and Supporting Documentation submitted therewith, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

.1 defective Work not remedied;

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.2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;

.3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials, or equipment, in accordance with the provisions of the Contract Documents and the applicable agreement between the Contractor and the Subcontractor or supplier with respect to the Project and/or the Work;

.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

.5 damage to the Owner or a Separate Contractor;

.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;

.7 repeated failure to carry out the Work in accordance with the Contract Documents;

.8 amounts previously paid to the Contractor are in excess of amounts properly due the Contractor; or

.9 failure of the Contractor to comply with any of the Contractor's indemnification obligations under the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. Upon request by the Owner, the Contractor shall properly endorse such joint checks to enable the deposit thereof by the other payee. If the Owner makes payments by joint check, the Owner shall notify the Architect and such payments shall be reflected on the Contractor's subsequent Applications for Payment as payments received by the Contractor. Architect

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall use payments made under the Contract solely for the purpose of performance of the Work pursuant to the Contract Documents. Contractor shall pay for all labor and services performed and materials, equipment and machinery supplied by others in connection with the performance of the Work, in accordance with the Contract Documents and as required by applicable Legal Requirements.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that, and subject to the same requirements as are, provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents and/or applicable Legal Requirements.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the

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Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Any provision in the Contract Documents to the contrary notwithstanding, the Owner shall not be obligated to make payment to the Contractor hereunder to the extent that the Contractor has not performed the Work or supplied the materials, for which payment is requested, in accordance with the Contract Documents.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment in accordance with the requirements of the Contract Documents, through no fault of the Contractor, within ten (10) days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within ten (10) days after the date such payment is due to be paid by the Owner pursuant to the terms of the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon ten (10) additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's actual reasonable additional costs incurred as a result of shutdown and start-up.

§ 9.8 Substantial Completion

§ 9.8.1 The Work shall be considered to be "Substantially Complete(d)" or to have reached "Substantial Completion" on the date as determined by the Architect when (1) the entirety of the Work is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for the use for which it is intended (subject only items on the Punchlist, the completion of which can be accomplished within thirty (30) days without interfering with the actual use of the Work by the Owner or those claiming by, through or under the Owner), (2) the Contractor has obtained a temporary or permanent certificate of occupancy for the Work permitting the lawful occupancy of the entire Project or such other permits, approvals, licenses, and other documents, for which the Contractor is responsible, from any governmental authority having jurisdiction thereof which are necessary for the beneficial occupancy and use of the building, and (3) the Architect has issued a Certificate of Substantial Completion for the entirety of the Work pursuant to Section 9.8.4 of these General Conditions.

Without limitation of the foregoing, Substantial Completion of the Work shall not be deemed to have occurred until construction and installation of all facilities and systems (including but not limited to instrumentation and controls) are complete in all respects as required for the issuance of all required use and occupancy permits and approvals by all applicable governmental authorities. Further, if and to the extent applicable given the Work required to be performed under the Contract Documents, Substantial Completion shall require full commissioning and operation of all automatic systems, including but not limited to testing of individual system components and equipment and full operational startup and certification testing.

The Contractor shall be responsible for the coordination of the commissioning and closeout of the Project. Contractor shall prepare all documentation required by the Owner and the State of Connecticut Department of Administrative Services ("DAS") in connection with grant(s) or other financial assistance by the State of Connecticut to the Owner for the Project and compliance with State audit requirements applicable to the Project and/or any such grants.

§ 9.8.2 When the Contractor considers that the Work is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment (the "Punchlist"). Failure to include an item on the Punchlist does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's Punchlist, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents as described in Section 9.8.1(1), the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work is Substantially Complete (with the exception of the Architect's issuance of a Certificate of Substantial Completion), the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities,

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damage to the Work and insurance; and fix the time within which the Contractor shall finish all remaining items on the Punchlist accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit the Punchlist to the Architect as provided under Section 9.8.2 and 9.8.3. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect. The facility shall be occupied and open to normal use during part or all of the construction of the Work. Such normal usage of the facility shall in no way affect the insurance coverages required pursuant to the Contract Documents, including without limitation Article 11.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect and the Owner will promptly make such inspection. When the Architect and the Owner find the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's and the Owner's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. All warranties and guarantees required under or pursuant to the Contract Documents not previously delivered shall be assembled and delivered by the Contractor to the Owner and Architect as part of the final Application for Payment. The final Certificate for Payment will not be issued by the Architect until all warranties and guarantees and all other close-out deliverables (including those set forth in Section 9.10.2 below) have been received and accepted by the Owner.

§ 9.10.2 The Contractor shall be required to submit the following to the Owner and the Architect, in the form satisfactory to the Owner, as conditions to the issuance of a final Certificate for Payment and delivery of final payment:

(1) an affidavit and waiver of claims attesting that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied;
(2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, which shall include, without limitation product liability and completed operations, for the six (6) year period following final completion and evidence that such insurance will not be canceled or allowed to expire;
(3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents;
(4) consent of surety to final payment, on AIA Document G706 or G707;
(5) final prints for record drawing use marked by the Contractor with record information as set forth in the Contract

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Documents;

(6) all guarantees and warranties to which the Owner is entitled hereunder including documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, including without limitation, the Contractor's guarantee that for no less than two (2) years after the date Substantial Completion the Contractor shall correct and/or replace all defective workmanship, supplies, and/or materials included in the Work to the satisfaction of the Owner;

(7) a final sworn statement from the Contractor duly executed and acknowledged showing all Subcontractors to be fully paid and similar sworn statements from Subcontractors and, where appropriate, from Sub-subcontractors;

(8) satisfactory proof that all claims, including taxes (if any), arising out of the Work (including any claims of Subcontractors or suppliers) have been released or bonded and other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract signed by each Subcontractor, Sub-subcontractor and material supplier who performed or provided Work or materials under the Contract Documents and conditioned only upon receipt of final payment, the amount of which is consistent with the final Application for Payment, all to the extent and in such form as may be designated by the Owner;

(9) final documents of similar nature to those required by the Contract Documents for any monthly payments hereunder;

(10) all final permits, approvals (including, without limitation, the approval of the Owner's insurance company, if required and requested in a timely fashion) certificates (including, without limitation, certificates in respect of electrical systems and life safety systems) and authorizations for use and occupancy of the Project required by any authority having jurisdiction, including any building permits, temporary and unconditioned permanent and full certificate of occupancy and any other necessary occupancy and use permits;

(11) formally prepared "as built" drawings, records and related data including all field notes of all the Work (such drawings shall be in the form of "mylar" reproducible drawings, or as otherwise called for in the Contract Documents);

(12) the Operating and Maintenance Manual for the Project as provided below;

(13) a final statement of accounting for all allowances in form satisfactory to the Owner and/or DAS; and

(14) delivery of all spare parts required to be submitted pursuant to the Contract Documents.

§ 9.10.2.1 The "Operating and Maintenance Manual" for the Project shall be defined in the Contract Documents. Except as required otherwise by the Contract Documents, the "Operating and Maintenance Manual" for the Project shall contain, as applicable to the Work, (1) full information for each item of mechanical, electrical, or other operating equipment, copies of warranties therefor, schematic diagrams of control systems, circuit directories for each electric and communications panel board, and charts showing the tagging of all valves; and (2) complete keying schedules, paint color schedules, and paint color samples. Each volume of the manual shall be clearly indexed, and shall include a directory of all Subcontractors and maintenance contractors, indicating the area of responsibility of each, and the name and telephone number of the responsible member of each organization. The volumes shall be in both electronic and in bound book form.

§ 9.10.2.2 If a Subcontractor, Sub-subcontractor or supplier refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If no such bond is provided, the Owner may, without limiting its remedies under law, in equity, or under the Contract Documents, withhold the portion of final payment claimed to be due by the relevant Subcontractor, Sub-subcontractor or supplier until such lien, claim, security interest, or encumbrance is resolved. The Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging or otherwise resolving such lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.2.3 If the final documentation submitted by the Contractor is not deemed complete by the Owner or if the Owner deems the Work incomplete in any respect, the Contractor shall promptly complete any such Work and shall promptly resubmit the final documentation.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor, any Subcontractor, Sub-subcontractor, supplier or any other person or entity for whom or which any of them is responsible, or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the

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written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 Intentionally omitted.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, Sub-subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs required by the applicable Legal Requirements, the Contract Documents or as reasonably requested by the Owner in connection with the performance of the Contract. The Contractor shall monitor all job site safety and promptly report deficiencies to responsible Subcontractors and to the Owner.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- **.1** employees on the Work and other persons who may be affected thereby;
- **.2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- **.3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by the Legal Requirements, bearing on safety of persons or property or their protection from damage, injury, or loss, including without limitation of Connecticut General Statutes Section 31-40m relating to toxic substances, the requirements of the Occupational Safety and Health Act and the Construction Safety Act of 1969, as amended, and regulations and standards promulgated thereunder, and/or ordinances, rules, regulations and lawful orders of governmental authorities bearing on safety of persons or property or the environment or their protection from damage, injury, destruction, pollution or loss. The Contractor shall be directly responsible for compliance therewith on the part of its agents, employees, materialmen and Subcontractors and suppliers, and Sub-subcontractors, and shall directly receive and be responsible for all citations, assessments, fines or penalties which may be incurred by reason of the failure of the Contractor's agents, employees, Subcontractors or suppliers, or of any Sub-subcontractor, to so comply.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards. The Contractor shall also be responsible for all measures necessary to protect any property adjacent to the Project and improvements thereon. Any damage to such property or improvements shall be promptly repaired by the Contractor at its cost and expense.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall obtain all necessary permits from regulating agencies, exercise utmost care, and carry on such activities under supervision of properly qualified personnel, and strictly and fully comply with all applicable Legal Requirements relating to the storage or use explosives or other hazardous materials or equipment.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor, a Subcontractor, a

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supplier, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. The foregoing obligations of the Contractor are separate from and in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding ten days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter. The Contractor shall protect and maintain in operation all existing pipelines, conduits, sewers, drains, poles, wiring and similar conditions at the site which are within the area for construction of the Work, whether or not specifically shown on the Drawings. The Contractor shall ensure that all such items are protected, supported and/or moved as necessary for performance of the Work.

§ 10.2.9 In the event the Contractor identifies activities or conditions during performance of the Work or at the Project, which, in the Contractor's good faith opinion, pose an unreasonable risk of bodily injury or property damage, whether immediate or in the future, the Contractor shall have the right to immediately take steps to protect its personnel and Subcontractors and stop Work and remove its personnel from the affected area.

§ 10.2.10 The Contractor shall at all times provide protection against weather (rain, wind, storms or heat) so as to maintain all Work, materials, apparatus and fixtures free from damage. At the end of the day's work, all new Work likely to be damaged shall be reasonably protected against such weather.

§ 10.2.11 The Contractor shall provide adequate fire protection for all operations associated with the Work, and such protection must meet all applicable federal (including OSHA), State and municipal regulations.

§ 10.2.12 The Contractor shall remove and replace with new Work, at the Contractor's own expense, any Work damaged by failure to provide protection pursuant to Sections 10.2.10 and 10.2.11.

§ 10.2.13 Fire Protection: During any flame cutting and/or welding operation for the Work, the Contractor shall use or require Subcontractors or other persons performing such Work to use incombustible curtains and blankets to intercept, contain, and otherwise prevent the spread of hot metal, sparks and burning embers. In the performance of such Work, the Contractor shall employ a watchperson equipped with portable fire extinguishing equipment to maintain a fire watch continuously during all flame cutting and welding operation and for four (4) hours minimum thereafter. No flammable rubbish or liquid shall be kept in any part of the existing buildings at the site, except one-gallon quantities in approved safety cans or sealed metal containers. All fire doors at the site shall be kept clear of rubbish and in operating condition, and closed during non-working hours. The Contractor shall not allow any locking and blocking of any door in the existing building at the site during nonworking hours except entrance doors. Used construction materials, solvent soaked rags, empty volatile containers, and any other material or container which may be combustible shall be removed from the site each day at the conclusion of construction activities for the Work.

§ 10.2.14 The Contractor shall be responsible, to the extent not covered by insurance, for damage, loss or liability due to theft or vandalism to the Work and stored materials whether the same occurs while Work is in progress or not, and during the day or at night, or on weekdays, weekends or holidays.

§ 10.2.15 The Contractor shall protect and prevent damage to all finished and unfinished phases of the Work during the course of the Project.

§ 10.2.16 Securing the Site

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The Contractor is responsible for securing, and preventing access by unauthorized individuals to, the Project site from such date as the Contractor, Subcontractors, suppliers, consultants, or agents commence the Work until the date of Final Completion, unless the Owner and Contractor agree in writing to an earlier date.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding any material, substance, chemical, waste, product, derivative, compound, mixture, solid, liquid, mineral or gas, whether naturally occurring or manmade, that is hazardous, toxic, or words of similar import or regulatory effect, and any petroleum or petroleum-derived products, radon, radioactive materials or wastes, asbestos in any form, lead or lead-containing materials, urea formaldehyde foam insulation, and polychlorinated biphenyls (collectively, "Hazardous Materials"). If the Contractor believes its Work will disturb or otherwise implicate any actual or suspected Hazardous Material or encounters a Hazardous Material not addressed in the Contract Documents, the Contractor shall not disturb any such Hazardous Material, immediately report the condition to the Owner and the Architect in writing and take all necessary precautions to prevent release of and exposure to the Hazardous Materials and foreseeable bodily injury or death to persons resulting from such Hazardous Material. If such reasonable precautions will be inadequate to prevent release of and exposure to Hazardous Materials, or foreseeable bodily injury and death, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area.

§ 10.3.2 Upon receipt of the Contractor's notice pursuant to Section 10.3.1 of the existence of actual or suspect Hazardous Materials not addressed in the Contract Documents, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the Hazardous Material or substance reported by the Contractor and, in the event such Hazardous Material or substance is found to be present, to cause it to be rendered harmless or abated, or otherwise obtain verification from such licensed laboratory that such Hazardous Material or substances has been rendered harmless. When the Hazardous Material or substance has been rendered harmless and/or otherwise abated in accordance with all applicable Legal Requirements, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time may be extended appropriately, and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown and start-up.

§ 10.3.3 Intentionally omitted.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for Hazardous Materials or substances the Contractor, any Subcontractor, Sub-subcontractor, materialman or supplier, or any person or entity for whom or which any of them is responsible, brings to the site. The Contractor shall be responsible for the Contractor's fault or negligence and the fault of negligence of any of any Subcontractor, Sub-subcontractor, materialman or supplier, or any person or entity for whom or which any of them is responsible to the Owner, in the use and handling of such Hazardous Materials or substances required by the Contract Documents and/or a failure by any of them to comply with the Contract Documents or applicable Legal Requirements. The Contractor agrees not to use any fill or other materials to be incorporated into the Work which are hazardous, toxic or comprised of any items that are hazardous or toxic except to the extent required by the Contract Documents.

§ 10.3.5 To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold harmless the Owner, the East Lyme School Building Committee, East Lyme Public School District, East Lyme Board of Education, and their its agents and employees, against claims, damages, losses and expenses, including but not limited to attorney's fees, resulting from (1) an actual or suspect Hazardous Material which the Contractor, any Subcontractor, Sub-subcontractor, supplier or any other person or entity for whom or which any of them is responsible to the Owner, brings to the Project site and negligently handles, or (2) the Contractor's failure to perform its obligations under Section 10.3.1, except to the extent that the claims, damages, losses, costs and expenses are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence of fault on the part of the Contractor, or any party for whose acts the Contractor is responsible, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of properly performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.3.7 The Contractor shall perform all required procedures necessary to ensure that there will be no release, discharge, spillage, uncontrolled loss, seepage or filtration (each a "Release") of any Hazardous Material brought on the Project site by the Contractor, any Subcontractor, Sub-subcontractor or supplier in the course of the performance of the Work. The

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Contractor is responsible for any and all costs and liabilities associated with the investigation and remediation of any such Release, or as required by regulating authorities having jurisdiction under any of the applicable Legal Requirements, and holds the Owner, its employees and agents, and the fee owner of the Project site (if other than the Owner), harmless against any current or future liabilities resulting from such incidents.

§ 10.3.8 All material and equipment furnished under the Contract Documents shall be free of asbestos, lead based paint, and PCBs. Unless otherwise specified in the Contract Documents, any material or equipment containing these, and any other Hazardous Materials shall be considered defective and shall be removed by the Contractor at the Contractor's sole expense.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7. The Contractor shall promptly notify insurers as applicable, and the Architect and the Owner of the nature of the emergency. Immediately thereafter, the Contractor shall submit to the Architect and the Owner a written report including description of circumstances of the emergency and details of actions taken.

§ 10.4.1 The Contractor shall furnish the Owner and Architect, in writing, the names, addresses and telephone numbers of the Contractor's personnel to be contacted in the event of an emergency, including without limitation emergencies that occur after normal working hours.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized and properly licensed to issue insurance in the jurisdiction where the Project is located. The Owner, East Lyme School Building Committee, East Lyme Public School District, East Lyme Board of Education, and such other parties as are identified in the Contract Documents and such others as may be required by the Owner, shall be named as additional insureds under the Contractor's liability insurance policies required under the Contract Documents to be procured and maintained by the Contractor.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized and properly licensed to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. In the event of such suspension, the Contractor shall be responsible for, and shall not receive an extension of the Contract Time in connection with, the delay in the Work arising from the suspension. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as customarily maintained by the Owner.

§ 11.2.2 Property Insurance. If the Contractor is required under the Contract Documents to maintain property insurance for the Project and fails to purchase and maintain such insurance, with all of the coverages and in the amounts described in the

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Agreement or elsewhere in the Contract Documents, the Contractor shall be responsible to the Owner for all of the Owner's losses, costs and damages caused by, arising from or attributable thereto to the extent that such losses, costs and damages would have been covered by such insurance.

§ 11.2.3 Notice of Cancellation or Expiration of Contractor's Required Property Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of property insurance required to be maintained by the Contractor under the Contract Documents, if any, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Owner, upon receipt of notice from the Contractor, the Owner shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor. If the Owner purchases replacement coverage, the cost of the insurance shall be charged to the Contractor by an appropriate Change Order. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide required insurance or responsibility to the Owner pursuant to Section 11.2.2.

§ 11.3 Waivers of Subrogation

§ 11.3.1 If the Contractor is required under the Contract Documents to maintain property insurance for the Project, the Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by the Contractor's property insurance, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. Such policy of insurance shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 Intentionally omitted.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§ 11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under any property insurance required by the Agreement shall be adjusted by the Owner and made payable to the Owner for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 5 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner may settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

§ 11.6 Performance Bond and Payment Bond

§ 11.6.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the

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Contract Documents on the date of execution of the Contract.

§ 11.6.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.6.3 The Contractor shall increase the principal amount of the performance and labor and materials payments bond(s) in direct proportion to any increase in the Contract Sum resulting from Change Orders.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's or the Owner's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect or Owner, be uncovered for the Architect's or Owner's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect or Owner has not specifically requested to examine prior to its being covered, the Architect or Owner may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within two years after the date of Substantial Completion of the Work or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly at the Contractor's sole expense after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The two-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The two-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to modify the Contractor's obligations under Section 3.5 or to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the two-year period for correction of Work as described in Section 12.2.2 relates only to the specific

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obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.2.6 Audits

Upon request of the Owner, the Contractor will cooperate, and secure the cooperation of all Subcontractors, suppliers, and Sub-subcontractors, and assist the Owner during any audit of the Project conducted by the Owner and/or DAS at any time after Substantial Completion at no cost to the Owner. Such cooperation shall include providing the Owner with access to all records related to the Project.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract, in whole or in part, without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents that arise subsequent to the effective date of such assignment. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed by or available at law or in equity.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.3.3 No provision contained in the Contract Documents shall create or give to third parties any claim or right against the Owner or the Contractor except as specifically provided herein.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable Legal Requirements. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect and the Owner timely notice of when and where tests and inspections are to be made so that the Architect and the Owner may be present for and observe such inspections, testing or approval. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids from Subcontractors are received or negotiations concluded. Unless otherwise provided in the Contract Documents, the Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

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§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense. If the inspections and tests conducted under Section 13.4.1 or this Section 13.4.2 reveal failure in a portion of the Work, the Owner may order the inspection and testing at the Contractor's expense of any and all portions of the Work that are identical or similar to the failing portion.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest as provided in the Agreement.

§ 13.6 Prohibited Activities and Background Check Requirements

§ 13.6.1 Contractor shall comply with all applicable Legal Requirements including, without limitation, Connecticut General Statutes Section 10-222c, as applicable.

§ 13.6.2 Interaction with School Community. The scope of the Work does not, and will not under any circumstances, require any contact with students or any other minors physically present in the facilities of, or the grounds surrounding, the school where the Project is located (the "School Grounds"). None of the Contractor, Subcontractors, Sub-subcontractor, or any of their respective employees, agents or representatives shall, under any circumstances, converse or interact in any manner, with students or any minors physically present on the School Grounds. None of the Contractor, Subcontractors, Sub-subcontractor, or any of their respective employees, agents or representatives shall interact with any adult members of the school community (including, without limitation, employees, officials, or visitors, including parents of students enrolled in the Owner's schools) with respect to the Project with the exception of the Owner's Designated Representative as provided in the Agreement. All of the Contractor, Subcontractors, Sub-subcontractors, and their respective employees, agents or representatives shall, while on the School Grounds, refrain from use of vulgar language, obscene gestures, or any other behavior inappropriate for a school environment and/or property on which minor children are or may be present.

§ 13.6.3 Background and Employment History Checks

§ 13.6.3.1 To the extent permitted by law, the Contractor shall perform (or cause to be performed) as regards all of its employees, agents, and representatives (each a "Contractor Employee"), and all of the employees, agents, and representatives of Subcontractors and Sub-subcontractors (each a "Subcontractor Employee"), who will be physically present on the School Grounds in connection with the Project, appropriate background checks on all such Contractor Employees and Subcontractor Employees. Such background checks shall include, at a minimum and without limitation, a search of both the Connecticut Department of Emergency Services and Public Protection's sexual offender registry and the Abuse and Neglect Registry of the Connecticut Department of Children and Families. For those Contractor Employees and Subcontractor Employees who are to be physically present on the School Grounds in connection with the Project and whose current or most recent employment occurred out of state, the out-of-state equivalent of the Connecticut Department of Emergency Services and Public Protection's sexual offender registry and the Abuse and Neglect Registry of the Connecticut Department of Children and Families registry shall be checked. The Contractor shall complete (or cause to be completed) background checks as to each Contractor Employee and Subcontractor Employee prior to such Contractor Employee or Subcontractor Employee being permitted to be physically present on the School Grounds. If the Contractor receives any information indicating that any

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Contractor Employee or Subcontractor Employee may be registered as a sexual offender, may have a record of abuse or neglect, or is, in any other manner, unfit to perform services which could involve direct contact with minor children, or which may involve working in or near property on which minor children may be present, the Contractor shall immediately forward such information to the Owner, to the extent permitted by law, and shall immediately remove the individual from the School Grounds and from participation in the Project.

§ 13.6.3.2 The Contractor represents and warrants that, in its best professional judgment, each Contractor Employee and each Subcontractor Employee maintains the appropriate qualifications and is fit to perform services which could involve direct contact with minor children, or which may involve working in or near property on which minor children may be present. The Contractor shall immediately remove any Contractor Employee or Subcontractor Employee from the School Grounds and from the Project if requested to do so by the Owner (which request shall be made in the Owner's sole discretion) or if it becomes known to the Contractor that such Contractor Employee or Subcontractor Employee may be a danger to the health, safety or well-being of the school community, its students, or any minor children.

§ 13.6.3.3 The Contractor shall include and shall require all Subcontractors to include this Section 13.6 in all Subcontracts for the Project.

§ 13.6.3.4 By execution of the Contract, the Contractor represents and warrants that it has fully complied with the requirements of this Section 13.6. To the extent permitted by law, the Contractor agrees that upon the Owner's request, Contractor shall promptly provide the Owner with any documentation related to such compliance, including, without limitation, the results of the background and employment history checks required by this Section.

§ 13.6.3.5 Failure by the Contractor to comply with its obligations under this Section 13.6 shall constitute a material breach of the Contract.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- **.1** Issuance of an order of a court or other governmental authority having jurisdiction that requires all Work to be stopped;
- **.2** An act of government, such as a declaration of national emergency, that requires all Work to be stopped; or
- **.3** Because the Owner has repeatedly defaulted, beyond any applicable notice and cure periods, in its payment obligations to the Contractor under the Contract Documents.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, supplier or any of their respective agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than one hundred percent (100%) of the total number of days scheduled for completion of the Work, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon ten days' prior written notice to the Owner and the Architect, terminate the Contract and recover from the Owner payment pursuant to the Contract Documents for Work executed in accordance with the Contract Documents, along with direct costs incurred by the Contractor by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, supplier or their respective agents or employees or any other persons or entities performing portions of the Work by or on behalf of any of them, because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important and critical to the progress of the Work, the Contractor may, upon 10 additional days' prior written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.1.5 The notice of termination delivered pursuant to Section 14.1.3 or 14.1.4 must state with specificity the means by

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which the Owner may cure its nonperformance, and the Contractor shall not terminate the Contract if, within the applicable ten (10) day period, the Owner substantially takes such curative measures.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may, without prejudice to and without waiving any other rights or remedies the Owner may have, terminate the Contract if the Contractor

- **.1** repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- **.3** disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;
- **.4** otherwise is guilty of substantial breach of a provision of the Contract Documents;
- **.5** institutes proceedings or consent to proceedings requesting relief or arrangement under the Federal Bankruptcy Act or similar or applicable federal or state law, or a petition under any federal or state bankruptcy or insolvency law is filed against the Contractor and such petition is not dismissed within sixty (60) days from the date of said filing, or the Contractor admits in writing its inability to pay its debts as they become due, or it makes a general assignment for the benefit of its creditors, or a receiver, liquidator, trustee, or assignee is appointed, or a receiver of all or any substantial portion of the Contractor's properties is appointed;
- **.6** abandons the Work;
- **.7** fails to prosecute the Work promptly and diligently;
- **.8** submits an Application for Payment, sworn statement, waiver of lien, affidavit or document of any nature whatsoever which is intentionally falsified;
- **.9** fails to make prompt payment to Subcontractors or for materials or labor in accordance with the respective Subcontracts or otherwise breaches its obligations under any Subcontract with a Subcontractor; or
- **.10** after a mechanics or materialman's lien or notice of lien is filed against any part of the Work or the Project site, the lien and underlying claim are not promptly resolved as required under the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, the Owner may, without prejudice to and without waiving any other rights or remedies the Owner may have, and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- **.1** Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- **.2** Accept assignment of subcontracts pursuant to Section 5.4; and
- **.3** Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, and without prejudice and without waiving any other rights or remedies the Owner may have, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit to the extent provided and permitted in the Contract Documents. No adjustment shall be made to the extent

- **.1** that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which

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the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing Subcontracts and purchase orders and enter into no further Subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed in accordance with the Contract Documents and direct costs incurred by reason of the termination, including costs directly attributable to termination of Subcontracts.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 10 days after occurrence of the event giving rise to such Claim or within 10 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Work and its obligations under the Contract Documents and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

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§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of the probable effect of the delay on the progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction. No extension of the Contract Time will be granted for adverse weather conditions unless the number of days of inclement weather is substantially greater or conditions substantially more severe than the average for the calendar period as recorded by a recognized weather observation government agency.

§ 15.1.7 Intentionally omitted.

§ 15.1.8 Notwithstanding anything to the contrary herein or in the Contract Documents, neither the Contract Sum nor the Contract Time shall be adjusted if the increased costs or delay underlying the Contractor's claim for adjustment stems from the negligent act or omission of the Contractor, its subcontractors of any tier, or of anyone for whose performance the Contractor is responsible to the Owner, or as a result of the error of any of the same or of the failure of any of the same to comply with, and fulfill their responsibilities under, the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 45 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days after the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the claimant to authorize retention of such persons at the claimant's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. within ten days after receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part, or suggest a compromise.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any

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change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Section 9.10.5, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Intentionally Omitted

§ 15.4.1 Intentionally omitted.
§ 15.4.1.1 Intentionally omitted.
§ 15.4.2 Intentionally omitted.
§ 15.4.3 Intentionally omitted.

§ 15.4.4 Intentionally omitted.

§ 15.4.4.1 Intentionally omitted.
§ 15.4.4.2 Intentionally omitted.
§ 15.4.4.3 Intentionally omitted.

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SECTION 011000
SUMMARY

PART 1 GENERAL

1.1 PROJECT

A. Project Name: East Lyme High School - Aquatic Center Roof Replacement

B. Owner's Name: Town of East Lyme/East Lyme Public Schools

C. Architect's Name: Lothrop Associates Architects D.P.C.P.C.

D. The Project consists of Laterations at the East Lyme High School as follows:
   1. Remove existing standing seam metal roof system, metal deck, and purlin framing.
   2. Provide standing seam metal roof system, acoustic metal deck and steel channel purlins.
   3. All work as indicated in the construction documents

E. Contract Time
   1. Contract Start Date: Date of Notice to proceed
   2. Construction Start Date: April 6, 2026
   3. Substantial Completion: Decenber 4, 2026

1.2 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price

1.3 DESCRIPTION OF ALTERATIONS WORK

A. Scope of the work is as follows:
   1. Remove existing standing seam metal roof system, metal deck, and purlin framing.
   2. Provide standing seam metal roof system, acoustic metal deck and steel channel purlins.
   3. Provide all scaffolding and shoring and equipmet to replace roof structure and system.
   4. Provide temporary protection for all equipment and systems to remain including pool tank, pool equipment, bleachers, mechanical systems, lighting,scoreboard etc.
   5. Remove, reinstall and provide temporary support for all equipment and systems to remain including but not limited to ductwork, lighting, fire supression/sprinklers and pool equipment hung from existing metal deck and purlins.
   6. Draining and filling the swimming pool is not included in the contract and will be the responsibility of the East Lyme Public Schools.
   7. All work as indicated on the construction documents

1.4 OWNER OCCUPANCY

A. Owner (East Lyme Public Schools)intends to continue to occupy adjacent portions of the existing building during the entire construction period.

B. Owner intends to occupy the Project upon Substantial Completion.

C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

D. Schedule the Work to accommodate Owner occupancy.

1.5 CONTRACTOR USE OF SITE AND PREMISES

A. Provide access to and from site as required by law and by Owner:
   1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
   2. Do not obstruct roadways, sidewalks, or other public ways without permit.

B. Time Restrictions:
   1. Limit conduct of the hours of 7:00 am to 5:00 pm Monday through Friday.

C. Utility Outages and Shutdown:
   1. Limit disruption of utility services to hours the building is unoccupied.
   2. Prevent accidental disruption of utility services to other facilities.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 012300
ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 01 Specification Sections, apply to this Section.

SUMMARY

THIS SECTION INCLUDES ADMINISTRATIVE AND PROCEDURAL REQUIREMENTS GOVERNING ALTERNATES.

DEFINITIONS

A. Definition: An Alternate is 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 the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
   1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate the Alternate into the Work. No other adjustments are made to the Contract Sum.

PROCEDURES

A. Coordination: Modify or adjust affected adjacent Work as necessary to completely and fully integrate that Work into the 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 mentioned as part of the Alternate.

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

EXECUTE ACCEPTED ALTERNATES UNDER THE SAME CONDITIONS AS OTHER WORK OF THIS CONTRACT.

6.1 SCHEDULE OF ALTERNATES

A. Where indicated on the Bid form state the amount to be added to or deducted from the Base Bid amount for:

ALTERNATE NO. 1: PROVIDE REPLACEMENT DUCTWORK AT POOL AREA

1. In place of support and re-use of existing ductork in the pool area, provide FabricAir, Ductsox or Airmax fabric duct with air volume, dispersion, layout and size simular to existing duct volume, dispersion and layout design. Provide all required caps, zipperduct sections, diffusers, duct hangers and brackets for a complete installation. Provide active antimicrobial agent. Color of fabric and diffuser type shall be slected by Architect from manufactures full range of standard and premuim colors and finishes.

PART 2 - PRODUCTS NOT APPLICABLE

PART 3 - EXECUTION NOT APPLICABLE

END OF SECTION 012300

SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Procedural requirements for proposed substitutions

1.2 RELATED REQUIREMENTS

A. Section 013000 - Administrative Requirements: Submittal procedures, coordination.

B. Section 016000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.

1.3 DEFINITIONS

A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
   1. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
   1. Note explicitly any non-compliant characteristics.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.

1. No specific form is required. Contractor's Substitution Request documentation must include the following:
   a. Project Information:
      1) Official project name and number, and any additional required identifiers established in Contract Documents.
   b. Substitution Request Information:
      1) Discrete and consecutive Substitution Request number, and descriptive subject/title.
      2) Indication of whether the substitution is for cause or convenience.
      3) Issue date.
      4) Reference to particular Contract Document(s) specification section number, title, and article/paragraph(s).
      5) Description of Substitution.
      6) Reason why the specified item cannot be provided.
      7) Differences between proposed substitution and specified item.
      8) Description of how proposed substitution affects other parts of work.
   c. Attached Comparative Data: Provide point-by-point, side-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:
      1) Physical characteristics.
      2) In-service performance.
      3) Expected durability.
      4) Visual effect.
      5) Warranties.
      6) Other salient features and requirements.
      7) Include, as appropriate or requested, the following types of documentation:
         a) Product Data:
         b) Certificates, test, reports or similar qualification data.
         c) Drawings, when required to show impact on adjacent construction elements.
   d. Impact of Substitution:
      1) Savings to Owner for accepting substitution.
      2) Change to Contract Time due to accepting substitution.

D. Limit each request to a single proposed substitution item.
   1. Submit an electronic document, combining the request form with supporting data into single document.

3.2 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Submittal Time Restrictions:
   1. Owner and Architect will consider requests for substitutions only if submitted at least 10 days prior to the date for receipt of bids.
   2. Refer to individual technical specification sections for additional product specific substition requirements.

3.3 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Architect will consider requests for substitutions only within 15 days after date of Agreement.

B. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

C. Submit request for Substitution for Convenience within 14 days of discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
   1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
   2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
   3. Bear the costs engendered by proposed substitution of:
      a. Owner's compensation to the Architect for any required redesign, time spent processing and evaluating the request.

D. Substitutions will not be considered under one or more of the following circumstances:
   1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
   2. Without a separate written request.
   3. When acceptance will require revisions to Contract Documents.

3.4 RESOLUTION

A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

B. Architect will notify Contractor in writing of decision to accept or reject request.
   1. Architect's decision following review of proposed substitution will be noted on the submitted form.

3.5 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.6 CLOSEOUT ACTIVITIES

A. See Section 017800 - Closeout Submittals, for closeout submittals.

B. Include completed Substitution Request Forms as part of the Project record. Include both approved and rejected Requests.

END OF SECTION

SECTION 012600
CONTRACT MODIFICATION PROCEDURES

GENERAL

1.1 SUMMARY

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

1.2 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710 "Architects Supplemental Instructions"
   1. Work Change Proposal Requests issued by Owner or Architect are not instructions either to stop work in progress or to execute the proposed change.

1.3 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue 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. Work Change Proposal Requests issued by Owner or Architect are not instructions either to stop work in progress or to execute the proposed change.
   2. Within the time specified in Proposal Request or10 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. Total combined overhead and profit for contcactor and it's subcontractor shall not to exceed 15%.
      e. 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. Use available total float before requesting an extension of the Contract Time.

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 the owner and 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. Total combined overhead and profit for contactor and their subcontractor not to exceed 15%.
6. 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. Use available total float before requesting an extension of the Contract Time.
7. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

1.4 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Change Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701 "Change Order"

1.5 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Owner and Architect may issue a Construction Change Directive. A Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
   1. 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.

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

PRODUCTS (NOT USED)

EXECUTION (NOT USED)

END OF SECTION 012600

SECTION 012900
PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

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

1.2 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
   1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
   2. Submit the schedule of values to Architect at the earliest possible date, but no later than fourteen days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
   1. Arrange schedule of values consistent with format of AIA Document G703
   2. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
      a. Divide each breakdown into separate line items for labor and materials
   3. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
      a. Differentiate between items stored on-site and items stored off-site.
      b. Provide separate line items for each breakdown for labor and materials WHERE APPLICABLE.
   4. 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.
   5. Provide separate line item for punchlist in the amount of five (5) percent of the Contract Sum and subcontract amount.
   6. Overhead Costs: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
   7. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling two (2) percent of the Contract Sum and subcontract amount.

8. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.3 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Times: Submit final version of each Application for Payment to Architect by the last business 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 by no later seven (7) days before the day the final version of the Application for Payment is due as indicated in the General Condiotions for review by the Architect.

D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect 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.

F. Transmittal: Submit four signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
   1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien 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. 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.
5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Products list (preliminary if not final).
5. Submittal schedule (preliminary if not final).
6. List of Contractor's staff assignments.
7. Copies of building permits.
8. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
9. Certificates of insurance and insurance policies.
10. Performance and payment bonds.

I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706.
5. AIA Document G706A.
6. AIA Document G707.
7. Evidence that claims have been settled.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

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SECTION 013000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. General administrative requirements.

B. Preconstruction meeting.

C. Progress meetings.

D. Construction progress schedule.

E. Progress photographs.

F. Submittals for review, information, and project closeout.

G. Number of copies of submittals.

H. Requests for Interpretation (RFI) procedures.

I. Submittal procedures.

1.2 RELATED REQUIREMENTS

A. Section 016000 - Product Requirements: General product requirements.

B. Section 017000 - Execution and Closeout Requirements: Additional coordination requirements.

C. Section 017800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.3 REFERENCE STANDARDS

A. AIA G716 - Request for Information; 2004.

1.4 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 017000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

B. Make the following types of submittals to Architect:
   1. Requests for Interpretation (RFI).
   2. Requests for substitution.
   3. Shop drawings, product data, and samples.
   4. Test and inspection reports.

5. Design data.
6. Manufacturer's instructions and field reports.
7. Applications for payment and change order requests.
8. Progress schedules.
9. Correction Punch List and Final Correction Punch List for Substantial Completion.
10. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 PRECONSTRUCTION MEETING

A. Attendance Required:
   1. Owner.
   2. Architect.
   3. Contractor.

B. Agenda:
   1. Execution of Owner-Contractor Agreement.
   2. Submission of executed bonds and insurance certificates.
   3. Distribution of Contract Documents.
   4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
   5. Designation of personnel representing the parties to Contract, Contractor, Owner and Architect.
   6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
   7. Scheduling.

C. Record minutes and distribute copies within two days after meeting to participants, with copies to Contractor, Owner, participants, and those affected by decisions made.

3.2 PROGRESS MEETINGS

A. Attendance Required:
   1. Contractor.
   2. Owner.
   3. Architect.
   4. Contractor's superintendent.
   5. Major subcontractors at contractor's dis

B. Agenda:
   1. Review minutes of previous meetings.
   2. Review of work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede, or will impede, planned progress.

5. Review of submittals schedule and status of submittals.
6. Maintenance of progress schedule.
7. Corrective measures to regain projected schedules.
8. Planned progress during succeeding work period.
9. Maintenance of quality and work standards.
10. Effect of proposed changes on progress schedule and coordination.
11. Other business relating to work.

C. Record minutes and distribute copies within two days after meeting to participants, with copies to, Owner, participants, and those affected by decisions made.

3.3 CONSTRUCTION PROGRESS SCHEDULE

A. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

B. Within 10 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
1. Include written certification that major contractors have reviewed and accepted proposed schedule.

C. Within 10 days after joint review, submit complete schedule.

D. Submit updated schedule with each Application for Payment.

3.4 PROGRESS PHOTOGRAPHS

A. Submit new photographs at least once a month, within 3 days after being taken.

B. Photography Type: Digital; electronic files.

C. Provide photographs of site and construction throughout progress of work produced by an experienced photographer, acceptable to Architect.

D. In addition to periodic, recurring views, take photographs of each of the following events:
1. Structural framing in progress and upon completion.
2. Metal roof deck in progress and upon completion
3. Metal Roof sytem in progress and upon completion

E. Take photographs as evidence of existing project conditions as follows:
1. Interior views: all elevations of principal work areas.
2. Exterior views: all elevations of principal work areas.
3. Documentation of existing conditions and existing defects and damage are soley the responsibility of the contractor. Contractor will be held liable foe all damage discovered during construction unless they can document damage as an existing condition prior to start of construction..

F. Views:
1. Provide non-aerial photographs from four cardinal views at each specified time, until date of Substantial Completion.
2. Consult with Architect for instructions on views required.

3. Provide factual presentation.
4. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.

G. Digital Photographs: 24 bit color, minimum resolution of 1024 by 768, in JPG format; provide files unaltered by photo editing software.
1. Delivery Medium: Via email.
2. File Naming: Include project identification, date and time of view, and view identification.
3. PDF File: Assemble all photos into printable pages in PDF format, with 2 to 3 photos per page, each photo labeled with file name; one PDF file per submittal.
4. Each photo shall time and date stamped.

3.5 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:
1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
2. A resolution to an issue which has arisen due to field conditions and affects design intent.

B. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
1. Prepare a separate RFI for each specific item.
2. Prepare in a format and with content acceptable to Architect
a. submit electronically as singe PDF file..

C. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
1. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
a. Approval of submittals (use procedures specified elsewhere in this section).
b. Approval of substitutions (see Section - 016000 - Product Requirements)
c. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
2. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
3. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.

D. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.

1. Discrete and consecutive RFI number, and descriptive subject/title.
2. Issue date, and requested reply date.
3. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
4. Annotations: Field dimensions and/or description of conditions which have engendered the request.
5. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.

E. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

F. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.

G. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

H. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Architect.
1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.6 SUBMITTAL SCHEDULE

A. Submit to Architect for review within 10 days to notice to proceed a schedule for submittals in tabular format.
1. Arrange information to include scheduled date for initial submittal, specification number and title, submittal category (for review or for information), description of item of work covered, and role and name of subcontractor.

3.7 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
   1. Product data.
   2. Shop drawings.
   3. Samples for selection.
   4. Samples for verification.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 017800 - Closeout Submittals.

3.8 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Design data.
   2. Certificates.
   3. Test reports.
   4. Inspection reports.
   5. Manufacturer's instructions.
   6. Manufacturer's field reports.
   7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner.

3.9 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Bonds.
   5. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

3.10 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
   1. PDF submission to be one combined file

B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
   1. After review, produce duplicates.
   2. Retained samples will not be returned to Contractor unless specifically so stated.

3.11 SUBMITTAL PROCEDURES

A. General Requirements:
   1. All submittals except samples to be in electronic format
      a. Format to be PDF
      b. PDF submission to be one single combined file.
   2. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
   3. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
      a. Submittals provided without contractor's review stamp will be returned marked " not rerviewed"
   4. Schedule submittals to expedite the Project, and coordinate submission of related items.
      a. For each submittal for review, allow 15 calendar days excluding delivery time to and from the Contractor.
      b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.
   5. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
   6. Provide space for Contractor and Architect review stamps.
   7. When revised for resubmission, identify all changes made since previous submission.
   8. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
   9. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
   10. Submittals not requested will be recognized, and will be returned "Not Reviewed",

B. Product Data Procedures:
   1. Submit only information required by individual specification sections.
   2. Collect required information into a single submittal.
   3. Do not submit (Material) Safety Data Sheets for materials or products.

C. Shop Drawing Procedures:

1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
2. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

D. Samples Procedures:
1. Transmit related items together as single package.
2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.

3.12 SUBMITTAL REVIEW

A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.

B. Submittals for Information: Architect will acknowledge receipt and review. See below for actions to be taken.

C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.

D. Architect's and consultants' actions on items submitted for review:
1. Authorizing purchasing, fabrication, delivery, and installation:
a. "Noe Exceptions Taken".
b. "Make Corrections Noted".
2. Not Authorizing fabrication, delivery, and installation:
a. "Revise and Resubmit".Resubmit Revised item with review notations acknowleded and incorporated
b. "Rejected" Submit item complying with the requirements of the construction documents.
c. Non Responsive Resubmittals may be rejected.

E. Architect's and consultants' actions on items submitted for information:
1. Items for which no action was taken:
a. "Received" - to notify the Contractor that the submittal has been received for record only.
2. Items for which action was taken:
a. "Reviewed" - no further action is required from Contractor.

END OF SECTION 013000

SECTION 014000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submittals.

B. Quality assurance.

C. References and standards.

D. Testing and inspection agencies and services.

E. Control of installation.

F. Mock-ups.

G. Tolerances.

H. Defect Assessment.

1.2 RELATED REQUIREMENTS

A. Document 007200 - General Conditions: Inspections and approvals required by public authorities.

B. Section 013000 - Administrative Requirements: Submittal procedures.

C. Section 016000 - Product Requirements: Requirements for material and product quality.

1.3 DEFINITIONS

A. Contractor's Quality Control Plan: Contractor's management plan for executing the Contract for Construction.

1.4 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
   1. Include required product data and shop drawings.
   2. Include a statement or certification attesting that design data complies with criteria indicated, such as building codes, loads, functional, and similar engineering requirements.

C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, 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.

D. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.5 Quality Assurance

A. Contractor's Quality Control (CQC) Plan:
   1. Prior to start of work, submit a comprehensive plan describing how contract deliverables will be produced. Tailor CQC plan to specific requirements of the project. Include the following information:
      a. Owner will not make a separate payment for providing and maintaining a Quality Control Plan. Include associated costs in Bid price.
      b. Acceptance of the plan is required prior to start of construction activities not including mobilization work. Owner's acceptance of the plan will be conditional and predicated on continuing satisfactory adherence to the plan. Owner reserves the right to require Contractor to make changes to the plan and operations, including removal of personnel, as necessary, to obtain specified quality of work results.

1.6 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

C. Obtain copies of standards where required by product specification sections.

D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.2 MOCK-UPS

A. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.

B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

C. Architect will use accepted mock-ups as a comparison standard for the remaining Work.

D. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

3.3 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

3.4 TESTING AND INSPECTION

A. Testing Agency Duties:
   1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   2. Perform specified sampling and testing of products in accordance with specified standards.
   3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
   5. Perform additional tests and inspections required by Architect.
   6. Submit reports of all tests/inspections specified.

B. Limits on Testing/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. Contractor Responsibilities:
   1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
   2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
   3. Provide incidental labor and facilities:
      a. To provide access to Work to be tested/inspected.
      b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
      c. To facilitate tests/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/inspection services.
   5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
   6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

D. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.

E. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.5 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

B. If, in the opinion of Architect, it is not practical to remove and replace the work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION 014000

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SECTION 014333
MANUFACTURER'S FIELD SERVICES

1.1 PART 1 GENERAL

A. Drawings and general provisions of the Contract, including the Conditions of the Contract and Division 07 Specification Sections apply to this Section.

1.2 SUMMARY

A. Section includes Manufacturer's field services for roofing assemblies.

1.3 Related Work Specified Elsewhere:

A. Roofing Material: Section 07 41 00 - Standing Seam Metal Roofing Panels

1.4 REFERENCES

A. International building Code (current edition) or local authority building code.

B. American Society of Civil Engineers (ASCE): ASCE 7, Minimum Design Loads for Buildings and Other Structures.

C. Factory Mutual Global (FMG):
   1. Roof Assembly Classifications.

D. National Roofing Contractors Association (NRCA):
   1. Roofing and Waterproofing Manual.

E. American National Standards Institute and Single Ply Roofing Institute (ANSI/SPRI):
   1. ANSI/SPRI ES-1 Testing and Certification Listing of Shop Fabricated Edge Metal.

1.5 SUBMITTALS FOR REVIEW

A. Product Data:
   1. Provide manufacturer's technical product data for each type of roofing product specified. Include data substantiating that materials comply with specified requirements.

B. Specimen Warranty:
   1. Provide an unexecuted copy of the warranty specified for this project, identifying the terms and conditions required of the Manufacturer and the Owner.

C. Roofing System Manufacture's Evaluation:

D. Provide a comprehensive written assessment comparing available roofing solutions with validation of why the roofing system selection for the specific project is suitable and appropriate.

E. Roofing System Manufacturer's Report Form:
1. Provide a copy of the report form utilized by the Job Site Inspector for progress inspections to monitor installation and quality.

1.6 SUBMITTALS FOR INFORMATION

A. Manufacturer's Installation Instructions:
1. Submit installation instructions and recommendations indicating special precautions required for installing the membrane.

B. Manufacturer's Certificate:
1. Certify that roof system furnished is approved by Underwriters Laboratories, Warnock Hersey or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.
2. Certify that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.
3. Submit a certified copy of the roofing manufacturer's ISO 9001 compliance certificate.
4. Written certification verifying the applicator is currently authorized for the installation of the specified roof system.

C. Design Loads:
1. Submit copy of manufacturer's minimum design load calculations according to ASCE 7-16, Method 2 for Components and Cladding. In no case shall the design loads be taken to be less than those detailed in Design and Performance Criteria article of this specification.

D. Qualification data for firms and individuals identified in Quality Assurance Article 1.7 below.

E. Test Reports:

F. Submit ANSI/SPRI ES-1 Testing and Certification Listing of Shop Fabricated Edge Metal Products.

G. Substitutions:
1. Products proposed as equal to the products specified for this project shall meet all of the requirements in the appropriate Division 7 specifications and shall be submitted for consideration at least seven (7) days prior to the date that bids must be submitted.
2. Proposals shall be accompanied by a copy of the manufacturer's standard specification Section.
a. That specification Section shall be signed and sealed by a professional engineer licensed in the state in which the installation is to take place.
b. Substitution requests containing specifications without licensed engineer certification shall be rejected for non-conformance.

3. Manufacturer's checklist will be accompanied with any substitution to verify equal performance characteristics to those specified in Division 7 specification.
4. The Owner's decision regarding substitutions will be considered final.

1.7 CONTRACT CLOSEOUT SUBMITTALS

A. Project Warranty: Manufacturer shall execute all applicable warranties for all system(s) criteria. Multiple manufacturers warranties are not acceptable.
1. Manufacturer's long-term system warranty.
2. Installer's three (3) year warranty covering system installation.
3. Warranties shall commence on date of Substantial Completion.
4. Single system warranty: The final warranty issued to the Owner shall include each roofing, wall cladding and soffit system, separate or all-encompassing shall be warranted and owned by a single Manufacture.

B. Roofing Maintenance Instructions:
1. Provide a roof care and maintenance manual of manufacturer's recommendations for maintenance of installed roofing systems.

C. Insurance Certification:

D. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

E. Inspection Logs:
1. Copy of inspection reports as performed by the Job Site Inspector or manufacturer shall be submitted at project closeout and include photographic documentation of installation progress, weather conditions, and personnel on the project at the time of every inspection.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications:
1. Company specializing in manufacturing the products specified in this Section with not less than Fifty (50) years of documented experience and have ISO 9001 certification.
2. Installer Qualifications:
a. Company specializing in specified roofing installation with not less than 5 years experience and authorized by roofing system manufacturer as qualified to install manufacturer's roofing materials.

B. Installer's Field Supervision:
1. Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.
2. Maintain proper supervision of workmen.

C. Maintain a copy of the roof plans, details, and specifications in the possession of the Supervisor/Foreman and on the roof at all times.

D. Source Limitations:

1. Obtain all primary waterproofing components of roofing systems from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer.
2. The manufacturer providing the roofing system warranty must verify that they manufacture a minimum of 85% of the products utilized in the roofing system of this project.
3. Products that are private labeled or tested under a different name shall not be considered as manufactured by the roofing system supplier and will not be accepted.
4. Upon request of the Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

E. Source Quality Control:
1. Manufacturer shall have in place a documented, standardized quality control program such as ISO-9001.

1.9 PRE-INSTALLATION CONFERENCE

A. Pre-Installation Roofing Conference:
1. Convene a pre-roofing conference approximately two (2) weeks before scheduled commencement of roofing system installation and associated work.

B. Require attendance of:
1. All project design team members: Architect, structural, etc.
2. Contractors of construction to receive any work associated with the project
3. Installers of rooftop units or any roof hatch related work
4. Contractors or subcontractors of any other work in and around roofing that must precede or follow roofing work (including mechanical and electrical work if any)
5. Owner or representative of roofing system and building
6. Manufacturer's full-time employee(s)
7. Other representatives directly concerned with performance of the Work, including (where applicable) Owner's insurers, testing agencies and governing authorities.

C. Objectives of conference include:
1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
2. Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work performed by others.
3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
4. Review roofing system requirements (drawings, specifications and other contract documents).
5. Review required submittals both completed and yet to be completed.
6. Review and finalize construction schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
7. Review required inspection, testing, certifying and material usage accounting procedures.

8. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing (if not a mandatory requirement).
9. Record discussion of conference including decisions and agreements (or disagreements) reached and furnish a copy of record to each party attending.
    a. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
    b. Do not proceed with roofing work until such issues are resolved to the satisfaction of the Owner. This shall not be construed as interference with the progress of Work on the part of the Owner.
10. The Owner will designate one of the conference participants to record the proceedings and promptly distribute them to the participants for record.

D. The intent of the conference is to resolve any issues affecting the installation and performance of roofing work.

1.10 MANUFACTURER'S INSPECTIONS

A. When the Project is in progress, a full-time employee of the roofing system manufacturer must provide the following:
1. Weekly reports, showing progress and quality of the work as observed. Progress reports shall be published to an online system as referenced in Section 1.4.
2. Provide periodic roofing installation inspections: Not less than three days per week, Inspections reports must include; photographic documentation of work in progress and written statements of compliance with details/shop drawings.
3. Report to the Architect and Owner in writing any failure or refusal of the contractor to correct unacceptable practices called to the contractor's attention.
4. Confirm after project completion that the manufacturer has observed no application procedures in conflict with the specifications other than those that may have been previously reported and corrected.

1.11 WARRANTY

A. Upon completion of installation on all roof sections and systems, one manufacturer will supply to the Owner all specified, long-term warranty(s) specified here within.

B. Installer will submit a three-year workmanship warranty to the membrane manufacturer with a copy directly to the Owner.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 EXECUTION, GENERAL

A. Comply with requirements of related Division 07 Section.

3.2 GENERAL INSTALLATION REQUIREMENTS

A. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.

B. Insurance/Code Compliance: Where required by code, install and test the roofing system to comply with governing regulation and specified insurance requirements.

3.3 FIELD QUALITY CONTROL

A. Representative shall perform field inspection as specified in Article titled: MANUFACTURER'S INSPECTIONS above. Inspections must include photographic documentation of installation progress, weather conditions, and personnel on the project at the time of inspection.

B. Correct defects or irregularities discovered during field inspection. Issues deemed defective must be re-inspected and determined suitable by the roofing manufacturer.

C. Require attendance of roofing materials manufacturers' representatives on site during installation of the roofing system. A copy of the specification shall also be on site at all times.

D. Frequent progress meetings shall be conducted during the performance of roof system installation and must be attended by the Architect, Owner, roofing system manufacturer's full-time employee, and Contractor or any other representatives directly concerned with performance of the work.

3.4 FINAL INSPECTION

A. At the completion of the roofing installation and associated work, meet with contractor and installer of associated work, Owner, roofing system client's representative, and other representatives directly concerned with performance of roofing system.

B. Walk roof surface areas of the building, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. List all items requiring correction or completion and furnish copy of list to each party in attendance.

C. Notify the Architect and Owner upon completion of corrections.

3.5 Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.

3.6 Immediately correct roof leakage during construction. If the contractor does not respond within twenty-four (24) hours, the Owner may exercise right to correct the Work under the terms of the Conditions of the Contract.

END OF SECTION

Statement of Special Inspections

Project: *East Lyme High School - Aquatic Center Roof Replacement*

Location: *30 Chesterfield Road, East Lyme, Connecticut 06333*

Owner: *East Lyme Public Schools*

Architect of Record: *Lothrop Associates Architects D.P.C.*

Structural Engineer of Record: *e2 engineers*

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Special Inspection Coordinator and the identity of other approved agencies to be retained for conducting these inspections and tests. This *Statement of Special Inspections* encompass the following disciplines:

☒ Structural ☐ Mechanical/Electrical/Plumbing
☐ Architectural ☐ Other: _____

The Special Inspection Coordinator shall keep records of all inspections and shall furnish inspection reports to the Building Official and the Registered Design Professional in Responsible Charge. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities. **Special Inspections of Architectural Systems and Mechanical/Electrical/Plumbing systems is by others.**

Interim reports shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency: *Monthly*

Prepared by:

Chad Vogt, P.E.
(type or print name)

Signature Date

Design Professional Seal

Owner's Authorization:

Signature Date

Building Official's Acceptance:

Signature Date

Schedule of Inspection and Testing Agencies

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- ☐ Soils and Foundations
- ☐ Cast-in-Place Concrete
- ☐ Precast Concrete
- ☐ Masonry
- ☒ Structural Steel
- ☐ Cold-Formed Steel Framing
- ☐ Spray Fire Resistant Material
- ☐ Wood Construction
- ☐ Exterior Insulation and Finish System
- ☐ Mechanical & Electrical Systems
- ☐ Architectural Systems
- ☐ Special Cases

Special Inspection Agencies	Firm	Address, Telephone, e-mail
1. **Special Inspection Coordinator**	*TBD*	*TBD*
2. Geotechnical Engineer	*N/A*	*N/A*
3. Field Inspector	*TBD*	*TBD*
4. Testing Agency	*TBD*	*TBD*
5. Testing Agency		
6. Other		

Note: The inspectors and testing agencies 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.

Quality Assurance Plan

Quality Assurance for Seismic Resistance

Seismic Design Category	*B*
Quality Assurance Plan Required (Y/N)	*N*

Description of seismic force resisting system and designated seismic systems:
Ordinary Moment Frames & Ordinary Braced Frames

Quality Assurance for Wind Requirements

Basic Wind Speed (3 second gust), V_{ult}	*135 mph*
Nominal Wind Speed (3 second gust), V_{asd}	*105 mph*
Wind Exposure Category	*B*
Quality Assurance Plan Required (Y/N)	*N*

Description of wind force resisting system and designated wind resisting components:
Ordinary Moment Frames & Ordinary Braced Frames

Statement of Responsibility

Each contractor responsible for the construction or fabrication of a system or component designated above must submit a Statement of Responsibility.

Qualifications of Inspectors and Testing Technicians

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge deems it appropriate that the individual performing a stipulated test or inspection have a specific certification or license as indicated below, such designation shall appear below the *Agency Number* on the Schedule.

PE/SE	Structural Engineer – a licensed SE or PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

American Concrete Institute (ACI) Certification

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

American Welding Society (AWS) Certification

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

American Society of Non-Destructive Testing (ASNT) Certification

ASNT	Non-Destructive Testing Technician – Level II or III.

International Code Council (ICC) Certification

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

National Institute for Certification in Engineering Technologies (NICET)

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

Exterior Design Institute (EDI) Certification

EDI-EIFS	EIFS Third Party Inspector

Structural Steel

Item	Agency # (Qualif.)	Scope	Inspection Frequency
1. Fabricator Certification/ Quality Control Procedures ☐ Fabricator Exempt	*1 PE/SE 4 AWS/AIS C-SSI ICC-SWSI*	*Verify PRIME Fabricator and all sub-contracted fabricators hold AISC Certification prior to start of fabrication when required by Project Specification. Review shop fabrication and quality control procedures for all shops NOT AISC Certified.*	*P1*
2. Material Certification	*(1) PE/SE (4) AWS/AIS C-SSI ICC-SWSI*	*Review certified mill test reports (1) and identification markings on rolled shapes, high-strength bolts, nuts and welding electrodes (4). Frequency shall be sufficient to satisfy testing agent and Special Inspection Coordinator.*	*P2*
3. Bolting	*3,4 AWS/AIS C-SSI ICC-SWSI (See Notes 2,3)*	*Inspect installation and tightening of high-strength bolts. Verify that splines have separated from tension control bolts. Verify proper tightening sequence. Continuous inspection of bolts in slip-critical connections; 25% minimum of bolts in other connections. Verify bolt size and grade. Inspect installation and tightening of high strength bolts. Provide continuous inspection of bolts in slip-critical connections. Inspect per Section 9 of the RSCC "Specification for Structural Joints Using A325 or A490 Bolts."*	*C*
4. Welding	*3,4 AWS-CWI ASNT*	*Visually inspect all welds. Inspect pre-heat, post-heat and surface preparation between passes. Verify size and length of fillet welds.* *Ultrasonic testing of all full-penetration welds. Provide continuous inspection of all complete and partial penetration groove welds, all multi-pass fillet welds and all single pass fillet welds > 5/16" (see Note 3 and 4 for additional requirements).* *Check welder qualifications.*	*P3*

5. Structural Details	*3* *PE/SE*	*Inspect steel frame for compliance with structural drawings, including bracing, member configuration and connection details.*	*P2*
6. Metal Deck	*3,4* *AWS-CWI*	*Inspect welding and side-lap fastening of metal roof and floor deck.* *Prior to installation, inspect one unit per bundle for depth, gage and profile conforming to project specifications.* *Visually inspect all installed metal roof and floor deck for conformance with project specification and SDI. Visually inspect welding and side-lap fastening of metal roof and floor deck. Report broken welds or excessive burn through.* *Check welder qualifications.*	*P2*
7. Special Inspection Coordination	*1* *PE*	*Monitor testing lab and field inspection results to ensure conformance with construction documents. Submit progress reports to the Building Official and Engineer of Record at the stated interim report frequency, including a log of all nonconforming items.*	*C*
12. Other: *Anchor Rods*	*(1)* *PE/SE*	*Verify C.M. has notified Steel Erector in writing of any repairs, replacements and/or modifications to the anchor rods per OSHA*	*P*
Shop Drawings	*(4)*	*Verify approved shop drawings are on site and in use.*	*P*

Inspection Frequency:
C: Continuous
P: Periodic Inspections.

Add'l Requirements as follows:
P1: If all requirements are met, only one inspection is required.
P2: While steel erection operations are ongoing, daily inspections shall be performed, unless otherwise noted. This inspection frequency may be increased or decreased at the Special Inspections Coordinator's discretion.
P3: Refer to Section 051000 Structural Steel

Notes:
1. Special Inspections Coordinator shall continuously monitor structural steel tests and inspections to assure conformance with the Construction Documents; notify SER of any discrepancies immediately.
2. Inspector shall have a minimum of 5 years experience in the inspection of steel structures.
3. Review material identification and manufacturer certificates for conformance of weld filler material with AWS Standards and AISC Manual of Steel Construction, 15th Edition.
4. Base metal exceeding 1.5 inches in thick and adjacent to the welds after joint welding.
5. Special Inspections of Fabricator is not required if fabricator complies with "Fabricator's Certificate of Compliance."

SECTION 015000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Temporary sanitary facilities.

B. Temporary Controls: Barriers, enclosures, fencing, and protection.

C. Security requirements.

D. Vehicular access and parking.

E. Waste removal facilities and services.

F. Project identification sign.

G. Scaffolding

H. Field offices.

1.2 RELATED REQUIREMENTS

A. Section 015100 - Temporary Utilities.

B. Section 015500 - Vehicular Access and Parking.

1.3 TEMPORARY UTILITIES

A. Owner will provide the following:
   1. Electrical power and metering, consisting of connection to existing facilities.
   2. Water supply, consisting of connection to existing facilities.

1.4 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. Maintain daily in clean and sanitary condition.

1.5 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

1. Costruct Exterior Barriers with 2x4 min framing and lumber sheathing. provide access doors where indicated.
2. Costruct interior bariers with metal or lumber framing, and gypsum board sheathing, with access doors were indicated.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.

C. Provide protection for plants designated to remain. Replace damaged plants.

D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

E. Traffic Controls: provide all traffic controls,signs, markings, cones, barries etc. to indicate temporary changes to traffic due to construction and deliveries..

F. Provide protection for all equipment, systems and finishes to remain. Contractor will be specifically be responsible for protecting all finishes within the natatouroum including but not limited to poll tank and deck. Poool tank and deck shoulf be protected with rigig materials. contractor will be reponsible for any damaged to pool tank and deck.

G. Contractor Reponsible for the design and engineering for all scaffolding required to remove and reinstall roof at natatotium and natatorium mezzanine. Contractor to submit engineered, shop drawings signed and stamped by professional Engineer liscenced in state of Connecticut. Contractor to include in shop drawings protection measures for scaffold installation for pool tank and deck. Contractor will be reponsible to repair all damage from scaffold installation at pool tank and deck.

1.6 FENCING

A. Construction: Commercial grade chain link fence. install on concrete pavers.

B. Provide 6 foot high fence around contractors dumpster/storage/ staging area and construction areas as shown on site plan; equip with vehicular and pedestrian gates with locks.

C. provide overhaed protection as indicated on plans

D. Provide and maintain for the duration of construction a temporary fence to prevent entry into the work area by the public.

E. Provide 4'-0" high orange safety fencing on balasted non penetrating posts at areas indicated on plan

1.7 EXTERIOR ENCLOSURES

A. Provide temporary weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.8 INTERIOR ENCLOSURES

A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.

B. Construction: Framing and plywood sheet materials with closed joints and sealed edges at intersections with existing surfaces:

1.9 TEMPORARY PROTECTION SCHEDULE

A. Pool Deck:provide mimimum 1 layer of 3/4' thick sheet lumber

B. Pool Tank: Provide rigid lumber cover/ work surface over entire poot tank at pool deck level. contractor to engineer cover including and all framing and supports to support construction loads and activities. Design to be signed and stamped by state of Connecticut professional engineer. All framing and support to be properisolated to not cause damage to pool tank. Protestion of built in pool stairs to be included in the design.

C. Pool Gutter-fully encase in layers of high density rigid foam insulation. Include in gutter protcetion, protection of touch pad outlets. seal outlets from dust with 6 mil reinforced poly sheeting sealed to gutter/deck.

D. Deck drains. seal with 6 mil reinforced poly sheeting. seal to deck

E. Mezzanine Refrigerator- provide rigid lumber barrier/enclosure/crate. Fully enclose on all sides,front, back and top.

F. Diving Boards- provide rigid lumber barrier/enclosure/crate. Fully enclose on all sides,front, back, top and bottom. encousure to include ladders/platforms and spring/diving boards.

G. Starting Blocks- provide rigid lumber barrier/enclosure/crate. Fully enclose on all sides,front, back, top and bottom.

H. Judges Platform- provide rigid lumber barrier/enclosure/crate. Fully enclose on all sides,front, back, top and bottom.

I. Fire Department Connection: provide rigid lumber barrier/ enclosure with access door. Mark enclouse with FDC connection signs.

J. Gas Service enclosure: provide rigid lumber barrier with access door. Mark encluse gas service.

K. Floor Protection: Mimimum 1 layer 1/4" thick sheet lumber.

L. Concrete protection:Minimum 1 layer 3/4" thick sheet lumber

1.10 SECURITY

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

B. Coordinate with Owner's security program.

C. Contractor to provide all workers with photo Identifaction, to be worn by workers at all times when on site.

D. No alchohol or tobacco use, smoking or vaping allowed on site.

E. Contractor and contractors personel to follow all of owners conduct and site use policies.

1.11 VEHICULAR ACCESS AND PARKING - See Section 015500

A. Coordinate access and haul routes with governing authorities and Owner.

B. Provide and maintain access to fire hydrants, free of obstructions.

C. Provide means of removing mud from vehicle wheels before entering streets.

D. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

E. provide construction/equipment tracking/trackout pad/mat at construction/ staging area entrance such as "DiamondTrack"

1.12 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
   1. Empty dumpsters weeky or more frequently if dumpster is full.
   2. Provide daily clean-up of site. Remove all construction waste and rubish from site and place in construction waste receptacles/dumpster.

B. Provide containers with lids. Remove trash from site weekly.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.13 PROJECT IDENTIFICATION

A. Provide project identification sign of design, construction, and location approved by owner.

B. No other signs are allowed without Owner permission except those required by law.

1.14 FIELD OFFICES

A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack, and drawing display table.

B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.

C. Locate offices a minimum distance of 30 feet from existing and new structures.

1.15 SCAFFOLDING

A. Contractor tp provide all scaffolding, cranes, annd lifts to complete the project scope.

B. Scaffolding cranes and lifts to meet and follow all Connecticut state and OSHA safety requirements.

C. Contractor to have Scaffold system designed, signed and stamped by State of Connecticut Professional Engineer.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

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SECTION 016000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. General product requirements.

B. Re-use of existing products.

C. Transportation, handling, storage and protection.

D. Product option requirements.

E. Substitution limitations.

F. Maintenance materials, including extra materials, spare parts, tools, and software.

1.2 RELATED REQUIREMENTS

A. Section 011000 - Summary: Lists of products to be removed from existing building.

B. Section 012500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.

C. Section 014000 - Quality Requirements: Product quality monitoring.

D. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOC-restricted product categories.

E. Section 017419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

1.3 REFERENCE STANDARDS

1.4 SUBMITTALS

A. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
   1. Submit within 15 days after date of Agreement.
   2. For products specified only by reference standards, list applicable reference standards.

B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

C. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
   1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.1 EXISTING PRODUCTS

A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.

B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

2.2 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by Contract Documents.

B. See Section 014000 - Quality Requirements, for additional source quality control requirements.

C. Use of products having any of the following characteristics is not permitted:
   1. Containing lead, cadmium, or asbestos.

D. Where other criteria are met, Contractor shall give preference to products that:
   1. If used on interior, have lower emissions, as defined in Section 016116.
   2. If wet-applied, have lower VOC content, as defined in Section 016116.

2.3 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.4 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.1 SUBSTITUTION LIMITATIONS

A. See Section 012500 - Substitution Procedures.

3.2 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.

H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.3 STORAGE AND PROTECTION

A. Provide protection of stored materials and products against theft, casualty, or deterioration.

B. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 017419.

C. Store and protect products in accordance with manufacturers' instructions.

D. Store with seals and labels intact and legible.

E. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

F. For exterior storage of fabricated products, place on sloped supports above ground.

G. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.

H. Comply with manufacturer's warranty conditions, if any.

I. Do not store products directly on the ground.

J. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

K. Prevent contact with material that may cause corrosion, discoloration, or staining.

L. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

M. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 017000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Requirements for alterations work, including selective demolition, _____.

C. Pre-installation meetings.

D. Cutting and patching.

E. Surveying for laying out the work.

F. Cleaning and protection.

G. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.2 RELATED REQUIREMENTS

A. Section 011000 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.

B. Section 013000 - Administrative Requirements: Submittals procedures, Electronic document submittal service.

C. Section 014000 - Quality Requirements: Testing and inspection procedures.

D. Section 017419 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.

E. Section 017800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.

F. Section 078400 - Firestopping.

G. Individual Product Specification Sections:
   1. Advance notification to other sections of openings required in work of those sections.

1.3 REFERENCE STANDARDS

1.4 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
   1. On request, submit documentation verifying accuracy of survey work.
   2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
   3. Submit surveys and survey logs for the project record.

C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate Contractor.

D. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.5 QUALIFICATIONS

A. For demolition work, employ a firm specializing in the type of work required.
   1. Minimum of three years of documented experience.

B. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,

1.6 PROJECT CONDITIONS

A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.

C. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
   1. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.

D. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.7 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Notify affected utility companies and comply with their requirements.

C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of work of separate sections.

G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.1 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 016000 - Product Requirements.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.3 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.

B. Require attendance of parties directly affecting, or affected by, work of the specific section.

C. Notify Architect four days in advance of meeting date.

D. Prepare agenda and preside at meeting:
1. Review conditions of examination, preparation and installation procedures.
2. Review coordination with related work.

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.4 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Architect of any discrepancies discovered.

C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.

F. Utilize recognized engineering survey practices.

G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations; and _____.

2. Grid or axis for structures.
3. Building foundation, column locations, ground floor elevations, and _____.

H. Periodically verify layouts by same means.

I. Maintain a complete and accurate log of control and survey work as it progresses.

3.5 GENERAL INSTALLATION REQUIREMENTS

A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.

B. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

F. Make neat transitions between different surfaces, maintaining texture and appearance.

3.6 ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
1. Verify that construction and utility arrangements are as indicated.
2. Report discrepancies to Architect before disturbing existing installation.
3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.

C. Remove existing work as indicated and as required to accomplish new work.
1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
2. Remove items indicated on drawings.
3. Relocate items indicated on drawings.
4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.

D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
   2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
   3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
      a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
      b. Provide temporary connections as required to maintain existing systems in service.
   4. Verify that abandoned services serve only abandoned facilities.
   5. Remove abandoned pipe, ducts, conduits, and equipment , including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.

E. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.

F. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
   1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
   2. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.

G. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

H. Refinish existing surfaces as indicated:
   1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
   2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.

I. Clean existing systems and equipment.

J. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

K. Do not begin new construction in alterations areas before demolition is complete.

L. Comply with all other applicable requirements of this section.

3.7 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. See Alterations article above for additional requirements.

C. Perform whatever cutting and patching is necessary to:
1. Complete the work.
2. Fit products together to integrate with other work.
3. Provide openings for penetration of mechanical, electrical, and other services.
4. Match work that has been cut to adjacent work.
5. Repair areas adjacent to cuts to required condition.
6. Repair new work damaged by subsequent work.
7. Remove samples of installed work for testing when requested.
8. Remove and replace defective and non-complying work.

D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

G. Restore work with new products in accordance with requirements of Contract Documents.

H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 078400, to full thickness of the penetrated element.

J. Patching:
1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
2. Match color, texture, and appearance.
3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.8 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.9 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Protect work from spilled liquids. If work is exposed to spilled liquids, immediately remove protective coverings, dry out work, and replace protective coverings.

G. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

H. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.10 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.11 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.
   1. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.

B. Use cleaning materials that are nonhazardous.

C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

F. Clean filters of operating equipment.

G. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, drainage systems, and _____.

H. Clean site; sweep paved areas, rake clean landscaped surfaces.

I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

J. Restore all lawns damaged from and during contruction. refer to section 329219 Seeding.

K. Restore all asphalt paving damaged during construction. sawcut clean edge before installing new paving. New paving to be same depth and finish as existing.

L. Restore all concrete paving and sidewalks damaged during construction. sawcut clean edge before installing new paving. New paving/sidewalk to be same depth, width and finish as existing.

M.

3.12 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
1. Provide copies to Architect and Owner.

B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.

C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.

D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.

E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.

H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

END OF SECTION

SECTION 017800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Project record documents.

B. Operation and maintenance data.

C. Warranties and bonds.

1.2 RELATED REQUIREMENTS

A. Section 013000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

B. Section 017000 - Execution and Closeout Requirements: Contract closeout procedures.

C. Individual Product Sections: Specific requirements for operation and maintenance data.

D. Individual Product Sections: Warranties required for specific products or Work.

1.3 SUBMITTALS

A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.

B. Operation and Maintenance Data:
   1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
   3. Submit two sets of revised final documents in final form within 10 days after final inspection.

C. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.
   5. Reviewed shop drawings, product data, and samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Field changes of dimension and detail.
   2. Details not on original Contract drawings.

3.2 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.3 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:

1. Product data, with catalog number, size, composition, and color and texture designations.
2. Information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

D. Additional information as specified in individual product specification sections.

E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.4 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

B. Where systems involve more than one specification section, provide separate tabbed divider for each system.

C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.

F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.

H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.

I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

3.5 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

END OF SECTION

Section 020800
Asbestos Abatement

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Prepared by:



1.0 Introduction:

The work involves the removal of the two exterior non-friable asbestos Transite (asbestos cement) panels used to make the enclosure for the exhaust ducts (see attached photo) prior to replacement of the roof.

The work area near the ducts must be isolated using barrier tape and signs (no containments are required). The ground adjacent to the roofing area with asbestos must be covered with 6 mil poly taped securely to the base of building under the roof areas to catch any debris as it is removed from the roofs. After lightly misting the surfaces, the Transite panels can through disassembly using carpenter tools or other none dust generating methods, and the waste shall be placed directly into asbestos labeled 6 mil poly waste bags (or wrapped with 2 layers of 6mil poly taped at the seems and lowered to the ground. Any debris on the roof or adjacent ground must be HEPA vacuumed after each removal.

The work must be done when school is not in session and the building is unoccupied. Workers must wear disposable full body Tyvek Coveralls.

The waste must be removed and wrapped in two layers of 6 mil poly or placed in double 6 mil poly asbestos waste bags and labeled as asbestos waste. After the roof removal passes a visual inspection by the licensed Asbestos Project Monitor, the poly must be cleaned and folded in on itself and disposed of asbestos waste. All debris and plastic must be double bagged in poly asbestos labeled waste bags.

All waste must be lowered to the ground. No visible emissions are allowed.

All waste must then be transferred to a 6 mil poly double lined waste container or waste accumulation site that can be secured at night.

The ground under the poly must be inspected by a licensed Asbestos Project Monitor and the contractor must clean the ground until it passes a visual inspection that it is free of suspect debris.

2.0 General Procedures for Preparation of the Work Area

- All vents and air ducts and other opening inside the regulated work areas must be covered and sealed with two layers of 6-mil polyethylene and duct tape.
- The work area must be cordoned of with hazard warning barrier tape.

3.0 Engineering Controls

- Engineering controls must include the use of HEPA vacuums and water.

4.0 Work Procedures:

- Use wetting of asbestos containing materials before removal begins and keeping the material wet while removal is in progress and until it is bagged or wrapped for disposal. **A commercial grade wetting agent must be used (sprayed with hand sprayers or air less sprayers) for wetting all material before removal. See SDS for the wetting agent description.**
- Use water to keep the materials in moist condition prior to removal, using equipment capable of providing a fine spray mist, in order to reduce airborne fiber concentrations when the material is disturbed
- Establish regulated area
- Abatement Contractor shall transport asbestos-containing waste bags to the waste hauling vehicle.
- Once the asbestos containing materials are removed, detail clean the work area to the point of no visible debris.
- The Abatement Company must notify the owner and GC for a final visual inspection.

- Evidence of visible debris and dusts must require additional clean up.
- Once the Asbestos Inspector is satisfied that the work area is clean the contractor's competent person must remove the plastic on the ground and barrier tape.

5.0 Air Monitoring & Final Clearance Samples Asbestos

- The purpose of the air monitoring must be to detect possible release of asbestos fibers emanating from the work area.
- Area air samples for asbestos must be collected on a daily bases during the abatement phase.
- The air samples must be collected using 25 millimeter (mm) cassettes, with a cellulose ester membrane size of 0.8 micrometer (um).
- If any area air sample exceed the EPA clearance criteria of 0.01 fibers per cubic centimeter of air (f/cc), analysis by Phase Contrast Microscopy (PCM), during the asbestos removal, the work must be stopped and the Project Industrial Hygienist must determine what action shall be taken to reduce the airborne fiber concentration to / or below 0.01f/cc Post asbestos abatement air sampling must be conducted using high volume pumps with the flow rate between 8 to 16 liters per minute, and the sample volume shall be no less than 1200 liters.
- All collected air samples must be analyzed using the National Institute for Occupational Safety and Health (NIOSH) Method 7400, "A" counting rules.
- The abatement contractor shall be responsible for any personal air sampling.

The CT licensed Asbestos Project Monitor (from Mystic Air Quality) must conduct area air sampling outside of the containment during all abatement activities.

6.0 Personal Protection Equipment

- The Contractor must provide all PPE including respirators, and disposable coveralls to all employees assigned to work in this containment.
- The Contractor shall enforce and follow good personal hygiene practices during the abatement of hazardous materials.
- These practices must include but not be limited to the following:
- No eating, drinking, smoking or applying cosmetics in the work area.

7.0 Signs

- Warning signs that demarcate the regulated area shall be provided and displayed around the area.
- Provide labeling in accordance with U.S. OSHA requirements.
- Provide the required signs, labels, warnings, or posted instructions for containers used to transport contaminated material to the landfill.
- Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area.
- Provide labels and affix to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos.
- Warning Sign Format: Vertical format conforming to 29 CFR 1926.1101: The warning signs required by paragraph (k)(7) of this section shall bear the following information.
  DANGER
  ASBESTOS
  MAY CAUSE CANCER
  CAUSES DAMAGE TO LUNGS
  AUTHORIZED PERSONNEL ONLY
- Warning Label Format: Provide labels that comply with 29 CFR 1926.1101 of sufficient size to be clearly legible, displaying the following legend:

  DANGER
  ASBESTOS
  CANCER AND LUNG DISEASE HAZARD
  AUTHORIZED PERSONNEL ONLY

8.0 Asbestos waste Handling

- Ensure that polyethylene bags are sealed air-tight. All bags shall be wet cleaned prior to removing them from the equipment decontamination unit.
- Ensure all disposal containers are properly labeled according to 8 CCR 1529, 5194 (HAZCOM), 49 CFR 171-179 (USDOT), 40 CFR 61 Subpart M (NESHAP), and any local regulations and state regulations as required by this specification.

- It is the responsibility of the abatement Contractor to determine current waste handling, labeling, transportation and disposal regulations for the work site and for each waste disposal landfill.
- Abatement Contractor must comply fully with these regulations, local, state, and federal regulations and provide documentation of the same.
- Comply with all current local, state and federal codes relating to waste water release.
- Asbestos-containing waste that is properly labeled and double-bagged may be temporarily stored in unoccupied areas approved by the Owner.
- Waste is not to remain in temporary storage area for longer than four (4) days before final load-out of materials.
- All asbestos waste shall be double-wrapped prior to transport from the work area.
- All vehicles used to transport waste must be registered with the Department of Toxic Substance Control and display the proper registration and expiration stickers.
- Contractor shall provide at minimum one (1) day advance notification to the Owner when signatures are required on manifest/manifests.
- Contractor shall ensure that the Hazardous Waste Manifest is correctly filled out.
- Contractor shall give the appropriate copies to the Owner and shall also instruct the Owner in writing that they must send the appropriate copy to the Department of Health Services.

9.0 Asbestos waste disposal

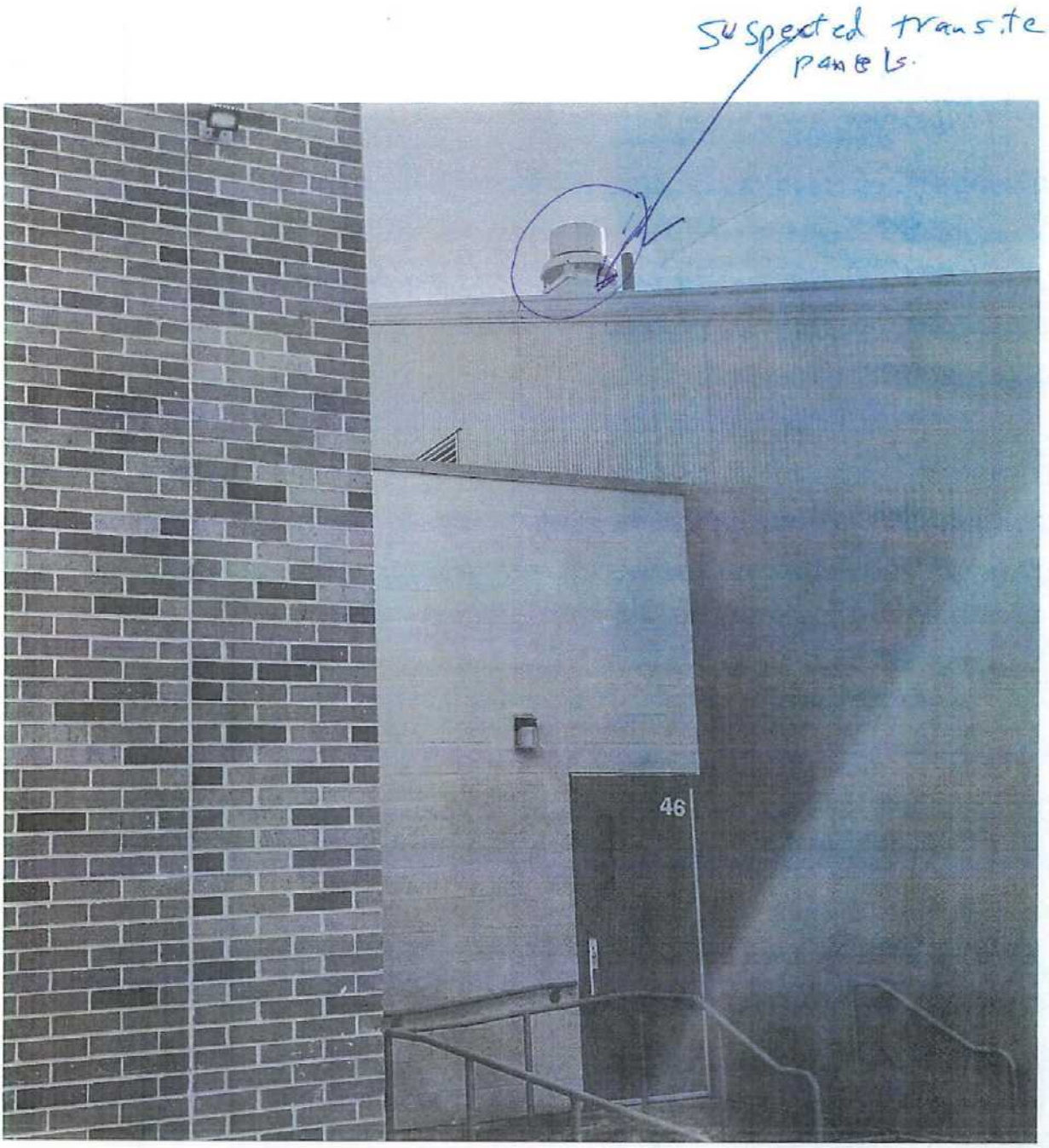
We must be responsible for preparation of any manifest required by Federal or State regulations to track the movement of hazardous waste. We must use the Owner's EPA Identification Number for all manifests. Hazardous waste manifests must be completed and signed by the contractor.

The asbestos materials must be packaged in impermeable dust tight containers (i.e. heavy duty six (6) mil plastic bags). All containers must be labeled in large legible letter:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

The asbestos waste must not be transported with any other materials.

The waste must be transported in a manner that must not permit release.


Suspected transite panels.
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SECTION 024100
DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

1.2 RELATED REQUIREMENTS

A. Section 011000 - Summary: Limitations on Contractor's use of site and premises.

B. Section 011000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.

C. Section 015000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.

D. Section 016000 - Product Requirements: Handling and storage of items removed for salvage and relocation.

E. Section 017000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

F. Section 070150.19 - Preparation for Re-Roofing: Removal of existing roofing, roof insulation, flashing, trim, and accessories.

1.3 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 for Re-installation : Detach or dismantle items from existing construction in a manner to prevent damage. Clean, package, label and store securely on site or as directred by Owner, salvaged items in ready-for-reuse condition. Clean and Prepare for re-use and reinstasll where indicated.

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.

F. Protect: Cover, surrond, isolate existing items, systems, materials and finishes to reamain in place during construction to prevent damage from construction and contractori's activites during construction. Contractor responsible for damage due to inadequate protection measures. Refer to section 015000 Temporary Facilities and Controls for additional information.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.1 DEMOLITION

A. Remove other items indicated, for salvage and relocation.

3.2 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   3. Provide, erect, and maintain temporary barriers and security devices.
   4. 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.

B. Do not begin removal until receipt of notification to proceed from Owner.

C. Do not begin removal until built elements to be salvaged or relocated have been removed.

D. 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.

E. Hazardous Materials:
   1. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.

3.3 EXISTING UTILITIES

A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.4 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.
   1. Verify construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Remove existing work as indicated and required to accomplish new work.
   1. Remove items indicated on drawings.

C. Services including, but not limited to, HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications: Remove existing systems and equipment as indicated.
   1. Maintain existing active systems to remain in operation, and maintain access to equipment and operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
   3. Verify that abandoned services serve only abandoned facilities before removal.
   4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings. Remove back to source of supply where possible, otherwise cap stub and tag with identification.

D. Protect existing work to remain.
   1. Prevent movement of structure. Provide shoring and bracing as required.
   2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.

3. Repair adjacent construction and finishes damaged during removal work.
4. Patch to match new work.

3.5 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.

D. No Burning to dispose of waste and debris.

END OF SECTION 024100

SECTION 051200
STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Structural steel.
   2. Shrinkage-resistant grout.

1.2 DEFINITIONS

A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in ANSI/AISC 303.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data:
   1. Structural-steel materials.
   2. High-strength, bolt-nut-washer assemblies.
   3. Anchor rods.
   4. Threaded rods.
   5. Shop primer.
   6. Galvanized-steel primer.
   7. Etching cleaner.
   8. Galvanized repair paint.
   9. Shrinkage-resistant grout.

B. Shop Drawings: Show fabrication of structural-steel components.

C. Delegated Design Submittal: For structural-steel connections indicated on Drawings to comply with design loads, include analysis data signed and sealed by the qualified professional engineer registered in the State of Connecticut responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Welding certificates.

B. Field quality-control reports.

1.6 QUALITY ASSURANCE

A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category BU or is accredited by the IAS Fabricator Inspection Program for Structural Steel (Acceptance Criteria 172).

B. Installer Qualifications: A qualified Installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category ACSE .

C. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.1/D1.1M.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with applicable provisions of the following specifications and documents:
   1. ANSI/AISC 303.
   2. ANSI/AISC 360.
   3. RCSC's "Specification for Structural Joints Using High-Strength Bolts."

B. Connection Design Information:
   1. Option 1: Connection designs have been completed and connections indicated on the Drawings.
   2. Option 2: Fabricator's experienced steel detailer shall select or complete connections in accordance with ANSI/AISC 303.
      a. Select and complete connections using schematic details indicated and ANSI/AISC 360.
      b. Use Allowable Stress Design; data are given at service-load level.
   3. Option 3 and 3A: Design connections in accordance with ANSI/AISC 303 by fabricator's qualified professional engineer. Member reinforcement at connections is indicated on Drawings.
      a. Use Allowable Stress Design; data are given at service-load level.
   4. Option 3 and 3B: Design connections and final configuration of member reinforcement at connections in accordance with ANSI/AISC 303 by fabricator's qualified professional engineer.
      a. Use Allowable Stress Design; data are given at service-load level.

C. Moment Connections: Type FR, fully restrained.

2.2 STRUCTURAL-STEEL MATERIALS

A. Rolled Shapes and Plates: Per drawings.

B. Welding Electrodes: Comply with AWS requirements.

C. All new steel from initial materials sourcing through the applications of all coating, including all misc. pieces and connectors must occur in the United States of America.

2.3 BOLTS AND CONNECTORS

A. High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers; all with plain finish.
   1. Direct-Tension Indicators: ASTM F959/F959M, Type 325-1, compressible-washer type with plain finish.

B. Zinc-Coated High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers.
   1. Finish: Hot-dip zinc coating .
   2. Direct-Tension Indicators: ASTM F959/F959M, Type 325-1, compressible-washer type with mechanically deposited zinc coating finish.

C. Shear Stud Connectors: ASTM A108, AISI C-1015 through C-1020, headed-stud type, cold-finished carbon steel; AWS D1.1/D1.1M, Type B.

2.4 RODS

A. Unheaded Anchor Rods: ASTM F1554, Grade 36 .
   1. Configuration: Hooked.
   2. Finish: Hot-dip zinc coating, ASTM A153/A153M, Class C .

B. Headed Anchor Rods: ASTM F1554, Grade 36 , straight.
   1. Finish: Hot-dip zinc coating, ASTM A153/A153M, Class C .

C. Threaded Rods: ASTM A36/A36M .
   1. Finish: Plain Hot-dip zinc coating, ASTM A153/A153M, Class C .

2.5 PRIMER

A. Steel Primer:
   1. Comply with Section 09 96 00 "High Performance Coatings."
   2. Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.

B. Galvanized-Steel Primer: MPI#26 MPI#80, MPI#134.
   1. Etching Cleaner: MPI#25, for galvanized steel.
   2. Galvanizing Repair Paint: MPI#18, MPI#19, or SSPC-Paint 20 ASTM A780/A780M.

2.6 SHRINKAGE-RESISTANT GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C1107/C1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2.7 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate in accordance with ANSI/AISC 303 and to ANSI/AISC 360.

B. Shear Stud Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Weld using automatic end welding of headed-stud shear connectors in accordance with AWS D1.1/D1.1M and manufacturer's written instructions.

2.8 SHOP CONNECTIONS

A. High-Strength Bolts: Shop install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint specified.
   1. Joint Type: Pretensioned.

B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

2.9 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel in accordance with ASTM A123/A123M.
   1. Fill vent and drain holes that are exposed in the finished Work unless they function as weep holes, by plugging with zinc solder and filing off smooth.

2.10 SHOP PRIMING

A. Shop prime steel surfaces, except the following:
   1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
   2. Surfaces to be field welded.
   3. Surfaces to receive sprayed fire-resistive materials (applied fireproofing).
   4. Galvanized surfaces unless indicated to be painted.

B. Surface Preparation of Steel: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces in accordance with the following specifications and standards:
   1. SSPC-SP 3.

C. Surface Preparation of Galvanized Steel: Prepare galvanized-steel surfaces for shop priming by thoroughly cleaning steel of grease, dirt, oil, flux, and other foreign matter, and treating with etching cleaner or in accordance with SSPC-SP 16.

D. Priming: Immediately after surface preparation, apply primer in accordance with manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and in accordance with ANSI/AISC 303 and ANSI/AISC 360.

B. Baseplates Bearing Plates and Leveling Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
   1. Set plates for structural members on wedges, shims, or setting nuts as required.

2. Weld plate washers to top of baseplate.
3. Pretension anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
4. Promptly pack shrinkage-resistant grout solidly between bearing surfaces and plates, so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for grouting.

C. Maintain erection tolerances of structural steel within ANSI/AISC 303.

3.3 FIELD CONNECTIONS

A. High-Strength Bolts: Install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt and joint type specified.
1. Joint Type: Pretensioned .

B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
1. Comply with ANSI/AISC 303 and ANSI/AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.

3.4 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a special inspector to perform the following special inspections:
1. Verify structural-steel materials and inspect steel frame joint details.
2. Verify weld materials and inspect welds.
3. Verify connection materials and inspect high-strength bolted connections.

B. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
1. Bolted Connections: Inspect bolted connections in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts."
2. Welded Connections: Visually inspect field welds in accordance with AWS D1.1/D1.1M.
a. In addition to visual inspection, test and inspect field welds in accordance with AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:
1) Liquid Penetrant Inspection: ASTM E165/E165M.
2) Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
3) Ultrasonic Inspection: ASTM E164.
4) Radiographic Inspection: ASTM E94/E94M.

END OF SECTION 051200

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SECTION 05 31 01 - Corrosion Resistant Steel Roof Deck System

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. This Section includes the following:

1. Metal roof deck (corrosion resistant) - natatorium areas
2. Special 316 Grade corrosion resistant Stainless-Steel Fasteners.
3. Flexible rubber air & vapor roof deck barriers and blocks where required
4. Acoustical Sound Batts wrapped in thin plastic
5. 25 Year Manufacturer's "Combined Roof Deck with SSMR Metal Roof Enclosure Warrant". Refer to Section 074100 - Metal Roofing Panels.

B. Related Sections: The following Sections contain requirements that relate to this Section:
1. Division 05 Section "Structural Steel Framing" for shop-welded shear connectors.
2. Division 07 Section "Metal Roofing Panels" - Combined Warranty
3. Division 07 Section "Polyisocyanurate Foam Insulation"
4. Division 09 Section 099600 "High-Performance Coating- Metal Deck Over Natatorium"

1.3 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 01 Specification Sections.

B. Product data for each type of deck, corrosion resistant 316 Stainless Steel fasteners.

C. Shop drawings indicating panel layout and types of deck panels, anchorage details, accessories, and attachments to other construction. Shop Drawings shall show the fastening pattern in clear detail (graphic). Submit two sets of shop drawings completely checked and marked by the contractor before submitting them for review.

D. Shop drawings must be stamped and submitted by a Professional Engineer registered in the state of Connecticut to assure products comply with specified requirements

E. Product test reports from qualified independent testing agencies evidencing compliance with requirements based on comprehensive testing:
1. Mechanical fasteners.
2. Acoustical deck performance.

F. Research reports or evaluation reports of the model code organization acceptable to authorities having jurisdiction that steel deck's compliance with the building code in effect for the Project.

1.4 QUALITY ASSURANCE

A. Codes and Standards: Comply with applicable provisions of the following specifications:
1. ANSI/AISI S100-16 w/S2-20, North American Specification for the Design of Cold-Formed Steel Structural Members
2. ANSI/AISI S310-20, North America Standard for the Design of Profiled Steel Diaphragm Panels
3. ANSI/SDI RD-2017 Standard for Roof Deck

B. Installer Qualifications: Engage an experienced installer approved by the manufacturer who has completed installation of steel deck similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance. Engage an experienced installer approved by the manufacturer who has completed installation of metal roof deck systems.

C. Engage the Manufacturer's Field Representative to conduct required periodic inspections of work in progress as described herein and shall furnish written documentation of all such inspections.

D. Manufacturer shall provide the project Owner with a written statement and provide periodic site inspections that confirm the project is being constructed as in conformance with the roof deck system specifications, by an experienced, full-time employee of the company.

E. FM Listing: Provide steel roof deck evaluated by Factory Mutual and listed in Factory Mutual "Approval Guide" for Class I fire rating and windstorm ratings for the geographic area, however, minimum Class 1-90.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage,

and handling.

B. Store materials to permit easy access for inspection and identification.

C. Protect deck and packaged materials from erosion and deterioration, stack in such a manner that any surface water will properly drain. Protect with a waterproof covering and ventilate to avoid condensation. Cover in such a way that rain will not fall on the material, but air will flow freely through the stack, if materials are to be stored for an extended period of time. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials on structures as directed.

D. Coordinate delivery of the roof components with the installation of the roof deck system so they arrive in sufficient time for installation but also with minimum delay between arrival and installation. Store under cover off the ground in a protected location

E. Protect galvanized and primed/painted surfaces from moisture and corrosion during shipment and storage. Keep galvanized surfaces separated and do not allow surfaces to contact each other.

F. Protect and ventilate acoustical cellular roof deck with factory-installed insulation to maintain insulation free of moisture.

1.6 WARRANTY

A. Upon completion of the work described in this section, the Roofing System supplier shall deliver a 35 YEAR MANUFACTURER'S ROOF and ROOF DECK ENCLOSURE WARRANTY for the metal roof deck and roof system described in Section 074113: Metal Roof Panels.

B. The Roof Deck supplier will be required to review product information Section: 099600 "High-Performance Coating- Metal Deck Over Natatorium". Upon approval of these products and their installations supplier will execute the 35-year warranty

C. The roof deck system installer will provide a two-year installation warranty for the complete roof deck system described herein

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. AISI Specifications: Comply with the calculated structural characteristics of steel deck in accordance with AISI S100.

B. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

   a. Indicate design designations from UL's "Fire Resistance Directory" or from listings of another qualified testing agency.

C. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

2.1 STEEL ROOF DECK

A. Roof Deck: Subject to compliance with requirements, provide:
1.50" BA cellular roof deck G90 galvanized. Prior to fabrication of the panels, both surfaces (top and bottom) of the panel will be processed through a continuous coil coat line degreased and cleaned. Then followed by a chemical conversion coating and epoxy primer (epoxy primer will be compatible with the two-coat field applied high performance finish coating provided by others) coil coated top and bottom sides. Roof deck manufacturers will be reviewed for approval based upon meeting the performance requirements of this specification. Submitted manufacturer must include published literature for the complete roof deck system as specified herein with data sheets equal to or exceeding performance of the specified roof deck system and must comply with the following:

1. Overall, Roof Deck System Description: G90 Galvanized steel deck with a baked on coil coated primer over top and bottom of the panels. Primer must be compatible with the High-Performance Coating specified in Section 099600 –"High Performance Coatings." 316 Stainless Steel corrosion resistant fasteners (deck to support, deck to deck and roof board to deck)
2. Roof Deck:
   a. Fabricate panels to comply with ANSI/SDI RD.
   b. Galvanized-Steel Sheet: ASTM A653, Structural Steel (SS), Grade as indicated on structural drawings, G 90 zinc coated.
      1) Design Uncoated-Steel Thickness: As required to achieve the diaphragm design and meet span dimensions without exceeding deck deflection with screw attachment; however, minimum 20/20 gauge.
      2) Steel Deck Profile: As indicated on drawings.
      3) Steel Deck Profile Depth: 1.50 inches
      4) Noise Reduction Coefficient: 0.75 minimum
      5) Span Condition: As indicated on drawings.

6) Side Joints: Side joints, overlapped, nested or interlocked.
7) End Laps: Butted, as recommended by the roof deck manufacturer. However, 3 inches minimum overlap, 1-1/2 inches bearing on each side of support.

B. Mechanical Fasteners, Roof Deck to Structural Steel:
1. Powder Actuated Mechanical Fasteners:
a. Material: AISI 1070 modified
b. Hardness: Minimum Rockwell Hardness C 54.5
c. Strength: Minimum tensile strength 285 ksi; minimum shear strength 175 ksi
d. Design and Manufacture: Knurled shank with forged ballistic point. Manufacturing process shall ensure steel ductility and prevent development of hydrogen embrittlement.
e. Washers: Minimum 0.591 in. steel washers
f. Corrosion Resistance: 5 micron zinc electroplated in accordance with ASTM B 633 SC1 Type III
g. Design Requirements:
i. ICC-ES AC43 or SDI method for diaphragm shear strength and stiffness
ii. UL fire classification
h. Approved Types:
i. Hilti X-ENP-19 L15
ii. Approved Equal.

C. Sidelap Connectors
a. Corrosion resistant 316 Grade Stainless Steel Fasteners (deck to support, deck to deck and roof board to deck), design, size, and length as recommended by the roof deck manufacturer to securely fasten intended mating components and that will meet required loads including lateral and uplift.

D. Miscellaneous Roof Deck Accessories: Air blocks at perimeter edges and roof openings where required.

E. Plastic Wrapped Acoustical Sound Batts. Factory installed and formed to the deck flutes.

2.2 ACCESSORIES

A. Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.
B. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, not less than 0.0358-inch design uncoated thickness, of same material, grade, and finish as deck; of profile indicated or required for application.
C. Column Closures, End Closures, Z-Closures, and Cover Plates: Steel sheet, of same material,

grade, finish, and thickness as deck unless otherwise indicated.

B. Acceptance and approval of the self adhering air and vapor barrier applied with the manufacturer's approved primer.

C. Galvanized Touch-Up
   1. Galvanizing Repair Paint: Galvilite Cold Galvanizing Repair Compound, Esterified Epoxy Based Zinc Rich Metal Primer by ZRC Worldwide or a reviewed substitute used to repair all damaged galvanizing. As a minimum, galvanizing repair shall comply with the following:
      a. Specifications: Fed. Spec. DOD-P-21035A and Mil Spec. Mil-P-26915A
      b. Registration: ISO 9001
      c. VOC Compliant
      d. Zinc in Dried Film: 95 percent, ASTM D520 Type III
      e. Percent Solids: 52 percent by volume.
      f. Pencil Hardness: 2H per ASTM D3363
      g. UL: Recognized by UL as being equivalent to hot dipped galvanized
      h. Impact Resistance: Greater than 30 inch-lbs. per ASTM D2794
      i. Abrasion Resistance: 11.5 liters per dry mil when tested at 3 mils DFT per ASTM D98
      j. Dry Time to Touch: 20-30 minutes at 1.5 mils DFT
      k. Recoat Time: 24-48 hours
   2. Painted Surface Touch-up: Corrosion resistant as recommended by the primer manufacturer and steel deck manufacturer for intended purpose and compatible with paints and surfaces to be touched up.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting framing and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance of steel deck.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. Conduit and Piping: Ensure that there is no conduit, piping, or other building components, elements, and materials that are or will be located directly between the bottom side of the installed metal deck and its supporting structure. Roof system fasteners may not penetrate or otherwise damage conduit, piping, or other building components, elements, and materials directly below the roof during installation of the roof system. Additionally, roof system fasteners in contact with but not penetrating conduit, piping, or other building components, elements, and materials may cause wear to these items as the structure moves or create

conditions for galvanic action.

3.2 PREPARATION

A. Locate decking bundles to prevent overloading of supporting members.
B. Marking: Mark steel roof deck at the centerline of supporting steel members to prevent weld burn through or mechanical fastener punch through. Use a chalk line or indelible marker.
C. Test Fastenings:
    a. Mechanical Fasteners: Gauge powder-actuated tool systems to the base material steel type, steel deck type and thickness prior to final installation. Confirm appropriate power regulation and powder-actuated cartridge type prior to final installation.

3.3 INSTALLATION, GENERAL -

A. Install deck panels and accessories in accordance with SDI RD, manufacturer's written instructions, and requirements in this Section.
B. Secure steel roof deck to supporting steel framing with mechanical fasteners. Install mechanical fasteners at the spacing and pattern as shown on the Drawings. Welding is not permitted.
C. Secure steel roof deck sidelap connectors at the spacing and pattern as shown on the Drawings with special 316 Grade Stainless Steel Fasteners. Welding is not permitted.

D. Install temporary shoring before placing roof panels when required to meet deflection limitations.

E. Place roof panels on adjacent and supporting framing members and adjust to final position with ends accurately aligned and bearing on supporting framing before being permanently fastened. Do not stretch or contract side lap interlocks.

F. Align cellular deck panels over full length of cell run and align cells at ends of abutting panels.

G. Place roof deck panels flat and square and mechanically fasten to supporting framing without warp or deflection. Flutes shall run straight, true, and parallel to walls so that roof insulation joints will lay straight with a minimum 3/4 inch full edge bearing on flutes. Notify the Architect if the flutes will not run straight.

H. Cut and neatly fit roof panels and accessories around openings and other work projecting through or adjacent to the decking.

I. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of roof decking, and support of other work.

J. End Bearing: Install roof deck ends over supporting framing with a minimum end bearing of 2 inches past the centerline of the supporting members.

K. Tolerances: Ribs aligned to a tolerance of 1/4 inch per foot.

L. Drainage Requirements: The installed roof deck shall not have any deflections that exceed 1 inch in 10 feet. The General Contractor shall report, to the Architect, all suspicious areas in the roof deck that may contribute to ponding or standing water.

3.4 ROOF DECK INSTALLATION

A. Installation Criteria: In addition to UL and SDI requirements, installed deck shall conform to the following requirements: Do not weld roof deck.
1. Remove all mud and dirt from roof decking prior to erecting. There shall be no visible mud, dirt, or rust streaks on the roof deck after erection has been completed.
2. End laps are lapped 3 inches and equally spaced over supports.
3. Roof deck flutes are straight and parallel.
4. All 316 stainless steel sidelap screws are tight, straight, and fully seated.
5. The roof deck is fastened securely and does not wobble, shake, twist, when walked on.
6. Top Flanges have no concavity or convexity in excess of 1/8 inch across any three adjacent flanges.
7. Roof deck is secured to each supporting member with mechanical fasteners at the spacing and pattern as shown on the Drawings.
8. The roof deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/4 inch out of plane.
9. Welds, not permitted in the indoor aquatic area.
10. Slope is the proper direction and proper amount.

B. Installation
1. Mechanically-fasten roof deck panels to steel supporting members at the spacing and pattern as shown on the Drawings, but no greater than as follows:
a. To typical supporting members: No greater than 12 inches oc with a minimum of 4 fasteners in each unit at each support
b. To perimeter and ridge supporting members:
i. Deck ends: No greater than 6 inches oc
ii. Deck sides: No greater than 16 inches oc.
2. Side Lap Fastening:
a. Secure roof deck side laps with side lap fasteners at the spacing and pattern as

shown on the Drawings, but no greater than 3 side lap fasteners spaced equally between supports.

3. Miscellaneous Roof Deck Accessories: Install ridge and valley plates, finish strips, sump pans, cover plates, end closures, and reinforcing channels according to deck manufacturer's recommendations. Mechanically attach to substrate to provide a complete deck installation.
4. Flexible Closure Strips: Install flexible closure strips over partitions, walls, and where indicated. Install with adhesive according to manufacturer's instructions to ensure complete closure.

C. Testing Agency: Responsibility for an independent testing agency is defined in Section 014000 – Quality Requirements. Not to be paid for by the deck supplier or installer.
1. Testing and Inspection Agency shall inspect for total compliance with SDI and FM requirements for specified wind uplift requirements.

3.5 REPAIRS AND PROTECTION

A. Mechanical Fasteners: Replace or supplement under-driven and over driven fasteners with adjacent, properly installed fasteners.

B. Touchup Painting: clean and touch up scarred areas, and rust spots on both surfaces of installed roof deck panels.
1. Touch up damaged, scarred exposed steel, cut edges, and otherwise disturbed surfaces with touch up paint recommended by the primer and the roof deck manufacturers.
2. Welding is not permitted on the roof deck without written permission from the Architect. If welding is performed on the roof deck, remove all traces of weld spatter, flux, and damaged primer, and touch up thoroughly with galvanizing repair. Fill all burn-throughs with a screw and galvanized plate that are properly primed. Excessive burn-throughs will justify replacement of deck. Fasten deck with approved screw at each burn-through.
3. Plug all open and vacant screw holes and other openings.

C. Provide final protection and maintain conditions to ensure roof decking is without damage or deterioration at time of Substantial Completion.

3.6 CLEANING

A. Upon completion of the installation, inspect and broom clean the surface of all construction debris. Roofing work should commence promptly at the completion of the Perform-A-Deck material installation.

3.7 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Tests and Inspections:

1. Special inspections for cold-formed steel floor and roof deck in accordance with quality-assurance inspection requirements of SDI QA/QC.
2. Steel decking will be considered defective if it does not pass tests and inspections.
3. Mechanical Fasteners: Examine fastener placement location and washer condition. Ensure steel roof deck is clamped to the supporting steel framing.

C. Prepare test and inspection reports.

3.7 FINAL INSPECTION

A. Final Inspection: Prior to the application of the roof covering, inspect completed portions of the assembly and correct any deficiencies and/or damage to the surface.

END OF SECTION 053101

SECTION 061000
ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The provisions of the Contract, the General Conditions, the Supplementary Conditions and other Division I Specification Sections, apply to the work in this section.

1.2 RELATED SECTIONS

A. Drawing and general provisions of the Contract, including General Supplementary Conditions and Division 1 Specification Sections, Apply to this Section.

B. Section 072200 - Roof Deck Insulation

C. Section 074100 - Standing Seam Metal Roofing Panels

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM)

B. ASTM C-209 Water Absorption, % by Volume

C. ASTM C-1289, Type V

D. ASTM D-2126-Dimensional Stability Change

E. ASTM D-16121 Compression Resistance

F. ASTM E96 Moisture Vapor Transmission

G. ASTM E-108 Class A fire resistance rating

1.4 Federal Specification

A. HH-1-1972/Gen and HH-1-1972/2

1.5 DELIVERY, STORAGE AND HANDLING

A. Time delivery and installation of carpentry work to avoid delaying other trades whose work is dependent on or affected by the carpentry work.

B. Keep materials dry during delivery

C. Store lumber, plywood and insulated nail board in stacks with provisions for air circulation within stacks. Protect bottom of stacks against contact with damp or wet surfaces.

D. Protect exposed materials against water and wind. Remove damaged or unsuitable material from the job site.

1.6 QUALITY ASSURANCE

A. Comply with governing codes & regulations

B. Use experienced installers who have a minimum of five (5) years experience.

C. Lumber Standards: American Softwood Lumber Standard PS 20-70 by the U.S. Department of Commerce.

D. Plywood Standards: U.S. product Standard PSI-74/ANSI A 199.1 or latest APA Performance Standards for American Plywood Association.

E. Factory Marking: Mark each piece of lumber or plywood to indicate type, grade, agency providing inspection service.

F. Size and Shape: Dress lumber 4 sides (S4S) and work to shapes and patterns shown. Nominal sizes shown and specified refer to undressed lumber dimensions. Detailed dimensions show actual lumber size required.

1.7 SCOPE OF WORK

A. Add wood blocking to meet new insulation heights according to drawings.

B. Replace deteriorated trim in kind and install new wood.

PART 2 - PRODUCTS

2.1 DIMENSIONAL LUMBER AND PLYWOOD

A. Construction Lumber:
1. Standard Grade Douglas Fir, Western Larch, Western Hemlock (WWPA or WCLB) or No. 2 dimension Southern Pine (SPIB).
2. Exterior Type Plywood: APA Rated sheathing, EXT.
3. Bucks, Nailers, Blocking, Etc.: No. 2 common grade of any WWPA or WCLA species or No. 2 Southern Pine (SPIB).

B. Anchorage and Fastenings: Proper type, size material and finish for each application.

C. Quality: Sound, seasoned, well manufactured materials of longest practical lengths and sizes to minimize joints. Free from warp which cannot be easily corrected by anchoring and attachment. Discard material with defects which would impair quality of work.

2.2 WOOD TREATMENT

A. Wood Preservative (Pressure Treatment): AWPA Treatment C1 using water borne preservative with 0.25 pcf retention.

B. All lumber and blocking, blocking knee walls, headers, plywood, etc. shall be wood preservative treated (Pressure treated)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify measurements and dimensions shown before proceeding with carpentry work.

B. Examine supporting structure and conditions under which carpentry work is to be Installed. Do not proceed with installation until unsatisfactory conditions have been corrected.

C. Correlate location of nailers, blocking and similar supports for attached work.

D. Scribe and cope as required for accurate fit of carpentry work to other work.

3.2 PROTECTION

A. Protect installed work from damage by other trades until acceptance of work.

B. Protect work areas and any lower roof sections.

C. Utilize walk ways and keep staged material a minimum of ten (10) feet from any high trafficked area.

3.3 INSTALLATION

A. Lumber and plywood products:
   1. Provide all nailers, blocking and sleepers where shown on the drawings or required for attachment of other work. Minimum flashing height of eight (8) inches is required. Coordinate with location with other work involved; refer to shop drawings of such work.

B. Attach to substrate securely as required to support applied loading. Countersink bolts and nuts flush with surfaces.

C. Securely attach wood nailers to substrates in accordance with Factory Mutual Loss Prevention Data Sheet 1-49 and as required by recognized standards.

D. Provide washers under bolt heads and nuts in contact with wood.

E. Do not wax or lubricate fasteners that depend on friction for holding power.

F. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish material.

G. Make tight connections between members. Install fasteners without splitting of wood; predrill as required. Do not drive threaded friction type fasteners; turn into place.

H. Tighten bolts and lag screws at installation and retighten as required for tight connections prior to closing in or at completion of work.

END OF SECTION 061000

SECTION 070150.19
PREPARATION FOR RE-ROOFING

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

A. Section 074100 - Standing Seam Metal Roof Panels: Roof system.

1.2 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with affected mechanical and electrical work associated with roof penetrations.

B. Preinstallation Meeting: Convene one week before starting work of this section.
   1. Attendees:
      a. Architect.
      b. Contractor.
      c. Owner.
      d. Roofing system manufacturer's field representative.
   2. Meeting Agenda: Provide agenda to participants prior to meeting in preparation for discussions on the following:
      a. Removal and installation schedule.
      b. Necessary preparatory work.
      c. Protection before, during, and after roofing system installation.
      d. Removal of existing roofing system.
      e. Installation of new roofing system.
      f. Temporary roofing and daily terminations.

1.3 FIELD CONDITIONS

A. Existing Roofing System: Standing seam metal roofing.

B. Do not remove existing roofing membrane when weather conditions threaten the integrity of building contents or intended continued occupancy.

C. Maintain continuous temporary protection prior to and during installation of new roofing system.

D. Provide notice at least three days before starting activities that will affect normal building operations.

E. Verify that occupants have been evacuated from building areas when work on structurally impaired roof decking is scheduled to begin.

1.4 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Existing Warranties: Perform this work using methods and materials that will maintain existing roof system warranties.
   1. Notify existing roof system warrantor prior to starting this work and obtain written instructions for procedures necessary to maintain this existing warranty.
   2. Upon completion of this work, notify warrantor of reroofing completion and obtain documentation to verify that existing roofing system has been inspected and warranty is still in effect.
      a. Submit documentation upon project closeout.

PART 2 PRODUCTS

2.1 COMPONENTS

A. See the following sections for additional information on components relating to this work:
   1. Partial removal of existing roofing system in preparation for new roofing system in designated areas as indicated on drawings, see Section 074100.
   2. Remove existing flashing and counterflashings in preparation for replacement of these materials as part of this work, see Section 074100, 077123,077200 for material requirements.

2.2 MATERIALS

A. Temporary Roofing Protection Materials:
   1. Contractor's responsibility to select appropriate materials for temporary protection of roofing areas as determined necessary for this work.

2.3 ACCESSORIES

A. Roof Vent Pipe Extension: Solid-wall PVC fitting consisting of pipe and splice sleeve inserts, configured for insertion and sealing to existing plumbing vent piping, sized to fit inside diameter of plumbing vent piping, enabling extension of piping to field-determined height to meet local building code requirements for plumbing vent pipe height above existing roof level.
   1. Splice Sleeve Insert Length: 6 inches, nominal.

PART 3 EXECUTION

3.1 MATERIAL REMOVAL

A. Remove only existing roofing materials that can be replaced with new materials the same day.
   1. Remove maximum one bay of roof deck and purlins at any given time. Replace full bay of steel purlins and metal deck prior to removal of next bay.

B. Remove metal counter flashings.

3.2 INSTALLATION

A. Coordinate scope of this work with requirements for installation of new roofing system, see Section 051200, 053101,Division 07, for additional requirements.

3.3 PROTECTION

A. Provide protection of existing roofing system that is not having work performed on it.

B. Do not permit traffic over unprotected new deck surface.

3.4 REMOVALS

A. Existing Roofing Areas as Indicated: Remove existing perimeter flashings, base flashings, counter flashings, vent stack flashings, insulation, vapor retarder, and standing seam metal roof system, roof deck and purlins..

B. Remove and reset roof mounted mechanical equipment, electrical equipment, and provide new curbs and flashings.

END OF SECTION 070150.19

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SECTION 072200
ROOF DECK AND INSULATION

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Conditions of the Contract and Division 01 Specification Sections apply to this section.

1.2 SUMMARY

A. Section includes roof insulation over the properly prepared deck substrate.

B. Section to be applied in conjunction with Section 053101

1.3 REFERENCES

A. American Society for Testing and materials (ASTM):
1. ASTM A167 Standard Specification for Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet and Strip.
2. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-
3. ASTM B29 Standard Specification for Refined Lead.
4. ASTM C165 Standard Test Method for Measuring Compressive Properties of Thermal Insulation.
5. ASTM C272 Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions.
6. ASTM C1396 Standard Specification for Gypsum
7. Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
8. ASTM C728 Standard Test Methods for Fire Test of Roof Coverings.
9. ASTM C1289 Standard Specification for Faced Rigid Polyisocyanurate Thermal Insulation.
10. ASTM D5 Standard Test Method for Penetration of Bituminous Materials.
11. ASTM D36 Standard Test Method for Softening Point of Bitumen (Ring and Ball Apparatus).
12. ASTM D312 Standard Specification for Asphalt Used in Roofing.
13. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
14. ASTM D1621 Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
15. ASTM D1622 Standard Test Method for Apparent Density of Rigid Cellular Plastics.
16. ASTM D1863 Standard Specification for Mineral Aggregate Used on Built-Up Roofs.
17. ASTM D2126 Standard Test Method for Response off Rigid Cellular Plastics to Thermal Humid Aging.

18. ASTM D2178 Standard Specification for Asphalt Glass Felts used in Roofing and Waterproofing.
19. ASTM D4601 Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
20. ASTM D5147 Standard Sampling and Testing Modified Bituminous Sheet Material.

B. Factory Mutual Research (FM): Roof Assembly Classifications.

C. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual

D. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.

E. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)

F. Steel Deck Institute, St. Louis, Missouri (SDI)

G. Insulation Board, Polyisocyanurate (FS HH-I-1972)

H. Insulation Board, Thermal (Fiberboard) (FS LLL-1-535B)

1.4 ACTION SUBMITTALS

A. Product Data: Provide manufacturer s specification data sheets for each product in accordance with Division 01 Section Submittal Procedures. 013000-ADMINISTRATIVE PROCEDURES.

B. Provide approval letters from insulation manufacturer for use of their insulation within this particular roofing system type.

C. Provide a sample of each insulation type.

D. Shop Drawings
1. Submit manufacturer s shop drawings indicating complete installation details of tapered insulation system, including identification of each insulation block, sequence of installation, layout, drain locations, roof slopes, thicknesses, crickets and saddles.
2. Shop drawing shall include: Outline of roof, location of drains, complete board layout of tapered insulation components, thickness and the average R value for the completed insulation system.

E. Certification:
1. Submit roof manufacturer s certification that insulation fasteners (if needed) furnished are acceptable to roof manufacturer.
2. Submit roof manufacturer s certification that insulation furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer s system warranty.

1.5 SCOPE OF WORK

A. Existing and new vents need to kept free of any and all debris or obstruction prior to installation of coverboard.

B. Any degraded decking material found shall be brought immediately to the Architects attention prior to replacement.

C. The Architect, Owner, Manufacturers representative, and Contractor shall meet onsite to inspect and determine extent of needed in-kind replacement.

1.6 QUALITY ASSURANCE

A. Fire Classification, ASTM E108.

B. Manufacturer's Certificate: Certify that roof system furnished is approved by Underwriters Laboratories, Warnock Hersey or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.

C. Pre-installation meeting: Refer to Division 07 roofing specifications for pre-installation meeting requirements.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.

B. Store all insulation materials in a manner to protect them from the wind, sun and moisture damage prior to and during installation. Any insulation that has been exposed to any moisture shall be removed from the project site and replaced at contractors' expense.

C. Keep materials enclosed in a watertight, ventilated enclosure (i.e. tarpaulins).

D. Store materials off the ground. Any warped, broken or wet insulation boards shall be removed from the project site and replaced at contractors' expense.

PART 2 PRODUCTS

2.1 PRODUCTS GENERAL

A. Refer to Division 01 Section "Common Product Requirements."

B. Basis of Design: Materials, manufacturer's product designations, and/or manufacturer's names specified herein shall be regarded as the minimum standard of quality required for work of this Section. Comply with all manufacturer and contractor/fabricator quality and performance criteria specified in Part 1.

C. Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Bidding Requirements and Division 01 provisions.
   1. Proposals shall be accompanied by a copy of the manufacturer's standard specification section. That specification section shall be signed and sealed by a professional engineer licensed in the state in which the installation is to take place.

D. Substitution requests containing specifications without licensed engineer certification shall be rejected for non-conformance.

1. Include a list of three (3) projects of similar type and extent, located within a one-hundred-mile radius from the location of the project.

2.2 INSULATION MATERIALS

A. Thermal Insulation Properties and Approved Insulation Boards.
   1. Rigid Polyisocyanurate Roof Insulation; ASTM C1289:
      a. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
      b. ASTM C1289 Type II, Class 1 Grade 2- 20 PSI
      c. Thickness: Minimum 5.2□
      d. Layers include: base of 3.5□and a top layer of 2.5□
      e. Taper □0.0
      f. R-Value: Minimum 30.
      g. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1.
      h. Drain Sump: N/A

B. Gypsum Roof Board (Cover Board): USG Securock Gypsum-Fiber Roof Board manufactured to conform to ASTM C1278, □Standard Specification for Fiber-Reinforced Gypsum Panel.□
   1. Qualities: Nonstructural, non-faced, noncombustible, water-resistant treated gypsum panel.
   2. Board Size: Four feet by four feet (4□x8□).
   3. Thickness: One half (1/2) inch.
   4. R-Value: .56
   5. Compliances: UL, WH or FM listed under Roofing Systems.

2.3 RELATED MATERIALS

A. Protection Board: Pre-molded semi-rigid asphalt composition board one half (1/2) inch.

B. Roof Board Joint Tape: Six (6) inches wide glass fiber mat with adhesive compatible with insulation board facers.

PART 3 EXECUTION

3.1 INSPECTION AND VERIFICATIO

A. Roofing contractor shall be responsible for preparing an adequate substrate to receive insulation.
   1. Verify that all vapor barriers are properly sealed and joined together from the existing building to the new sloped sections.
   2. Verify that wood nailers are properly and securely installed.
   3. Examine surfaces for defects, rough spots, ridges, depressions, foreign material, moisture, and unevenness.
   4. Do not proceed until defects are corrected.
   5. Do not apply insulation until substrate is sufficiently dry.

6. Broom clean substrate immediately prior to application.
7. Use additional insulation to fill depressions and low spots that would otherwise cause ponding water.
8. Verify that temporary roof has been completed.

3.2 INSTALLATION

3.3 CLEANING

A. Remove debris and cartons from roof deck. Leave insulation clean and dry, ready to receive specified coverboard.

3.4 CONSTRUCTION WASTE MANAGEMENT

A. Remove and properly dispose of waste products generated during installation. Comply with requirements of authorities having jurisdiction.

END OF SECTION 072200

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SECTION 074100
STANDING SEAM METAL ROOFING PANELS

PART 1- GENERAL

1.1 SECTION INCLUDES

A. Standing seam metal roofing system

B. Standing seam metal roofing accessories

1.2 REFERENCE STANDARDS

A. AAMA 501.1 - Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure; 2017.

B. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

C. ASCE 7-16 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; 2016.

D. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2025.

E. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2023a.

F. ASTM D1056 - Standard Specification for Flexible Cellular Materials□ Sponge or Expanded Rubber; 2020.

G. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

H. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference; 2025.

I. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference; 1995 (Reapproved 2024).

J. ISO 9001 - Quality Management Systems □ Requirements; 2015, with Amendment (2024).

K. UL 263 - Standard for Fire Tests of Building Construction and Materials; Current Edition, Including All Revisions.

L. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies; Current Edition, Including All Revisions.

M. UL 790 - Standard for Standard Test Methods for Fire Tests of Roof Coverings; Current Edition, Including All Revisions.

N. UL 1897 - Uplift Tests for Roof-Covering Systems; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

1.3 RELATED SECTIONS

A. Section 051200 - Structural Steel Framing

B. Section 061000 - Rough Carpentry

C. Section 072200 - Roof and Deck Insulation.

D. Section 076200 - Sheet metal Flashing and Trim

E. Section 077123 - Gutters and Downspouts

F. Section 07720 - Roof Accesories

1.4 REFERENCES

A. American Architectural Manufacturer Association (AAMA):
1. AAMA 501.1 Standard Test Method for Metal Curtain Walls for Water Penetration using Dynamic Pressure.

B. American Iron and Steel Institute (AISI):
1. 1996 Edition Specification for the Design of Cold-Formed Steel Structural Members.

C. American Society of Civil Engineers (ASCE):
1. ASCE 7-05 Minimum Design Loads for Buildings and Other Structures.

D. ASTM A 240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

E. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.

F. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

G. ASTM E84 - Standard Test for Surface Burning Characteristics of Building Materials.

H. ASTM E 283 - Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

I. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.

J. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference.

K. ASTM E 2140 - Standard Test Method for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head.

L. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

M. UL 263 - Fire Tests of Building Constructions and Materials.

N. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies.

O. UL 790 - Standard Test Methods for Fire Tests of Roof Coverings.

P. UL 1897 - Uplift Test for Roof Covering Systems.

Q. ICC-ES AC166 - Test Procedure for Wind Driven Rain Resistance of Metal Roof Coverings.

R. SMACNA - Architectural Sheet Metal Manual.

S. National Coil Coating Association (NCCA)

T. NRCA - The NRCA Roofing and Waterproofing Manual.

1.5 SYSTEM DESCRIPTION

A. It is the intent of this specification to install a long-term, high-performance structural standing seam roof system that meets or exceeds all current NRCA guidelines as stated in the most recent edition of the NRCA Roofing and Waterproofing Manual.

1.6 DESIGN AND PERFORMANCE REQUIREMENTS

A. Structural Standing □T□Seam Roofing System:
   1. Thermal Expansion and Contraction:
      a. Completed metal roofing and flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, producing excess stress on structure, anchors or fasteners, or reducing performance ability.
      b. Design temperature differential shall be not less then 200 degrees F.
      c. Interface between panel and clip shall provide for unlimited thermal movement in each direction along the longitudinal direction.
      d. Location of metal roofing rigid connection shall be at roof ridge unless otherwise approved by the Architect. Metal ridge connector may require design as per job conditions by manufacturer.
   2. Uniform Wind Load Capacity:
      a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
         1) Design Code: ASCE 7-16, Method 2 for Components and Cladding.
         2) Safety Factor: 1.67 after any load reduction or material stress increase.
         3) Category III Building with an Importance Factor of 1
         4) Wind Speed: 135.
         5) Ultimate Pullout Value: 431 psf holding the panel clip to the roof decking or framing system.

6) Exposure Category: B
7) Design Roof Height: 22 feet.
8) Minimum Building Width: 94 feet.
9) Roof Pitch: 4:12□
10) Roof Area Design Uplift Pressure:
    a) Zone 1 - Field of roof 35 psf.
    b) Zone 2 - Eaves, ridges, hips, and rakes 58.4 psf.
    c) Zone 3 □Corners 67.6 psf

3. Uniform Positive Load Capacity.
    a. Capacity to resist positive loads shall be determined by empirical calculations in accordance with AISI. Calculation shall be sealed by a registered professional engineer liscenced in the state of Connecticut.
    b. Installed roof system shall carry positive uniform design loads with a maximum system deflection of L/180 as measured at the rib (web) of the panel.
    c. A structural engineer liscensed in Connecticut must review and approve the application through a structural evaluation.
    d. Installed roof system shall be capable of resisting the following positive uniform roof loads: Roof Live Load of 20 psf; Roof Snow Load of 30 psf.
    e. Dead Load: Loading of the roof structure, due to tear off of existing, and/or installation of new roofing materials shall not exceed the present loading due to weight of the existing roofing system.
    f. Installed roof system shall carry positive uniform design loads with a maximum system deflection of L/180 as measured at the rib (web) of the panel.
4. ASTM E1646: Static pressure water infiltration (roof panels):
    a. Pressure Result:
        1) 5 Gal. /Hr. per S.F. and Static No Leakage
        2) Pressure of 20.0 PSF for 15 minutes
5. Capacities for gauge, span or loading other than those tested may be determined by interpolation of test results within the range of test data. Extrapolations for conditions outside test range are not acceptable.
6. Water penetration (dynamic pressure): No water penetration, other than condensation, when exposed to dynamic rain and 70 mph wind velocities for not less than five minutes duration, when tested in accord with principles of AAMA 501.1.
7. Wind and wind driven rain resistance: No water penetration or panel movement when exposed to 110 mph wind velocities when tested in accordance with TAS 100.
8. Installed roof system assembly shall show that it can resist the calculated roof pressure in accordance with the test results of TAS 125.
9. Water penetration in low slope applications: No water penetration or panel movement when subject to 6 inch head of water for 6 hours when tested in accordance with the ASTM E 2140 and when subject to 6 inch head of water for 7 days when tested in accordance with the TAS 114 appendix G.
10. Submit third party validation of environmental claims, prepared UL Environment, for all metal roof panels containing recycled content and/or bio based content.

1.7 SUBMITTALS

A. Product Data: Submit product data, test reports, and certifications in accordance with quality assurance and performance requirements specified herein.

B. Design Loads: Design Test Reports: Provide certified test reports from an independent testing laboratory that bear the seal of a registered professional engineer to show compliance with the performance criteria specified herein. Each of the following test reports must be submitted:
   1. ASTM E1592: Test results must clearly demonstrate compliance with the following requirements:
      a. The ultimate test failure load shall be reduced by the safety factor specified herein to determine the allowable working load for the panel system.
      b. The proposed system has been tested to insure that the allowable working load of the panel system meets or exceeds the specified negative wind uplift pressures listed herein for all roof zones.
      c. The test results are applicable for the panel material, grade, thickness, width, and profile specified. Results are not applicable for systems that are thinner, wider, lower grade, or different material/profile than the system which was tested.
      d. The results must clearly show that the allowable clip spacing meets or exceeds the requirements specified for all roof areas. Clip spacing shall not be reduced for any roof zone from that which is specified.
   2. ASTM E283 and E331: Test results must clearly demonstrate compliance with the performance requirements specified herein.
   3. ASTM E1646 and E1680: Test results must clearly demonstrate compliance with the performance requirements specified herein. Results are not applicable for systems that are thinner, wider, lower grade, or different material/profile than the system which was tested. The differential test pressures must be equal to those specified herein.
   4. UL 580: The proposed roof panel shall be listed as UL 580, Class 1-90.
   5. UL 790: The proposed roof panel shall be listed as a non-combustible roof covering material and be approved for use in a UL classification assembly.
   6. UL 263: The proposed roof panel shall be listed for use in a UL fire rated construction assembly

C. Engineered shop drawings designed and signed by professional structural engineel liscenced in Connecticut showing layout of every roof panel and side laps and end laps marked within 1% deviation of their actual location from manufacturer of light-gauge structural framing.
   1. Provide details for edge conditions, seams, joints, corners, panel profiles, assembly anchoring techniques, round and square flashings and counter flashings.
   2. Provide maximum z furring, clip spacing and fastening requirements for z furing, standing seam roof clips, and insulation for specified load requirements.

D. Dead Load Evaluation: If required, provide documentation from a licensed structural engineer of a structural evaluation of the roof structure and its suitability for the new imposed roofing loads.

E. Any roofing system submitted must be accompanied by a report letter signed by a third-party professional engineer licensed in the state in which the installation is to take place. This report letter shall show that the submitted system meets the Design and Performance criteria in this

specification. Any roofing system submitted without a third-party licensed engineer approval letter will be rejected for non-conformance.

F. Shop Drawings: Prepared specifically for this project; showing dimensions of metal roofing and accessories, fastening details and connections and interface with other products.

G. Selection Samples: For each finish product specified, two complete sets of samples representing manufacturer's full range of available colors and textures.

H. Samples: Provide full scale samples of the following materials and system components. Samples shall be of identical material type, thickness, panel width, and material grade/alloy/temper as the system specified for this project. Except for item 2, samples may be of any of the manufacturer□s standard colors.
1. Submit a twelve (12) inch long by actual width sample of panel showing seam profile and stiffening mesas across the flat pan of the panel. Also include separate snap-on cap with factory applied hot melt sealant beads.
2. Provide a six by six (6 x 6) inch sample of the color selected for this project. The sample shall be the actual specified coating system on a metal substrate.
3. Provide samples of actual system components, including: each type of anchor/clip required, head closure assembly, roll goods (if specified), bearing plates and/or framing (if specified).
4. A copy of manufacturer's 35-year warranty. Warranty must include coverage for all trim, flashing, and penetrations associated with this roof.
5. Proof that the manufacturer has been in business for a minimum number of years equal to two times the warranty period required for this project.

I. Yearly Roof Inspections: Provide a letter stating that manufacturer will provide yearly roof inspections at no additional cost to the Owner for the life of the warranty.
1. Inspection reports shall be provided for Owner□s records. Any deficiencies in the roof caused by material failure or workmanship shall be corrected at no additional cost to the Owner (labor and material). Failure to submit such letter will be result in the submission being rejected for non-conformance.

J. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

K. Closeout Submittals:
1. Provide manufacturer's maintenance instructions that include recommendations for periodic checking and maintenance of installed roof system.
2. Provide executed copy of manufacturer's warranty.

1.8 QUALITY ASSURANCE

A. Manufactures Qualifications:
1. Manufacturer Approval: This specification is based on the performance characteristics of the system identified in Part II. Failure of a panel system manufacturer to meet all requirements of this specification may result in forfeiture of the bid award.
2. The manufacturer□s warranty must come directly from the company who physically manufactures the products. Private Labled As or any other private labeled panel system will not be accepted.

3. Manufacturer Qualifications: Manufacturer shall have in place a documented, standardized quality control program such as ISO 9001 approval.

B. Installer Qualifications:

C. Connecticut DAS Certified, an approved installer of the metal roofing system manufacturer.
1. Installer must perform Work in accordance with NRCA Roofing and SMACNA Manual.
2. Company specializing in performing Work on this project shall have minimum ten years documented experience and not have any.
3. Successful contractor is required to maintain a full-time supervisor/foreman who is on the job-site at all times during installation of new roof system. Foreman must have a minimum of five (5) years experience with the installation of system similar to that specified.

D. Source Limitations:
1. Obtain all waterproofing and metal components for the roofing system and facade panels from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system manufacturer. Upon request of the Architect or Owner, submit manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

E. Mock-Up:
1. Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
2. Finish areas designated by Architect.
3. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
4. Refinish mock-up area as required to produce acceptable work.

F. Country of Origin:
1. All rolled good, mastics, sealants, prefabricated metal panels and all other metal components shall be 100% sourced and manufactured in the USA by one manufacturer. Raw materials sourced outside of the stated country of origin shall not be accepted. Upon request of the Architect or Owner, submit a Manufacturer's written letter as proof that all components in list form, signed by an authorized agent of the Manufacturer have been sourced and manufactured in the listed country of origin above.

1.9 PRE-INSTALLATION CONFERENCE

A. Convene a pre-roofing conference approximately two weeks before scheduled commencement of roofing system installation and associated work.

B. Require attendance of installers of deck or substrate construction to receive roofing, installers of rooftop units and other work in and around roofing which must precede or follow roofing work including mechanical work, Architect, Owner, roofing system manufacturer's representative.

C. Objectives include:
1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.

2. Tour representative areas of roofing substrates, inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work.
3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
4. Review roofing system requirements, Drawings, Specifications and other Contract Documents.
5. Review and finalize schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
6. Review required inspection, testing, certifying procedures.
7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.
8. Record conference including decisions and agreements reached. Furnish a copy of records to each party attending.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

B. Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
1. Store materials above ground, on skids.
2. Protect material with waterproof covering and allow sufficient ventilation to prevent condensation buildup or moisture entrapment on the materials.

1.11 PROJECT CONDITIONS

1.12 Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.13 WARRANTY

A. Upon completion of the work, provide the Manufacturer's written and signed Edge-To-Edge NDL System Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installer, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition including all metal components, roofing systems and wall panels.
1. Warranty Period:
a. 35-year NDL from date of Substantial Completion.

B. Installer is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.
1. Warranty Period:
a. 3-year from date of acceptance.

C. Single Manufacturer s warranty: The water-tight warranty shall cover the roofing system, snow retention and any metal wall panels provided by the Manufacturer.

PART 2 PRODUCTS

2.1 PRODUCT OPTIONS AND SUBSTITUTIONS

A. Submitted Manufactures products and systems will be accepted based upon meeting the requirements of this specification.

B. Any material/ system submitted must include a list of five (5) projects where the proposed material has been used in a similar roofing system as that which is specified and is located within a fifty-mile radius from the location of the project. In addition, the five projects must be at least five (5) years old and be available for inspection by the Architect, Owner or Owner s Representative.

C. The design criteria specified within are the minimum Standard of Quality for the products and performance required for this project. The bidder must disclose in the bid, the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid/bidder will be disqualified.
   1. Bidder will not be allowed to change materials after the bid opening date.
   2. Submitted products must be equal to or exceed the products specified. Supporting technical data shall be submitted to the Architect and Owner for approval prior to acceptance.
   3. When submitted a manufacture and system the Bidder/Roofing Contractor represents that it has:
      a. Personally investigated the proposed product or method, and determined that it is equal or superior in all respects to that specified.
      b. Will provide the same guarantee for submitted product as for the product and method specified.
      c. Will coordinate installation of the submitted manufacturer/system in work, making such changes as may be required for work to be completed in all respects.
      d. Will waive all claims for additional cost related to submitted manufacturer/ system , which consequently become apparent.
      e. Cost data is complete and includes all related cost under his/her contract or other contracts, which may be affected by the submitted manufacturer's products and system.
      f. Will reimburse the Owner for all redesign cost by the Architect for accommodation of the submitted manufacturer's products and system.
   4. Architect and Owner reserve the right to be the final authority on the acceptance or rejection of any or all bids, proposed alternate roofing systems or materials that not has met ALL specified requirement criteria.
   5. Failure to submit roof manufacturer package, or any portion thereof requested, will result in immediate disqualification and consideration for that particular contractor s request for manufacturer substitution.

2.2 STANDING SEAM METAL ROOFING SYSTEM

A. General.
1. All performance requirements listed in "Design Criteria" and "Warranty Criteria" must be met and submitted as well as all items listed in the "Manufacturer's Qualifications".
2. Site Formed Panels: Site formed panels are prohibited. All metal panels must be factory pre-manufactured and engineered for this project.

B. Standing Seam Roof Assembly Design Criteria:
1. Width of Standing T-Seam Panel: 1 inch T-seam.
   a. 16 inches.
2. Standing Seam: 2-3/8 inch tall mechanically seamed with factory installed hot melt sealant in-seam cap. Panel/Cap is configured with a total of 4 layers of metal surrounding anchor clip.
3. Exposed fasteners, screws and/or roof mastic are unacceptable and will be rejected. System configuration only allows for exposed fasteners at panel overlap (if required) and trim details (as per manufacturer's guidelines).
4. Panel Profile: Provided with minimum 1-1/2 inches wide elevated mesa's every 2 inches on center continuous throughout panel.
   a. Minimum Slope: Open Purlins down to 1/4:12.
   b. Provide panels in continuous lengths from ridge to eave with no overlaps unless approved by manufacturer, in writing.
   c. Panels lengths which exceed maximum shipping lengths shall be field rolled on equipment owned by the panel manufacturer. Seam sealant must be factory applied.
   d. Seam caps shall be manufactured in the factory and may be installed with endlaps. Seam sealant must be factory applied.
   e. Panel ends shall be panned at ridge, headwall, and hip conditions, or where applicable.
5. Field Panel material:
   a. Aluminum, 3105-H14 alloy, smooth as per ASTM B 209, .040-inch thickness.
6. Flashing and flat stock material:
   a. Fabricate in profiles indicated on Drawings of same material, thickness, and finish as roof system, unless indicated otherwise.
7. Coated Finish:
   a. Exposed surfaces for coated panels:
      1) Two coat coil applied, baked-on full-strength (70% resin) fluorocarbon coating system (polyvinylidene fluoride, PVF2), applied by manufacturer's approved applicator.
      2) Coating system shall provide nominal 1.0 mil dry film thickness, consisting of primer and color coat
8. Accessory Components:
   a. Anchor Clips:
      1) Concealed Standard Anchor Clips: Clips 16-gauge stainless steel, alloy 316L, 1 piece clip with projecting legs for additional panel alignment and provision for unlimited thermal movement in each direction along the longitudinal dimension.

2) System clips shall be installed as per Manufactures engineered shop drawing details into z furring channels.

b. Fasteners:
1) Concealed fasteners: Corrosion resistant steel fasteners (zinc plated, stainless steel or equal) designed to meet structural loading requirements.
a) Steel: Blazer 1/4-14 HWH
2) Exposed fasteners: Series 410 stainless steel fasteners or 1/8 inch diameter stainless steel waterproof rivets. All exposed fasteners shall be factory painted to match the color of the standing seam panels.

c. Closures: Factory precut closed cell foam meeting ASTM D1056 or ASTM D 3575, enclosed in metal channel matching panels when used at hip, ridge, rake, and jamb.

d. Z furring channels- Minimum 16 guage galvanized G40. Size, spacing and fastening as determined by Manufacturers engineered shop drawings.

e. Provide all miscellaneous accessories for complete installation.

2.3 STANDING SEAM METAL ROOFING ACCESSORIES

A. Vapor Barrier: 45 mil minimum high temp, self-adhesive membrane, installed in accordance with manufacturer's recommendations.
1. 100% Coverage, used in conjunction with SA primer over
2. Tensile Strength: MD 125 lbf./in; XD 90 lbf./in. (15.76 kN/m)
3. Tear Strength: MD 175 lbf.; XD 120 lbf. (534 N)
4. Elongation: MD 23; XD 20
5. Low-Temp Flex: MD Pass -25°F (-32°C); XD Pass -20°F (-28°C)

B. Underlayment: Semi-Permeable, high temp, self-adhering membrane, installed in accordance with manufacturer's recommendations.
1. Sourced from the same Manufacturer or the metal roof assembly

C. Thermal Insulation Properties and Approved Insulation Boards.
1. Rigid Polyisocyanurate Roof Insulation; ASTM C1289:
a. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
b. ASTM C1289 Type II, Class 1 Grade 2- 20 PSI
c. Thickness: Minimum 6□
d. Layers include: base of 3.5□and a top layer of 2.5□
e. Taper □0.0
f. R-Value: Minimum 30.
g. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1.

D. Gypsum Roof Board: USG Securock Gypsum-Fiber Roof Board is manufactured to conform to ASTM C1278, □Standard Specification for Fiber-Reinforced Gypsum Panel.□
1. Qualities: Nonstructural, non-faced, noncombustible, water-resistant treated gypsum panel.
2. Board Size: Four feet by eight feet (4□x8□).
3. Thickness: One half (1/2) inch.

4. R-Value: .56
5. Compliances: UL, WH or FM listed under Roofing Systems.

E. Sealants:
1. Concealed Applications: Non-Curing Butyl Sealant Approved by system manufacturer.
2. Exposed Applications: UV Resistant Tripolymer Sealant Approved by system manufacturer.

2.4 FABRICATION

A. Off-site or shop fabricate metal roofing accessories and flashing components to the maximum extent possible, forming metal work with clear, sharp, straight, and uniform bends and rises.
1. Hem exposed edges of flashings.

B. Form flashing components from full single width sheet in minimum ten (10) foot lengths.
1. Provide shop fabricated, mitered corners, joined using closed end pop rivets and joint sealant.

C. Fabricate all roofing and related sheet metal work in accordance with approved shop drawings and applicable NRCA standards.

2.5 METAL ROOFING ACCESSORIES

A. Flat Metal Sheet Stock: High gloss, factory painted aluminum .040 or .050 nom
1. Material and Thickness: Same as specified field panel.
2. Sourced from the same Manufacturer or the metal roof assembly

B. Snow Retention System: Compatible with and sourced from the Manufacturer of metal panel systems to be included in edge-to-edge roofing system warranty.
1. Refer to section 077200- Roof Accessories

C. Snow Guard:
1. 6005-T5 aircraft grade aluminum.

2.6 COLOR OPTIONS

A. Provide manufacturer's full range of Standard, Premium and Deluxe color anbd texture collections
1. Colors, texture and finishes to be selected by Architect and Owner

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine surfaces to receive metal roofing. Notify the Architect in writing of any defective conditions encountered. Starting of work shall constitute acceptance of such conditions.

B. Structural Deck Substrate:

1. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves, or projections, and properly sloped.
2. Verify deck is dry and joints are solidly supported and fastened.
3. Verify wood nailers are installed and correctly located. Do not use pressure-treated wood containing salt-based preservatives or materials corrosive to steel.

C. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, reglets are in place, and nailing strips located.

D. Correct defective conditions before beginning work.

3.2 INSTALLATION

A. Install in conformance with the NRCA Roofing and Waterproofing Manual and Manufacturers installation requirements.

B. Form panel shape as indicated on Drawings, accurate in size, square, and free from distortion or defects.

C. Install new wood blocking or other reinforcing at roof penetrations and roof perimeters, as required to properly terminate the new roofing and flashing systems. secure wood blocking to metal deck in accordance with Factory Mutual Loss prevention data sheet 1-49

D. Install temporary roof system as needed to ensure roof area remains watertight during metal roof system installation.

E. General Installation Scope:
1. Fasten ½ Gypsum based, non-faced board over new metal decking and prime with SA primer at a rate of 0.5gal/sq.
2. Prime and install .45 mil, 100% Vapor closed vapor barrier over cementitious deck board and any blocking substrates tying into existing building vertical sheathing
3. Mechanically fasten two layers of rigid polyisocyanurate while staggering all seams Install z furring at panel joints in first layer per wind uplift and manufacturers shop drawi
4. Install manufacturers HT, semi-permeable underlayment over insulation
5. Install Standing Seam Metal Roof System with panel clips steel bearing pla and Z furing channels per wind up-lift requirements and manufacturer shop drawings.

F. Install specified flashing system(s) at vent pipes, unit curbs and roof perimeters.

G. Install specified gutter, snow retention and accessories of system where required and shown on drawings.

H. Clean and restore all areas affected by work.

I. Coordinate with installation of rigid board insulation as specified in Section 07200.

J. Install all panels continuous from ridge to eave. Transverse seams are not permitted.

K. Panel lengths that exceed maximum shipping lengths shall be field rolled on equipment owned by the panel manufacturer. Seam sealant must be factory applied.

L. Installation of Roof Panels: Due to the symmetrical design of the specified panel system start from the middle of the roof and work toward each end.

M. A hand crimping tool shall be used to crimp the cap around the top of two adjacent panels Caps shall then be permanently seamed with manufacturer's mechanical seamer.
   1. At the end of each day's work, seam caps shall be mechanically seamed or hand crimped (crimp 4 inches every 8 feet) to reduce the possibility of wind damage prior to completion of the project.

N. Exposed fasteners, screws and/or roof mastic are unacceptable and will be rejected. System configuration only allows for exposed fasteners at panel overlap, if required, and at trim details in accordance with the Manufacturer's requirements.

O. Where not otherwise indicated conform to SMACNA details including flashings and trim.

P. Install sealants where indicated to clean dry surfaces only without skips or voids.

Q. Install metal edge treatment, specified gutter, snow retention and accessories in accordance with the manufacturer's instructions and the approved shop drawings.

R. Install metal roofing accessories in accordance with the manufacturer's instructions and the approved shop drawings.

3.3 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

3.4 FIELD QUALITY CONTROL

A. Provide manufacturer's field observations at start-up and at intervals of approximately 30 percent, 60 percent and 90 percent completion. Provide a final inspection upon completion of the Work.

B. Inspection: When the project is in progress, the roofing system manufacturer will provide the following: Provide a final inspection upon completion of the Work.

C. Report progress and quality of the work as observed in a weekly report.
   1. Provide job site inspections a minimum of three-times per week, at no additional cost to the building Owner or Contractor.
   2. Field observations shall be performed by a Manufacturer□s Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve roofing system installations for the manufacturer.
   3. The field observer must possess roofing field and technical experience with the roof system manufacturer. Roof system manufacturer must provide a written letter, signed by a corporate officer, that the required inspector meets the above referenced criteria.
   4. Provide weekly inspection and progress reports to the Owner and Architect. Progress reports must include digital photographic documentation and a summary of the daily

work progress. Progress reports must be made available to the Owner via a password secure on-line database

5. Warranty shall be issued upon manufacturer's acceptance of the installation.
6. Provide observation reports from the Manufacturer s Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
7. Provide a final report from the Manufacturer s Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

D. Perform field inspection and testing as required by the specifications and Architect.

E. Contractor to correct defects or irregularities discovered during field inspection.

END OF SECTION 074100

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SECTION 077123
MANUFACTURED GUTTERS AND DOWNSPOUTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Pre-finished aluminum gutters and downspouts.

1.2 RELATED REQUIREMENTS

A. Section 074100 - Standing Seam Metal Roofing Panel

1.3 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

B. ASTM A48/A48M - Standard Specification for Gray Iron Castings; 2022.

C. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

D. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Comply with SMACNA (ASMM) for sizing components for rainfall intensity determined by a storm occurrence of 1 in 5 years.

B. Comply with applicable code for size and method of rain water discharge.

C. Maintain one copy of each document on site.

1.5 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on prefabricated components.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope to drain.

B. Prevent contact with materials that could cause discoloration, staining, or damage.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Gutters and Downspouts:
   1. ATAS International, Inc: www.atas.com/#sle.
   2. approved equal.
   3. Substitutions: See Section 016000 - Product Requirements.

2.2 MATERIALS

A. Pre-Finished Aluminum Sheet: ASTM B209/B209M; .063 inch thick.
   1. Finish: Plain, shop pre-coated with polyvinylidene fluoride (PVDF) coating.
   2. Color: _____.As selected by Architect from manufacturer's full range of standard, custom and premium colors.

2.3 COMPONENTS

A. Gutters: CDA square style profile. Size -match exisiting

B. Downspouts: CDA square profile. Size- match exisitng

C. Anchors and Supports: Profiled to suit gutters and downspouts.
   1. Gutter Supports: Brackets.
   2. Downspout Supports: Brackets.

D. Fasteners: Stainless steel, with soft neoprene washers.

2.4 FABRICATION

A. Form gutters and downspouts of profiles and size indicated.

B. Fabricate with required connection pieces.

C. Form sections square, true, and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints.

D. Hem exposed edges of metal.

E. Fabricate gutter and downspout accessories; seal watertight.

2.5 FINISHES

A. Fluoropolymer Coating: Superior Performance Organic Finish, AAMA 2605, multiple coat, thermally cured fluoropolymer finish system; color as selected from manufacturer's standard colors and deluxe and premium colors.

2.6 ACCESSORIES

A. Downspout Boots: Smooth interior without boxed corners or choke points; include integral lug slots and on-body cleanout and cover with neoprene gaskets.
   1. Configuration: offset or straight .
   2. Material: Cast iron; ASTM A48/A48M; casting thickness 3/8 inch (9.5 mm), minimum.
   3. Finish: Manufacturer's standard factory applied powder coat finish.
   4. Color: To be selected by Architect from manufacturer's full range of standard, premium and deluxe colors
   5. Accessories: Manufacturer's standard stainless steel fasteners, stainless steel building wall anchors, and rubber coupling.
   6. Products:
      a. Neenan Foundry R-4926-29 series.
      b. or equal.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.

3.2 PREPARATION

3.3 INSTALLATION

A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions and as shown on drawings.

B. Sheet Metal: Join lengths with formed seams sealed watertight. Flash and seal gutters to downspouts and accessories.

C. Slope gutters 1/8 inch per foot .

D. Connect downspouts to downspout boots above grade at existing locations. Grout connection watertight.

END OF SECTION

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SECTION 077200
ROOF ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Roof curbs.

B. Snow guards.

1.2 RELATED REQUIREMENTS

A. Section 074100-Standing Seam Metal Roof Panels

B. Sction 072200 - Roof Deck and Insulation

1.3 REFERENCE STANDARDS

A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.

B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.

C. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2018, with Amendment (2019).

1.4 SUBMITTALS

A. See Section 013000 - Administrative Requirements for 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.

D. Warranty Documentation:
   1. Submit manufacturer standard warranty minimum 1 year.
   2. Ensure that forms have been completed in Owner's name and registered with manufacturer.

PART 2 PRODUCTS

2.1 ROOF CURBS

A. Roof Curbs Manufacturers:
   1. Active Ventilation Products, Inc; Insulated Roof Curbs: www.roofvents.com/#sle.
   2. an approved equal.

B. Roof Curbs Mounting Assemblies: Factory fabricated hollow sheet metal construction, internally reinforced, and capable of supporting superimposed live and dead loads and designated equipment load with fully mitered and sealed corner joints welded or mechanically fastened, and integral counterflashing with top and edges formed to shed water.
   1. Roof Curb Mounting Substrate: Curb substrate consists of standing seam metal roof panel system.
   2. Sheet Metal Material:
      a. Aluminum: 0.080 inch minimum thickness, with 3003 alloy, and H14 temper.
   3. Fabricate curb bottom and mounting flanges for installation directly on metal roof panel system to match slope and configuration of system.
      a. Extend side flange to next adjacent roof panel seam and comply with seam configurations and seal connection, providing at least 6 inch clearance between curb and metal roof panel flange allowing water to properly flow past curb.
      b. Where side of curb aligns with metal roof panel flange, attach fasteners on upper slope of flange to curb connection allowing water to flow past below fasteners, and seal connection.
      c. Maintain at least 12 inch clearance from curb, and lap upper curb flange on underside of down sloping metal roof panel, and seal connection.
      d. Lap lower curb flange overtop of down sloping metal roof panel and seal connection.

2.2 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. Support Spacing and 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. Hardware, Bolts, Nuts, and Washers: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A153/A153M.

B. Pipe Supports: Provide attachment fixtures complying with MSS SP-58 and as indicated.

2.3 SNOW GUARDS

A. Fence Type Snow Guard: Continuous snow guard; manufacturer's standard pipe, bar, channel, or solid rod, set in brackets or posts, with optional plates and metal trim to match roof.

1. Extruded Aluminum Channel: Manufacturer's standard shape; with slot for insertion of metal trim matching roof.
2. Supplemental Plates and Clips: Attached to horizontal component; match finish of pipe, tube, rod, or channel.
3. Clamps for Standing Seam Roof: Aluminum clamps attached to standing seams of roof panels; for attachment of fence type snow guard.
   a. Seam Profile: Selected by Architect from manufacturer's standard range; match profile of metal roof.
   b. Finish: Mill finish.
4. Products:
   a. Metal Roof Innovations, Ltd. S-5! Attachment Solutions; ColorGard: www.s-5.com/#sle.
   b. approved equal.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions, in manner that maintains roofing system weather-tight integrity.

B. Coordinate with standing seam metal roof panels

3.2 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

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SECTION 099600
HIGH PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Section 051200 Structural Steel Framing

B. Section 05310 Corrosion Resistant Steel Deck

1.2 SUMMARY

A. This Section includes shop and field surface preparation and shop and field painting of various substrates.

1. Surface preparation, including in the shop and applications of metal primer, and field applications of primers and finishes are specified in this Section.

B. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

C. This Section includes surface preparation and application of high-performance coating systems on the following substrates:

1. Interior Substrates:

a. Structural Steel

b. Galvanized Metal Deck

1.3 REFERENCES

A. ASTM D 16 - Terminology Relating to Paint, Varnish, Lacquer, and Related Products.

B. ASTM D 4263 - Indicating Moisture in Concrete by the Plastic Sheet Method.

C. ASTM D 6386 – Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting.

D. ASTM F 1869 - Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

E. International Concrete Repair Institute (ICRI) Guideline No. 03732 - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays.

F. SSPC-SP 1 - Solvent Cleaning.

G. SSPC-SP 2 - Hand Tool Cleaning.

H. SSPC-SP 3 - Power Tool Cleaning.

I. SSPC-SP 11 Power Tool Clean to Bare Metal.

J. SSPC-SP 6/NACE 3 - Commercial Blast Cleaning.

K. SSPC-SP 13/NACE 6 - Surface Preparation of Concrete.

L. SSPC-PA2 Measurement of Dry Coating with Magnetic Gauges.

1.4 DEFINITIONS

A. Definitions of Painting Terms: In accordance with ASTM D 16, unless otherwise specified.

B. Dry Film Thickness (DFT): Thickness of a coat of paint in fully cured state measured in mils (1/1000 inch).

1.5 SUBMITTALS

A. Submit under provisions of section 013000 administrative Requirements

B. Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.
4. Operation and maintenance data.
5. Provide material analysis, including vehicle type and percentage by weight and by volume of vehicle, resin and pigment.
6. Manufacturer’s certified test reports showing the substitute product(s) performance as outlined in Paragraph 2.6 shall be submitted.

7. Submit manufacturer's Material Safety Data Sheets (MSDS) and other safety requirements.

C. Shop Drawings:

1. Submit a complete list of products proposed for use, including identifying product names and catalog numbers.

a. Arrange in same format as Schedule of Paint Finishes below.
b. Include applicable manufacturer's data and recommendations.

D. Selection Samples: For finish products specified, one complete set of color chips representing manufacturer's full range of available colors.

E. Verification Samples: For each finish product specified, two samples, minimum size 3 X 4 inch square representing actual product color.

F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.6 QUALITY ASSURANCE

A. Manufacturer's Quality Assurance: Submit manufacturer's certification that coatings comply with specified requirements and are suitable for intended application.

B. Applicator's Quality Assurance: Submit list of a minimum of 5 completed projects of similar size and complexity to this Work. Include for each project:

1. Project name and location.
2. Name of owner.
3. Name of contractor.
4. Name of architect.
5. Name of coating manufacturer.
6. Approximate area of coatings applied.
7. Date of completion.

C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1. Prepare 10 foot by 10 foot (3.05 m by 3.05 m) mock-up for each coating system specified using same materials, tools, equipment, and procedures intended for actual surface preparation and application.

2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.
4. Retain mock-ups to establish intended standards by which coating systems will be judged.

D. Preapplication Meeting: Convene a preapplication meeting before start of application of coating systems. Require attendance of parties directly affecting work of this section, including Contractor, Architect, applicator, and manufacturer's representative. Review the following:

1. Environmental requirements.
2. Protection of surfaces not scheduled to be coated.
3. Surface preparation.
4. Application methods.
5. Repair.
6. Field quality control.
7. Cleaning.
8. Protection of coating systems.
9. One-year inspection.
10. Coordination with other work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying:

1. Coating or material name.
2. Manufacturer.
3. Color name and number.
4. Batch or lot number.
5. Date of manufacture.
6. Mixing and thinning instructions.

B. Storage:

1. Store materials in a clean dry area and within temperature range in accordance with manufacturer's instructions.
2. Keep containers sealed until ready for use.
3. Do not use materials beyond manufacturer's shelf life limits.

C. Handling: Protect materials during handling and application to prevent damage or contamination.

D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

B. Weather:

1. Air and Surface Temperatures: Prepare surfaces and apply and cure coatings within air and surface temperature range in accordance with manufacturer's instructions.
2. Surface Temperature: Minimum of 5 degrees F (3 degrees C) above dew point.
3. Relative Humidity: Prepare surfaces and apply and cure coatings within relative humidity range in accordance with manufacturer's instructions.
4. Precipitation: Do not prepare surfaces or apply coatings in rain, snow, fog, or mist.
5. Wind: Do not spray coatings if wind velocity is above manufacturer's recommended limit.

C. Ventilation: Provide ventilation during coating evaporation stage in confined or enclosed areas in accordance with manufacturer's instructions.

D. Dust and Contaminants:

1. Schedule coating work to avoid excessive dust and airborne contaminants.
2. Protect work areas from excessive dust and airborne contaminants during coating application and curing.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of design Tnemec Company Incorporated, 6800 Corporate Drive, Kansas City, Missouri 64120-1372. Telephone Toll Free (800) 863-6321, Local Representation –

Telephone 800-533-3003. Web Site www.rightergroup.com and are specified as a standard of quality.

B. Materials specified herein shall not preclude consideration of equivalent or superior materials. Suggested equivalent materials or other substitutions shall be submitted to specifier for consideration in compliance with substitution procedures in [Section 01 25 00] of this Project Manual and including the following.

1. Submittals shall be provided no latter than (10) days after Owner/Owner's Agent letter of Notice to Proceed.
2. Requests for substitution shall include evidence of satisfactory past performance in similar environment.
3. Substitutions will not be considered that change the number of coats or do not meet specified dry film thicknesses.
4. Manufacturer's certified test reports showing the substitute product(s) performance as outlined in Paragraph 2.6
5. After second submittal, Architect/Engineer/ Owner or Owner's Agent hourly rates will be charged to review further submittals.

C. Bidders desiring to use coatings other than those specified shall submit those with their proposal based on the specified materials, together with the information required in Paragraph 1.5 above, and indicate the sum which will be added to or deducted from the base bid should alternate materials be accepted.

2.2 HIGH PERFORMANCE COATINGS GENERAL

A. Materials Compatibility: Provide shop and field primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Tnemec Company is established at the Basis of Design and Performance for all special coatings, equals by Jotun and Dupont shall be considered as long as they meet and exceed Basis of Design.

2.3 COATING SYSTEMS FOR STEEL, MISCELLANEOUS METALS

A. Natatorium, Structural Steel (new galvanized steel):

1. Fabrication Shop Surface Preparation: SSPC-SP 6/NACE 3.
2. Fabrication Shop Primer:

a. Series 94-H2O Hydro-Zinc, DFT 2.5 to 3.5 Mils.

3. Field Spot Surface preparation: SSPC SP11 (All rusted abraded areas after erection and field welds)

4. Field Prime: (All prepared rusted abraded areas after erection and field welds)

a. Series 94-H2O Hydro-Zinc, DFT 2.5 to 3.5 Mils.

5. First Coat: (Field)

a. Series 115 Uni-Bond DF, DFT 2.0 to 4.0 mils.

b. Note: For Vertical Columns Utilize Series 1081 Endura-Shield at 2.0-3.0 mils.

6. Finish Coat: (Field)

a. Series 115 Uni-Bond DF, DFT 2.0 to 4.0 mils.

b. Note: For Vertical Columns Utilize Series 1081 Endura-Shield at 2.0-3.0 mils.

7. Finish Color:

a. As selected by Architect from manufacturer's standard colors.

B. Natatorium, Structural Steel (Existing structural steel):

1. Field Surface preparation: SSPC SP11 (All rusted abraded areas after erection and all field welds)

2. Field Prime:

a. .Series 115 Uni-Bond DF, DFT 2.0 to 4.0 mils.

3. First Coat: (Field)

a. Series 115 Uni-Bond DF, DFT 2.0 to 4.0 mils.

b. Note: For Vertical Columns Utilize Series 1081 Endura-Shield at 2.0-3.0 mils.

4. Finish Coat: (Field)

a. Series 115 Uni-Bond DF, DFT 2.0 to 4.0 mils.

b. Note: For Vertical Columns Utilize Series 1081 Endura-Shield at 2.0-3.0 mils.

7. Finish Color:

a. As selected by Architect from manufacturer's standard colors.

C. Galvanized Steel Decking (Factory Primed by Deck Manufacturer)

1. Field Spot Surface preparation: SSPC SP11 (All rusted abraded areas after erection and field welds)

2. Field Spot Prime: (All prepared rusted abraded areas after erection and field welds)

a. Series 94-H2O Hydro-Zinc shall be used as spot primer, DFT 2.5 to 3.5 mils.

3. Finish Coat: (Field)

a. Two Coats of Series 115 Uni-Bond DF at 2.0 to 4.0 mils DFT.

4. Finish Color:

a. As selected by Architect from manufacturer's standard colors.

D. Salvaged equipment (Interior and exsterior):

1. Field Surface preparation: SSPC SP11 (All rusted abraded areas after erection and field welds).

2. Prime Coat:

a. Series 1224 Epoxoline WB, DFT 3.0 to 4.0 mils.

4. Finish Coat:

a. Series 1081 Endura-Shield, DFT 2.0-3.0 mils. (TWO COATS)

3. Finish Color:

a. As selected by Architect from manufacturer's standard colors.

2.4 PRODUCT REQUIREMENTS

A. Interior:

1. All Interior Coatings: Supply certified test reports verifying product performance according to the following requirements: Tnemec Performance Criteria data shall be used as the Basis of Design

2.5 MATERIALS – GENERAL REQUIREMENTS

A. Paints and Coatings - General:

1. Unless otherwise indicated, provide factory thinned coatings. Mix coatings to correct ratio and consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such a procedure is specifically described in manufacturer's product instructions. VOC numbers used in this document need to be confirmed by using the products MSDS sheets.

2. Requirements: VOC regulations for Architectural and Industrial Maintenance Coatings shall meet the OTC AIM VOC Model Rule or project location jurisdiction.

2.6 ACCESSOERIES

B. Coating Application Accessories:

1. Accessories required for application of specified coatings: Provide in accordance with coating manufacturer's instructions, including thinners.

PART 3 - EXECUTION

3.1 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.

3.2 PROTECTION OF SURFACES NOT SCHEDULED TO BE COATED

A. Protect surrounding areas and surfaces not scheduled to be coated from damage during surface preparation and application of coatings.
B. Immediately remove coatings that fall on surrounding areas and surfaces not scheduled to be coated.

3.3 SURFACE PREPARATION OF STEEL

A. Prepare steel surfaces in accordance with manufacturer's instructions.

B. Fabrication Defects:

1. Correct steel and fabrication defects revealed by surface preparation.
2. Remove weld spatter and slag.
3. Round sharp edges and corners of welds to a smooth contour.
4. Smooth weld undercuts and recesses.
5. Grind down porous welds to pinhole-free metal.
6. Remove weld flux from surface.

C. Ensure surfaces are dry.

D. Remove visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter in accordance with SSPC-SP 6/NACE 3, unless otherwise specified. On Galvanized Steel, reference SSPC-SP16.

E. Abrasive Blast-Cleaned Surfaces: Coat abrasive blast-cleaned surfaces with primer before visible rust forms on surface. Do not leave blast-cleaned surfaces uncoated for more than 8 hours.

F. Shop Primer: Prepare shop primer to receive field coat in accordance with manufacturer's instructions.

3.4 SURFACE PREPARATION OF GALVANIZED STEEL AND NONFERROUS METAL

A. Prepare galvanized steel per ASTM D 6386 abrasive blast or zinc phosphate treatment. Prepare nonferrous metal surfaces in accordance with manufacturer's instructions. Surface preparation recommendations will vary depending on substrate and exposure conditions.

3.5 APPLICATION

A. Apply coatings in accordance with manufacturer's instructions.

B. Mix and thin coatings, including multi-component materials, in accordance with manufacturer's instructions.

C. Keep containers closed when not in use to avoid contamination.

D. Do not use mixed coatings beyond pot life limits.

E. Use application equipment, tools, pressure settings, and techniques in accordance with manufacturer's instructions.

F. Uniformly apply coatings at spreading rate required to achieve specified DFT.

G. Apply coatings to be free of film characteristics or defects that would adversely affect performance or appearance of coating systems.

H. Stripe paint with brush critical locations on steel such as welds, corners, and edges using specified primer.

3.6 REPAIR

A. Materials and Surfaces Not Scheduled to Be Coated: Repair or replace damaged materials and surfaces not scheduled to be coated.

B. Damaged Coatings: Touch-up or repair damaged coatings. Touch-up of minor damage shall be acceptable where result is not visibly different from adjacent surfaces. Recoat entire surface where touch-up result is visibly different, either in sheen, texture, or color.

C. Coating Defects: Repair in accordance with manufacturer's instructions coatings that exhibit film characteristics or defects that would adversely affect performance or appearance of coating systems.

3.7 FIELD QUALITY CONTROL

PART 1 Inspector's Services:

1. Verify coatings and other materials are as specified.
2. Verify surface preparation and application are as specified.
3. Verify Dry Film Thickness (DFT) of each coat and total Dry Film Thickness (DFT) of each coating system specified using
   wet film and dry film gauges.
4. Coating Defects: Check coatings for film characteristics or defects that would adversely affect performance or appearance of coating systems.
5. Report:

   a. Submit written reports describing inspections made and actions taken to correct nonconforming work.
   b. Report nonconforming work not corrected.
   c. Submit copies of report to Architect and Contractor.

   d. Manufacturer's Technical Services: Coordinate with coating manufacturer's technical service department or independent sales representative for current technical data and instructions.

3.8 CLEANING

A. Remove temporary coverings and protection of surrounding areas and surfaces.

3.9 PROTECTION OF COATING SYSTEMS

A. Protect surfaces of coating systems from damage during construction.

A. Touch-up, or repair damaged products before Substantial Completion.

3.10 ONE-YEAR INSPECTION

A. Owner will set date for one-year inspection of coating systems.

B. Inspection shall be attended by Owner, Contractor, Architect, and manufacturer's representative.

C. Repair deficiencies in coating systems as determined by Architect in accordance with manufacturer’s instructions.

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END OF SECTION 099600

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SECTION 230529
HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Metal pipe hangers and supports.
2. Trapeze pipe hangers.
3. Metal framing systems.
4. Thermal-hanger shield inserts.
5. Fastener systems.
6. Equipment supports.

B. Related Sections:
1. Section 233113 "Metal Ducts" for duct hangers and supports.

1.3 DEFINITIONS

A. MSS: Manufacturers Standardization Society of The Valve and Fittings Industry Inc.

1.4 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design trapeze pipe hangers and equipment supports, including comprehensive engineering analysis by a qualified professional engineer registered in Connecticut, using performance requirements and design criteria indicated.

B. Structural Performance: Hangers and supports for HVAC piping and equipment shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.

1. Design supports for multiple pipes, including pipe stands, capable of supporting combined weight of supported systems, system contents, and test water.

2. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Signed and sealed by a qualified professional engineer registered in Connecticut. Show fabrication and installation details and include calculations for the following; include Product Data for components:

1. Trapeze pipe hangers.

C. Delegated-Design Submittal: For trapeze hangers indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer registered in Connecticut responsible for their preparation.

1. Detail fabrication and assembly of trapeze hangers.
2. Design Calculations: Calculate requirements for designing trapeze hangers.

1.6 INFORMATIONAL SUBMITTALS

A. Welding certificates.

1.7 QUALITY ASSURANCE

A. Structural Steel Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

B. Pipe Welding Qualifications: Qualify procedures and operators according to ASME Boiler and Pressure Vessel Code.

PART 2 - PRODUCTS

2.1 METAL PIPE HANGERS AND SUPPORTS

A. Pool area shall consist of non-corrosive materials.

B. Carbon-Steel Pipe Hangers and Supports:

1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
2. Galvanized Metallic Coatings: Pregalvanized or hot dipped.
3. Nonmetallic Coatings: Plastic coating, jacket, or liner.

4. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
5. Hanger Rods: Continuous-thread rod, nuts, and washer made of carbon steel.

C. Copper Pipe Hangers:

1. Description: MSS SP-58, Types 1 through 58, copper-coated-steel, factory-fabricated components.
2. Hanger Rods: Continuous-thread rod, nuts, and washer made of copper-coated steel.

2.2 TRAPEZE PIPE HANGERS

A. Description: MSS SP-69, Type 59, shop- or field-fabricated pipe-support assembly made from structural carbon-steel shapes with MSS SP-58 carbon-steel hanger rods, nuts, saddles, and U-bolts.

2.3 METAL FRAMING SYSTEMS

A. MFMA Manufacturer Metal Framing Systems:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Allied Tube & Conduit.
b. Cooper B-Line, Inc.
c. Flex-Strut Inc.
d. GS Metals Corp.
e. Thomas & Betts Corporation.
f. Unistrut Corporation; Tyco International, Ltd.
g. Wesanco, Inc.

2. Description: Shop- or field-fabricated pipe-support assembly for supporting multiple parallel pipes.
3. Standard: MFMA-4.
4. Channels: Continuous slotted steel channel with inturned lips.
5. Channel Nuts: Formed or stamped steel nuts or other devices designed to fit into channel slot and, when tightened, prevent slipping along channel.
6. Hanger Rods: Continuous-thread rod, nuts, and washer made of carbon steel.
7. Metallic Coating: Electroplated zinc or Hot-dipped galvanized.

B. Non-MFMA Manufacturer Metal Framing Systems:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Anvil International; a subsidiary of Mueller Water Products Inc.

b. Empire Industries, Inc.
c. ERICO International Corporation.
d. Haydon Corporation; H-Strut Division.
e. NIBCO INC.
f. PHD Manufacturing, Inc.
g. PHS Industries, Inc.

2. Description: Shop- or field-fabricated pipe-support assembly made of steel channels, accessories, fittings, and other components for supporting multiple parallel pipes.
3. Standard: Comply with MFMA-4.
4. Channels: Continuous slotted steel channel with inturned lips.
5. Channel Nuts: Formed or stamped steel nuts or other devices designed to fit into channel slot and, when tightened, prevent slipping along channel.
6. Hanger Rods: Continuous-thread rod, nuts, and washer made of carbon steel.
7. Coating: Zinc.

2.4 THERMAL-HANGER SHIELD INSERTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Carpenter & Paterson, Inc.
2. Clement Support Services.
3. ERICO International Corporation.
4. National Pipe Hanger Corporation.
5. PHS Industries, Inc.
6. Pipe Shields, Inc.; a subsidiary of Piping Technology & Products, Inc.
7. Piping Technology & Products, Inc.
8. Rilco Manufacturing Co., Inc.
9. Value Engineered Products, Inc.

B. Insulation-Insert Material for Cold Piping: ASTM C 552, Type II cellular glass with 100-psig minimum compressive strength and vapor barrier.

C. Insulation-Insert Material for Hot Piping: Water-repellent treated, ASTM C 533, Type I calcium silicate with 100-psig minimum compressive strength.

D. For Trapeze or Clamped Systems: Insert and shield shall cover entire circumference of pipe.

E. For Clevis or Band Hangers: Insert and shield shall cover lower 180 degrees of pipe.

F. Insert Length: Extend 2 inches beyond sheet metal shield for piping operating below ambient air temperature.

2.5 FASTENER SYSTEMS

A. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

B. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel anchors, for use in hardened portland cement concrete; with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

2.6 EQUIPMENT SUPPORTS

A. Description: Welded, shop- or field-fabricated equipment support made from structural carbon-steel shapes.

2.7 MISCELLANEOUS MATERIALS

A. Structural Steel: ASTM A 36, carbon-steel plates, shapes, and bars; black and galvanized.

B. Grout: ASTM C 1107, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.

1. Properties: Nonstaining, noncorrosive, and nongaseous.
2. Design Mix: 5000-psi, 28-day compressive strength.

PART 3 - EXECUTION

3.1 NOTE REGARDING INSTALLATION OF FIRE ALARM, FIRE PROTECTION, HVAC, PLUMBING AND ELECTRICAL DEVICES:

A. The Architect’s intention is to align and/or center wall-mounted devices, typically, and ceiling-mounted devices as well, whether those devices are provided by the electrician, plumber, sprinkler installer, mechanical sub-contractor, or others. For walls, these devices and their alignments may be indicated on interior elevations or building sections, but, regardless, it is expected that adjustments may need to be made in the field, or that additional items may be required. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include sconces, switches, thermostats and electrical outlets, where located close to one another, and may also include wall diffusers, side-mounted sprinkler heads, return grilles, access panels, pull stations, horns and strobes, etc.

B. In ceilings, the Architect’s intention is to center ceiling-mounted elements within a space or a room, and/or to align them with one another. These devices and their alignments may be indicated on the reflected ceiling plans, but it is expected that adjustments may need to be made in the field, or that additional items may be required to be mounted. The installation of all such items shall

be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include lights, HVAC equipment, access panels, diffusers and returns, sprinkler heads, paddle fans, ceiling lights, exhaust fans, smoke detectors, etc. If the ceiling is of a modular type (panels), it is expected that device locations will also be coordinated and aligned and/or centered within the panels.

C. The General Contractor shall coordinate the various trades involved in providing and installing such wall- and ceiling-mounted devices before any installation begins, in accordance with the requirement for a preliminary coordination meeting called for elsewhere in these specifications. The General Contractor shall review approaches to locating devices, and specific device locations, with the Architect before roughing. Roughed items that do not comply with the intentions of this section, or with the architectural drawings, shall be relocated per the Architect's direction. Additional payment will not be made for the cost of relocating elements that were not installed in accordance with these intentions or with the Architect's approval, or for the cost of patching of finishes that might be necessary by such relocation.

3.2 HANGER AND SUPPORT INSTALLATION

A. Metal Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Install hangers, supports, clamps, and attachments as required to properly support piping from the building structure.

B. Metal Trapeze Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Arrange for grouping of parallel runs of horizontal piping, and support together on field-fabricated trapeze pipe hangers.

1. Pipes of Various Sizes: Support together and space trapezes for smallest pipe size or install intermediate supports for smaller diameter pipes as specified for individual pipe hangers.
2. Field fabricate from ASTM A 36, carbon-steel shapes selected for loads being supported. Weld steel according to AWS D1.1.

C. Metal Framing System Installation: Arrange for grouping of parallel runs of piping, and support together on field-assembled metal framing systems.

D. Thermal-Hanger Shield Installation: Install in pipe hanger or shield for insulated piping.

E. Fastener System Installation:

1. Install powder-actuated fasteners for use in lightweight concrete or concrete slabs less than 4 inches thick in concrete after concrete is placed and completely cured. Use operators that are licensed by powder-actuated tool manufacturer. Install fasteners according to powder-actuated tool manufacturer's operating manual.
2. Install mechanical-expansion anchors in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.

F. Install hangers and supports complete with necessary attachments, inserts, bolts, rods, nuts, washers, and other accessories.

G. Equipment Support Installation: Fabricate from welded-structural-steel shapes.

H. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.

I. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 and larger and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.

J. Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.

K. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by ASME B31.9 for building services piping.

L. Insulated Piping:

1. Attach clamps and spacers to piping.

    a. Piping Operating above Ambient Air Temperature: Clamp may project through insulation.
    b. Piping Operating below Ambient Air Temperature: Use thermal-hanger shield insert with clamp sized to match OD of insert.
    c. Do not exceed pipe stress limits allowed by ASME B31.9 for building services piping.

2. Install MSS SP-58, Type 39, protection saddles if insulation without vapor barrier is indicated. Fill interior voids with insulation that matches adjoining insulation.

    a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.

3. Install MSS SP-58, Type 40, protective shields on cold piping with vapor barrier. Shields shall span an arc of 180 degrees.

    a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.

4. Shield Dimensions for Pipe: Not less than the following:

    a. NPS 1/4 to NPS 3-1/2: 12 inches long and 0.048 inch thick.
    b. NPS 4: 12 inches long and 0.06 inch thick.
    c. NPS 5 and NPS 6: 18 inches long and 0.06 inch thick.
    d. NPS 8 to NPS 14: 24 inches long and 0.075 inch thick.
    e.

5. Pipes NPS 8 and Larger: Include wood or reinforced calcium-silicate-insulation inserts of length at least as long as protective shield.
6. Thermal-Hanger Shields: Install with insulation same thickness as piping insulation.

3.3 EQUIPMENT SUPPORTS

A. Fabricate structural-steel stands to suspend equipment from structure overhead or to support equipment above floor.

B. Grouting: Place grout under supports for equipment and make bearing surface smooth.

C. Provide lateral bracing, to prevent swaying, for equipment supports.

3.4 METAL FABRICATIONS

A. Cut, drill, and fit miscellaneous metal fabrications for trapeze pipe hangers and equipment supports.

B. Fit exposed connections together to form hairline joints. Field weld connections that cannot be shop welded because of shipping size limitations.

C. Field Welding: Comply with AWS D1.1 procedures for shielded, metal arc welding; appearance and quality of welds; and methods used in correcting welding work; and with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. Finish welds at exposed connections so no roughness shows after finishing and so contours of welded surfaces match adjacent contours.

3.5 ADJUSTING

A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.

B. Trim excess length of continuous-thread hanger and support rods to 1-1/2 inches.

3.6 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide a minimum dry film thickness of 2.0 mils.

B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

3.7 HANGER AND SUPPORT SCHEDULE

A. Specific hanger and support requirements are in Sections specifying piping systems and equipment.

B. Comply with MSS SP-69 for pipe-hanger selections and applications that are not specified in piping system Sections.

C. Use hangers and supports with galvanized metallic coatings for piping and equipment that will not have field-applied finish.

D. Use nonmetallic coatings on attachments for electrolytic protection where attachments are in direct contact with copper tubing.

E. Use carbon-steel pipe hangers and supports, metal trapeze pipe hangers and metal framing systems and attachments for general service applications.

F. Use copper-plated pipe hangers and copper attachments for copper piping and tubing.

G. Use padded hangers for piping that is subject to scratching.

H. Use thermal-hanger shield inserts for insulated piping and tubing.

I. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

1. Adjustable, Steel Clevis Hangers (MSS Type 1): For suspension of noninsulated or insulated, stationary pipes NPS 1/2 to NPS 30.
2. Yoke-Type Pipe Clamps (MSS Type 2): For suspension of up to 1050 deg F, pipes NPS 4 to NPS 24, requiring up to 4 inches of insulation.
3. Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3): For suspension of pipes NPS 3/4 to NPS 36, requiring clamp flexibility and up to 4 inches of insulation.
4. Steel Pipe Clamps (MSS Type 4): For suspension of cold and hot pipes NPS 1/2 to NPS 24 if little or no insulation is required.
5. Pipe Hangers (MSS Type 5): For suspension of pipes NPS 1/2 to NPS 4, to allow off-center closure for hanger installation before pipe erection.
6. Adjustable, Swivel Split- or Solid-Ring Hangers (MSS Type 6): For suspension of noninsulated, stationary pipes NPS 3/4 to NPS 8.
7. Adjustable, Steel Band Hangers (MSS Type 7): For suspension of noninsulated, stationary pipes NPS 1/2 to NPS 8.
8. Adjustable Band Hangers (MSS Type 9): For suspension of noninsulated, stationary pipes NPS 1/2 to NPS 8.

9. Adjustable, Swivel-Ring Band Hangers (MSS Type 10): For suspension of noninsulated, stationary pipes NPS 1/2 to NPS 8.
10. Split Pipe Ring with or without Turnbuckle Hangers (MSS Type 11): For suspension of noninsulated, stationary pipes NPS 3/8 to NPS 8.
11. Extension Hinged or Two-Bolt Split Pipe Clamps (MSS Type 12): For suspension of noninsulated, stationary pipes NPS 3/8 to NPS 3.
12. U-Bolts (MSS Type 24): For support of heavy pipes NPS 1/2 to NPS 30.
13. Clips (MSS Type 26): For support of insulated pipes not subject to expansion or contraction.
14. Pipe Saddle Supports (MSS Type 36): For support of pipes NPS 4 to NPS 36, with steel-pipe base stanchion support and cast-iron floor flange or carbon-steel plate.
15. Pipe Stanchion Saddles (MSS Type 37): For support of pipes NPS 4 to NPS 36, with steel-pipe base stanchion support and cast-iron floor flange or carbon-steel plate, and with U-bolt to retain pipe.
16. Adjustable Pipe Saddle Supports (MSS Type 38): For stanchion-type support for pipes NPS 2-1/2 to NPS 36 if vertical adjustment is required, with steel-pipe base stanchion support and cast-iron floor flange.
17. Single-Pipe Rolls (MSS Type 41): For suspension of pipes NPS 1 to NPS 30, from two rods if longitudinal movement caused by expansion and contraction might occur.
18. Adjustable Roller Hangers (MSS Type 43): For suspension of pipes NPS 2-1/2 to NPS 24, from single rod if horizontal movement caused by expansion and contraction might occur.
19. Complete Pipe Rolls (MSS Type 44): For support of pipes NPS 2 to NPS 42 if longitudinal movement caused by expansion and contraction might occur but vertical adjustment is not necessary.
20. Pipe Roll and Plate Units (MSS Type 45): For support of pipes NPS 2 to NPS 24 if small horizontal movement caused by expansion and contraction might occur and vertical adjustment is not necessary.
21. Adjustable Pipe Roll and Base Units (MSS Type 46): For support of pipes NPS 2 to NPS 30 if vertical and lateral adjustment during installation might be required in addition to expansion and contraction.

J. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers NPS 3/4 to NPS 24.
2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): For support of pipe risers NPS 3/4 to NPS 24 if longer ends are required for riser clamps.

K. Hanger-Rod Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

1. Steel Turnbuckles (MSS Type 13): For adjustment up to 6 inches for heavy loads.
2. Steel Clevises (MSS Type 14): For 120 to 450 deg F piping installations.
3. Swivel Turnbuckles (MSS Type 15): For use with MSS Type 11, split pipe rings.
4. Malleable-Iron Sockets (MSS Type 16): For attaching hanger rods to various types of building attachments.

5. Steel Weldless Eye Nuts (MSS Type 17): For 120 to 450 deg F piping installations.

L. Building Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

1. Steel or Malleable Concrete Inserts (MSS Type 18): For upper attachment to suspend pipe hangers from concrete ceiling.
2. Top-Beam C-Clamps (MSS Type 19): For use under roof installations with bar-joist construction, to attach to top flange of structural shape.
3. Side-Beam or Channel Clamps (MSS Type 20): For attaching to bottom flange of beams, channels, or angles.
4. Center-Beam Clamps (MSS Type 21): For attaching to center of bottom flange of beams.
5. Welded Beam Attachments (MSS Type 22): For attaching to bottom of beams if loads are considerable and rod sizes are large.
6. C-Clamps (MSS Type 23): For structural shapes.
7. Top-Beam Clamps (MSS Type 25): For top of beams if hanger rod is required tangent to flange edge.
8. Side-Beam Clamps (MSS Type 27): For bottom of steel I-beams.
9. Steel-Beam Clamps with Eye Nuts (MSS Type 28): For attaching to bottom of steel I-beams for heavy loads.
10. Linked-Steel Clamps with Eye Nuts (MSS Type 29): For attaching to bottom of steel I-beams for heavy loads, with link extensions.
11. Malleable-Beam Clamps with Extension Pieces (MSS Type 30): For attaching to structural steel.
12. Welded-Steel Brackets: For support of pipes from below or for suspending from above by using clip and rod. Use one of the following for indicated loads:

    a. Light (MSS Type 31): 750 lb.
    b. Medium (MSS Type 32): 1500 lb.
    c. Heavy (MSS Type 33): 3000 lb.

13. Side-Beam Brackets (MSS Type 34): For sides of steel or wooden beams.
14. Plate Lugs (MSS Type 57): For attaching to steel beams if flexibility at beam is required.
15. Horizontal Travelers (MSS Type 58): For supporting piping systems subject to linear horizontal movement where headroom is limited.

M. Saddles and Shields: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

1. Steel-Pipe-Covering Protection Saddles (MSS Type 39): To fill interior voids with insulation that matches adjoining insulation.
2. Protection Shields (MSS Type 40): Of length recommended in writing by manufacturer to prevent crushing insulation.
3. Thermal-Hanger Shield Inserts: For supporting insulated pipe.

N. Spring Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:

1. Restraint-Control Devices (MSS Type 47): Where indicated to control piping movement.
2. Spring Cushions (MSS Type 48): For light loads if vertical movement does not exceed 1-1/4 inches.
3. Spring-Cushion Roll Hangers (MSS Type 49): For equipping Type 41, roll hanger with springs.
4. Spring Sway Braces (MSS Type 50): To retard sway, shock, vibration, or thermal expansion in piping systems.
5. Variable-Spring Hangers (MSS Type 51): Preset to indicated load and limit variability factor to 25 percent to allow expansion and contraction of piping system from hanger.
6. Variable-Spring Base Supports (MSS Type 52): Preset to indicated load and limit variability factor to 25 percent to allow expansion and contraction of piping system from base support.
7. Variable-Spring Trapeze Hangers (MSS Type 53): Preset to indicated load and limit variability factor to 25 percent to allow expansion and contraction of piping system from trapeze support.
8. Constant Supports: For critical piping stress and if necessary to avoid transfer of stress from one support to another support, critical terminal, or connected equipment. Include auxiliary stops for erection, hydrostatic test, and load-adjustment capability. These supports include the following types:

    a. Horizontal (MSS Type 54): Mounted horizontally.
    b. Vertical (MSS Type 55): Mounted vertically.
    c. Trapeze (MSS Type 56): Two vertical-type supports and one trapeze member.

O. Comply with MSS SP-69 for trapeze pipe-hanger selections and applications that are not specified in piping system Sections.

P. Comply with MFMA-103 for metal framing system selections and applications that are not specified in piping system Sections.

Q. Use powder-actuated fasteners or mechanical-expansion anchors instead of building attachments where required in concrete construction.

END OF SECTION 230529

SECTION 230553
IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Equipment labels.
2. Warning signs and labels.
3. Pipe labels.
4. Stencils.
5. Valve tags.
6. Warning tags.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples: For color, letter style, and graphic representation required for each identification material and device.

C. Equipment Label Schedule: Include a listing of all equipment to be labeled with the proposed content for each label.

D. Valve numbering scheme.

E. Valve Schedules: For each piping system to include in maintenance manuals.

1.4 COORDINATION

A. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.

B. Coordinate installation of identifying devices with locations of access panels and doors.

C. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 EQUIPMENT LABELS

A. Plastic Labels for Equipment:

1. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/8 inch thick, and having predrilled holes for attachment hardware.
2. Letter Color: White.
3. Background Color: Black.
4. Maximum Temperature: Able to withstand temperatures up to 160 deg F.
5. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.
6. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.
7. Fasteners: Stainless-steel rivets or self-tapping screws.
8. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.

B. Label Content: Include equipment's Drawing designation or unique equipment number, Drawing numbers where equipment is indicated (plans, details, and schedules), plus the Specification Section number and title where equipment is specified.

C. Equipment Label Schedule: For each item of equipment to be labeled, on 8-1/2-by-11-inch bond paper. Tabulate equipment identification number and identify Drawing numbers where equipment is indicated (plans, details, and schedules), plus the Specification Section number and title where equipment is specified. Equipment schedule shall be included in operation and maintenance data.

2.2 WARNING SIGNS AND LABELS

A. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/8 inch thick, and having predrilled holes for attachment hardware.

B. Letter Color: White.

C. Background Color: Red.

D. Maximum Temperature: Able to withstand temperatures up to 160 deg F.

E. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.

F. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.

G. Fasteners: Stainless-steel rivets or self-tapping screws.

H. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.

I. Label Content: Include caution and warning information, plus emergency notification instructions.

2.3 PIPE LABELS

A. General Requirements for Manufactured Pipe Labels: Preprinted, color-coded, with lettering indicating service, and showing flow direction.

B. Pretensioned Pipe Labels: Precoiled, semirigid plastic formed to cover full circumference of pipe and to attach to pipe without fasteners or adhesive.

C. Self-Adhesive Pipe Labels: Printed plastic with contact-type, permanent-adhesive backing.

D. Pipe Label Contents: Include identification of piping service using same designations or abbreviations as used on Drawings, pipe size, and an arrow indicating flow direction.

1. Flow-Direction Arrows: Integral with piping system service lettering to accommodate both directions, or as separate unit on each pipe label to indicate flow direction.
2. Lettering Size: At least 1-1/2 inches high.

2.4 DUCT LABELS

A. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/16 inch thick, and having predrilled holes for attachment hardware.

B. Letter Color: Black

C. Background Color: White

D. Maximum Temperature: Able to withstand temperatures up to 160 deg F.

E. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.

F. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.

G. Fasteners: Stainless-steel rivets or self-tapping screws

H. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.

I. Duct Label Contents: Include identification of duct service using same designations or abbreviations as used on Drawings, duct size, and an arrow indicating flow direction. Duct service identification shall include air handler or fan that ducts are connected to and whether supply, return, etc.

1. Flow-Direction Arrows: Integral with duct system service lettering to accommodate both directions, or as separate unit on each duct label to indicate flow direction.
2. Lettering Size: At least 1-1/2 incheshigh.

2.5 STENCILS

A. Stencils: Prepared with letter sizes according to ASME A13.1 for piping; minimum letter height of 1-1/4 inches for ducts; and minimum letter height of 3/4 inch for access panel and door labels, equipment labels, and similar operational instructions.

1. Stencil Material: Fiberboard or metal.
2. Stencil Paint: Exterior, gloss, acrylic enamel black unless otherwise indicated. Paint may be in pressurized spray-can form.
3. Identification Paint: Exterior, acrylic enamel in colors according to ASME A13.1 unless otherwise indicated.

2.6 VALVE TAGS

A. Valve Tags: Stamped or engraved with 1/4-inch letters for piping system abbreviation and 1/2-inch numbers.

1. Tag Material: Brass, 0.032-inch minimum thickness, and having predrilled or stamped holes for attachment hardware.
2. Fasteners: Brass wire-link or beaded chain; or S-hook.

B. Valve Schedules: For each piping system, on 8-1/2-by-11-inch bond paper. Tabulate valve number, piping system, system abbreviation (as shown on valve tag), location of valve (room or space), normal-operating position (open, closed, or modulating), and variations for identification. Mark valves for emergency shutoff and similar special uses.

1. Valve-tag schedule shall be included in operation and maintenance data.

2.7 WARNING TAGS

A. Warning Tags: Preprinted or partially preprinted, accident-prevention tags, of plasticized card stock with matte finish suitable for writing.

1. Size: Approximately 4 by 7 inches.
2. Fasteners: Brass grommet and wire.
3. Nomenclature: Large-size primary caption such as "DANGER," "CAUTION," or "DO NOT OPERATE."
4. Color: Yellow background with black lettering.

PART 3 - EXECUTION

3.1 NOTE REGARDING INSTALLATION OF FIRE ALARM, FIRE PROTECTION, HVAC, PLUMBING AND ELECTRICAL DEVICES:

A. The Architect's intention is to align and/or center wall-mounted devices, typically, and ceiling-mounted devices as well, whether those devices are provided by the electrician, plumber, sprinkler installer, mechanical sub-contractor, or others. For walls, these devices and their alignments may be indicated on interior elevations or building sections, but, regardless, it is expected that adjustments may need to be made in the field, or that additional items may be required. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include sconces, switches, thermostats and electrical outlets, where located close to one another, and may also include wall diffusers, side-mounted sprinkler heads, return grilles, access panels, pull stations, horns and strobes, etc.

B. In ceilings, the Architect's intention is to center ceiling-mounted elements within a space or a room, and/or to align them with one another. These devices and their alignments may be indicated on the reflected ceiling plans, but it is expected that adjustments may need to be made in the field, or that additional items may be required to be mounted. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include lights, HVAC equipment, access panels, diffusers and returns, sprinkler heads, paddle fans, ceiling lights, exhaust fans, smoke detectors, etc. If the ceiling is of a modular type (panels), it is expected that device locations will also be coordinated and aligned and/or centered within the panels.

C. The General Contractor shall coordinate the various trades involved in providing and installing such wall- and ceiling-mounted devices before any installation begins, in accordance with the requirement for a preliminary coordination meeting called for elsewhere in these specifications. The General Contractor shall review approaches to locating devices, and specific device locations, with the Architect before roughing. Roughed items that do not comply with the intentions of this section, or with the architectural drawings, shall be relocated per the Architect's direction. Additional payment will not be made for the cost of relocating elements that were not installed in accordance with these intentions or with the Architect's approval, or for the cost of patching of finishes that might be necessary by such relocation.

3.2 PREPARATION

A. Clean piping and equipment surfaces of substances that could impair bond of identification devices, including dirt, oil, grease, release agents, and incompatible primers, paints, and encapsulants.

3.3 EQUIPMENT LABEL INSTALLATION

A. Install or permanently fasten labels on each major item of mechanical equipment.

B. Locate equipment labels where accessible and visible.

3.4 PIPE LABEL INSTALLATION

A. Stenciled Pipe Label Option: Stenciled labels may be provided instead of manufactured pipe labels, at Installer's option. Install stenciled pipe labels with painted, color-coded bands or rectangles, complying with ASME A13.1, on each piping system.

1. Identification Paint: Use for contrasting background.
2. Stencil Paint: Use for pipe marking.

B. Locate pipe labels where piping is exposed or above accessible ceilings in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior exposed locations as follows:

1. Near each valve and control device.
2. Near each branch connection, excluding short takeoffs for fixtures and terminal units. Where flow pattern is not obvious, mark each pipe at branch.
3. Near penetrations through walls, floors, ceilings, and inaccessible enclosures.
4. At access doors, manholes, and similar access points that permit view of concealed piping.
5. Near major equipment items and other points of origination and termination.
6. Spaced at maximum intervals of 50 feet along each run. Reduce intervals to 25 feet in areas of congested piping and equipment.
7. On piping above removable acoustical ceilings. Omit intermediately spaced labels.

C. Pipe Label Color Schedule:

1. Heating Water Piping:

    a. Background Color: Green
    b. Letter Color: White

2. Refrigerant Piping:

    a. Background Color: Blue
    b. Letter Color: White

3. Condensate Piping:

   a. Background Color: Green
   b. Letter Color: White

3.5 DUCT LABEL INSTALLATION

A. Locate stencils near points where ducts enter into concealed spaces and at maximum intervals of 50 feet in each space where ducts are exposed or concealed by removable ceiling system.

3.6 VALVE-TAG INSTALLATION

A. Install tags on valves and control devices in piping systems, except check valves; valves within factory-fabricated equipment units; shutoff valves; faucets; convenience and lawn-watering hose connections; and HVAC terminal devices and similar roughing-in connections of end-use fixtures and units. List tagged valves in a valve schedule.

B. Valve-Tag Application Schedule: Tag valves according to size, shape, and color scheme and with captions similar to those indicated in the following subparagraphs:

1. Valve-Tag Size and Shape:
   a. Hot Water: 2 inches, round.
   b. Gas: 2 inches, round.
   c. Low-Pressure Steam: 2 inches, round.
   d. Steam Condensate: 2 inches, round.

2. Valve-Tag Color:
   a. Hot Water: Green.
   b. Gas: Yellow.
   c. Low-Pressure Steam: Yellow.
   d. Steam Condensate: Green.

3. Letter Color:
   a. Hot Water: White.
   b. Gas: Black.
   c. Low-Pressure Steam: Black.
   d. Steam Condensate: White.

3.7 WARNING-TAG INSTALLATION

A. Write required message on, and attach warning tags to, equipment and other items where required.

END OF SECTION 230553

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SECTION 230713
DUCT INSULATION

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 insulating the following duct services:

1. Indoor, concealed supply and outdoor air.
2. Indoor, exposed supply and outdoor air.
3. Indoor, concealed return located in unconditioned space.
4. Indoor, exposed return located in unconditioned space.
5. Indoor, concealed outdoor air.
6. Indoor, exposed outdoor air.

B. Related Sections:
1. Section 230719 "HVAC Piping & Equipment Insulation."

1.3 =ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include thermal conductivity, water-vapor permeance thickness, and jackets (both factory- and field-applied if any).

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1. Detail application of protective shields, saddles, and inserts at hangers for each type of insulation and hanger.
2. Detail insulation application at elbows, fittings, dampers, specialties and flanges for each type of insulation.
3. Detail application of field-applied jackets.
4. Detail application at linkages of control devices.

C. Samples: For each type of insulation and jacket indicated. Identify each Sample, describing product and intended use. Sample sizes are as follows:

1. Sheet Form Insulation Materials: 12 inches square.
2. Sheet Jacket Materials: 12 inches square.

3. Manufacturer's Color Charts: For products where color is specified, show the full range of colors available for each type of finish material.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Material Test Reports: From a qualified testing agency acceptable to authorities having jurisdiction indicating, interpreting, and certifying test results for compliance of insulation materials, sealers, attachments, cements, and jackets, with requirements indicated. Include dates of tests and test methods employed.

C. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Skilled mechanics who have successfully completed an apprenticeship program or another craft training program certified by the Department of Labor, Bureau of Apprenticeship and Training.

B. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84, by a testing agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.

1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
2. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Packaging: Insulation material containers shall be marked by manufacturer with appropriate ASTM standard designation, type and grade, and maximum use temperature.

1.7 COORDINATION

A. Coordinate sizes and locations of supports, hangers, and insulation shields specified in Section 230529 "Hangers and Supports for HVAC Piping and Equipment."

B. Coordinate clearance requirements with duct Installer for duct insulation application. Before preparing ductwork Shop Drawings, establish and maintain clearance requirements for installation of insulation and field-applied jackets and finishes and for space required for maintenance.

1.8 SCHEDULING

A. Schedule insulation application after pressure testing systems. Insulation application may begin on segments that have satisfactory test results.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

A. Comply with requirements in "Duct Insulation Schedule, General," "Indoor Duct and Plenum Insulation Schedule," and "Aboveground, Outdoor Duct and Plenum Insulation Schedule" articles for where insulating materials shall be applied.

B. Products shall not contain asbestos, lead, mercury, or mercury compounds.

C. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.

D. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.

E. Glass-Fiber Blanket: Glass fibers bonded with a thermosetting resin; suitable for maximum use temperature up to 450 deg F (232 deg C) in accordance with ASTM C411. Comply with ASTM C553, Type II, and ASTM C1290, Type III with factory-applied FSK jacket. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Johns Manville; a Berkshire Hathaway company.
b. Knauf Insulation.
c. Owens Corning.

F. Mineral-Fiber Board Insulation: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 612, Type IA or Type IB. For duct and plenum applications, provide insulation with factory-applied FSK jacket. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

1. Products: Subject to compliance with requirements, provide one of the following:

a. CertainTeed Corp.; Commercial Board.

b. Fibrex Insulations Inc.; FBX.
c. Johns Manville; 800 Series Spin-Glas.
d. Knauf Insulation; Insulation Board.
e. Manson Insulation Inc.; AK Board.
f. Owens Corning; Fiberglas 700 Series.

G. Mineral-Fiber, Pipe and Tank Insulation: Mineral or glass fibers bonded with a thermosetting resin. Semirigid board material with factory-applied FSK jacket complying with ASTM C 1393, Type II or Type IIIA Category 2, or with properties similar to ASTM C 612, Type IB. Nominal density is 2.5 lb/cu. ft. or more. Thermal conductivity (k-value) at 100 deg F is 0.29 Btu x in./h x sq. ft. x deg F or less. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

1. Products: Subject to compliance with requirements, provide one of the following:

a. CertainTeed Corp.; CrimpWrap.
b. Johns Manville; MicroFlex.
c. Knauf Insulation; Pipe and Tank Insulation.
d. Manson Insulation Inc.; AK Flex.
e. Owens Corning; Fiberglas Pipe and Tank Insulation.

2.2 FIRE-RATED INSULATION SYSTEMS

A. Fire-Rated Board: Structural-grade, press-molded, xonolite calcium silicate, fireproofing board suitable for operating temperatures up to 1700 deg F. Comply with ASTM C 656, Type II, Grade 6. Tested and certified to provide a 2-hour fire rating by an NRTL acceptable to authorities having jurisdiction.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Johns Manville; Super Firetemp M.

B. Fire-Rated Blanket: High-temperature, flexible, blanket insulation with FSK jacket that is tested and certified to provide a 2-hour fire rating by an NRTL acceptable to authorities having jurisdiction.

1. Products: Subject to compliance with requirements, provide one of the following:

a. CertainTeed Corp.; FlameChek.
b. Johns Manville; Firetemp Wrap.
c. Nelson Fire Stop Products; Nelson FSB Flameshield Blanket.
d. Thermal Ceramics; FireMaster Duct Wrap.
e. 3M; Fire Barrier Wrap Products.
f. Unifrax Corporation; FyreWrap.

2.3 ADHESIVES

A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated unless otherwise indicated.

B. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-127.Eagle Bridges - Marathon Industries; 225.
b. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 85-60/85-70.Mon-Eco Industries, Inc.; 22-25.

C. ASJ Adhesive, and FSK Jacket Adhesive: Comply with MIL-A-3316C, Class 2, Grade A for bonding insulation jacket lap seams and joints.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-82.
b. Eagle Bridges - Marathon Industries; 225.
c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 85-50.Mon-Eco Industries, Inc.; 22-25.

2.4 MASTICS

A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.

B. Vapor-Barrier Mastic: Water based; suitable for indoor use on below ambient services.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 30-80/30-90.
b. Vimasco Corporation; 749.

2. Water-Vapor Permeance: ASTM E 96/E 96M, Procedure B, 0.013 perm at 43-mil dry film thickness.
3. Service Temperature Range: Minus 20 to plus 180 deg F.
4. Solids Content: ASTM D 1644, 58 percent by volume and 70 percent by weight.
5. Color: White.

C. Vapor-Barrier Mastic: Solvent based; suitable for indoor use on below ambient services.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-30.
b. Eagle Bridges - Marathon Industries; 501.
c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 30-35.
d. Mon-Eco Industries, Inc.; 55-10.

2. Water-Vapor Permeance: ASTM F 1249, 0.05 perm at 35-mil dry film thickness.
3. Service Temperature Range: 0 to 180 deg F.
4. Solids Content: ASTM D 1644, 44 percent by volume and 62 percent by weight.
5. Color: White.

2.5 LAGGING ADHESIVES

A. Description: Comply with MIL-A-3316C, Class I, Grade A and shall be compatible with insulation materials, jackets, and substrates.
1. Products: Subject to compliance with requirements, provide one of the following:

a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-50 AHV2.Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 30-36.
b. Vimasco Corporation; 713 and 714.

2. Fire-resistant, water-based lagging adhesive and coating for use indoors to adhere fire-resistant lagging cloths over duct insulation.
3. Service Temperature Range: 0 to plus 180 deg F.
4. Color: White.

2.6 SEALANTS

A. FSK and Metal Jacket Flashing Sealants:

1. Products: Subject to compliance with requirements, provide one of the following:

a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-76.Eagle Bridges - Marathon Industries; 405.
b. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 95-44.
c. Mon-Eco Industries, Inc.; 44-05.

2. Materials shall be compatible with insulation materials, jackets, and substrates.
3. Fire- and water-resistant, flexible, elastomeric sealant.
4. Service Temperature Range: Minus 40 to plus 250 deg F.
5. Color: Aluminum.
6. For indoor applications, sealants shall have a VOC content of 420 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

7. Sealants shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.7 FACTORY-APPLIED JACKETS

A. Insulation system schedules indicate factory-applied jackets on various applications. When factory-applied jackets are indicated, comply with the following:

1. ASJ: White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
2. ASJ-SSL: ASJ with self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C 1136, Type I.
3. FSK Jacket: Aluminum-foil, fiberglass-reinforced scrim with kraft-paper backing; complying with ASTM C 1136, Type II.

2.8 TAPES

A. FSK Tape: Foil-face, vapor-retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C 1136.

1. Products: Subject to compliance with requirements, provide one of the following:

   a. ABI, Ideal Tape Division; 491 AWF FSK.
   b. Avery Dennison Corporation, Specialty Tapes Division; Fasson 0827.
   c. Compac Corporation; 110 and 111.
   d. Venture Tape; 1525 CW NT, 1528 CW, and 1528 CW/SQ.

2. Width: 3 inches.
3. Thickness: 6.5 mils.
4. Adhesion: 90 ounces force/inch in width.
5. Elongation: 2 percent.
6. Tensile Strength: 40 lbf/inch in width.
7. FSK Tape Disks and Squares: Precut disks or squares of FSK tape.

B. Aluminum-Foil Tape: Vapor-retarder tape with acrylic adhesive.

1. Products: Subject to compliance with requirements, provide one of the following:

   a. ABI, Ideal Tape Division; 488 AWF.
   b. Avery Dennison Corporation, Specialty Tapes Division; Fasson 0800.
   c. Compac Corporation; 120.
   d. Venture Tape; 3520 CW.

2. Width: 2 inches.
3. Thickness: 3.7 mils.
4. Adhesion: 100 ounces force/inch in width.

5. Elongation: 5 percent.
6. Tensile Strength: 34 lbf/inch in width.

2.9 SECUREMENTS

A. Bands:

1. Products: Subject to compliance with requirements, provide one of the following:

   a. ITW Insulation Systems; Gerrard Strapping and Seals.
   b. RPR Products, Inc.; Insul-Mate Strapping, Seals, and Springs.

2. Stainless Steel: ASTM A 167 or ASTM A 240/A 240M, Type 304 or Type 316; 0.015 inch thick, 3/4 inch wide with wing seal or closed seal.
3. Aluminum: ASTM B 209, Alloy 3003, 3005, 3105, or 5005; Temper H-14, 0.020 inch thick, 3/4 inch wide with wing seal or closed seal.
4. Springs: Twin spring set constructed of stainless steel with ends flat and slotted to accept metal bands. Spring size determined by manufacturer for application.

B. Insulation Pins and Hangers:

1. Capacitor-Discharge-Weld Pins: Copper- or zinc-coated steel pin, fully annealed for capacitor-discharge welding, 0.135-inch- diameter shank, length to suit depth of insulation indicated.

   a. Products: Subject to compliance with requirements, provide one of the following:

      1) AGM Industries, Inc.; CWP-1.
      2) GEMCO; CD.
      3) Midwest Fasteners, Inc.; CD.
      4) Nelson Stud Welding; TPA, TPC, and TPS.

2. Cupped-Head, Capacitor-Discharge-Weld Pins: Copper- or zinc-coated steel pin, fully annealed for capacitor-discharge welding, 0.135-inch- diameter shank, length to suit depth of insulation indicated with integral 1-1/2-inch galvanized carbon-steel washer.

   a. Products: Subject to compliance with requirements, provide one of the following:

      1) AGM Industries, Inc.; CHP-1.
      2) GEMCO; Cupped Head Weld Pin.
      3) Midwest Fasteners, Inc.; Cupped Head.
      4) Nelson Stud Welding; CHP.

3. Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch-thick, galvanized-steel sheet, with beveled edge sized as required to hold insulation securely in place but not less than 1-1/2 inches in diameter.

   a. Products: Subject to compliance with requirements, provide one of the following:

1) AGM Industries, Inc.; RC-150.
2) GEMCO; R-150.
3) Midwest Fasteners, Inc.; WA-150.
4) Nelson Stud Welding; Speed Clips.

b. Protect ends with capped self-locking washers incorporating a spring steel insert to ensure permanent retention of cap in exposed locations.

C. Staples: Outward-clinching insulation staples, nominal 3/4-inch-wide, stainless steel or Monel.

D. Wire: 0.080-inch nickel-copper alloy.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. C & F Wire.

2.10 CORNER ANGLES

A. Aluminum Corner Angles: 0.040 inch thick, minimum 1 by 1 inch, aluminum according to ASTM B 209, Alloy 3003, 3005, 3105, or 5005; Temper H-14.

PART 3 - EXECUTION

3.1 NOTE REGARDING INSTALLATION OF FIRE ALARM, FIRE PROTECTION, HVAC, PLUMBING AND ELECTRICAL DEVICES:

A. The Architect's intention is to align and/or center wall-mounted devices, typically, and ceiling-mounted devices as well, whether those devices are provided by the electrician, plumber, sprinkler installer, mechanical sub-contractor, or others. For walls, these devices and their alignments may be indicated on interior elevations or building sections, but, regardless, it is expected that adjustments may need to be made in the field, or that additional items may be required. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include sconces, switches, thermostats and electrical outlets, where located close to one another, and may also include wall diffusers, side-mounted sprinkler heads, return grilles, access panels, pull stations, horns and strobes, etc.

B. In ceilings, the Architect's intention is to center ceiling-mounted elements within a space or a room, and/or to align them with one another. These devices and their alignments may be indicated on the reflected ceiling plans, but it is expected that adjustments may need to be made in the field, or that additional items may be required to be mounted. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include lights, HVAC equipment, access panels, diffusers and returns, sprinkler heads, paddle fans, ceiling lights, exhaust fans, smoke detectors, etc. If the ceiling is of a modular type (panels), it is expected that device locations will also be coordinated and aligned and/or centered within the panels.

C. The General Contractor shall coordinate the various trades involved in providing and installing such wall- and ceiling-mounted devices before any installation begins, in accordance with the requirement for a preliminary coordination meeting called for elsewhere in these specifications. The General Contractor shall review approaches to locating devices, and specific device locations, with the Architect before roughing. Roughed items that do not comply with the intentions of this section, or with the architectural drawings, shall be relocated per the Architect's direction. Additional payment will not be made for the cost of relocating elements that were not installed in accordance with these intentions or with the Architect's approval, or for the cost of patching of finishes that might be necessary by such relocation.

3.2 EXAMINATION

A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of insulation application.

1. Verify that systems to be insulated have been tested and are free of defects.
2. Verify that surfaces to be insulated are clean and dry.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 PREPARATION

A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

3.4 GENERAL INSTALLATION REQUIREMENTS

A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of ducts and fittings.

B. Install insulation materials, vapor barriers or retarders, jackets, and thicknesses required for each item of duct system as specified in insulation system schedules.

C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.

D. Install insulation with longitudinal seams at top and bottom of horizontal runs.

E. Install multiple layers of insulation with longitudinal and end seams staggered.

F. Keep insulation materials dry during application and finishing.

G. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.

H. Install insulation with least number of joints practical.

I. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.

1. Install insulation continuously through hangers and around anchor attachments.
2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.
3. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.

J. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.

K. Install insulation with factory-applied jackets as follows:

1. Draw jacket tight and smooth.
2. Cover circumferential joints with 3-inch-wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.
3. Overlap jacket longitudinal seams at least 1-1/2 inches. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at 2 inches o.c.

    a. For below ambient services, apply vapor-barrier mastic over staples.

4. Cover joints and seams with tape, according to insulation material manufacturer's written instructions, to maintain vapor seal.
5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to duct flanges and fittings.

L. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.

M. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.

N. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

3.5 PENETRATIONS

A. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.

B. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Terminate insulation at fire damper sleeves for fire-rated wall and partition penetrations. Externally insulate damper sleeves to match adjacent insulation and overlap duct insulation at least 2 inches.

1. Comply with requirements in Section 078413 "Penetration Firestopping and fire-resistive joint sealers.

C. Insulation Installation at Floor Penetrations:

1. Duct: For penetrations through fire-rated assemblies, terminate insulation at fire damper sleeves and externally insulate damper sleeve beyond floor to match adjacent duct insulation. Overlap damper sleeve and duct insulation at least 2 inches.
2. Seal penetrations through fire-rated assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

3.6 INSTALLATION OF MINERAL-FIBER INSULATION

A. Board Insulation Installation on Ducts and Plenums: Secure with adhesive and insulation pins.

1. Apply adhesives according to manufacturer's recommended coverage rates of duct and plenum surfaces.
2. Apply adhesive to entire circumference of ducts and to all surfaces of fittings and transitions.
3. Install either capacitor-discharge-weld pins and speed washers or cupped-head, capacitor-discharge-weld pins on sides and bottom of horizontal ducts and sides of vertical ducts as follows:

    a. On duct sides with dimensions 18 inches and smaller, place pins along longitudinal centerline of duct. Space 3 inches maximum from insulation end joints, and 16 inches o.c.
    b. On duct sides with dimensions larger than 18 inches, space pins 16 inches o.c. each way, and 3 inches maximum from insulation joints. Install additional pins to hold insulation tightly against surface at cross bracing.
    c. Pins may be omitted from top surface of horizontal, rectangular ducts and plenums.
    d. Do not over compress insulation during installation.
    e. Cut excess portion of pins extending beyond speed washers or bend parallel with insulation surface. Cover exposed pins and washers with tape matching insulation facing.

4. For ducts and plenums with surface temperatures below ambient, install a continuous unbroken vapor barrier. Create a facing lap for longitudinal seams and end joints with insulation by removing 2 inches from one edge and one end of insulation segment. Secure laps to adjacent insulation section with 1/2-inch outward-clinching staples, 1 inch o.c. Install vapor barrier consisting of factory- or field-applied jacket, adhesive, vapor-barrier mastic, and sealant at joints, seams, and protrusions.

    a. Repair punctures, tears, and penetrations with tape or mastic to maintain vapor-barrier seal.

b. Install vapor stops for ductwork and plenums operating below 50 deg F at 18-foot intervals. Vapor stops shall consist of vapor-barrier mastic applied in a Z-shaped pattern over insulation face, along butt end of insulation, and over the surface. Cover insulation face and surface to be insulated a width equal to two times the insulation thickness, but not less than 3 inches.

5. Install insulation on rectangular duct elbows and transitions with a full insulation section for each surface. Groove and score insulation to fit as closely as possible to outside and inside radius of elbows. Install insulation on round and flat-oval duct elbows with individually mitered gores cut to fit the elbow.
6. Insulate duct stiffeners, hangers, and flanges that protrude beyond insulation surface with 6-inch-wide strips of same material used to insulate duct. Secure on alternating sides of stiffener, hanger, and flange with pins spaced 6 inches o.c.

3.7 FIRE-RATED INSULATION SYSTEM INSTALLATION

A. Where fire-rated insulation system is indicated, secure system to ducts and duct hangers and supports to maintain a continuous fire rating.

B. Insulate duct access panels and doors to achieve same fire rating as duct.

C. Install firestopping at penetrations through fire-rated assemblies. Fire-stop systems are specified in Section 078413 "Penetration Firestopping."

3.8 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Perform tests and inspections.

C. Tests and Inspections:

1. Inspect ductwork, randomly selected by Architect, by removing field-applied jacket and insulation in layers in reverse order of their installation. Extent of inspection shall be limited to two location(s) for each duct system defined in the "Duct Insulation Schedule, General" Article.

D. All insulation applications will be considered defective Work if sample inspection reveals noncompliance with requirements.

3.9 DUCT INSULATION SCHEDULE, GENERAL

A. Plenums and Ducts Requiring Insulation:

1. Indoor, concealed outdoor air.
2. Indoor, exposed outdoor air.

B. Items Not Insulated:
   1. Metal ducts with duct liner of sufficient thickness to comply with energy code and ASHRAE/IESNA 90.1.
   2. Flexible connectors.
   3. Vibration-control devices.
   4. Factory-insulated access panels and doors.

3.10 INDOOR DUCT AND PLENUM INSULATION SCHEDULE:

A. Concealed, Supply-Air Duct Insulation: Glass-fiber, 2 inches thick and 3 lb/cu. ft. nominal density.

B. Concealed, Return-Air Duct Insulation: Glass-fiber, 2 inches thick and 3 lb/cu. ft. nominal density.

C. Exposed, Supply-Air Duct Insulation: Glass-fiber, 2 inches thick and 3 lb/cu. ft. nominal density.

D. Exposed, Return-Air Duct Insulation: Glass-fiber, 2 inches thick and 3 lb/cu. ft. nominal density.

E. Concealed, round and flat-oval, outdoor-air duct insulation shall be the following:
   1. Mineral-Fiber Board: 1-1/2 inches thick and 6-lb/cu. ft. nominal density.
   2. Factory applied FSK jacket.

F. Concealed, rectangular, outdoor-air duct insulation shall be the following:
   1. Mineral-Fiber Board: 1-1/2 inches thick and 6-lb/cu. ft. nominal density.
   2. Factory applied FSK jacket.

G. Concealed, outdoor-air plenum insulation shall be the following:
   1. Mineral-Fiber Board: 1-1/2 inches thick and 6-lb/cu. ft. nominal density.
   2. Factory applied FSK jacket.

H. Exposed, round and flat-oval, outdoor-air duct insulation shall be the following:
   1. Mineral-Fiber Board: 1-1/2 inches thick and 6-lb/cu. ft. nominal density.
   2. Factory applied FSK jacket.
   3. Mineral-Fiber Pipe and Tank: 1-1/2 inches thick.

I. Exposed, rectangular, outdoor-air duct insulation shall be the following:
   1. Mineral-Fiber Board: 1-1/2 inches thick and 6-lb/cu. ft. nominal density.
   2. Factory applied FSK jacket.

J. Exposed, outdoor-air plenum type insulation for pool area shall be the following:
   1. Mineral-Fiber Board: 1-1/2 inches thick and 6-lb/cu. ft. nominal density.
   2. Factory applied FSK jacket.

END OF SECTION 230713

SECTION 230719
HVAC PIPING AND EQUIPMENT INSULATION

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 insulating the following HVAC piping systems:

1. Condensate drain piping, indoors.
2. Antifreeze piping, indoors.
3. Heating hot-water piping, indoors.
4. Air separators

B. Related Sections:

1. Section 230713 "Duct Insulation."

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include thermal conductivity, water-vapor permeance thickness, and jackets (both factory and field applied if any).

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1. Detail application of protective shields, saddles, and inserts at hangers for each type of insulation and hanger.
2. Detail attachment and covering of heat tracing inside insulation.
3. Detail insulation application at elbows, fittings, flanges, valves, and specialties for each type of insulation.
4. Detail removable insulation at piping specialties.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Skilled mechanics who have successfully completed an apprenticeship program or another craft training program certified by the Department of Labor, Bureau of Apprenticeship and Training.

B. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84, by a testing and inspecting agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.

1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Packaging: Insulation material containers shall be marked by manufacturer with appropriate ASTM standard designation, type and grade, and maximum use temperature.

1.7 COORDINATION

A. Coordinate sizes and locations of supports, hangers, and insulation shields specified in Section 230529 "Hangers and Supports for HVAC Piping and Equipment."

B. Coordinate clearance requirements with piping Installer for piping insulation application. Before preparing piping Shop Drawings, establish and maintain clearance requirements for installation of insulation and field-applied jackets and finishes and for space required for maintenance.

C. Coordinate installation and testing of heat tracing.

1.8 SCHEDULING

A. Schedule insulation application after pressure testing systems and, where required, after installing and testing heat tracing. Insulation application may begin on segments that have satisfactory test results.

B. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

A. Comply with requirements in "Piping Insulation Schedule, General," "Indoor Piping Insulation Schedule," "Outdoor, Aboveground Piping Insulation Schedule," and "Outdoor, Underground Piping Insulation Schedule" articles for where insulating materials shall be applied.

B. Products shall not contain asbestos, lead, mercury, or mercury compounds.

C. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.

D. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.

E. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.

F. Cellular Glass: Inorganic, incombustible, foamed or cellulated glass with annealed, rigid, hermetically sealed cells. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

1. Products: Subject to compliance with requirements, provide one of the following:

    a. Pittsburgh Corning Corporation; Foamglas.

2. Block Insulation: ASTM C 552, Type I.
3. Special-Shaped Insulation: ASTM C 552, Type III.
4. Board Insulation: ASTM C 552, Type IV.
5. Preformed Pipe Insulation with Factory-Applied ASJ: Comply with ASTM C 552, Type II, Class 2.
6. Factory fabricate shapes according to ASTM C 450 and ASTM C 585.

G. Mineral or Glass-Fiber, Preformed Pipe Insulation:

1. Products: Subject to compliance with requirements, provide one of the following:

    a. Fibrex Insulations Inc.; Coreplus 1200.
    b. Johns Manville; Micro-Lok.
    c. Knauf Insulation; 1000-Degree Pipe Insulation.
    d. Manson Insulation Inc.; Alley-K.
    e. Owens Corning; Fiberglas Pipe Insulation.

2. Type I, 850 deg F Materials: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 547, Type I, Grade A, with factory-applied ASJ. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

H. Mineral-Fiber, Pipe and Tank Insulation: Mineral or glass fibers bonded with a thermosetting resin. Semirigid board material with factory-applied ASJ complying with ASTM C 1393, Type II or Type IIIA Category 2, or with properties similar to ASTM C 612, Type IB. Nominal density is 2.5 lb/cu. ft. or more. Thermal conductivity (k-value) at 100 deg F is 0.29 Btu x in./h x sq. ft. x deg F or less. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

1. Products: Subject to compliance with requirements, provide one of the following:

a. CertainTeed Corp.; CrimpWrap.
b. Johns Manville; MicroFlex.
c. Knauf Insulation; Pipe and Tank Insulation.
d. Manson Insulation Inc.; AK Flex.
e. Owens Corning; Fiberglas Pipe and Tank Insulation.

2.2 INSULATING CEMENTS

A. Mineral-Fiber Insulating Cement: Comply with ASTM C 195.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Ramco Insulation, Inc.; Super-Stik.

B. Expanded or Exfoliated Vermiculite Insulating Cement: Comply with ASTM C 196.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Ramco Insulation, Inc.; Thermokote V.

C. Mineral-Fiber, Hydraulic-Setting Insulating and Finishing Cement: Comply with ASTM C 449.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Ramco Insulation, Inc.; Ramcote 1200 and Quik-Cote.

2.3 ADHESIVES

A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated unless otherwise indicated.

B. Cellular-Glass Adhesive: Two-component, thermosetting urethane adhesive containing no flammable solvents, with a service temperature range of minus 100 to plus 200 deg F.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 81-84.

C. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-127.
b. Eagle Bridges - Marathon Industries; 225.
c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 85-60/85-70.
d. Mon-Eco Industries, Inc.; 22-25.

D. ASJ Adhesive, and FSK and PVDC Jacket Adhesive: Comply with MIL-A-3316C, Class 2, Grade A for bonding insulation jacket lap seams and joints.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-82.
b. Eagle Bridges - Marathon Industries; 225.
c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 85-50.
d. Mon-Eco Industries, Inc.; 22-25.

E. PVC Jacket Adhesive: Compatible with PVC jacket.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Dow Corning Corporation; 739, Dow Silicone.
b. Johns Manville; Zeston Perma-Weld, CEEL-TITE Solvent Welding Adhesive.
c. P.I.C. Plastics, Inc.; Welding Adhesive.
d. Speedline Corporation; Polyco VP Adhesive.

2.4 MASTICS

A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.

B. Vapor-Barrier Mastic: Water based; suitable for indoor use on below-ambient services.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 30-80/30-90.
b. Vimasco Corporation; 749.

2. Water-Vapor Permeance: ASTM E 96/E 96M, Procedure B, 0.013 perm at 43-mil dry film thickness.
3. Service Temperature Range: Minus 20 to plus 180 deg F.

4. Solids Content: ASTM D 1644, 58 percent by volume and 70 percent by weight.
5. Color: White.

C. Breather Mastic: Water based; suitable for indoor and outdoor use on above-ambient services.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-10.
b. Eagle Bridges - Marathon Industries; 550.
c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 46-50.
d. Mon-Eco Industries, Inc.; 55-50.
e. Vimasco Corporation; WC-1/WC-5.

2. Water-Vapor Permeance: ASTM F 1249, 1.8 perms at 0.0625-inch dry film thickness.
3. Service Temperature Range: Minus 20 to plus 180 deg F.
4. Solids Content: 60 percent by volume and 66 percent by weight.
5. Color: White.

2.5 LAGGING ADHESIVES

A. Description: Comply with MIL-A-3316C, Class I, Grade A and shall be compatible with insulation materials, jackets, and substrates.

1. For indoor applications, use lagging adhesives that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
2. Products: Subject to compliance with requirements, provide one of the following:

a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-50 AHV2.
b. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 30-36.
c. Vimasco Corporation; 713 and 714.

3. Fire-resistant, water-based lagging adhesive and coating for use indoors to adhere fire-resistant lagging cloths over pipe insulation.
4. Service Temperature Range: 0 to plus 180 deg F.
5. Color: White.

2.6 SEALANTS

A. Joint Sealants:

1. Joint Sealants for Cellular-Glass Products: Subject to compliance with requirements, provide one of the following:

a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-76.
b. Eagle Bridges - Marathon Industries; 405.
c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 30-45.
d. Mon-Eco Industries, Inc.; 44-05.
e. Pittsburgh Corning Corporation; Pittseal 444.

2. Materials shall be compatible with insulation materials, jackets, and substrates.
3. Permanently flexible, elastomeric sealant.
4. Service Temperature Range: Minus 100 to plus 300 deg F.
5. Color: White or gray.

B. ASJ Flashing Sealants and PVC Jacket Flashing Sealants:

1. Products: Subject to compliance with requirements, provide one of the following:

a. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-76.

2. Materials shall be compatible with insulation materials, jackets, and substrates.
3. Fire- and water-resistant, flexible, elastomeric sealant.
4. Service Temperature Range: Minus 40 to plus 250 deg F.
5. Color: White.

2.7 FACTORY-APPLIED JACKETS

A. Insulation system schedules indicate factory-applied jackets on various applications. When factory-applied jackets are indicated, comply with the following:

1. ASJ: White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
2. ASJ-SSL: ASJ with self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C 1136, Type I.

2.8 FIELD-APPLIED JACKETS

A. Field-applied jackets shall comply with ASTM C 921, Type I, unless otherwise indicated.

B. PVC Jacket: High-impact-resistant, UV-resistant PVC complying with ASTM D 1784, Class 16354-C; thickness as scheduled; roll stock ready for shop or field cutting and forming. Thickness is indicated in field-applied jacket schedules.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Johns Manville; Zeston.
b. P.I.C. Plastics, Inc.; FG Series.

c. Proto Corporation; LoSmoke.
d. Speedline Corporation; SmokeSafe.

2. Adhesive: As recommended by jacket material manufacturer.
3. Color: White.
4. Factory-fabricated fitting covers to match jacket if available; otherwise, field fabricate.

a. Shapes: 45- and 90-degree, short- and long-radius elbows, tees, valves, flanges, unions, reducers, end caps, soil-pipe hubs, traps, mechanical joints, and P-trap and supply covers for lavatories.

2.9 TAPES

A. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.

1. Products: Subject to compliance with requirements, provide one of the following:

a. ABI, Ideal Tape Division; 428 AWF ASJ.
b. Avery Dennison Corporation, Specialty Tapes Division; Fasson 0836.
c. Compac Corporation; 104 and 105.
d. Venture Tape; 1540 CW Plus, 1542 CW Plus, and 1542 CW Plus/SQ.

2. Width: 3 inches.
3. Thickness: 11.5 mils.
4. Adhesion: 90 ounces force/inch in width.
5. Elongation: 2 percent.
6. Tensile Strength: 40 lbf/inch in width.
7. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.

B. PVC Tape: White vapor-retarder tape matching field-applied PVC jacket with acrylic adhesive; suitable for indoor and outdoor applications.

1. Products: Subject to compliance with requirements, provide one of the following:

a. ABI, Ideal Tape Division; 370 White PVC tape.
b. Compac Corporation; 130.
c. Venture Tape; 1506 CW NS.

2. Width: 2 inches.
3. Thickness: 6 mils.
4. Adhesion: 64 ounces force/inch in width.
5. Elongation: 500 percent.
6. Tensile Strength: 18 lbf/inch in width.

2.10 SECUREMENTS

A. Bands:

1. Products: Subject to compliance with requirements, provide one of the following:

a. ITW Insulation Systems; Gerrard Strapping and Seals.
b. RPR Products, Inc.; Insul-Mate Strapping, Seals, and Springs.

2. Stainless Steel: ASTM A 167 or ASTM A 240/A 240M, Type 304 or Type 316; 0.015 inch thick, 1/2 inch wide with closed seal.
3. Aluminum: ASTM B 209, Alloy 3003, 3005, 3105, or 5005; Temper H-14, 0.020 inch thick, 1/2 inch wide with closed seal.
4. Springs: Twin spring set constructed of stainless steel with ends flat and slotted to accept metal bands. Spring size determined by manufacturer for application.

B. Staples: Outward-clinching insulation staples, nominal 3/4-inch-wide, stainless steel or Monel.

C. Wire: 0.080-inch nickel-copper alloy or 0.062-inch soft-annealed, stainless steel.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. C & F Wire.

PART 3 - EXECUTION

3.1 NOTE REGARDING INSTALLATION OF FIRE ALARM, FIRE PROTECTION, HVAC, PLUMBING AND ELECTRICAL DEVICES:

A. The Architect’s intention is to align and/or center wall-mounted devices, typically, and ceiling-mounted devices as well, whether those devices are provided by the electrician, plumber, sprinkler installer, mechanical sub-contractor, or others. For walls, these devices and their alignments may be indicated on interior elevations or building sections, but, regardless, it is expected that adjustments may need to be made in the field, or that additional items may be required. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include sconces, switches, thermostats and electrical outlets, where located close to one another, and may also include wall diffusers, side-mounted sprinkler heads, return grilles, access panels, pull stations, horns and strobes, etc.

B. In ceilings, the Architect’s intention is to center ceiling-mounted elements within a space or a room, and/or to align them with one another. These devices and their alignments may be indicated on the reflected ceiling plans, but it is expected that adjustments may need to be made in the field, or that additional items may be required to be mounted. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include lights, HVAC equipment, access panels, diffusers and returns, sprinkler heads, paddle

fans, ceiling lights, exhaust fans, smoke detectors, etc. If the ceiling is of a modular type (panels), it is expected that device locations will also be coordinated and aligned and/or centered within the panels.

C. The General Contractor shall coordinate the various trades involved in providing and installing such wall- and ceiling-mounted devices before any installation begins, in accordance with the requirement for a preliminary coordination meeting called for elsewhere in these specifications. The General Contractor shall review approaches to locating devices, and specific device locations, with the Architect before roughing. Roughed items that do not comply with the intentions of this section, or with the architectural drawings, shall be relocated per the Architect's direction. Additional payment will not be made for the cost of relocating elements that were not installed in accordance with these intentions or with the Architect's approval, or for the cost of patching of finishes that might be necessary by such relocation.

3.2 EXAMINATION

A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of insulation application.

1. Verify that systems to be insulated have been tested and are free of defects.
2. Verify that surfaces to be insulated are clean and dry.
3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 PREPARATION

A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

B. Coordinate insulation installation with the trade installing heat tracing. Comply with requirements for heat tracing that apply to insulation.

C. Mix insulating cements with clean potable water; if insulating cements are to be in contact with stainless-steel surfaces, use demineralized water.

3.4 GENERAL INSTALLATION REQUIREMENTS

A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties.

B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of pipe system as specified in insulation system schedules.

C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.

D. Install insulation with longitudinal seams at top and bottom of horizontal runs.

E. Install multiple layers of insulation with longitudinal and end seams staggered.

F. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.

G. Keep insulation materials dry during application and finishing.

H. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.

I. Install insulation with least number of joints practical.

J. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.

K. Install insulation with factory-applied jackets as follows:

1. Draw jacket tight and smooth.
2. Cover circumferential joints with 3-inch-wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.
3. Overlap jacket longitudinal seams at least 1-1/2 inches. Install insulation with longitudinal seams at bottom of pipe. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at 4 inches o.c.

    a. For below-ambient services, apply vapor-barrier mastic over staples.

4. Cover joints and seams with tape, according to insulation material manufacturer's written instructions, to maintain vapor seal.
5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to pipe flanges and fittings.

L. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.

M. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.

N. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

O. For above-ambient services, do not install insulation to the following:

1. Vibration-control devices.
2. Testing agency labels and stamps.
3. Nameplates and data plates.
4. Manholes.

5. Handholes.
6. Cleanouts.

3.5 PENETRATIONS

A. Insulation Installation at Underground Exterior Wall Penetrations: Terminate insulation flush with sleeve seal. Seal terminations with flashing sealant.

B. Insulation Installation at Aboveground Exterior Wall Penetrations: Install insulation continuously through wall penetrations.

1. Seal penetrations with flashing sealant.
2. For applications requiring only indoor insulation, terminate insulation inside wall surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
3. Extend jacket of outdoor insulation outside wall flashing and overlap wall flashing at least 2 inches.
4. Seal jacket to wall flashing with flashing sealant.

C. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.

D. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions.

1. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping and fire-resistive joint sealers.

E. Insulation Installation at Floor Penetrations:

1. Pipe: Install insulation continuously through floor penetrations.
2. Seal penetrations through fire-rated assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

3.6 GENERAL PIPE INSULATION INSTALLATION

A. Requirements in this article generally apply to all insulation materials except where more specific requirements are specified in various pipe insulation material installation articles.

B. Insulation Installation on Fittings, Valves, Strainers, Flanges, and Unions:

1. Install insulation over fittings, valves, strainers, flanges, unions, and other specialties with continuous thermal and vapor-retarder integrity unless otherwise indicated.
2. Insulate pipe elbows using preformed fitting insulation or mitered fittings made from same material and density as adjacent pipe insulation. Each piece shall be butted tightly against adjoining piece and bonded with adhesive. Fill joints, seams, voids, and irregular surfaces

with insulating cement finished to a smooth, hard, and uniform contour that is uniform with adjoining pipe insulation.

3. Insulate tee fittings with preformed fitting insulation or sectional pipe insulation of same material and thickness as used for adjacent pipe. Cut sectional pipe insulation to fit. Butt each section closely to the next and hold in place with tie wire. Bond pieces with adhesive.
4. Insulate valves using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. For valves, insulate up to and including the bonnets, valve stuffing-box studs, bolts, and nuts. Fill joints, seams, and irregular surfaces with insulating cement.
5. Insulate strainers using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. Fill joints, seams, and irregular surfaces with insulating cement. Insulate strainers so strainer basket flange or plug can be easily removed and replaced without damaging the insulation and jacket. Provide a removable reusable insulation cover. For below-ambient services, provide a design that maintains vapor barrier.
6. Insulate flanges and unions using a section of oversized preformed pipe insulation. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker.
7. Cover segmented insulated surfaces with a layer of finishing cement and coat with a mastic. Install vapor-barrier mastic for below-ambient services and a breather mastic for above-ambient services. Reinforce the mastic with fabric-reinforcing mesh. Trowel the mastic to a smooth and well-shaped contour.
8. For services not specified to receive a field-applied jacket except for flexible elastomeric and polyolefin, install fitted PVC cover over elbows, tees, strainers, valves, flanges, and unions. Terminate ends with PVC end caps. Tape PVC covers to adjoining insulation facing using PVC tape.
9. Stencil or label the outside insulation jacket of each union with the word "union." Match size and color of pipe labels.

C. Insulate instrument connections for thermometers, pressure gages, pressure temperature taps, test connections, flow meters, sensors, switches, and transmitters on insulated pipes. Shape insulation at these connections by tapering it to and around the connection with insulating cement and finish with finishing cement, mastic, and flashing sealant.

D. Install removable insulation covers at locations indicated. Installation shall conform to the following:

1. Make removable flange and union insulation from sectional pipe insulation of same thickness as that on adjoining pipe. Install same insulation jacket as adjoining pipe insulation.
2. When flange and union covers are made from sectional pipe insulation, extend insulation from flanges or union long at least two times the insulation thickness over adjacent pipe insulation on each side of flange or union. Secure flange cover in place with stainless-steel or aluminum bands. Select band material compatible with insulation and jacket.
3. Construct removable valve insulation covers in same manner as for flanges, except divide the two-part section on the vertical center line of valve body.

4. When covers are made from block insulation, make two halves, each consisting of mitered blocks wired to stainless-steel fabric. Secure this wire frame, with its attached insulation, to flanges with tie wire. Extend insulation at least 2 inches over adjacent pipe insulation on each side of valve. Fill space between flange or union cover and pipe insulation with insulating cement. Finish cover assembly with insulating cement applied in two coats. After first coat is dry, apply and trowel second coat to a smooth finish.
5. Unless a PVC jacket is indicated in field-applied jacket schedules, finish exposed surfaces with a metal jacket.

3.7 INSTALLATION OF CELLULAR-GLASS INSULATION

A. Insulation Installation on Straight Pipes and Tubes:

1. Secure each layer of insulation to pipe with wire or bands and tighten bands without deforming insulation materials.
2. Where vapor barriers are indicated, seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.
3. For insulation with factory-applied jackets on above-ambient services, secure laps with outward-clinched staples at 6 inches o.c.
4. For insulation with factory-applied jackets on below-ambient services, do not staple longitudinal tabs. Instead, secure tabs with additional adhesive as recommended by insulation material manufacturer and seal with vapor-barrier mastic and flashing sealant.

B. Insulation Installation on Pipe Flanges:

1. Install preformed pipe insulation to outer diameter of pipe flange.
2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with cut sections of cellular-glass block insulation of same thickness as pipe insulation.
4. Install jacket material with manufacturer's recommended adhesive, overlap seams at least 1 inch, and seal joints with flashing sealant.

C. Insulation Installation on Pipe Fittings and Elbows:

1. Install preformed sections of same material as straight segments of pipe insulation when available. Secure according to manufacturer's written instructions.
2. When preformed sections of insulation are not available, install mitered sections of cellular-glass insulation. Secure insulation materials with wire or bands.

D. Insulation Installation on Valves and Pipe Specialties:

1. Install preformed sections of cellular-glass insulation to valve body.
2. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
3. Install insulation to flanges as specified for flange insulation application.

3.8 INSTALLATION OF MINERAL-FIBER INSULATION

A. Insulation Installation on Straight Pipes and Tubes:

1. Secure each layer of preformed pipe insulation to pipe with wire or bands and tighten bands without deforming insulation materials.
2. For insulation with factory-applied jackets on above-ambient surfaces, secure laps with outward-clinched staples at 6 inches o.c.
3. For insulation with factory-applied jackets on below-ambient surfaces, do not staple longitudinal tabs. Instead, secure tabs with additional adhesive as recommended by insulation material manufacturer and seal with vapor-barrier mastic and flashing sealant.

B. Insulation Installation on Pipe Flanges:

1. Install preformed pipe insulation to outer diameter of pipe flange.
2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with mineral-fiber blanket insulation.
4. Install jacket material with manufacturer's recommended adhesive, overlap seams at least 1 inch, and seal joints with flashing sealant.

C. Insulation Installation on Pipe Fittings and Elbows:

1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed insulation elbows and fittings are not available, install mitered sections of pipe insulation, to a thickness equal to adjoining pipe insulation. Secure insulation materials with wire or bands.

D. Insulation Installation on Valves and Pipe Specialties:

1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed sections are not available, install mitered sections of pipe insulation to valve body.
3. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
4. Install insulation to flanges as specified for flange insulation application.

3.9 FIELD QUALITY CONTROL

A. Perform tests and inspections.

B. Tests and Inspections:

1. Inspect pipe, fittings, strainers, and valves, randomly selected by Commissioning Agent or Engineer, by removing field-applied jacket and insulation in layers in reverse order of their

installation. Extent of inspection shall be limited to three locations of straight pipe, three locations of threaded fittings, three locations of welded fittings, two locations of threaded strainers, two locations of welded strainers, three locations of threaded valves, and three locations of flanged valves for each pipe service defined in the "Piping Insulation Schedule, General" Article.

C. All insulation applications including uninspected Work will be considered defective Work if sample inspection reveals noncompliance with requirements.

3.10 PIPING INSULATION SCHEDULE, GENERAL

A. Acceptable preformed pipe and tubular insulation materials and thicknesses are identified for each piping system and pipe size range. If more than one material is listed for a piping system, selection from materials listed is Contractor's option.

B. Items Not Insulated: Unless otherwise indicated, do not install insulation on the following:

1. Drainage piping located in crawl spaces.
2. Underground piping.
3. Chrome-plated pipes and fittings unless there is a potential for personnel injury.

3.11 INDOOR PIPING INSULATION SCHEDULE

A. Condensate and Equipment Drain Water below 60 Deg F:

1. All Pipe Sizes: Insulation shall be the following:
   a. Mineral-Fiber, Preformed Pipe Insulation, Type I: 1 inch thick with factory applied ASJ and PVC fitting covers.

B. Heating-Hot-Water Supply and Return, 200 Deg F and Below:

1. NPS 1-1/4 and Smaller: Insulation shall be the following:
   a. Mineral-Fiber, Preformed Pipe, Type I: 1-1/2 inches thick, with factory applied ASJ and PVC fitting covers.

2. NPS 1-1/2 and Larger: Insulation shall be the following:
   a. Mineral-Fiber, Preformed Pipe, Type I: 2 inches thick, with factory applied ASJ and PVC fitting covers.

C. Air Separators: Insulation shall be mineral-fiber, preformed pipe, type I or II, 2 inches thick with factory applied ASJ.

END OF SECTION 230719

SECTION 260519
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Building wires and cables rated 600 V and less.
   2. Connectors, splices, and terminations rated 600 V and less.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Alcan Products Corporation; Alcan Cable Division.
   2. Alpha Wire.
   3. Belden Inc.
   4. Encore Wire Corporation.
   5. General Cable Technologies Corporation.
   6. Southwire Incorporated.

B. Copper Conductors: Comply with NEMA WC 70/ICEA S-95-658.

C. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type THHN-2-THWN-2.

D. Multiconductor Cable: Comply with NEMA WC 70/ICEA S-95-658 for metal-clad cable, Type MC with ground wire.

2.2 CONNECTORS AND SPLICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AFC Cable Systems, Inc.
2. Gardner Bender.
3. Hubbell Power Systems, Inc.
4. Ideal Industries, Inc.
5. Ilsco; a branch of Bardes Corporation.
6. NSi Industries LLC.
7. O-Z/Gedney; a brand of the EGS Electrical Group.
8. 3M; Electrical Markets Division.
9. Tyco Electronics.

B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

2.3 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70.

PART 3 - EXECUTION

3.1 NOTE REGARDING INSTALLATION OF FIRE ALARM, FIRE PROTECTION, HVAC, PLUMBING AND ELECTRICAL DEVICES:

A. The Architect's intention is to align and/or center wall-mounted devices, typically, and ceiling-mounted devices as well, whether those devices are provided by the electrician, plumber, sprinkler installer, mechanical sub-contractor, or others. For walls, these devices and their alignments may be indicated on interior elevations or building sections, but, regardless, it is expected that adjustments may need to be made in the field, or that additional items may be required. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include sconces, switches, thermostats and electrical outlets, where located close to one another, and may also include wall diffusers, side-mounted sprinkler heads, return grilles, access panels, pull stations, horns and strobes, etc.

B. In ceilings, the Architect's intention is to center ceiling-mounted elements within a space or a room, and/or to align them with one another. These devices and their alignments may be indicated on the reflected ceiling plans, but it is expected that adjustments may need to be made in the field, or that additional items may be required to be mounted. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include lights, HVAC equipment, access panels, diffusers and returns, sprinkler heads, paddle

fans, ceiling lights, exhaust fans, smoke detectors, etc. If the ceiling is of a modular type (panels), it is expected that device locations will also be coordinated and aligned and/or centered within the panels.

C. The General Contractor shall coordinate the various trades involved in providing and installing such wall- and ceiling-mounted devices before any installation begins, in accordance with the requirement for a preliminary coordination meeting called for elsewhere in these specifications. The General Contractor shall review approaches to locating devices, and specific device locations, with the Architect before roughing. Roughed items that do not comply with the intentions of this section, or with the architectural drawings, shall be relocated per the Architect's direction. Additional payment will not be made for the cost of relocating elements that were not installed in accordance with these intentions or with the Architect's approval, or for the cost of patching of finishes that might be necessary by such relocation.

3.2 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

3.3 CONDUCTOR INSULATION APPLICATIONS AND WIRING METHODS

A. Service Entrance: Type THHN-2-THWN-2, single conductors in raceway.

B. Exposed Feeders: Type THHN-2-THWN-2, single conductors in raceway.

C. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspaces: Type THHN-2-THWN-2, single conductors in raceway.

D. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-2-THWN-2, single conductors in raceway.

E. Exposed Branch Circuits, Including in Crawlspaces: Type THHN-2-THWN-2, single conductors in raceway.

F. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-2-THWN-2, single conductors in raceway.

G. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-2-THWN-2, single conductors in raceway.

3.4 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.

B. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.

C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

F. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."

3.5 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

B. Make splices, terminations, and taps that are compatible with conductor material.

C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

3.6 IDENTIFICATION

A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

3.7 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.8 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 078413 "Penetration Firestopping."

3.9 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:
   1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.
   2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.

B. Test and Inspection Reports: Prepare a written report to record the following:
   1. Procedures used.
   2. Results that comply with requirements.
   3. Results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

C. Cables will be considered defective if they do not pass tests and inspections.

END OF SECTION 260519

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SECTION 260526
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes grounding and bonding systems and equipment.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.4 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Burndy; Part of Hubbell Electrical Systems.
2. Dossert; AFL Telecommunications LLC.

3. ERICO International Corporation.
4. Fushi Copperweld Inc.
5. Galvan Industries, Inc.; Electrical Products Division, LLC.
6. Harger Lightning and Grounding.
7. ILSCO.
8. O-Z/Gedney; A Brand of the EGS Electrical Group.
9. Robbins Lightning, Inc.
10. Siemens Power Transmission & Distribution, Inc.

2.2 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

2.3 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
3. Tinned Conductors: ASTM B 33.
4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.
5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
6. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

2.4 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy.

C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

D. Bus-Bar Connectors: Mechanical type, cast silicon bronze, solderless compression-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

PART 3 - EXECUTION

3.1 NOTE REGARDING INSTALLATION OF FIRE ALARM, FIRE PROTECTION, HVAC, PLUMBING AND ELECTRICAL DEVICES:

A. The Architect's intention is to align and/or center wall-mounted devices, typically, and ceiling-mounted devices as well, whether those devices are provided by the electrician, plumber, sprinkler installer, mechanical sub-contractor, or others. For walls, these devices and their alignments may be indicated on interior elevations or building sections, but, regardless, it is expected that adjustments may need to be made in the field, or that additional items may be required. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include sconces, switches, thermostats and electrical outlets, where located close to one another, and may also include wall diffusers, side-mounted sprinkler heads, return grilles, access panels, pull stations, horns and strobes, etc.

B. In ceilings, the Architect's intention is to center ceiling-mounted elements within a space or a room, and/or to align them with one another. These devices and their alignments may be indicated on the reflected ceiling plans, but it is expected that adjustments may need to be made in the field, or that additional items may be required to be mounted. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include lights, HVAC equipment, access panels, diffusers and returns, sprinkler heads, paddle fans, ceiling lights, exhaust fans, smoke detectors, etc. If the ceiling is of a modular type (panels), it is expected that device locations will also be coordinated and aligned and/or centered within the panels.

C. The General Contractor shall coordinate the various trades involved in providing and installing such wall- and ceiling-mounted devices before any installation begins, in accordance with the requirement for a preliminary coordination meeting called for elsewhere in these specifications. The General Contractor shall review approaches to locating devices, and specific device locations, with the Architect before roughing. Roughed items that do not comply with the intentions of this section, or with the architectural drawings, shall be relocated per the Architect's direction. Additional payment will not be made for the cost of relocating elements that were not installed in accordance with these intentions or with the Architect's approval, or for the cost of patching of finishes that might be necessary by such relocation.

3.2 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

B. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
3. Connections to Ground Rods at Test Wells: Bolted connectors.
4. Connections to Structural Steel: Welded connectors.

3.3 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Metallic Fences: Comply with requirements of IEEE C2.

1. Grounding Conductor: Bare copper, not less than No. 8 AWG.

3.4 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.

C. Grounding and Bonding for Piping:

1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use a bolted clamp connector or bolt a lug-type connector to a pipe flange by using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.

D. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install tinned bonding jumper to bond across flexible duct connections to achieve continuity.

3.5 FIELD QUALITY CONTROL

A. Perform tests and inspections.

B. Tests and Inspections:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal. Make tests at ground rods before any conductors are connected.

    a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
    b. Perform tests by fall-of-potential method according to IEEE 81.

C. Grounding system will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

E. Report measured ground resistances that exceed the following values:

1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 10 ohms.

F. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 260526

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SECTION 260529
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Hangers and supports for electrical equipment and systems.

1.3 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. IMC: Intermediate metal conduit.

C. RMC: Rigid metal conduit.

1.4 ACTION SUBMITTALS

A. Product Data: For the following:

1. Steel slotted support systems.

B. Shop Drawings: Show fabrication and installation details and include calculations for the following:

1. Trapeze hangers. Include Product Data for components.
2. Steel slotted channel systems. Include Product Data for components.
3. Equipment supports.

1.5 QUALITY ASSURANCE

A. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Allied Tube & Conduit.
    b. Cooper B-Line, Inc.
    c. ERICO International Corporation.
    d. GS Metals Corp.
    e. Thomas & Betts Corporation.
    f. Unistrut; Atkore International.
    g. Wesanco, Inc.

2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
3. Channel Dimensions: Selected for applicable load criteria.

4. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Allied Tube & Conduit.
    b. Cooper B-Line, Inc.
    c. Fabco Plastics Wholesale Limited.
    d. Seasafe, Inc.

5. Fittings and Accessories: Products of channel and angle manufacturer and designed for use with those items.
6. Fitting and Accessory Materials: Same as channels and angles.
7. Rated Strength: Selected to suit applicable load criteria.

B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.

C. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1) Hilti, Inc.
2) ITW Ramset/Red Head; Illinois Tool Works, Inc.
3) MKT Fastening, LLC.
4) Simpson Strong-Tie Co., Inc.

2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.

a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1) Cooper B-Line, Inc.
2) Empire Tool and Manufacturing Co., Inc.
3) Hilti, Inc.
4) ITW Ramset/Red Head; Illinois Tool Works, Inc.
5) MKT Fastening, LLC.

3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
6. Toggle Bolts: All-steel springhead type.
7. Hanger Rods: Threaded steel.

2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

PART 3 - EXECUTION

3.1 NOTE REGARDING INSTALLATION OF FIRE ALARM, FIRE PROTECTION, HVAC, PLUMBING AND ELECTRICAL DEVICES:

A. The Architect's intention is to align and/or center wall-mounted devices, typically, and ceiling-mounted devices as well, whether those devices are provided by the electrician, plumber, sprinkler installer, mechanical sub-contractor, or others. For walls, these devices and their alignments may be indicated on interior elevations or building sections, but, regardless, it is expected that adjustments may need to be made in the field, or that additional items may be required. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include sconces, switches, thermostats and electrical outlets, where located close to one another, and may also include wall diffusers, side-mounted sprinkler heads, return grilles, access panels, pull stations, horns and strobes, etc.

B. In ceilings, the Architect's intention is to center ceiling-mounted elements within a space or a room, and/or to align them with one another. These devices and their alignments may be indicated on the reflected ceiling plans, but it is expected that adjustments may need to be made in the field, or that additional items may be required to be mounted. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include lights, HVAC equipment, access panels, diffusers and returns, sprinkler heads, paddle fans, ceiling lights, exhaust fans, smoke detectors, etc. If the ceiling is of a modular type (panels), it is expected that device locations will also be coordinated and aligned and/or centered within the panels.

C. The General Contractor shall coordinate the various trades involved in providing and installing such wall- and ceiling-mounted devices before any installation begins, in accordance with the requirement for a preliminary coordination meeting called for elsewhere in these specifications. The General Contractor shall review approaches to locating devices, and specific device locations, with the Architect before roughing. Roughed items that do not comply with the intentions of this section, or with the architectural drawings, shall be relocated per the Architect's direction. Additional payment will not be made for the cost of relocating elements that were not installed in accordance with these intentions or with the Architect's approval, or for the cost of patching of finishes that might be necessary by such relocation.

3.2 APPLICATION

A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.

B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.

C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

1. Secure raceways and cables to these supports with two-bolt conduit clamps.

3.3 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.

B. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, as permitted in NFPA 70.

C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.

D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.
3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners.
5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.
6. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts.
7. To Light Steel: Sheet metal screws.
8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.

E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.4 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

B. Field Welding: Comply with AWS D1.1/D1.1M.

3.5 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.

B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 260529

SECTION 260533
RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Metal conduits, tubing, and fittings.
2. Boxes, enclosures, and cabinets.

1.3 DEFINITIONS

A. GRC: Galvanized rigid steel conduit.

B. IMC: Intermediate metal conduit.

1.4 ACTION SUBMITTALS

A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved:

1. Structural members in paths of conduit groups with common supports.
2. HVAC and plumbing items and architectural features in paths of conduit groups with common supports.

PART 2 - PRODUCTS

2.1 METAL CONDUITS, TUBING, AND FITTINGS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AFC Cable Systems, Inc.
2. Allied Tube & Conduit.
3. Anamet Electrical, Inc.
4. Electri-Flex Company.
5. O-Z/Gedney.
6. Picoma Industries.
7. Republic Conduit.
8. Robroy Industries.
9. Southwire Company.
10. Thomas & Betts Corporation.
11. Western Tube and Conduit Corporation.
12. Wheatland Tube Company.

B. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. GRC: Comply with ANSI C80.1 and UL 6.

D. IMC: Comply with ANSI C80.6 and UL 1242.

E. EMT: Comply with ANSI C80.3 and UL 797.

F. FMC: Comply with UL 1; zinc-coated steel.

G. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.

H. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.
1. Fittings for EMT:

a. Material: Steel.
b. Type: Setscrew or compression.

2. Expansion Fittings: Steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.

I. Joint Compound for IMC or GRC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.2 BOXES, ENCLOSURES, AND CABINETS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Adalet.
2. Cooper Technologies Company; Cooper Crouse-Hinds.
3. EGS/Appleton Electric.
4. Erickson Electrical Equipment Company.
5. FSR Inc.
6. Hoffman.
7. Hubbell Incorporated.
8. Kraloy.
9. Milbank Manufacturing Co.
10. Mono-Systems, Inc.
11. O-Z/Gedney.
12. RACO; Hubbell.
13. Robroy Industries.
14. Spring City Electrical Manufacturing Company.
15. Stahlin Non-Metallic Enclosures.
16. Thomas & Betts Corporation.
17. Wiremold / Legrand.

B. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.

C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.

D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.

E. Luminaire Outlet Boxes: Nonadjustable, designed for attachment of luminaire weighing 50 lb. Outlet boxes designed for attachment of luminaires weighing more than 50 lb shall be listed and marked for the maximum allowable weight.

F. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

G. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, cast aluminum with gasketed cover.

H. Box extensions used to accommodate new building finishes shall be of same material as recessed box.

I. Device Box Dimensions: 4 inches square by 2-1/8 inches deep.

J. Gangable boxes are allowed.

K. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, Type 1 with continuous-hinge cover with flush latch unless otherwise indicated.

1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
2. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.

L. Cabinets:

1. NEMA 250, Type 1 galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
2. Hinged door in front cover with flush latch and concealed hinge.
3. Key latch to match panelboards.

PART 3 - EXECUTION

3.1 NOTE REGARDING INSTALLATION OF FIRE ALARM, FIRE PROTECTION, HVAC, PLUMBING AND ELECTRICAL DEVICES:

A. The Architect’s intention is to align and/or center wall-mounted devices, typically, and ceiling-mounted devices as well, whether those devices are provided by the electrician, plumber, sprinkler installer, mechanical sub-contractor, or others. For walls, these devices and their alignments may be indicated on interior elevations or building sections, but, regardless, it is expected that adjustments may need to be made in the field, or that additional items may be required. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include sconces, switches, thermostats and electrical outlets, where located close to one another, and may also include wall diffusers, side-mounted sprinkler heads, return grilles, access panels, pull stations, horns and strobes, etc.

B. In ceilings, the Architect’s intention is to center ceiling-mounted elements within a space or a room, and/or to align them with one another. These devices and their alignments may be indicated on the reflected ceiling plans, but it is expected that adjustments may need to be made in the field, or that additional items may be required to be mounted. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include lights, HVAC equipment, access panels, diffusers and returns, sprinkler heads, paddle fans, ceiling lights, exhaust fans, smoke detectors, etc. If the ceiling is of a modular type (panels), it is expected that device locations will also be coordinated and aligned and/or centered within the panels.

C. The General Contractor shall coordinate the various trades involved in providing and installing such wall- and ceiling-mounted devices before any installation begins, in accordance with the requirement for a preliminary coordination meeting called for elsewhere in these specifications. The General Contractor shall review approaches to locating devices, and specific device locations, with the Architect before roughing. Roughed items that do not comply with the intentions of this section, or with the architectural drawings, shall be relocated per the Architect’s direction. Additional payment will not be made for the cost of relocating elements that were not

installed in accordance with these intentions or with the Architect's approval, or for the cost of patching of finishes that might be necessary by such relocation.

3.2 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed Conduit: GRC.
2. Concealed Conduit, Aboveground: GRC.
3. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
4. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.

B. Indoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed, Not Subject to Physical Damage: EMT.
2. Exposed, Not Subject to Severe Physical Damage: EMT.
3. Exposed and Subject to Severe Physical Damage: GRC.
4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
6. Damp or Wet Locations: IMC.
7. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4 stainless steel in institutional and commercial kitchens and damp or wet locations.

C. Minimum Raceway Size: 1/2-inch trade size.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with this type of conduit. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
3. EMT: Use setscrew or compression, fittings. Comply with NEMA FB 2.10.
4. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.

3.3 INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.

B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

C. Complete raceway installation before starting conductor installation.

D. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.

E. Arrange stub-ups so curved portions of bends are not visible above finished slab.

F. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction.

G. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.

H. Support conduit within 12 inches of enclosures to which attached.

I. Stub-ups to Above Recessed Ceilings:

1. Use EMT, IMC, or RMC for raceways.
2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.

J. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.

K. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.

L. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.

M. Cut conduit perpendicular to the length. For conduits 2-inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.

N. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.

O. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.

P. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where an underground service raceway enters a building or structure.
3. Where otherwise required by NFPA 70.

Q. Expansion-Joint Fittings:

1. Install in each run of aboveground RNC that is located where environmental temperature change may exceed 30 deg F and that has straight-run length that exceeds 25 feet. Install in each run of aboveground RMC and EMT conduit that is located where environmental temperature change may exceed 100 deg F and that has straight-run length that exceeds 100 feet.
2. Install type and quantity of fittings that accommodate temperature change listed for each of the following locations:

    a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
    b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.
    c. Indoor Spaces Connected with Outdoors without Physical Separation: 125 deg F temperature change.
    d. Attics: 135 deg F temperature change.

3. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change for PVC conduits. Install fitting(s) that provide expansion and contraction for at least 0.000078 inch per foot of length of straight run per deg F of temperature change for metal conduits.
4. Install expansion fittings at all locations where conduits cross building or structure expansion joints.
5. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.

R. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches of flexible conduit for equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

1. Use LFMC in damp or wet locations subject to severe physical damage.
2. Use LFMC in damp or wet locations not subject to severe physical damage.

S. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.

T. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a raintight connection between box and cover plate or supported equipment and box.

U. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.

V. Locate boxes so that cover or plate will not span different building finishes.

W. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.

X. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

3.4 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.5 FIRESTOPPING

A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

3.6 PROTECTION

A. Protect coatings, finishes, and cabinets from damage and deterioration.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.

END OF SECTION 260533

SECTION 262726
WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Receptacles, receptacles with integral GFCI, and associated device plates.
2. Weather-resistant receptacles.
3. Snap switches and wall-box dimmers.
4. Wall-switch and exterior occupancy sensors.
5. Communications outlets.

1.3 DEFINITIONS

A. GFCI: Ground-fault circuit interrupter.

B. Pigtail: Short lead used to connect a device to a branch-circuit conductor.

1.4 ADMINISTRATIVE REQUIREMENTS

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.

1.6 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing-label warnings and instruction manuals that include labeling conditions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:

1. Cooper Wiring Devices; Division of Cooper Industries, Inc. (Cooper).
2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
3. Leviton Mfg. Company Inc. (Leviton).
4. Pass & Seymour/Legrand (Pass & Seymour).

B. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

2.2 GENERAL WIRING-DEVICE REQUIREMENTS

A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70.

C. Devices that are manufactured for use with modular plug-in connectors may be substituted under the following conditions:

1. Connectors shall comply with UL 2459 and shall be made with stranding building wire.
2. Devices shall comply with the requirements in this Section.

2.3 STRAIGHT-BLADE RECEPTACLES

A. Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498, and FS W-C-596.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; 5351 (single), CR5362 (duplex).
b. Hubbell; HBL5351 (single), HBL5352 (duplex).
c. Leviton; 5891 (single), 5352 (duplex).
d. Pass & Seymour; 5361 (single), 5362 (duplex).

2.4 GFCI RECEPTACLES

A. General Description:

1. Straight blade, feed-through type.
2. Comply with NEMA WD 1, NEMA WD 6, UL 498, UL 943 Class A, and FS W-C-596.
3. Include indicator light that shows when the GFCI has malfunctioned and no longer provides proper GFCI protection.

B. Duplex GFCI Convenience Receptacles, 125 V, 20 A:

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; VGF20.
b. Hubbell; GFR5352L.
c. Pass & Seymour; 2095.
d. Leviton; 7590.

2.5 TOGGLE SWITCHES

A. Comply with NEMA WD 1, UL 20, and FS W-S-896.

B. Switches, 120/277 V, 20 A:

1. Products: Subject to compliance with requirements, provide one of the following:

1) Single Pole:

2) Cooper; AH1221.
3) Hubbell; HBL1221.
4) Leviton; 1221-2.
5) Pass & Seymour; CSB20AC1.

6) Two Pole:

7) Cooper; AH1222.
8) Hubbell; HBL1222.
9) Leviton; 1222-2.
10) Pass & Seymour; CSB20AC2.

11) Three Way:

12) Cooper; AH1223.
13) Hubbell; HBL1223.
14) Leviton; 1223-2.
15) Pass & Seymour; CSB20AC3.

16) Four Way:

17) Cooper; AH1224.
18) Hubbell; HBL1224.
19) Leviton; 1224-2.
20) Pass & Seymour; CSB20AC4.

2.6 DECORA-STYLE DEVICES

A. Convenience Receptacles: Square face, 125 V, 15 A; comply with NEMA WD 1, NEMA WD 6 Configuration 5-15R, and UL 498.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; 6252.
b. Hubbell; DR15.
c. Leviton; 16252.
d. Pass & Seymour; 26252.

B. GFCI, Feed-Through Type, Convenience Receptacles: Square face, 125 V, 15 A; comply with NEMA WD 1, NEMA WD 6 Configuration 5-15R, UL 498, and UL 943 Class A.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; VGF15.
b. Hubbell; GF15LA.
c. Leviton; 8599.
d. Pass & Seymour; 1594.

C. Rocker Switches, Square Face, 120/277 V, 15 A: Comply with NEMA WD 1, UL 20, and FS W-S-896.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; 7621 (single pole), 7623 (three way).
b. Hubbell; DS115 (single pole), DS315 (three way).
c. Leviton; 5621-2 (single pole), 5623-2 (three way).
d. Pass & Seymour; 2621 (single pole), 2623 (three way).

2.7 WALL PLATES

A. Single and combination types shall match corresponding wiring devices.

1. Plate-Securing Screws: Metal with head color to match plate finish.
2. Material for Finished Spaces: Steel with white baked enamel, suitable for field painting.
3. Material for Unfinished Spaces: Galvanized steel.

2.8 PREFABRICATED MULTIOUTLET ASSEMBLIES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Hubbell Incorporated; Wiring Device-Kellems.
2. Wiremold/Legrand.

B. Description:

1. Two-piece surface metal raceway, with factory-wired multioutlet harness.
2. Components shall be products from single manufacturer designed for use as a complete, matching assembly of raceways and receptacles.

C. Raceway Material: Metal, with manufacturer's standard finish.

D. Multioutlet Harness:

1. Receptacles: 15-A, 125-V, NEMA WD 6 Configuration 5-15R receptacles complying with NEMA WD 1, UL 498, and FS W-C-596.
2. Receptacle Spacing: 6 inches.
3. Wiring: No. 12 AWG solid, Type THHN copper, single circuit.
4.

2.9 FINISHES

A. Device Color:

1. Wiring Devices Connected to Normal Power System: As selected by architect.

B. Wall Plate Color: For plastic covers, match device color.

PART 3 - EXECUTION

3.1 NOTE REGARDING INSTALLATION OF FIRE ALARM, FIRE PROTECTION, HVAC, PLUMBING AND ELECTRICAL DEVICES:

A. The Architect’s intention is to align and/or center wall-mounted devices, typically, and ceiling-mounted devices as well, whether those devices are provided by the electrician, plumber, sprinkler installer, mechanical sub-contractor, or others. For walls, these devices and their alignments may be indicated on interior elevations or building sections, but, regardless, it is expected that adjustments may need to be made in the field, or that additional items may be required. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include sconces, switches, thermostats and electrical outlets, where located close to one another, and may also include wall diffusers, side-mounted sprinkler heads, return grilles, access panels, pull stations, horns and strobes, etc.

B. In ceilings, the Architect's intention is to center ceiling-mounted elements within a space or a room, and/or to align them with one another. These devices and their alignments may be indicated on the reflected ceiling plans, but it is expected that adjustments may need to be made in the field, or that additional items may be required to be mounted. The installation of all such items shall be as reviewed and approved by the Architect. The devices to be aligned and/or centered may include lights, HVAC equipment, access panels, diffusers and returns, sprinkler heads, paddle fans, ceiling lights, exhaust fans, smoke detectors, etc. If the ceiling is of a modular type (panels), it is expected that device locations will also be coordinated and aligned and/or centered within the panels.

C. The General Contractor shall coordinate the various trades involved in providing and installing such wall- and ceiling-mounted devices before any installation begins, in accordance with the requirement for a preliminary coordination meeting called for elsewhere in these specifications. The General Contractor shall review approaches to locating devices, and specific device locations, with the Architect before roughing. Roughed items that do not comply with the intentions of this section, or with the architectural drawings, shall be relocated per the Architect's direction. Additional payment will not be made for the cost of relocating elements that were not installed in accordance with these intentions or with the Architect's approval, or for the cost of patching of finishes that might be necessary by such relocation.

3.2 INSTALLATION

A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.

B. Coordination with Other Trades:

1. Protect installed devices and their boxes. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of boxes.
2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
4. Install wiring devices after all wall preparation, including painting, is complete.

C. Conductors:

1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.
2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
4. Existing Conductors:

    a. Cut back and pigtail, or replace all damaged conductors.
    b. Straighten conductors that remain and remove corrosion and foreign matter.

c. Pigtailing existing conductors is permitted, provided the outlet box is large enough.

D. Device Installation:

1. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.

E. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles down.

F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

G. Dimmers:

1. Install dimmers within terms of their listing.
2. Verify that dimmers used for fan speed control are listed for that application.
3. Install unshared neutral conductors on line and load side of dimmers according to manufacturers' device listing conditions in the written instructions.

H. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

3.3 GFCI RECEPTACLES

A. Install non-feed-through-type GFCI receptacles where protection of downstream receptacles is not required.

3.4 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Test Instruments: Use instruments that comply with UL 1436.
2. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.

B. Tests for Convenience Receptacles:

1. Line Voltage: Acceptable range is 105 to 132 V.
2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is unacceptable.
3. Ground Impedance: Values of up to 2 ohms are acceptable.
4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
5. Using the test plug, verify that the device and its outlet box are securely mounted.
6. Tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.

C. Wiring device will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

END OF SECTION 262726

SECTION 329219
SEEDING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Seeding.

1.2 INFORMATIONAL SUBMITTALS

A. Certification of grass seed.

B. Certification of each seed mixture

C. Product certificates.

1.3 QUALITY ASSURANCE

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

PART 2 PRODUCTS

2.1 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species:
   1. Quality, State Certified: State-certified seed of grass species as listed below for solar exposure.
   2. Full Sun: Kentucky Bluegrass.
   3. Shade: Proportioned by weight as follows:
      a. 60 percent Kentucky blue grass .
      b. 20 precent improved perennial ryegrass
      c. 20 percent fie Fescules

2.2 FERTILIZERS

2.3 Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

2.4 MULCHES

A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

2.5 PESTICIDES

A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

PART 3 EXECUTION

3.1 SEEDING

3.2 Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph (8 km/h).

A. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.

B. Do not use wet seed or seed that is moldy or otherwise damaged.

C. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.

D. Sow seed at a total rate of [3 to 4 lb/1000 sq. ft.

E. Rake seed lightly into top 1/8 inch (3 mm) of soil, roll lightly, and water with fine spray.

F. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of [2 tons/acre] to form a continuous blanket [1-1/2 inches in loose thickness over seeded areas.

G. Protect seeded areas from hot, dry weather or drying winds by applying compost mulch 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a thickness of [3/16 inch and roll surface smooth.

3.3 TURF MAINTENANCE

A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

B. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings.

3.4 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Architect:
   1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding [90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches

B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

END OF SECTION 329219

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