



## Town of Fairfield

Sullivan Independence Hall  
725 Old Post Road

Fairfield, Connecticut 06824  
Purchasing Department

(203) 256-3060  
FAX (203) 256-3080

### Award Recommendation Resolution:

On Wednesday, 16 February, 2022 the Purchasing Authority recommended an award of bid number 2022-109 Request for Proposals for Engineering and Design Services for Dredging at Lake Mohegan to RACE Coastal Engineering, Stratford, CT for the total amount of \$63,925.00 based on the firm's qualifications and experience.

Section I: Lake Mohegan Dredging – \$30,070.00

Section II: Restoration for the Beach Structure (Stairways, Concession, and Building) – \$9,655.00

Section III: Add Alternate – Extra Work, Design of additional storm and detention systems - \$24,200.00

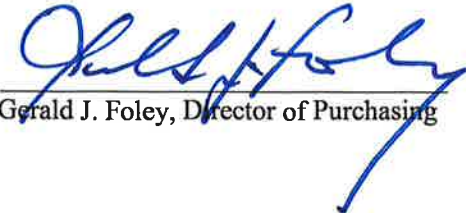
Total for all work involved – \$63,925.00

Following is justification for the selection:

- RACE is a shortlisted firm for the On-Call Coastal Engineering Services per RFQ 2022-78. As a short-listed firm, RACE provided the Town with a competitive fee proposal for the Dredging at Lake Mohegan project.
- RACE has provided the Town with a vast list of similar services in which they have successfully performed.
- RACE is deemed the most qualified firm for these services based on the qualification submission materials that were submitted for this solicitation.

The award of this contract may be subject to the review and approval of the Board of Selectman.

  
Brenda L. Kupchick, First Selectwoman

  
Gerald J. Foley, Director of Purchasing



**TOWN OF FAIRFIELD  
PURCHASING DEPARTMENT**

**REQUEST FOR PROPOSAL**

To: Prequalified Coastal Engineering Consultants

From: Corinne M. Dyer, Senior Buyer, Fairfield Purchasing Department

Date: 1/21/2022

Re: Town of Fairfield – Design Services for Dredging at Lake Mohegan

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The Town of Fairfield is submitting this Request for Proposal (RFP) to shortlisted qualified coastal engineering consulting firms that were prequalified through the Town of Fairfield's Purchasing Department procurement process in relation to Request for Qualification (RFQ) #2022-78 On-Call Coastal Engineering Services. The Town is requesting cost proposals from the shortlisted firms for the Scope of Services listed in the sections below.

**DEADLINES**

All RFI's shall be submitted via email to Corinne Dyer; [cdyer@fairfieldct.org](mailto:cdyer@fairfieldct.org) by Noon on Friday, Jan. 28<sup>th</sup>, 2022.

RFPs shall be submitted electronically by 12pm on Monday, February 7<sup>th</sup>, 2022 to [cdyer@fairfieldct.org](mailto:cdyer@fairfieldct.org)

**Purpose:**

The Town of Fairfield is seeking qualified engineering firms to design plans for a necessary dredging project at the Lake Mohegan. This engineer will be responsible for plans and specifications for dredging material, as well as restoring the area around the beach, structures, stairs, sidewalks and the concession building that were impacted by the Hurricane Ida.



The design proposal is broken up into three (3) sections;

- Section 1 includes Hydrographic/Bathymetric & Topographic Survey, sampling specification and restoration of the beach. The Town is hoping for minimal contamination due to “fresh” sand and sediment that entered the lake.
- Section 2 includes Restoration for the Beach Structure (Sidewalks, Stairways, Scour near Concession Building).
- Section 3 shall be an Add Alternate, depending on the Town’s preference and funding, the Consultant shall investigate engineering options to help prevent future excessive runoff and erosion from parking lot and beach area. This shall include designing additional storm system structures, designing a detention area uphill or east of the parking lot and other permanent erosion and sediment control structures to help reduce the impact of another 100-year storm.

During the preliminary analysis as mentioned in the detail below, an option of pumping in flow able concrete to fill the cavities under the eroded foundation of sidewalks, stairways and the concession building is being considered unless replacement is necessary.

#### **Preliminary Analysis:**

A preliminary analysis was conducted for the Town of Fairfield of the lower area of the Lake Mohegan. A significant quantity of sand washed into the waterfront from the beach at the Lake Mohegan. There also has been significant amount of organic material washed into the area adjacent to the beach, near the outlet of the lake as shown in the attached map.

- Based on the preliminary analysis, approximately 13,500 square feet of the area (1,250 CY) is anticipated to be dredged.
- The average sediment depth is estimated at approximately 2.25’.
- The water depth appears to drop off to an approximate depth greater than fifteen (15) feet as it extends further out from the shore as shown in the attached plan.
- The area depicted near the outlet has modest amounts of organic sediment with emergent vegetation and washed down organic debris. This area will be included in the area to be dredged.
- The intent is to obtain a smoothed out grade of the sediments to make this area safe and desirable to swimmers. The Engineer shall take all necessary measures to prevent a steep drop off in the grade of the beach area.
- All measurements and estimates shall be verified by the selected Engineering Firm.
- Per the field observation, velocity of the water picks up at the outlet due to the steepness of the

lake. The stone outlet is approximately five (5') feet wide and three (3') feet high. This outlet should be protected while dredging the lake. The river flows through the northern part of the area and into Lake Mohegan and then exits the lake through a spillway/outlet and continues south.

The Engineering Department has coordinated with the permitting agencies to acquire information for the DEEP, ACOE, and Dam Safety Permits. Lake Mohegan is noncoastal/tidal waterbody, this work will not trigger any of the DEEP's coastal program requirements. The Town has submitted NDDB for State listed species review and fisheries consultation form to the DEEP. Fisheries Dept. has given an approval based on the preliminary analysis. The area is outside NDDB delineation but if any comments, the Consultant - be notified. The Consultant shall be responsible for notifying the Town if any supplemental protocols are determined after the sampling and hydrographic/bathymetric survey to ensure the Town is working in compliance with all applicable permitting agencies.

The hydrographic/bathymetric survey and the sampling shall be completed prior to bidding out to the contractors. The quantity of sand and material that is being proposed for dredging is approximately 1,250 cubic yards so it is anticipated that three (3) main samples will be collected and tested for composition, grain size and potential offsite disposal. The list of contaminants that are recommended for collecting and testing of potential dredged material using a CT certified lab are listed on page 4 of this RFP. The Engineering Department conducted a survey at Lake Mohegan and has 1977 survey maps. Attached are the pictures and the plans for the reference.

### **Scope of Work**

The following scope will be completed as part of this RFP:

#### **Section I - Lake Mohegan Dredging**

##### **A. Hydrographic Survey & Topographic Survey:**

1. Consultant shall provide a detailed hydrographic/bathymetric survey of the dredge footprint of the lake and the topographic survey, proposed dredge dewatering footprint, channel boundaries, relevant shoreline features, beach area and volume of sediment deposits.
2. Cross sections of the existing lake in the proposed dredge footprint and one cross section beyond the dredged footprint.
3. Final As-Built Survey of the dredged footprint to determine the construction bid line item and permit conditions.

4. Restoration & Maintenance Plan of the sandy beach and affected areas. Include stockpile, storage and dewatering areas.

**B. Sediment coring and sample collection:**

1. Prior to conducting the sampling, the selected Consultant may have to conduct field screening to determine the method for sampling for waste characterization. Use hand auger, macro core sampler or other conventional method. Consultant shall notify the Town about the methods of sampling that are proposed. As per the requirement of Army Corps of Engineers the sampling method shall meet the criteria of Self Verification or a preconstruction notification (PCN). As an example, sediment sampling via soil boring would require submittal of a Self-Verification Notification Form (SVNF) to the Corps provided all criteria of the CT GP and General Conditions are met. Consultant shall notify the Town to determine the submittals to the permitting agencies.

Anticipated lab analysis tests (5 point composite) for dredged and imported materials are:

ETPH- CTDPH

VOCs- EPA 8260 (grab)

SVOCs/PAH-EPA 8270

Total RCRA 8 Metals

PCBs- 8082A

Pesticides- 8081

Herbicides 8151

2. Using sieve analysis, determine Grain Size of material to be dredged (e.g., silty sand). Provide any existing sediment grain size and sediment chemistry data from the proposed project. Conduct sediment coring and sample collection within the proposed dredge footprint. Submit test results for the samples. The Town shall pay all lab fees direct to the laboratory.
3. Prepare proposed dredged sediment location plan for on-site placement and identify an alternative location if the disposal location is determined not feasible or unsuitable. The samples will be delivered to the State approved laboratories and results should be submitted to the Engineering Department.
4. Site Monitoring: The consultant shall provide weekly (or as needed) inspection to confirm contractor is following the project contract requirements, best practices and provide the Town with a short weekly site monitor report. The consultant will also inspect erosion and undermining of the beach and beachside structures (including the concession building, sidewalks and stairways)

that were impacted from the storm. Provide standard specifications and drawings for restoration and stabilization.

5. (Extra Work item) If soil testing reveals contaminated soil, Consultant shall notify Town and provide an additional scope of services for the planning of waste manifests, proper disposal and means and methods to direct Contractor in the specifications. The Town and Consultant shall mutually agree upon these services and fee.

**C. Prepare Dredging Specification**

1. Provide detailed specification for the bidding purposes. Specifications shall include detailed dewatering procedure, disposal or placement of the dredged material, handling of the dredged material on site, protection of outlet during dredging, maintenance of any soil erosion and sedimentation features that will be required and to follow DEEP recommendations such as the procedure for the protection of any habitat features to provide important shelter and foraging opportunities for fish in the pond as well habitat for turtles and other wildlife.

**Section II - Restoration for the Beach Structure (Stairways, Concession Building)**

**A. Inspection:**

1. Assess any damage to beach structures (Sidewalks, Stairways, Scour near Concession Building) due to erosion from the storm.
2. Consultant shall provide project plans that include recommendations to repair, limit damage or replace structure(s) if necessary. Show any recommendations and details. The town has survey and site plans of the beach area that can be utilized for any proposed work. Provide Survey of the beachfront area; note lake hydrographic/bathymetry pricing shall be included in Section 1 Fee Proposal. The Town shall pay all lab fees directly to the laboratory.

**Deliverables**

1. Consultant shall prepare update summary reports to the Town's staff (Project Team) every two weeks, that will describe progress items, milestones achieved, look ahead schedule and how any deficiencies are being addressed.
2. Provide Reports and plans both in digital and PDF Format. Plans should be provided both in PDF and ACAD format.

3. Consultant shall provide design plans, specifications and details for the project including lake and beach area. Also, include proposed grading on the plans, with proposed cut/fill calculations. The Town and Consultant will decide whether additional sand will need to be purchased to restore the beach area.

### **Section III- Extra Work and Additional Engineering**

1. ADD ALTERNATE- The Town may direct the selected Consultant to perform drainage analysis of existing parking lot and beach watershed if funding and time allows. Design for additional drainage structures and detention area east (uphill) from current parking lot. Design storms of 10 and 100-year frequency. (1% and 10% probability storm). Consultant shall create design plans, details, and specifications for project contract bid.

### **Schedule**

Lake Mohegan Beach is presently closed to the public due to erosion of the sand. The Town's goal is to publically bid the dredging portion of this contract ASAP, with an anticipated finish date of May 23, 2022. In order to meet the anticipated deadline, the Town would like the above scope of services completed by March 9, 2022.

## **COST PROPOSAL**

Shortlisted Firm: \_\_\_\_\_

The proposal should include all of the necessary costs to complete the following minimum scope of work as presented above. Proposal should be submitted on company letterhead with a detailed breakout of the costs shown below:

### **Section I - Lake Mohegan Dredging**

Phase 1- Bathymetric Survey (exist/as built) \$ \_\_\_\_\_

Phase 2- Sample collection and analysis \$ \_\_\_\_\_

Phase 3 –Dredging Specifications \$ \_\_\_\_\_

**Total Proposed Fee (Phases 1-3)** \$ \_\_\_\_\_

Construction Administration and Oversight \$ \_\_\_\_\_

(if applicable this phase shall be awarded at a later date)

### **Section II - Restoration for the Beach Structure (Stairways, Concession Building)**

Phase 1- Inspection & Site review, recommendations \$ \_\_\_\_\_

Phase 2- Contract Plans, beach front specifications \$ \_\_\_\_\_

**Total Proposed Fee (Phases 1-2)** \$ \_\_\_\_\_

Construction Administration and Oversight \$ \_\_\_\_\_

(if applicable this phase shall be awarded at a later date)

### **Section III- ADD ALTERNATE- Extra Work, additional Engineering**

Phase 1- Design of additional storm and detention Systems \$ \_\_\_\_\_

Construction Administration and Oversight \$ \_\_\_\_\_

Consultants shall list any additional information including exceptions, confirmation of deadline/schedule, and/or any additional costs the Town may incur.

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## **DEADLINES**

**All RFI's shall be submitted via email to Corinne Dyer; [cdyer@fairfieldct.org](mailto:cdyer@fairfieldct.org) by Noon on Friday, Jan. 28<sup>th</sup>, 2022.**

**RFPs shall be submitted electronically by 12pm on Monday, February 7<sup>th</sup>, 2022 to [cdyer@fairfieldct.org](mailto:cdyer@fairfieldct.org)**



BID # 2022-109

DESC Lake Mohegan Engineering Services

DATE 2/7/2020

TIME 12:00 PM

**Town of Fairfield - Fee Proposals**

Short-listed Firms selected from RFP 2022-58

	RACE COASTAL ENGINEERING	GZA GEOENVIRONMENTAL INC	MCLAREN ENGINEERING GROUP	GEI	TIGHE AND BOND
Section I - Lake Mohegan Dredging				No Bid	No Bid
Phase 1- Bathymetric Survey (exist/as built)	\$11,900.00	\$15,638.00	\$13,500.00		
Phase 2- Sample collection and analysis	\$4,160.00	\$4,524.00	\$19,900.00		
Phase 3 -Dredging Specifications	\$7,910.00	\$4,893.00	\$20,600.00		
Total Proposed Fee (Phases 1-3)	<b>\$23,970.00</b>	<b>\$25,055.00</b>	<b>\$54,000.00</b>		
Construction Administration and Oversight	\$6,100.00	\$4,100.00	\$11,400.00		
SECTION 1 TOTAL	<b>\$30,070.00</b>	<b>\$29,155.00</b>	<b>\$65,400.00</b>		
Section II - Restoration for the Beach Structure (Stairways, Concession Building)					
Phase 1- Inspection & Site review, recommendations	\$2,265.00	\$1,004.00	\$2,600.00		
Phase 2- Contract Plans, beach front specifications	\$4,400.00	\$4,604.00	\$12,300.00		
Total Proposed Fee (Phases 1-2)	<b>\$6,665.00</b>	<b>\$5,608.00</b>	<b>\$14,900.00</b>		
Construction Administration and Oversight	\$2,990.00	\$2,100.00	\$2,500.00		
SECTION 2 TOTAL	<b>\$9,655.00</b>	<b>\$7,708.00</b>	<b>\$17,400.00</b>		
Section III- ADD ALTERNATE- Extra Work, additional Engineering					
Phase 1- Design of additional storm and detention Systems	\$18,100.00	\$26,500.00	\$26,900.00		
Construction Administration and Oversight	\$6,100.00	\$4,100.00	\$5,000.00		
SECTION 3 TOTAL	<b>\$24,200.00</b>	<b>\$30,600.00</b>	<b>\$31,900.00</b>		
GRAND TOTAL FOR ALL WORK INVOLVED	<b>\$63,925.00</b>	<b>\$67,463.00</b>	<b>\$114,700.00</b>		



February 7, 2022

Town of Fairfield  
Purchasing Department  
Sullivan Independence Hall  
725 Old Post Road  
Fairfield, CT 06824

Attention: Ms. Corinne M. Dyer, Senior Buyer  
[cdyer@fairfieldct.org](mailto:cdyer@fairfieldct.org)

Reference: Design Services for Lake Mohegan  
Fairfield, CT  
RACE Proposal No. 2022012

Dear Ms. Dyer:

**RACE COASTAL ENGINEERING, INC.** ("RACE") herein submits to you this proposal for engineering services related to the Lake Mohegan project as detailed in the Town's 21 January 2022 Request For Proposal (RFP). The purpose of this Agreement is to provide you with our understanding of **RACE's** Scope of Services and estimated fees to perform these services. The services are to be provided to the **Town of Fairfield** ("Client").

## 1. SCOPE OF SERVICES:

The following paragraphs identify the specific Scope of Services to be provided. **RACE's** Scope of Services will include the following Phases:

- Section 1: Lake Mohegan Dredging
- Section 2: Restoration for the Beach Structures
- Section 3: Add Alternate – Parking Lot Drainage Improvements
- Section 4: Construction Administration and Oversight

Services specifically included in the Scope of Services are identified as *Basic Services*. Fees for the *Basic Services* are listed in Section 3 of this Agreement. During the course of the Work, the Client may authorize services that are not specifically included in the Scope of Services. Such services are identified as *Additional Services*. The fees for *Additional Services* are NOT included in the fees for the *Basic Services*. The fees for *Additional Services* are in accordance with Section 3 of this Agreement.

### Section 1: Lake Mohegan Dredging

Work associated with this Section is related to efforts required to dredge material displaced from the beach area into the lake. It is understood that this material was scoured by storm water associated with Hurricane Ida on September 1-2, 2021. The Client is seeking to relocate the displaced beach sand from the lake bottom and restore the beach area for recreational use.

The following phases describe services to be provided:

- **A: Hydrographic and Topographic Survey**

- Mobilize shallow water hydrographic survey boat and equipment to the project site.



**Photo #1: RACE survey vessel Mudflat**

- Perform hydrographic survey of beach front and extending 200' into Lake. Survey lines to be performed at nominal 20' line spacing.
- Obtain shoreside topography and location of relevant shoreline features using RTK-GPS. This information is anticipated to supplement existing Client provided surveys depicting existing structures. Upland information obtained will be limited to the immediate project area and purpose. No property boundary survey is proposed as part of this work. If this is requested by the Client it can be provided as an *Additional Service*.
- Identify and locate inland wetland locations. Prepare wetland report
- Prepare site plan depicting soundings from hydrographic survey, topography from GPS survey, wetland locations, and integrating Client provided survey. Develop representative cross-sections from survey data.
- Perform Post-Dredge survey of dredge area (following construction activities by others). Calculate volume of material removed and prepare plans and sections depicting the post-construction grades.

- **B: Sediment Coring and Sample Collection**

- Obtain three core samples of up to 4' in length of loose sands, silts, and/or organic material using Vibecore Mini by SDI, Inc. Cores in excess of 4' or in dense sands, gravel, or other hard packed material will require mobilization of different equipment and will be considered an *Additional Service*.
- Deliver core samples to an approved testing laboratory. Lab fees to be paid by the Client in accordance with RFP.
- Provide Client with lab report detailing chemical analysis for constituents listed in the RFP, as well as, grain size.
- Prepare proposed location plan for on-site placement of dredged material.



**Photo #2: Vibecore Mini**

- Based on sediment testing results, if material is deemed unsuitable for residential direct contact in accordance with CT Remedial Standard Regulations, then the Client may request RACE to review alternatives for management of this material. This effort may be undertaken as an *Additional Service* at mutually agreed upon terms.
- **C: Prepare Dredging Specifications**
  - Prepare plans and specifications detailing proposed lines and grades of beach restoration. Such plans to include; location of material storage and dewatering areas; sedimentation and erosion control plans; and protection of existing structures. Documents prepared shall be signed and sealed by CT Registered Professional Engineer.
  - Incorporate required permit condition in plans and specifications. Permit applications are not included in *Basic Services* and are understood to be by others.
  - Review and respond to one set of Town comments and make associated revisions.
- **Section 1 Deliverables**

Section 1 Deliverables	
A: Hydrographic and Topographic Survey	<ul style="list-style-type: none"><li>● Plan depicting soundings, upland topography, and Client supplies survey</li><li>● Representative Cross Sections</li><li>● Volume computations</li><li>● Wetland Report</li><li>● Post-Dredge survey, volume computations, and cross sections (following construction by others)</li></ul>
B: Sediment Coring and Sample Collection	<ul style="list-style-type: none"><li>● Field report from sediment sampling effort</li><li>● Laboratory testing report</li></ul>
C: Prepare Dredging Specifications	<ul style="list-style-type: none"><li>● Plans and specifications for dredging work (PDF and *.dwg formats)</li><li>● Bi-Weekly project summary e-mail reports</li></ul>

## Section 2: Restoration for the Beach Structures

Work associated with this Section is related to efforts required to replace soils eroded from the storm event and stabilize foundation elements of existing structures. It is anticipated that no geotechnical investigations or structural analyses of existing structures is required for this work. If it is required based upon investigations, then **RACE** can prepare a proposal for these *Additional Services* at that time.

The following phases describe services to be provided:

- **A: Site Review and Recommendations**
  - Professional engineer to review structures and grades impacted by scour damage
  - Prepare letter report of findings and review with Town personnel
- **B: Contract Plans**
  - Prepare plans and specifications detailing proposed fill replacement and structure foundation support. Documents prepared shall be signed and sealed by CT Registered Professional Engineer.



- Review and respond to one set of Town comments and make associated revisions.

- **Section 2 Deliverables**

Section 2 Deliverables	
A: Site Review and Recommendations	<ul style="list-style-type: none"><li>• Letter report of findings and recommendations</li></ul>
B: Contract Plans	<ul style="list-style-type: none"><li>• Plans and specifications for restoration work (PDF and *.dwg formats)</li><li>• Bi-weekly project summary email reports</li></ul>

**Section 3: Add Alternate – Parking Lot Drainage Improvements**

Work associated with this Section is related to potential Add Alternate assignment associated with drainage improvements for parking lot and adjacent eastern uphill area. It is understood that the intention of this work is to address drainage to prevent future scour and erosion events. The scope of work does not include the design of infiltration and any associated field investigations and testing.

- **A: Topographic Survey (Parking Lot)**

- Perform topographic survey as base map for design documents. Survey to be prepared to T-2 accuracy and will cover approximately 3 acres, including existing paved parking area, portions of adjacent roadway, existing drainage structures, utilities, and associated topography / surface features. Property line survey is excluded from this effort.

- **B: Stormwater Management Design**

- Prepare calculations for drainage system for project site. The system design will address the following items:
  - Catch basins and piping: These will be primarily located within the existing parking area. Additional piping and structures will be designed to connect to existing drainage system on Morehouse Highway.
  - Detention System: Stormwater detention shall be designed for the purposes of reducing the post development peak rates of runoff to that of pre-development, and to attenuate stormwater flows for the 10- and 100-year storm events. The area east (uphill) of parking lot will be evaluated as a potential location for detention.
  - Treatment: The proposed drainage system shall be designed to provide stormwater treatment of 80% TSS removal to meet Town of Fairfield and CT DEEP guidelines. Work shall consist of design of one treatment measure. This can be provided in the form of a water quality structure or other measure compliant with Town and State guidelines.
  - Discharge Location: The proposed stormwater management system will be designed to discharge to the existing system on Morehouse Highway. It is presumed that the receiving system has the capacity to accept and convey this discharge. This scope of work does not include capacity analysis of existing Morehouse Highway drainage system.
- Prepare drainage system report to be provided to Client including:
  - Description of the project site and site conditions.
  - Summary of existing and proposed drainage patterns
  - Calculations for existing conditions including location, volume, and flow





- Calculations for proposed system including piping, attenuation, and treatment systems
    - Map showing existing and proposed watersheds
    - Grading and drainage plans
    - Post-Construction Operations and Maintenance (O&M) Plan.
  - Design erosion and sedimentation controls to be implemented in accordance with CT Guidelines for Erosion and Sedimentation Control.
- **C: Contract Plans**
    - Prepare plans and specifications detailing proposed drainage improvements. Documents prepared shall be signed and sealed by CT Registered Professional Engineer.
    - Review and respond to one set of Town comments and make associated revisions.
- **Section 3 Deliverables**

Section 3 Deliverables	
A: Topographic Survey	<ul style="list-style-type: none"><li>• Topographic survey plan</li></ul>
B: Stormwater Management Design	<ul style="list-style-type: none"><li>• Drainage system report</li></ul>
C: Contract Plans	<ul style="list-style-type: none"><li>• Plans and specifications for drainage improvement work (PDF and *.dwg formats)</li><li>• Bi-weekly project summary email reports</li></ul>

#### Section 4: Construction Administration and Oversight

RACE can provide construction administration and oversight for each of the preceding Sections of work. The fees associated with this work are based on the hourly rates included herein. Actual amounts invoiced may vary from the estimated amount due to numerous factors outside the control of RACE including, but not limited to, contractor schedule, regulatory requirements, material testing requirements, etc. Estimates for the amount of time allocated to this effort by Section is based on Town RFI response.

These services can typically include:

- Preparation and coordination of pre-construction meetings
- Review of shop drawings and required submittals
- Assessment of changes that may be required due to unforeseen conditions
- Review of work in progress for general compliance with the Construction Documents
- Review of Contractor's invoices
- Post-Construction close-out requirements as may be required by regulatory agencies

The budgeted time per Section based on Town RFI is as follows:

Budgeted Construction Administration and Oversight per Town RFI	
Section 1: Lake Mohegan Dredging	40 hours
Section 2: Restoration for the Beach Structures	20 hours
Section 3: Add Alternate – Parking Lot Drainage Improvements	40 hours



## 2. ADDITIONAL INFORMATION

Per RFP, it was requested for consultant to list any additional information including exceptions, confirmation of deadline/schedule, and/or any additional costs the Town may incur.

- **Confirmation of Schedule**

**RACE** confirms that we have the resources and will make the commitment to meet the schedule outlined in the RFP for work described in Section 1 and 2 based on factors within our control. This commitment is based on; 1) receipt of Notice to Proceed being received by February 10, 2022; 2) Project kick-off meeting with Town by February 14, 2022; 3) prompt review and comments from the Town on submittals; and 4) lake free from ice to level necessary to safely perform hydrographic survey and sediment sampling. Additionally, the application for permits and any associated review time has not been accounted for in the fees or schedule. The RFP does not reference permit applications as part of the proposed scope for this project.

- **Potential Additional Costs**

As with any project there are possibilities for increased costs associated with unknown factors. The biggest unknown at this point is related to the sediment chemical analysis. If results of the sediment testing indicate exceedance from RSR Residential Standards, then additional costs will most likely be incurred to manage this sediment.

## 3. EXCLUSIONS AND LIMITATIONS:

The Scope of Services described under Section 1 of this Agreement include specific services that **RACE** will perform, which are considered as *Basic Services*. Certain information may be required to be provided by others prior to or during the performance of such services which is not part of the *Basic Services*. Services to be performed by others or services not specifically listed as *Basic Services* within the Scope of Services consist of, but are not limited, to the exclusions listed below. The Client may authorize **RACE** to perform any of the services listed below or other services, and such services shall be considered as *Additional Services*.

- |  |   |
|--|---|
| 1. Property boundary surveys (A-2)   | 9. Attendance to meetings except as noted herein  |
| 2. Underwater Investigations   | 10. Geotechnical investigations and geotechnical engineering                                      |
| 3. Soil test boring operations   | 11. Landscape Architecture and preparation of planting plans, plant list, or plant specifications |
| 4. Review for submerged aquatic vegetation (SAV), wildlife resources and habitat, benthic habitat, and indigenous aquatic life | 12. Design of utilities such as electrical, water, and sanitary service                           |
| 5. Participation in presentations and public hearings  | 13. Preparation of an Opinion of Probable Cost  |
| 6. Regulatory permit applications  | 14. Bid Solicitation  |
| 7. Regulatory application and other fees that may be required by federal, state, or local agencies                             | 15. Post-Construction survey requirements as may be required by regulatory agencies               |
| 8. Professional Design Services other than specifically noted herein   | 16. Reproduction, mailing and courier costs   |

*Basic Services* to be provided in this Agreement are based on information provided by the Client. It shall be understood by the Client that conditions may be revealed during the course of the project that were unknown during preparation of this Agreement. Such conditions may require *Additional Services* to be performed.

It shall be understood by the Client that **RACE** has no control over regulatory authorities having jurisdiction, statutes, or site conditions that the project may be subject to. Any opinion of eligibility for authorization of any proposed structure or activity is made on the basis of professional judgment and experience. **RACE** makes no warranty, expressed or implied, that a proposed structure or activity, in whole or portion thereof, will be authorized by those agencies having jurisdiction.





**4. ESTIMATED FEES:**

**Basic Services**

The Scope of Services identified in Section 1 includes the *Basic Services* of this Agreement. The estimated fees for the *Basic Services* are broken down by Phase on the following Fee Schedule.

**FEE SCHEDULE**

<b>Section 1 – Lake Mohegan Dredging</b>	<b>Basic Services Fees</b>
A: Hydrographic Survey and Topographic Survey (including As-Built survey per RFP)	\$ 11,900
B: Sediment Coring and Sample Collection (excluding lab fees to be paid by Town of Fairfield)	\$ 4,160
C: Prepare Dredging Specifications	\$ 7,910
<b>Total Proposed Fee (Phases A – C)</b>	<b>\$ 23,970</b>
Construction Administration and Oversight (if applicable this phase shall be awarded at a later date)	\$ 6,100

<b>Section 2 – Restoration of Beach Structure</b>	<b>Basic Services Fees</b>
A: Site Review and Recommendations	\$ 2,265
B: Contract Plans	\$ 4,400
<b>Total Proposed Fee (Phases A – B)</b>	<b>\$ 6,665</b>
Construction Administration and Oversight (if applicable this phase shall be awarded at a later date)	\$ 2,990

<b>Section 3 – Add Alternate: Parking Lot Drainage Improvements</b>	<b>Basic Services Fees</b>
A: Topographic Survey (Parking Lot)	\$ 4,500
B: Stormwater Management Design	\$ 8,090
C: Contract Plans	\$ 5,510
<b>Total Proposed Fee (Phases A – C)</b>	<b>\$ 18,100</b>
Construction Administration and Oversight	\$ 6,100



### Additional Services

During the course of the Work, the Client may authorize services that are not specifically included in the Scope of Services. Such services are identified as *Additional Services*. The fees for *Additional Services* are NOT included in the fees for the *Basic Services*. All time and materials invoices and all *Additional Services* which may be required or requested by the Client during the performance of the *Basic Services* shall be invoiced per the following Rate Schedule for the professional services indicated. These rates are subject to change at the beginning of each calendar year.

#### 2022 RATE SCHEDULE

POSITION	HOURLY RATE	POSITION	HOURLY RATE
Principal	\$225.00	Project Engineer	\$150.00
VP of Coastal Engineering	\$225.00	Engineer	\$130.00
Project Manager	\$195.00	Field Technician	\$130.00
Senior Engineer	\$195.00	CAD Operator	\$120.00
Coastal Engineer	\$150.00	Administrative	\$75.00

### 5. GENERAL TERMS AND CONDITIONS:

This Agreement shall be governed by the laws of the State of Connecticut.

**Payment Terms** All reimbursable expenses shall be invoiced at direct cost plus 10% overhead expense. Reimbursable expenses shall include such expenses as: overnight deliveries; courier services; reproduction of documents; shipping and mailing expenses; and any other disbursement including, without limitation, application fees made on behalf of the Client. The total fee payable, projected prior to commencement of services, if stated, shall be a reasonable estimate subject to change. The final fee shall not exceed by more than 10% of such estimate, exclusive of reimbursable expenses, without prior written approval of the Client. Where the fee arrangement is to be on an hourly basis, the rates shall be those included as a part of this Agreement.

Invoices for professional services shall be submitted, at the option of the Engineer, either upon completion of such services or on a monthly basis. Invoices shall be payable within thirty (30) days after the date of the invoice. All billings over thirty (30) days past due will be subject to interest charges of 1.0% per month on the unpaid balance. In the event that part or all of the account remains unpaid in full, ninety (90) days after initial billing, the Client shall be responsible for all costs of collection including, without limitation, reasonable attorney's fees. This Agreement is notice, where required, that the Engineer shall file a lien whenever necessary to collect past due amounts. Failure to make payment within thirty (30) days of invoice shall constitute a release of RACE from any and all claims which client may have, either in tort or contract, and whether known or unknown at the time.

**Unconditional Payment** Payment to RACE is expressly not conditioned upon the Client receiving any payment from third parties who are not a party to this Agreement, such as property owners, developers, funding agencies.

**Risk Allowance** The parties to this Agreement agree that the risks of the proposed project shall be allocated such the total liability of RACE to the Client for any and all claims, injuries, losses, expenses, damages or claim expenses arising out of this Agreement from any cause or causes shall not exceed ten (10) times the total fee for services of RACE at the time such claims or causes arise or \$250,000, whichever is less. Such claims or causes include, without limitation, negligence, errors, omissions, strict liability, breach of contract and breach of warranty.

**Standard of Care** The Standard of Care as defined under this Agreement shall mean the rendering of services with the ordinary degree of skill and care that would be used by other reasonably competent practitioners of the same discipline under similar circumstances, and do so in a reasonably careful and prudent manner. Services requested by the Client, which are in the opinion of RACE, beyond the normal Standard of Care, are considered as *Additional Services*.

**Flow of Work** Fees assume a steady progression of the work from start to finish. A start-up fee will be charged to resume work delayed for more than 30 days for any reason. This Agreement for engineering services is based upon the assumption that the Client will provide all required information in a timely manner. RACE will not be expected to proceed with portions of his work until necessary information to be provided by the Client and requested in writing by RACE has



been provided. If the Client requests **RACE** to perform work out of sequence or based upon preliminary information, then additional time required to perform work under these circumstances or to revise work based on revised project data or criteria supplied by the Client will be billable as *Additional Services*.

**Opinion of Probable Costs** In providing an Opinion of Probable Cost for any construction work, it shall be understood by the Client that **RACE** has no control over the cost or availability of labor, equipment, materials, market conditions, or the Contractors method of pricing. Any Opinion of Probable Cost provided by **RACE** is made on the basis of professional judgment and experience. **RACE** makes no warranty, express or implied, that any bids or negotiated cost of the Work will not vary from the Opinion of Probable Cost provided.

**Ownership of Documents** All documents produced by **RACE** under this Agreement, such as drawings, specifications, and computer files, are instruments of service and shall remain the property of **RACE** and may not be altered or used by the Client for any other endeavor without the written consent of **RACE**.

**Concealed Conditions** It is understood by the parties to this Agreement that the evaluation, reconstruction or rehabilitation of an existing structure requires that certain assumptions be made regarding existing conditions which are concealed or otherwise not visible. Some of these assumptions may not be verifiable without significant cost or destroying otherwise adequate and serviceable portions of the structure. Where it is impractical to verify assumptions concerning hidden conditions, **RACE** assumes no responsibility for any additional costs or liabilities associated with existing conditions which deviate from that assumed.

**Existing Conditions** Information on the existing structures have been obtained from existing drawings, preliminary site visits, and other documents. This Agreement is based upon the assumption that the construction of the existing structures was done in strict accordance with these drawings or with common construction standards and that the existing structural elements are, unless noted herein, in sound condition and are fully permitted with all required regulatory agencies. No attempt has been made to verify the integrity of the existing structures other than what will be explicitly shown on our drawings, and we assume no responsibility for its condition if it should turn out not to be adequate. It shall be the responsibility of the contractor for the construction of the new structure to report to **RACE** immediately any discrepancies and any evidence of impairment of structural strength found during the course of construction.

**Client Provided Information** **RACE** shall be entitled to generally rely on the accuracy and completeness of information and documents furnished by Client and by other consultants such as surveys, soil boring logs, geotechnical reports, and working drawings of existing structures. Any substantial inaccuracies in the quality or completeness of information provided which requires a substantial effort to change or correct our work which is based on Client provided information shall constitute a change in the Scope of Services

and be subject to the provisions which pertain to *Additional Services*.

**Jobsite Safety** Neither the professional activities of **RACE**, nor the presence of **RACE** or its sub-consultants at a construction site, shall relieve the General Contractor and any other entity of their obligations, duties, and responsibilities including, but not limited to, construction means, methods, sequences, techniques, or procedures necessary for performing, superintending, or coordinating all portions of the work of construction in accordance with the contract documents and any health or safety precautions required by any regulatory agencies.

**Time Period for Accepting Contract** This Agreement is valid for a period of 30 days, after which the Consultant reserves the right to review and revise the estimated fee, time schedule, and other terms specified herein.

**Alternate Dispute Resolution** All claims, counterclaims, disputes and other matters in question between the parties hereto arising out of or relating to this Agreement or breach thereof (except claims by **RACE** or its associates for fees and costs for professional services) will be presented to non-binding mediation, subject to the parties agreeing to a mediator(s).

**Contract Signatures** The individual executing this Agreement, if acting on behalf of a partnership, corporation, or funding agency, represents that he has the authority to do so.

**Discovery of Unanticipated Hazardous Materials** Hazardous materials or certain types of hazardous materials may exist where there is no reason to believe they could or should be present. **RACE** and the Client agree that the discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work. The Client and **RACE** also agree that the discovery of unanticipated hazardous materials may make it necessary for **RACE** to take immediate measures to protect human health and safety, and/or the environment. **RACE** agrees to notify the Client as soon as practically possible should unanticipated hazardous materials or suspected hazardous materials be encountered. The Client encourages **RACE** to take any and all measures that in **RACE**'s professional opinion are justified to preserve and protect the health and safety of **RACE**'s personnel and the public, and/or the environment, and the Client agrees to compensate **RACE** for the additional cost of such work. In addition, the Client waives any claims against **RACE** and agrees to indemnify for injury or loss arising from **RACE**'s encountering unanticipated hazardous materials or suspected hazardous materials. The Client also agrees to compensate **RACE** for any time spent and any expenses incurred by **RACE** in defense of any such claim, with such compensation to be based upon **RACE**'s prevailing fee schedule and expense reimbursement policy.

**Indemnification** The Client agrees to hold harmless and indemnify **RACE** for and against all claims, damages, awards and costs of defense arising out of delays in or failures of **RACE**'s performance resulting from events beyond the control of **RACE**. The Client agrees to stipulate within the contract documents between the Contractor and the Client, that the



Contractor or Client shall purchase and maintain, during the course of construction, “all-risk” builder’s risk insurance in a reasonable amount of coverage which names **RACE**, the Contractor, the Client, and the Client’s agents as additional insureds.

**Delivery of Electronic Files** In accepting and utilizing any drawings, reports and data on any form of electronic media generated and furnished by **RACE**, the Client agrees that all such electronic files are instruments of service of **RACE**, who shall be deemed the author, and shall retain all common law, statutory law and other rights, including copyrights. The Client agrees not to reuse these electronic files, in whole or in part, for any purpose other than for the Project. The Client agrees not to transfer these electronic files to others without the prior written consent of **RACE**. The Client further agrees to waive all claims against **RACE** resulting in any way from any unauthorized changes to or reuse of the electronic files for any other project by anyone other than **RACE**. The Client and **RACE** shall agree upon the format for any electronic files furnished by either party prior to the initiation of work. Any changes to the electronic specifications by either the Client or **RACE** are subject to review and acceptance by the other party. Additional services by **RACE** made necessary by changes to the electronic file specifications shall be compensated for as *Additional Services*. Electronic files furnished by either party shall be subject to an acceptance period of thirty (30) days during which the receiving party agrees to perform appropriate acceptance tests. The party furnishing the electronic file shall correct any discrepancies or errors detected and reported within the acceptance period. After the acceptance period, the electronic files shall be deemed to be accepted and neither party shall have any obligation to correct errors or maintain electronic files.

The Client is aware that differences may exist between the electronic files delivered and the printed hard-copy construction documents. In the event of a conflict between the

signed construction documents prepared by **RACE** and electronic files, the signed or sealed hard-copy construction documents shall govern. In addition, the Client agrees, to the fullest extent permitted by law, to indemnify and hold harmless **RACE**, its officers, directors, employees and sub-consultants against all damages, liabilities or costs, including reasonable attorneys’ fees and defense costs, arising from any changes made by anyone other than **RACE** or his designate from any reuse of the electronic files without the prior written consent of **RACE**. Under no circumstances shall delivery of electronic files for use by the Client be deemed a sale by **RACE**, and **RACE** makes no warranties, either express or implied, of merchantability and fitness for any particular purpose. In no event shall **RACE** be liable for indirect or consequential damages as a result of the Client’s use or reuse of the electronic files, unless those damages are a result of an error or omission which is shown on both the hard-copy documents and the electronic files.

#### **Termination**

- (1) This Agreement between the Client and **RACE** may be terminated by either party and shall be deemed effective upon receipt of seven (7) days prior written notice.
- (2) If this Agreement is terminated during the course of performance of the work, **RACE** shall be paid within seven (7) days of such termination the reasonable value of the services performed during the period prior to the effective date of termination.
- (3) If, prior to termination of this Agreement, any work by **RACE** during any phase of the work is suspended in whole or in part for more than three (3) months or abandoned after written notice from the Client, **RACE** shall be paid for such services performed prior to receipt of such notice.



**6. AUTHORIZATION**

We are prepared to undertake this project upon receipt of your written authorization to proceed. Please sign this Agreement and return one fully executed copy and the requested retainer fee to this office. We recommend that you retain a copy for your records. If you have any questions, please do not hesitate to contact the undersigned. We are looking forward to working with you on this project.

**OFFERED BY:**

**AUTHORIZED BY:**



Devin J. Santa, P.E.  
President

(printed name/title)

**RACE COASTAL ENGINEERING, INC.**

(authorized signatory)

(Date)

(printed name/title)

**Town of Fairfield**







February 18, 2022

Town of Fairfield  
Purchasing Department  
Sullivan Independence Hall  
725 Old Post Road  
Fairfield, CT 06824

Attention: Ms. Corinne M. Dyer, Senior Buyer  
[cdyer@fairfieldct.org](mailto:cdyer@fairfieldct.org)

Reference: Design Services for Lake Mohegan  
Fairfield, CT  
RACE Proposal No. 2022012

Dear Ms. Dyer:

**RACE COASTAL ENGINEERING, INC. ("RACE")** herein submits to you this proposal for engineering services related to the Lake Mohegan project as detailed in the Town's 21 January 2022 Request For Proposal (RFP). The purpose of this Agreement is to provide you with our understanding of **RACE's** Scope of Services and estimated fees to perform these services. The services are to be provided to the **Town of Fairfield** ("Client").

#### **1. SCOPE OF SERVICES:**

The following paragraphs identify the specific Scope of Services to be provided. **RACE's** Scope of Services will include the following Phases:

- Section 1: Lake Mohegan Dredging
- Section 2: Restoration for the Beach Structures
- Section 3: Add Alternate – Parking Lot Drainage Improvements
- Section 4: Construction Administration and Oversight

Services specifically included in the Scope of Services are identified as *Basic Services*. Fees for the *Basic Services* are listed in Section 3 of this Agreement. During the course of the Work, the Client may authorize services that are not specifically included in the Scope of Services. Such services are identified as *Additional Services*. The fees for *Additional Services* are NOT included in the fees for the *Basic Services*. The fees for *Additional Services* are in accordance with Section 3 of this Agreement.

#### **Section 1: Lake Mohegan Dredging**

Work associated with this Section is related to efforts required to dredge material displaced from the beach area into the lake. It is understood that this material was scoured by storm water associated with Hurricane Ida on September 1-2, 2021. The Client is seeking to relocate the displaced beach sand from the lake bottom and restore the beach area for recreational use.

The following phases describe services to be provided:

- **A: Hydrographic and Topographic Survey**

- Mobilize shallow water hydrographic survey boat and equipment to the project site.



**Photo #1: RACE survey vessel Mudflat**

- Perform hydrographic survey of beach front and extending 200' into Lake. Survey lines to be performed at nominal 20' line spacing.
- Obtain shoreside topography and location of relevant shoreline features using RTK-GPS. This information is anticipated to supplement existing Client provided surveys depicting existing structures. Upland information obtained will be limited to the immediate project area and purpose. No property boundary survey is proposed as part of this work. If this is requested by the Client it can be provided as an *Additional Service*.
- Identify and locate inland wetland locations. Prepare wetland report
- Prepare site plan depicting soundings from hydrographic survey, topography from GPS survey, wetland locations, and integrating Client provided survey. Develop representative cross-sections from survey data.
- Perform Post-Dredge survey of dredge area (following construction activities by others). Calculate volume of material removed and prepare plans and sections depicting the post-construction grades.

- **B: Sediment Coring and Sample Collection**

- Obtain three core samples (5-point composites) of up to 4' in length of loose sands, silts, and/or organic material using Vibecore Mini by SDI, Inc. Cores in excess of 4' or in dense sands, gravel, or other hard packed material will require mobilization of different equipment and will be considered an *Additional Service*.
- Deliver core samples to an approved testing laboratory. Lab fees to be paid by the Client in accordance with RFP.
- Provide Client with lab report detailing chemical analysis for constituents listed in the RFP, as well as, grain size.



**Photo #2: Vibecore Mini**



- Prepare proposed location plan for on-site placement of dredged material.
- Based on sediment testing results, if material is deemed unsuitable for residential direct contact in accordance with CT Remedial Standard Regulations, then the Client may request RACE to review alternatives for management of this material. This effort may be undertaken as an *Additional Service* at mutually agreed upon terms.
- **C: Prepare Dredging Specifications**
  - Prepare plans and specifications detailing proposed lines and grades of beach restoration. Such plans to include; location of material storage and dewatering areas; sedimentation and erosion control plans; and protection of existing structures. Documents prepared shall be signed and sealed by CT Registered Professional Engineer.
  - Incorporate required permit condition in plans and specifications. Permit applications are not included in *Basic Services* and are understood to be by others.
  - Review and respond to one set of Town comments and make associated revisions.
- **Section 1 Deliverables**

Section 1 Deliverables	
A: Hydrographic and Topographic Survey	<ul style="list-style-type: none"><li>• Plan depicting soundings, upland topography, and Client supplies survey</li><li>• Representative Cross Sections</li><li>• Volume computations</li><li>• Wetland Report</li><li>• Post-Dredge survey, volume computations, and cross sections (following construction by others)</li></ul>
B: Sediment Coring and Sample Collection	<ul style="list-style-type: none"><li>• Field report from sediment sampling effort</li><li>• Laboratory testing report</li></ul>
C: Prepare Dredging Specifications	<ul style="list-style-type: none"><li>• Plans and specifications for dredging work (PDF and *.dwg formats)</li><li>• Bi-Weekly project summary e-mail reports</li></ul>

## Section 2: Restoration for the Beach Structures

Work associated with this Section is related to efforts required to replace soils eroded from the storm event and stabilize foundation elements of existing structures. It is anticipated that no geotechnical investigations or structural analyses of existing structures is required for this work. If it is required based upon investigations, then **RACE** can prepare a proposal for these *Additional Services* at that time.

The following phases describe services to be provided:

- **A: Site Review and Recommendations**
  - Professional engineer to review structures and grades impacted by scour damage
  - Prepare letter report of findings and review with Town personnel
- **B: Contract Plans**



- Prepare plans and specifications detailing proposed fill replacement and structure foundation support. Documents prepared shall be signed and sealed by CT Registered Professional Engineer.
- Review and respond to one set of Town comments and make associated revisions.
- **Section 2 Deliverables**

Section 2 Deliverables	
A: Site Review and Recommendations	<ul style="list-style-type: none"><li>• Letter report of findings and recommendations</li></ul>
B: Contract Plans	<ul style="list-style-type: none"><li>• Plans and specifications for restoration work (PDF and *.dwg formats)</li><li>• Bi-weekly project summary email reports</li></ul>

### Section 3: Add Alternate – Parking Lot Drainage Improvements

Work associated with this Section is related to potential Add Alternate assignment associated with drainage improvements for parking lot and adjacent eastern uphill area. It is understood that the intention of this work is to address drainage to prevent future scour and erosion events. The scope of work does not include the design of infiltration and any associated field investigations and testing.

- **A: Topographic Survey (Parking Lot)**
  - Perform topographic survey as base map for design documents. Survey to be prepared to T-2 accuracy and will cover approximately 3 acres, including existing paved parking area, portions of adjacent roadway, existing drainage structures, utilities, and associated topography / surface features. Property line survey is excluded from this effort.
- **B: Stormwater Management Design**
  - Prepare calculations for drainage system for project site. The system design will address the following items:
    - Catch basins and piping: These will be primarily located within the existing parking area. Additional piping and structures will be designed to connect to existing drainage system on Morehouse Highway.
    - Detention System: Stormwater detention shall be designed for the purposes of reducing the post development peak rates of runoff to that of pre-development, and to attenuate stormwater flows for the 10- and 100-year storm events. The area east (uphill) of parking lot will be evaluated as a potential location for detention. The full watershed shall be evaluated using GIS contours and included on pre- and post-development figures.
    - Treatment: The proposed drainage system shall be designed to provide stormwater treatment of 80% TSS removal to meet Town of Fairfield and CT DEEP guidelines. Work shall consist of design of one treatment measure. This can be provided in the form of a water quality structure or other measure compliant with Town and State guidelines.
    - Discharge Location: The proposed stormwater management system will be designed to discharge to the existing system on Morehouse Highway. It is presumed that the receiving that the receiving system has the capacity to accept and convey this



discharge. This scope of work does not include capacity analysis of existing Morehouse Highway drainage system.

- Prepare drainage system report to be provide to Client including:
  - Description of the project site and site conditions.
  - Summary of existing and proposed drainage patterns
  - Calculations for existing conditions including location, volume, and flow
  - Calculations for proposed system including piping, attenuation, and treatment systems
  - Map showing existing and proposed watersheds
  - Grading and drainage plans
  - Post-Construction Operations and Maintenance (O&M) Plan.
- Design erosion and sedimentation controls to be implemented in accordance with CT Guidelines for Erosion and Sedimentation Control.

- **C: Contract Plans**

- Prepare plans and specifications detailing proposed drainage improvements. Documents prepared shall be signed and sealed by CT Registered Professional Engineer.
- Review and respond to one set of Town comments and make associated revisions.

- **Section 3 Deliverables**

Section 3 Deliverables	
A: Topographic Survey	<ul style="list-style-type: none"><li>• Topographic survey plan</li></ul>
B: Stormwater Management Design	<ul style="list-style-type: none"><li>• Drainage system report</li></ul>
C: Contract Plans	<ul style="list-style-type: none"><li>• Plans and specifications for drainage improvement work (PDF and *.dwg formats)</li><li>• Bi-weekly project summary email reports</li></ul>

#### **Section 4: Construction Administration and Oversight**

**RACE** can provide construction administration and oversight for each of the preceding Sections of work. The fees associated with this work are based on the hourly rates included herein. Actual amounts invoiced may vary from the estimated amount due to numerous factors outside the control of **RACE** including, but not limited to, contractor schedule, regulatory requirements, material testing requirements, etc. Estimates for the amount of time allocated to this effort by Section is based on Town RFI response.

These services can typically include:

- Preparation and coordination of pre-construction meetings
- Review of shop drawings and required submittals
- Assessment of changes that may be required due to unforeseen conditions
- Review of work in progress for general compliance with the Construction Documents
- Review of Contractor's invoices
- Post-Construction close-out requirements as may be required by regulatory agencies

The budgeted time per Section based on Town RFI is as follows:

**Budgeted Construction Administration and Oversight per Town RFI**



Section 1: Lake Mohegan Dredging	40 hours
Section 2: Restoration for the Beach Structures	20 hours
Section 3: Add Alternate – Parking Lot Drainage Improvements	40 hours

## 2. ADDITIONAL INFORMATION

Per RFP, it was requested for consultant to list any additional information including exceptions, confirmation of deadline/schedule, and/or any additional costs the Town may incur.

- **Confirmation of Schedule**

**RACE** confirms that we have the resources and will make the commitment to meet the schedule outlined in the RFP for work described in Section 1 and 2 based on factors within our control. This commitment is based on; 1) receipt of Notice to Proceed being received by February 10, 2022; 2) Project kick-off meeting with Town by February 14, 2022; 3) prompt review and comments from the Town on submittals; and 4) lake free from ice to level necessary to safely perform hydrographic survey and sediment sampling. Additionally, the application for permits and any associated review time has not been accounted for in the fees or schedule. The RFP does not reference permit applications as part of the proposed scope for this project.

- **Potential Additional Costs**

As with any project there are possibilities for increased costs associated with unknown factors. The biggest unknown at this point is related to the sediment chemical analysis. If results of the sediment testing indicate exceedance from RSR Residential Standards, then additional costs will most likely be incurred to manage this sediment.

## 3. EXCLUSIONS AND LIMITATIONS:

The Scope of Services described under Section 1 of this Agreement include specific services that **RACE** will perform, which are considered as *Basic Services*. Certain information may be required to be provided by others prior to or during the performance of such services which is not part of the *Basic Services*. Services to be performed by others or services not specifically listed as *Basic Services* within the Scope of Services consist of, but are not limited, to the exclusions listed below. The Client may authorize **RACE** to perform any of the services listed below or other services, and such services shall be considered as *Additional Services*.

1. Property boundary surveys (A-2)
2. Underwater Investigations
3. Soil test boring operations
4. Review for submerged aquatic vegetation (SAV), wildlife resources and habitat, benthic habitat, and indigenous aquatic life
5. Participation in presentations and public hearings
6. Regulatory permit applications
7. Regulatory application and other fees that may be required by federal, state, or local agencies
8. Professional Design Services other than specifically noted herein
9. Attendance to meetings except as noted herein
10. Geotechnical investigations and geotechnical engineering
11. Landscape Architecture and preparation of planting plans, plant list, or plant specifications
12. Design of utilities such as electrical, water, and sanitary service
13. Preparation of an Opinion of Probable Cost
14. Bid Solicitation
15. Post-Construction survey requirements as may be required by regulatory agencies
16. Reproduction, mailing and courier costs

*Basic Services* to be provided in this Agreement are based on information provided by the Client. It shall be understood by the Client that conditions may be revealed during the course of the project that were unknown during preparation of this Agreement. Such conditions may require *Additional Services* to be performed.



It shall be understood by the Client that **RACE** has no control over regulatory authorities having jurisdiction, statutes, or site conditions that the project may be subject to. Any opinion of eligibility for authorization of any proposed structure or activity is made on the basis of professional judgment and experience. **RACE** makes no warranty, expressed or implied, that a proposed structure or activity, in whole or portion thereof, will be authorized by those agencies having jurisdiction.

**4. ESTIMATED FEES:**

**Basic Services**

The Scope of Services identified in Section 1 includes the *Basic Services* of this Agreement. The estimated fees for the *Basic Services* are broken down by Phase on the following Fee Schedule.

**FEE SCHEDULE**

<b>Section 1 – Lake Mohegan Dredging</b>	<b>Basic Services Fees</b>
A: Hydrographic Survey and Topographic Survey (including As-Built survey per RFP)	\$ 11,900
B: Sediment Coring and Sample Collection (excluding lab fees to be paid by Town of Fairfield)	\$ 4,160
C: Prepare Dredging Specifications	\$ 7,910
<b>Total Proposed Fee (Phases A – C)</b>	<b>\$ 23,970</b>
Construction Administration and Oversight (if applicable this phase shall be awarded at a later date)	\$ 6,100

<b>Section 2 – Restoration of Beach Structure</b>	<b>Basic Services Fees</b>
A: Site Review and Recommendations	\$ 2,265
B: Contract Plans	\$ 4,400
<b>Total Proposed Fee (Phases A – B)</b>	<b>\$ 6,665</b>
Construction Administration and Oversight (if applicable this phase shall be awarded at a later date)	\$ 2,990

<b>Section 3 – Add Alternate: Parking Lot Drainage Improvements</b>	<b>Basic Services Fees</b>
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B: Stormwater Management Design	\$ 8,090
C: Contract Plans	\$ 5,510
<b>Total Proposed Fee (Phases A – C)</b>	<b>\$ 18,100</b>
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Invoices for professional services shall be submitted, at the option of the Engineer, either upon completion of such services or on a monthly basis. Invoices shall be payable within thirty (30) days after the date of the invoice. All billings over thirty (30) days past due will be subject to interest charges of 1.0% per month on the unpaid balance. In the event that part or all

of the account remains unpaid in full, ninety (90) days after initial billing, the Client shall be responsible for all costs of collection including, without limitation, reasonable attorney's fees. This Agreement is notice, where required, that the Engineer shall file a lien whenever necessary to collect past due amounts. Failure to make payment within thirty (30) days of invoice shall constitute a release of **RACE** from any and all claims which client may have, either in tort or contract, and whether known or unknown at the time.

**Unconditional Payment** Payment to **RACE** is expressly not conditioned upon the Client receiving any payment from third parties who are not a party to this Agreement, such as property owners, developers, funding agencies.

**Risk Allowance** The parties to this Agreement agree that the risks of the proposed project shall be allocated such the total liability of **RACE** to the Client for any and all claims, injuries, losses, expenses, damages or claim expenses arising out of this Agreement from any cause or causes shall not exceed ten (10) times the total fee for services of **RACE** at the time such claims or causes arise or \$250,000, whichever is less. Such claims or causes include, without limitation, negligence, errors,



omissions, strict liability, breach of contract and breach of warranty.

**Standard of Care** The Standard of Care as defined under this Agreement shall mean the rendering of services with the ordinary degree of skill and care that would be used by other reasonably competent practitioners of the same discipline under similar circumstances, and do so in a reasonably careful and prudent manner. Services requested by the Client, which are in the opinion of RACE, beyond the normal Standard of Care, are considered as *Additional Services*.

**Flow of Work** Fees assume a steady progression of the work from start to finish. A start-up fee will be charged to resume work delayed for more than 30 days for any reason. This Agreement for engineering services is based upon the assumption that the Client will provide all required information in a timely manner. RACE will not be expected to proceed with portions of his work until necessary information to be provided by the Client and requested in writing by RACE has been provided. If the Client requests RACE to perform work out of sequence or based upon preliminary information, then additional time required to perform work under these circumstances or to revise work based on revised project data or criteria supplied by the Client will be billable as *Additional Services*.

**Opinion of Probable Costs** In providing an Opinion of Probable Cost for any construction work, it shall be understood by the Client that RACE has no control over the cost or availability of labor, equipment, materials, market conditions, or the Contractors method of pricing. Any Opinion of Probable Cost provided by RACE is made on the basis of professional judgment and experience. RACE makes no warranty, express or implied, that any bids or negotiated cost of the Work will not vary from the Opinion of Probable Cost provided.

**Ownership of Documents** All documents produced by RACE under this Agreement, such as drawings, specifications, and computer files, are instruments of service and shall remain the property of RACE and may not be altered or used by the Client for any other endeavor without the written consent of RACE.

**Concealed Conditions** It is understood by the parties to this Agreement that the evaluation, reconstruction or rehabilitation of an existing structure requires that certain assumptions be made regarding existing conditions which are concealed or otherwise not visible. Some of these assumptions may not be verifiable without significant cost or destroying otherwise adequate and serviceable portions of the structure. Where it is impractical to verify assumptions concerning hidden conditions, RACE assumes no responsibility for any additional costs or liabilities associated with existing conditions which deviate from that assumed.

**Existing Conditions** Information on the existing structures have been obtained from existing drawings, preliminary site visits, and other documents. This Agreement is based upon the assumption that the construction of the existing structures was done in strict accordance with these drawings or with common construction standards and that the

existing structural elements are, unless noted herein, in sound condition and are fully permitted with all required regulatory agencies. No attempt has been made to verify the integrity of the existing structures other than what will be explicitly shown on our drawings, and we assume no responsibility for its condition if it should turn out not to be adequate. It shall be the responsibility of the contractor for the construction of the new structure to report to RACE immediately any discrepancies and any evidence of impairment of structural strength found during the course of construction.

**Client Provided Information** RACE shall be entitled to generally rely on the accuracy and completeness of information and documents furnished by Client and by other consultants such as surveys, soil boring logs, geotechnical reports, and working drawings of existing structures. Any substantial inaccuracies in the quality or completeness of information provided which requires a substantial effort to change or correct our work which is based on Client provided information shall constitute a change in the Scope of Services and be subject to the provisions which pertain to *Additional Services*.

**Jobsite Safety** Neither the professional activities of RACE, nor the presence of RACE or its sub-consultants at a construction site, shall relieve the General Contractor and any other entity of their obligations, duties, and responsibilities including, but not limited to, construction means, methods, sequences, techniques, or procedures necessary for performing, superintending, or coordinating all portions of the work of construction in accordance with the contract documents and any health or safety precautions required by any regulatory agencies.

**Time Period for Accepting Contract** This Agreement is valid for a period of 30 days, after which the Consultant reserves the right to review and revise the estimated fee, time schedule, and other terms specified herein.

**Alternate Dispute Resolution** All claims, counterclaims, disputes and other matters in question between the parties hereto arising out of or relating to this Agreement or breach thereof (except claims by RACE or its associates for fees and costs for professional services) will be presented to non-binding mediation, subject to the parties agreeing to a mediator(s).

**Contract Signatures** The individual executing this Agreement, if acting on behalf of a partnership, corporation, or funding agency, represents that he has the authority to do so.

**Discovery of Unanticipated Hazardous Materials** Hazardous materials or certain types of hazardous materials may exist where there is no reason to believe they could or should be present. RACE and the Client agree that the discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work. The Client and RACE also agree that the discovery of unanticipated hazardous materials may make it necessary for RACE to take immediate measures to protect human health and safety, and/or the environment. RACE agrees to notify the Client as soon as practically possible should unanticipated hazardous materials or suspected hazardous materials be





encountered. The Client encourages RACE to take any and all measures that in RACE's professional opinion are justified to preserve and protect the health and safety of RACE's personnel and the public, and/or the environment, and the Client agrees to compensate RACE for the additional cost of such work. In addition, the Client waives any claims against RACE and agrees to indemnify for injury or loss arising from RACE's encountering unanticipated hazardous materials or suspected hazardous materials. The Client also agrees to compensate RACE for any time spent and any expenses incurred by RACE in defense of any such claim, with such compensation to be based upon RACE's prevailing fee schedule and expense reimbursement policy.

**Indemnification** The Client agrees to hold harmless and indemnify RACE for and against all claims, damages, awards and costs of defense arising out of delays in or failures of RACE's performance resulting from events beyond the control of RACE. The Client agrees to stipulate within the contract documents between the Contractor and the Client, that the Contractor or Client shall purchase and maintain, during the course of construction, "all-risk" builder's risk insurance in a reasonable amount of coverage which names RACE, the Contractor, the Client, and the Client's agents as additional insureds.

**Delivery of Electronic Files** In accepting and utilizing any drawings, reports and data on any form of electronic media generated and furnished by RACE, the Client agrees that all such electronic files are instruments of service of RACE, who shall be deemed the author, and shall retain all common law, statutory law and other rights, including copyrights. The Client agrees not to reuse these electronic files, in whole or in part, for any purpose other than for the Project. The Client agrees not to transfer these electronic files to others without the prior written consent of RACE. The Client further agrees to waive all claims against RACE resulting in any way from any unauthorized changes to or reuse of the electronic files for any other project by anyone other than RACE. The Client and RACE shall agree upon the format for any electronic files furnished by either party prior to the initiation of work. Any changes to the electronic specifications by either the Client or RACE are subject to review and acceptance by the other party. Additional services by RACE made necessary by changes to the electronic file specifications shall be compensated for as *Additional Services*. Electronic files furnished by either party shall be subject to an acceptance period of thirty (30) days during which the receiving party agrees to perform appropriate

acceptance tests. The party furnishing the electronic file shall correct any discrepancies or errors detected and reported within the acceptance period. After the acceptance period, the electronic files shall be deemed to be accepted and neither party shall have any obligation to correct errors or maintain electronic files.

The Client is aware that differences may exist between the electronic files delivered and the printed hard-copy construction documents. In the event of a conflict between the signed construction documents prepared by RACE and electronic files, the signed or sealed hard-copy construction documents shall govern. In addition, the Client agrees, to the fullest extent permitted by law, to indemnify and hold harmless RACE, its officers, directors, employees and sub-consultants against all damages, liabilities or costs, including reasonable attorneys' fees and defense costs, arising from any changes made by anyone other than RACE or his designate from any reuse of the electronic files without the prior written consent of RACE. Under no circumstances shall delivery of electronic files for use by the Client be deemed a sale by RACE, and RACE makes no warranties, either express or implied, of merchantability and fitness for any particular purpose. In no event shall RACE be liable for indirect or consequential damages as a result of the Client's use or reuse of the electronic files, unless those damages are a result of an error or omission which is shown on both the hard-copy documents and the electronic files.

#### **Termination**

- (1) This Agreement between the Client and RACE may be terminated by either party and shall be deemed effective upon receipt of seven (7) days prior written notice.
- (2) If this Agreement is terminated during the course of performance of the work, RACE shall be paid within seven (7) days of such termination the reasonable value of the services performed during the period prior to the effective date of termination.
- (3) If, prior to termination of this Agreement, any work by RACE during any phase of the work is suspended in whole or in part for more than three (3) months or abandoned after written notice from the Client, RACE shall be paid for such services performed prior to receipt of such notice.



**6. AUTHORIZATION**

We are prepared to undertake this project upon receipt of your written authorization to proceed. Please sign this Agreement and return one fully executed copy and the requested retainer fee to this office. We recommend that you retain a copy for your records. If you have any questions, please do not hesitate to contact the undersigned. We are looking forward to working with you on this project.

**OFFERED BY:**

**AUTHORIZED BY:**



Devin J. Santa, P.E.  
President

(printed name/title)

**RACE COASTAL ENGINEERING, INC.**

(authorized signatory)

(Date)

(printed name/title)

**Town of Fairfield**





## Town of Fairfield

Sullivan Independence Hall  
725 Old Post Road

Fairfield, Connecticut 06824  
Purchasing Department

(203) 256-3060  
FAX (203) 256-3080

### Award Resolution Recommendation

On Tuesday, 22<sup>nd</sup> February, 2022, the Purchasing Authority recommended an award of bid number 2022-129 to Silktown Roofing, Inc., 27 Pleasant Street, Manchester, CT to provide labor, materials, equipment, and all else necessary, to fully replace the existing roof areas, as noted in the plans and specifications, at Roger Ludlowe Middle School, as specified in the contract documents prepared by Silver Petrucelli + Associates.

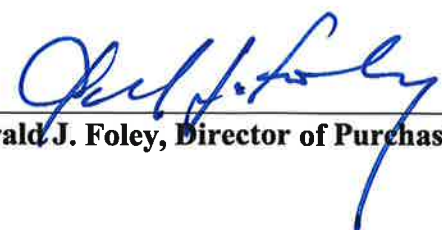
Entire Project for the Total Cost of:	\$3,016,500.00
Deduct Alternate No. 2: Twenty (20) Year Warranty	(\$ 2,600.00)
Deduct Alternate No. 4: Smoke Hatches:	(\$ 16,000.00)
Deduct from Base Bid Allowance No 1:	<u>(\$ 17,280.00)</u>
<b>Total Cost of Project:</b>	<b>\$2,980,620.00</b>

The Special Projects Standing Building Committee (SPSBC) voted to award the contract to Silktown Roofing, Inc. at their special meeting held on Monday, 7<sup>th</sup> February, 2022.

Silktown Roofing, Inc. was selected for this project based their proposed bid pricing, their qualifications, and the positive feedback from their references.

The award of the contract to Silktown Roofing, Inc. to provide labor, materials, equipment, and all else necessary, to fully replace the existing roof areas, as noted in plans and specifications, at Roger Ludlowe Middle School project may be subject to the review and approval of the Board of Selectmen.

  
Brenda L. Kupchick, First Selectwoman

  
Gerald J. Foley, Director of Purchasing





## Town of Fairfield

Sullivan Independence Hall  
725 Old Post Road

Fairfield, Connecticut 06824  
Purchasing Department

(203) 256-3060  
FAX (203) 256-3080

**BID #2022-129**

**State Project No. 051-0152 RR**

Roof Replacement – Roger Ludlowe Middle School

TOWN OF FAIRFIELD  
PURCHASING AUTHORITY  
725 OLD POST ROAD  
INDEPENDENCE HALL  
FAIRFIELD, CT 06824.

Date Submitted February 3, 2022

SEALED BIDS are subject to the standard instructions set forth on the attached sheets. Any modifications must be specifically accepted by the Town of Fairfield, Purchasing Authority.

Bidder:

Silktown Roofing, Inc.

Doing Business As (Trade Name)

27 Pleasant Street

Address

Manchester, CT 06040

Town, State, Zip

Mr. John C. McConville, President

(Mr. / Ms.) Name and Title, Printed

Signature

860-647-0198/860-646-0775

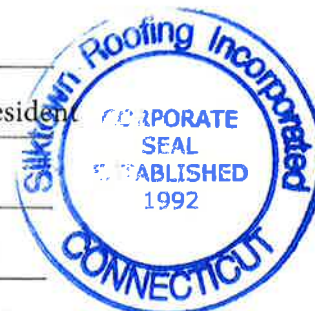
Telephone

Fax

Steve@silktownroofing.com (Steve Pumphrey, PM)

E-mail

*Thomas R. R...*  
First Selectwoman  
*[Signature]*  
Director of Purchasing  
01/18/2022  
Date



Sealed bids will be received by the Purchasing Authority at the office of the Director of Purchasing, First Floor, Independence Hall, 725 Old Post Road, Fairfield, Connecticut 06824, up to:

**11:00am, Thursday, 3<sup>rd</sup> February, 2022**

To provide labor, materials, equipment, and all else necessary, to fully replace the existing roof areas, as noted in plans and specifications, at Roger Ludlowe Middle School (RLMS), as specified in the attached contract documents prepared by Silver Petrucelli + Associates.

**NOTES:**

1. Bidders are to complete all requested data in the upper right corner of this page and must return this page and the Proposal page with their bid.
2. No bid shall be accepted from, or contracts awarded to, any person/company/affiliate or entity under common control who is in arrears to the Town of Fairfield upon debt, or contract or who has been within the prior five (5) years, a defaulter as surety or otherwise upon obligations to the Town of Fairfield, and shall be determined by the Town.
3. Bid proposals are to be submitted in a sealed envelope and clearly marked "BID #2022-129" on the outside of the envelope, including all outer packaging, such as, DHL, FedEx, UPS, etc.
4. It is the sole responsibility of the bidder to see that the bid is received by the Fairfield Purchasing Department prior to the time and date noted above. Bid proposals are not to be submitted via email or fax.
5. Bid proposals are not to be submitted with plastic binders or covers, nor may the bid proposal contain any plastic inserts or pages.

(To be submitted in duplicate)

BIDDER: Silktown Roofing Inc.  
Name  
151 Water St., Derby CT. 06418  
Address

To: **Town of Fairfield**  
**c/o Purchasing Department**  
**725 Old Post Road**  
**Fairfield, CT 06825**

Project: **Roger Ludlowe Middle School Roof Replacement**  
**689 Unquowa Road**  
**Fairfield, CT 06824**  
**State Project #051-0152 RR**  
**Bid #2022-129**

In preparing this bid, we have carefully examined the Bidding Documents for this Project. We have visited the site and noted the conditions affecting the Work.

The Bidding Documents referred to include Drawings and Project Manual dated November 4, 2021, prepared by Silver/Petrucelli + Associates, Inc., Hamden, Connecticut.

We propose to perform the work described in the Bidding Documents, in keeping with definitions of Article 1 of the Instructions to Bidders, for the Base Bid Sum as follows:

**Base Bid:**

**Entire Project** for the Total Cost of:

\$ Three Million, Sixteen Thousand, Five Hundred Dollars (\$ 3,016,500 .00).  
written figure

We will commence work on the project 10 calendar days after receipt of "Notice to Proceed" or signing of Contract, whichever is sooner. We will be able to substantially complete the project by the date indicated in the Invitation to Bid. (Also refer to SIB 1.1.B).

Bidder shall provide a Schedule of Values (see attached form).

**Allowances: (See Section 012100)**

Allowance No. 1: Metal Deck Replacement (part of Base Bid) \$ 17,280.00

**Alternates:**

The undersigned proposes to furnish all Labor, Materials, Equipment and Services necessary to construct the items listed in the Alternates described in Section 012300 for the stipulated sum of:

**ADD ALTERNATE NO. 1: Interior Painting:** Add to the Base Bid a Total of:

\$ Sixty One Thousand Dollars (\$ 61,000.00).  
written figure

The project schedule will be (increased/decreased) by 15 calendar days to complete the work indicated under Add Alternate 1.

**DEDUCT ALTERNATE NO. 2: Twenty (20) Year Warranty:** Deduct from the Base Bid a Total of:

\$ Twenty Six Hundred Dollars (\$ \$2,600.00).  
written figure

The project schedule will be (increased/decreased) by 0 calendar days to complete the work indicated under Deduct Alternate 2.

**ADD ALTERNATE NO. 3: Rooftop Mechanical Units:** Add to the Base Bid a Total of:

\$ Eleven Thousand, Five Hundred Dollars (\$ 11,500.00).  
written figure

The project schedule will be (increased/decreased) by 16 calendar days to complete the work indicated under Add Alternate 3.

**DEDUCT ALTERNATE NO. 4: Smoke Hatches:** Deduct from the Base Bid a Total of:

\$ Sixteen Thousand Dollars (\$ 16,000.00).  
written figure

The project schedule will be (increased/decreased) by 0 calendar days to complete the work indicated under Deduct Alternate 4.

**Unit Prices:**

As required by the Base Bid, should deteriorated or damaged materials be required to be removed as determined by the Architect or Owner, the cost to remove and replace the referenced material, (or credit for specified material not provided or installed) including all labor, material, equipment, and related furnishings is as follows:

Item	Description	Unit Price
1.	Metal roof deck, thickness to match existing roof deck to be removed (including deteriorated roof deck removal, credit and add)	\$4.00 sf
2.	Add pressure treated wood blocking, as specified, cut to fit around roof structure and systems installed	\$ 8.50 bf
3.	Deduct pressure treated wood blocking, as specified, cut to fit around roof structure and system installed	\$ 6.50 bf

If written notice of the acceptance of this Bid is mailed, telegraphed, or delivered to the undersigned at the Address designated below, within ninety (90) days after the date of Bid Opening, or any time thereafter before this Bid is withdrawn, the undersigned will, within ten (10) days after the date of mailing, telegraphing, or delivering of the notice, execute and deliver a contract in the Standard Form of



Agreement Between the Owner and Contractor, AIA Document A101, or similar contract modified as may be mutually agree upon.

The undersigned acknowledges that he has examined the documents, visited and examined the site as required under "Instructions to Bidders", examined the availability of labor and materials and further agrees to comply with all the requirements as to the conditions of employment and wage rates set forth by the Department of Labor.

**Addenda:**

The undersigned acknowledges receipt of the following addenda to the Contract Documents, listed by number and date:

Number 1, Dated: 1/27/22

Number 3, Dated: 2/1/22

Number 2, Dated: 1/31/22

Number 4, Dated: 2/1/22

Exceptions: \_\_\_\_\_

**ATTACHMENTS – Attached hereto is:**

1. **Schedule of Values** See below
2. **Contractor Prequalification Statement**
3. **Update Bid Statement**
4. **CHRO Bidder Contract Compliance Monitoring Report**
5. **Refer to Checklist on Town of Fairfield's Instructions to Bidders for additional items.**

**NON-COLLUSIVE BID STATEMENT**

The undersigned bidder certifies that this bid is made independently and without collusion, agreement, understanding or planned course of action with any other bidder and that the contents of the bid shall not be disclosed to anyone other than employees, agents, or sureties prior to the official bid opening.

Signature: \_\_\_\_\_

Date: 2/3/2022

Printed Name and Title

of Agent submitting bid: John C. McConville, President

Name of Company: Silktown Roofing Inc.

Address: 151 Water St., Derby Ct. 06418

Telephone Number: 203-735-0552

Fax Number: 203-732-7649

E-mail: steve@silktownroofing.com

This Bid may be withdrawn prior to the scheduled Bid Opening or any postponement thereof.

**SCHEDULE OF VALUES**

<b>ITEM DESCRIPTION</b>	<b>VALUE</b>
Mobilization	\$ 9,000.00
Safety	\$ 18,000.00
CHRO Administration	\$ 25,000.00
SBS Roofing	\$ 1,227,400.00
Roof Specialties & Sheet Metal (Material Only)	\$ 125,000.00
Insulation	\$ 985,000.00
Roof Accessories & Expansion Joints	\$ 30,000.00
Wood Blocking	\$ 365,000.00
Walkway Pads	\$ 35,000.00
Exterior Painting	\$ 8,500
Roof Drains & Insulation	\$ 99,100.00
Masonry	\$ 83,000.00
Daily Clean-up	\$ 6,500.00
Installation Manhours 1,100 Hrs	\$
Allowance #1 This is an add alternate, cannot be added	\$
<b>TOTAL SCHEDULED FEE<sup>1</sup></b>	<b>\$</b>

**NOTES:**

- The Total Scheduled Fee shall equal the Base Bid.*

### CHECKLIST

The following must be submitted with proposal:

- Cover page, completed and signed.
- Addenda (where issued) acknowledged.
- List of references where projects performed of comparable size and scope within the past three (3) years.
- List of all proposed Subcontractors identifying each trade, hourly rates, and Tax ID number. (All Subcontractors are subject to approval by the Town prior to award of contract.)
- Complete list of scheduled values for all lump sum amounts.
- Proposal includes Prevailing Wage Rates as appended to this document.
- DAS Pre-Qualification Certificate and Update (Bid) Statement.
- Bid Bond or equal approved security.
- Stated exceptions (if any are to apply).

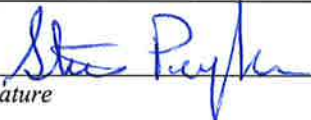
The Bidder hereby certifies that any and all defects, errors, inconsistencies or omissions of which he/she is aware, either directly or by notification from any sub-bidder or material supplier found in the Contract Documents are listed herewith.

Steve Pumphrey

*Name of Authorized Representative (Printed)*

Project Manager

*Title*

*Signature* 

*Date* 2/3/2022

**SUBCONTRACTORS**

Provide subcontractor details if any are to be employed as part of this contract, including labor rates:

**SUBCONTRACTOR #1:**

**ALL SUBS ARE TO BE DETERMINED**

Name of Company \_\_\_\_\_ Fed ID # \_\_\_\_\_

Contact Person \_\_\_\_\_ Title \_\_\_\_\_

Company Address \_\_\_\_\_ Phone \_\_\_\_\_

Trade \_\_\_\_\_ Email \_\_\_\_\_

Rates: Supervisor \$ \_\_\_\_\_ /hr Foreman \$ \_\_\_\_\_ /hr Journeyman \$ \_\_\_\_\_ /hr Apprentice \$ \_\_\_\_\_ /hr

**SUBCONTRACTOR #2:**

Name of Company \_\_\_\_\_ Fed ID # \_\_\_\_\_

Contact Person \_\_\_\_\_ Title \_\_\_\_\_

Company Address \_\_\_\_\_ Phone \_\_\_\_\_

Trade \_\_\_\_\_ Email \_\_\_\_\_

Rates: Supervisor \$ \_\_\_\_\_ /hr Foreman \$ \_\_\_\_\_ /hr Journeyman \$ \_\_\_\_\_ /hr Apprentice \$ \_\_\_\_\_ /hr

**SUBCONTRACTOR #3:**

Name of Company \_\_\_\_\_ Fed ID # \_\_\_\_\_

Contact Person \_\_\_\_\_ Title \_\_\_\_\_

Company Address \_\_\_\_\_ Phone \_\_\_\_\_

Trade \_\_\_\_\_ Email \_\_\_\_\_

Rates: Supervisor \$ \_\_\_\_\_ /hr Foreman \$ \_\_\_\_\_ /hr Journeyman \$ \_\_\_\_\_ /hr Apprentice \$ \_\_\_\_\_ /hr

**SUBCONTRACTOR #4:**

Name of Company \_\_\_\_\_ Fed ID # \_\_\_\_\_

Contact Person \_\_\_\_\_ Title \_\_\_\_\_

Company Address \_\_\_\_\_ Phone \_\_\_\_\_

Trade \_\_\_\_\_ Email \_\_\_\_\_

Rates: Supervisor \$ \_\_\_\_\_ /hr Foreman \$ \_\_\_\_\_ /hr Journeyman \$ \_\_\_\_\_ /hr Apprentice \$ \_\_\_\_\_ /hr

**NOTE:**

**All sub-contractors are subject to approval by the Town of Fairfield and are required to provide Fed ID #.**

**REFERENCES**

Provide reference details of most recent similar scope projects performed:

**REFERENCE #1: Amazon Distribution Center**

Name of Company RC Anderson Phone 973-227-8200  
Contact Person Scott White Cell \_\_\_\_\_  
Company Address 695 US-46, Suite 205, Fairfield, NJ 07004 Fax 973-227-8101  
Date work completed November 2021-\$3,565,000.00 Email swhite@rcanderson.com

**REFERENCE #2: MBC Derfee High School**

Name of Company Suffolk Construction Phone 617-445-3500  
Contact Person Brian Bianchi Cell \_\_\_\_\_  
Company Address 65 Allerton St., Boston, MA 02119 Fax 617-541-2128  
Date work completed Aug. 2021-\$2,918,000.00 Email Bbianchi@sulffolk.com

**REFERENCE #3: Tolland Middle School**

Name of Company Bartlett Brainard Eacott Phone 860-242-5565  
Contact Person Noal Jenkins, PM Cell \_\_\_\_\_  
Company Address 70 Griffin Rd. So., Bloomfield, CT 06002 Fax \_\_\_\_\_  
Date work completed 8/19/20-\$2,496,000.00 Email njenkins@bbeinc.com

**REFERENCE #4: Windam Tech High School**

Name of Company State of CT-DAS Phone \_\_\_\_\_  
Contact Person Steven Longo, PM Cell 860-713-5751  
Company Address 450 Columbus Blvd, Hartford, CT 06103 Fax \_\_\_\_\_  
Date work completed 8/23/17-\$4,698,000.00 Email Steven.longo@ct.gov

**REFERENCE #5: Yale New Residential Colleges**

Name of Company Dimeo Construction Phone 401-781-9800  
Contact Person Craig Bolton, PM Cell \_\_\_\_\_  
Company Address 75 Chapman Rd., Providence, RI Fax 888-661-7388  
Date work completed 2018-\$7,219,500.00 Email cbolton@dimeo.com

# State of Connecticut

## Department of Administrative Services Construction Contractor Prequalification Program

This certifies

### ***Silktown Roofing, Inc.***

***27 Pleasant Street, 13 Pleasant Street-Remittance Address, Manchester, CT 06040***

***As a***

***Prequalification Construction Contractor***

***April 15, 2021 through April 14, 2022***

#### **CONTACT INFORMATION**

**Name:** Joan K. McConville, Corp.  
Secretary

**Phone:** (860) 647-0198

**Fax:** (860) 646-0775

**Email:** Joan@silktownroofing.com

**Name:** John C. McConville, President

**Phone:** (860) 647-0198

**Fax:** (860) 646-0775

**Email:** John@silktownroofing.com

**Effective Date**  
4/15/2021

**Aggregate Work Capacity (AWC)**  
\$120,000,000.00

**Single Limit (SL)**  
\$30,000,000.00

**Classifications**  
ENERGY MANAGEMENT SYSTEMS,  
GENERAL BUILDING  
CONSTRUCTION (GROUP C),  
HISTORICAL BUILDING  
RESTORATION (MASONRY,  
ROOFING), METAL SIDING,  
ROOFING, WATERPROOFING

**Classification Name**  
ENERGY MANAGEMENT  
SYSTEMS

**Description**  
The design and installation of systems or maintenance programs to conserve energy use within a building. This category includes shared savings programs.

This certificate prequalifies the named company to bid. It is not a statement of the Contractor's capacity to perform a specific project. That responsibility lies with the awarding authority.

Company Licenses/Registrations: It is the Contractor's responsibility to update their license information by editing their electronic application. Licenses are confirmed by the Department of Administrative Services (DAS) at the time of initial application and at each renewal.

For information regarding the DAS Contractor Prequalification Program visit <http://portal.ct.gov/dasprequal> or call (860) 713-5280.



GENERAL BUILDING CONSTRUCTION (GROUP C)	The undertaking of general contracts for the construction of buildings i.e. new construction, renovation, rehabilitation, alteration, addition, etc. The contract must include a variety of construction practices and supervision of a minimum of three sub-trades. Includes buildings that are truly custom, requiring extensive detailing, or that have large amounts of integrated scientific or complex mechanical/electrical equipment in order for them to function. Examples include hospitals, chemistry buildings, special collections buildings, historic preservation to a landmark structure, and/or any other structure that is truly one of a kind within the State's inventory. Note: If you are prequalified for General Building Construction under Group C, you are automatically prequalified for Group A and Group B. Also if you are prequalified for General Building Group C you will automatically be prequalified for General Trades. Note: For the purposes of DAS Construction Contractor Prequalification, contractors in this classification are not required to be registered as a major contractor with the Department of Consumer Protection. However, there may be specific projects within this classification that require a major contractor registration from the Department of Consumer Protection. Projects that are threshold buildings may require a Major Contractor Registration.
HISTORICAL BUILDING RESTORATION (MASONRY, ROOFING)	Construction/renovation, masonry, and roofing work will require firms with experience with the Secretary of the Interior's Standards for Rehabilitation issued by the U.S. Department of Interior, National Park Service, Washington, D.C. (Standards for Treatment of Historic Project.)
METAL SIDING	Work customarily performed by this industry including the supply and installation of metal siding where used as external components of custom designed buildings. This does not apply to pre-engineered buildings where the metal siding is a building component.
ROOFING	The installation of various types of roofing materials including shingles, slate, rubber, PVC and related flashing and drainage systems.
WATERPROOFING	Installation, renovation, repair and maintenance of materials required to make foundations, walls and other surfaces of a building dam proof or impervious to water, including such incidental or related work as is customarily performed by those in the waterproofing and dam proofing trades. This category does not include roofing by itself.

This certificate prequalifies the named company to bid. It is not a statement of the Contractor's capacity to perform a specific project. That responsibility lies with the awarding authority.

Company Licenses/Registrations: It is the Contractor's responsibility to update their license information by editing their electronic application. Licenses are confirmed by the Department of Administrative Services (DAS) at the time of initial application and at each renewal.

For information regarding the DAS Contractor Prequalification Program visit <http://portal.ct.gov/dasprequal> or call (860) 713-5280.

State of Connecticut  
Department of Administrative Services (DAS) Contractor Prequalification  
**Update (Bid) Statement**  
(Statement to be included with the bid)

Connecticut General Statute §42-100 and Connecticut General Statute §4b-91

Each bid submitted for a contract shall include a copy of a prequalification certificate issued by the Commissioner of Administrative Services. The bid shall also be accompanied by an update bid statement in such form as the Commissioner of Administrative Services prescribes. The form for such update bid statement shall provide space for information regarding all projects completed by the bidder since the date the bidder's prequalification certificate was issued or renewed, all projects the bidder currently has under contract, including the percentage of work on such projects not completed, the names and qualifications of the personnel who will have supervisory responsibility for the performance of the contract, any significant changes in the bidder's financial position or corporate structure since the date the certificate was issued or renewed, any change in the contractor's qualification status, and such other relevant information as the Commissioner of Administrative Services prescribes. Any bid submitted without a copy of the prequalification certificate and an update bid statement shall be invalid. Any public agency that accepts a bid submitted without a copy of such prequalification certificate and an update bid statement, as required by this section, may become ineligible for the receipt of funds related to such bid.

<b>Name of Project that company is bidding on:</b>		
Roger Ludlowe Middle School		
<b>Project Number:</b>		
Bid #2022-129		
<b>Name of Company:</b>		
Silktown Roofing, Inc.		
<b>FEIN:</b>		
06-1350674		
<b>Company Address:</b>		
27 Pleasant Street, Manchester, CT 06040		
<b>Prequalification Contact:</b>		<b>Telephone Number:</b>
Joan K. McConville, Corporate Secretary		860-647-0198
<b>Date of Prequalification with the DAS:</b>	<b>Single Limit:</b>	<b>Aggregate Work Capacity (AWC):</b>
4/15/2021-4/14/2022	\$30,000,000.00	\$120,000,000.00
		<b>* Remaining Aggregate Work Capacity:</b>
		\$95,400,000.00

\* This amount equals your company's AWC minus the Total \$ Amount of Work Remaining.

Please list all of your company's BONDED PROJECTS (BOTH PUBLIC AND PRIVATE) WHICH WERE 100% COMPLETED SINCE THE DATE YOUR PREQUALIFICATION WAS ISSUED OR RENEWED: (Please add additional page(s) if required)

Name of Project	Owner of Project	Date Project Completed	Total Contract Amount
SEE ATTACHED			

Please list all of your company's **BONDED PROJECTS (BOTH PUBLIC AND PRIVATE) CURRENTLY UNDER CONTRACT:**  
(Please add additional page(s) if required. Please total the Work Remaining column)

Name of Project	Owner of Project	Total Contract Amount	% Complete	Work Remaining (\$)
SEE ATTACHED				
Total \$ Amount of Work Remaining →				\$24,600,000.00

Please list the names and titles of the personnel who will have supervisory responsibility for the performance of the contract being bid on:  
(Please add additional page(s) if required)

Individual Name	Title of Individual
John C. McConville	President
Kevin McGrath	General Manager
John Morrissey	Branch Manager
Chuck Arnold, Chris Heimer, Ryan Arnold, Chris Bollman, Bill Leonard	Project Managers-Manchester
Mike Geragava, Steve Pumphrey, Wojciech Florkiewicz, Sean Morrissey, Jeff Dunn	Project Managers-Derby
Sam Mills, Joe Izzo, Bill Croce	Superintendents

Have there been any changes in your company's financial condition or business organization, which might affect your company's ability to successfully complete this contract?

Yes ☐ No ☒

If yes, please explain:

I certify under penalty of law that all of the information contained in this Update (Bid) Statement is true and accurate to the best of my knowledge as of the date below.

Signature Joan K. McConville Joan K. McConville, Corporate Secretary

Date 2/2/2022

It is the responsibility of the Awarding Authority to determine if any of the information provided above will impact the contractor's performance on this project. 00412A  
The DAS' Contractor Prequalification Program can be reached at (860) 713-6280 DAS Update Statement

00412A

## **PART 1 - COMPLETED PROJECTS**

LIST ALL PUBLIC AND PRIVATE PROJECTS OF \$20,000 OR MORE THAT YOUR FIRM HAS COMPLETED SINCE THE DATE OF APPLICATION FOR YOUR MOST RECENTLY ISSUED (NOT EXTENDED OR AMENDED) SUB-BIDDER CERTIFICATE OF ELIGIBILITY\*.

PROJECT TITLE & LOCATION	WORK CATEGORY	CONTRACT PRICE	START DATE	DATE COMPLETED
2339 Tolland Tnpk, Manchester	Roofing	\$8,399,023.00	5/6/2019	11/4/2019
USPS Framingham	Roofing	\$930,757.00	9/2/2019	4/27/2020
Hood Elementary School	Roofing	1,190,668.00	6/28/2019	1/3/2020
Boston Children's Hospital	Roofing	\$400,000.00	6/28/2019	5/1/2020
Medical Dental Clinic-NAVFAC	Roofing	\$765,000.00	4/12/2019	6/2/2020
USPS Bristol, CT	Roofing	\$623,909.00	11/27/2019	4/27/2020

Attach additional sheets if necessary

\* If your firm has been terminated from a project prior to completion of the work or has failed or refused to complete its work under any contract, full details and an explanation must be provided. See Part 3 of this Sub-bidder Update Statement.

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH COMPLETED PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
2339 Tolland Tnpk	OWNER: Owner	Contact Person	Telephone
	WE 2339 Tolland Tnpk, LLC	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
USPS Framington	GC: Winstanley Constr. Mgmt.	Contact Person John Hudson	Telephone jhudson@winent.com
	OWNER: Owner	Contact Person	Telephone
	USPS	Contact Person Sandra G Chong Ham	Telephone Sandra.g.chongham@usps.gov
Hood Elementary School	DESIGNER: Designer	Contact Person	Telephone
	GC: Wood Eng & Infrastructure	Contact Person Tec Krush	Telephone ted.krush@wood plc.com
	OWNER: City of Lynn	Contact Person Andy Young	Telephone ayoung@lynnma.gov
Boston Children's Hosp.	DESIGNER: Designer	Contact Person	Telephone
	GC: PAC 360	Contact Person Brian Laroche	Telephone blaroche@PAC360.com
	OWNER: Boston Children's Hosp.	Contact Person A. Cacciola-GC	Telephone
Medical Dental Clinic	DESIGNER: Designer	Contact Person	Telephone
	GC: Wise Construction Co.	Contact Person	Telephone acacciola@wiseconstruction.com
	OWNER: NAVFAC-Mid Atlantic	Contact Person	Telephone
USPS Bristol, CT	DESIGNER: Designer	Contact Person	Telephone
	GC: KBEC Building Co.	Contact Person Rleo	Telephone rleo@kbebuilding.com
	OWNER: USPS	Contact Person Sandra G Chong Ham	Telephone Sandra.g.chongham@usps.gov
USPS Bristol, CT	DESIGNER: Designer	Contact Person	Telephone
	GC: Silkton Roofing, Inc.	Contact Person Ryan Arnold	Telephone 860-647-0198/ryean@silktonroofing.com
	OWNER: USPS	Contact Person	Telephone

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above, either through a business or family relationship? ☐ YES ☒ NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? ☐ YES ☒ NO

If you have answered YES to either question, explain. \_\_\_\_\_

## **PART 1 - COMPLETED PROJECTS**

LIST ALL PUBLIC AND PRIVATE PROJECTS OF \$20,000 OR MORE THAT YOUR FIRM HAS COMPLETED SINCE THE DATE OF APPLICATION FOR YOUR MOST RECENTLY ISSUED (NOT EXTENDED OR AMENDED) SUB-BIDDER CERTIFICATE OF ELIGIBILITY\*.

PROJECT TITLE & LOCATION	WORK CATEGORY	CONTRACT PRICE	START DATE	DATE COMPLETED
Green Meadow Elem. School- Maynard, MA	Roofing	\$567,389.00	5/22/2020	7/15/2020
Boston Engagement Center	Roofing	\$198,900.00	8/3/2020	1/15/2021
Bristol Comm College-Bldg E	Roofing	\$110,000.00	7/16/2020	12/31/2020
Longmeadow Community House	Roofing	\$174,550.00	7/21/2020	10/15/2020
State St. Grafton Data Center Cool'g Towers	Roofing	\$289,000.00	8/20/2020	1/15/2021
Southwick Fire Station, MA	Roofing	\$929,500.00	7/14/2020	11/19/2020

Attach additional sheets if necessary

\* If your firm has been terminated from a project prior to completion of the work or has failed or refused to complete its work under any contract, full details and an explanation must be provided. See Part 3 of this Sub-bidder Update Statement.



PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH COMPLETED PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
Green Meadow	OWNER: Owner Town of Maynard, MA	Contact Person Justin DeMarco	Telephone jdemarco@townofmaynard.net/978-897-300
	DESIGNER: Designer	Contact Person	Telephone
	GC: Silktown Roofing, Inc.	Contact Person Jason Woz	Telephone 508-887-8908/jason@silktownroofing.com
Boston Engagement	OWNER: Owner City of Boston	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: J&J Contracting	Contact Person Steve Godbole	Telephone sgodbole@jjcontractor.com/978-452-9898
Bristol Comm College	OWNER: Bristol Community College	Contact Person Debra Nadeau-GC	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: Nadeau Corp.	Contact Person Debra Nadeau	Telephone dc@nadeau.com
Longmeadow Comm. House	OWNER: Owner Town of Longmeadow	Contact Person Nick Georgantis	Telephone ngeorgantis@longmeadow.org/413-565-4150
	DESIGNER: Designer	Contact Person	Telephone
	GC: Silktown Roofing, Inc.	Contact Person	Telephone 508-887-8908/jason@silktownroofing.com
State St. Grafton Data	OWNER: Owner SSB Realty, LLC	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: CBRE	Contact Person David Salamone	Telephone david.salamone@cbre.com
Southwick Fire	OWNER: Owner Town of Southwick	Contact Person Arthur Lawler	Telephone arthurlawler@aol.com/413-569-5995
	DESIGNER: Designer	Contact Person	Telephone
	GC: Silktown Roofing, Inc.	Contact Person	Telephone

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above, either through a business or family relationship? ☐ YES ☒ NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? ☐ YES ☒ NO

If you have answered YES to either question, explain. \_\_\_\_\_

### **PART 1 - COMPLETED PROJECTS**

LIST ALL PUBLIC AND PRIVATE PROJECTS OF \$20,000 OR MORE THAT YOUR FIRM HAS COMPLETED SINCE THE DATE OF APPLICATION FOR YOUR MOST RECENTLY ISSUED (NOT EXTENDED OR AMENDED) SUB-BIDDER CERTIFICATE OF ELIGIBILITY\*.

PROJECT TITLE & LOCATION	WORK CATEGORY	CONTRACT PRICE	START DATE	DATE COMPLETED
Tolland Middle School	Roofing	\$2,496,000.00	5/19/20	8/19/20
Ana Grace Academy	Roofing	\$1,796,000.00	6/2/20	8/21/20
DOT Maintenance - Windsor, CT	Roofing	\$ 664,023.00	5/1/20	8/18/20
Goodwin College-Magnet School	Roofing	\$25,000.00	4/30/20	7/29/20
440 Wheelers Farm-Stamford, CT	Roofing/	\$435,286.00	4/30/20	8/1/20

Attach additional sheets if necessary

\* If your firm has been terminated from a project prior to completion of the work or has failed or refused to complete its work under any contract, full details and an explanation must be provided. See Part 3 of this Sub-bidder Update Statement.

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH COMPLETED PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
Tolland Middle School	OWNER: Town of Tolland	Contact Person P. Sztaba	Telephone 860-871-3600/psztaba@tolland.k12.ct.us
	DESIGNER	Contact Person	Telephone
	GC: Silktown Roofing, Inc.	Contact Person Ryeon Arnold	Telephone 860-647-0198/ryean@silktownroofing.com
ANA Grace Academy	OWNER: CREC	Contact Person	Telephone
	DESIGNER	Contact Person	Telephone
	GC: Bartlett Brainard Easton	Contact Person Noal Jenkins	Telephone 860-242-5565-njenkins@bbeinc.com
DOT Maintenance	OWNER: CT DOT	Contact Person Scott Hill, PE	Telephone
	DESIGNER:	Contact Person	Telephone
	GC: Silktown Roofing	Contact Person Ryeon Arnold	Telephone 860-647-0198-ryean@silktownroofing.com
Goodwin College-Magnet	OWNER: Goodwin College	Contact Person	Telephone 860-528-4111
	DESIGNER:	Contact Person	Telephone
	GC: CTEC Solar	Contact Person Josh Ferguson	Telephone 888-527-6527/josh.ferguson@ctecsolar.com
440 Wheeler Farms	OWNER: Private	Contact Person	Telephone
	DESIGNER	Contact Person	Telephone
	GC: Sky Builders, LLC	Contact Person Kallie Burke	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above, either through a business or family relationship? ☐ YES ☒ NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? ☐ YES ☒ NO

If you have answered YES to either question, explain. \_\_\_\_\_

## PART 2 - CURRENTLY HELD CONTRACTS

LIST ALL PUBLIC AND PRIVATE PROJECTS OF \$20,000 OR MORE THAT YOUR FIRM HAS UNDER CONTRACT ON THIS DATE REGARDLESS OF WHEN OR WHETHER THE WORK COMMENCED.

1	2	3	4	5	6	7
PROJECT TITLE & LOCATION	WORK CATEGORY	START AND END DATES	ON SCHEDULE (yes/no)	CONTRACT PRICE	% NOT COMPLETE	\$ VALUE OF WORK NOT COMPLETE (col. 5 X col. 6)
BMC Duffer High School Fall River, MA	Roofing/Sheet Metal	6/2020-8/2021	Y	\$2,918,000.		
Brightwood Lincoln Elem Sch Springfield, MA	"	6/2021-12/2022	Y	\$1,189,000.	100	\$1,189,000.
Brenson Headquarters Danbury, CT	"	4/2020-5/2021	Y	\$256,925.		
Manganese Removal Treatment Facility, Kingston, MA	"	4/1/21-7/1/21	Y	\$132,389.		
UConn Public Safety Complex Storrs, CT	"	8/2021-10/2021	Y	\$107,000.		

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH INCOMPLETE PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
Durfee High School	OWNER: Owner City of Fall River, MA	Contact Person	Telephone
Suffolk Construction	DESIGNER: Designer A13 Architects	Contact Person	Telephone 508-358-0790
Brightwood-Lincoln ES	GC: GC	Contact Person Brian Bianchi	Telephone 617-445-3500 Bbianchi@suffolk.com
GC-Daniel O'Connell's Sons	OWNER: Owner City of Springfield	Contact Person	Telephone
	DESIGNER: Designer Diinisco Design	Contact Person	Telephone
	GC: GC	Contact Person Richard Fairbanks, PM	Telephone 203-627-0381/rfairbanks@oconnells.com
Branson Headquarters	OWNER: Owner Emerson Electric, Ferguson MA	Contact Person	Telephone
	DESIGNER: Designer CPG Architecture	Contact Person	Telephone 203-967-3455
	GC: FIP GC	Contact Person B. McClennan, PM	Telephone 860-470-1800
Manganese Removal Treatment Town of Kinston, MA	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: Winston Builders Corp.	Contact Person Crystal Miller	Telephone 508-366-1767 crystal.winston@verizon.net
UConn Public Safety Complex	OWNER: Owner University of CT	Contact Person	Telephone
GC-Sarazin General Contractors Inc.	DESIGNER: Designer	Contact Person Christopher Williams	Telephone
	GC: GC	Contact Person Eric Kemp, PM	Telephone 860-456-4576/ekemp@sarazin.com
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship? ☐ YES ☒ NO

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If you have answered YES to either question, explain. \_\_\_\_\_

## PART 2 - CURRENTLY HELD CONTRACTS

LIST ALL PUBLIC AND PRIVATE PROJECTS OF \$20,000 OR MORE THAT YOUR FIRM HAS UNDER CONTRACT ON THIS DATE REGARDLESS OF WHEN OR WHETHER THE WORK COMMENCED.

1	2	3	4	5	6	7
PROJECT TITLE & LOCATION	WORK CATEGORY	START AND END DATES	ON SCHEDULE (yes / no)	CONTRACT PRICE	% NOT COMPLETE	\$ VALUE OF WORK NOT COMPLETE (col. 5 X col. 6)
Windham Senior Community Center	Roofing & Sheet Metal	6/15/20- <u>2-21-22</u>	Y	\$444,842.	40	\$177,937.
Amazon Distr. Center Windsor, CT	"	1/15/21-1/15/2022	Y	\$3,565,000.		
Bristol Arts Magnet School Bristol, CT	"	11/2020-8/2021	Y	\$984,500.	0	Complete.
Parker Rd. PreSchool Schrewsbury MA	"	6/21-8/21	Y	\$238,389.	0	Complete
DOT Salt Sheds 0171-0445	"	NTP-187 Days	Y	\$1,154,000.	30	\$346,200.



PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH INCOMPLETE PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
Windham Senior Center	OWNER: Owner Town of Windham	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: Nutmeg GC Companies	Contact Person Evert Gawendo	Telephone 860-823-1780 E-mail: evert@nutmegcompanies.com
Amazon Distr. Center	OWNER: Owner AMAZON	Contact Person	Telephone
	DESIGNER: Designer McGregor Associates and BL Companies	Contact Person	Telephone 203-630-1406
	GC: RC GC Anderson, LLC	Contact Person Scott White	Telephone 973-227-8200/swhite@rcanderson.com
Bristol Magnet School	OWNER: Owner City of Bristol, CT	Contact Person	Telephone
	DESIGNER: Designer Quisenberry Arcan Malik, LLC	Contact Person	Telephone 860-677-4594
	GC: D'Amato & GC Downes, JV-CT	Contact Person Frank Tomcak	Telephone ftomcak@downesco.com
Parker Rd. PreSchool	OWNER: Owner Town of Shrewsbury, MA	Contact Person Keith Baldinger	Telephone kbaldinger@shrewsburyma.gov
	DESIGNER: Designer	Contact Person	Telephone
	GC: Silktown Roofing, Inc.	Contact Person Jason Woz	Telephone 508-887-8908
DOT Salt Sheds	OWNER: Owner CT DOT	Contact Person	Telephone E-mail
	DESIGNER: Designer DOT	Contact Person	Telephone
	GC: Silktown GC Roofing	Contact Person Chuck Arnold, PM	Telephone 860-647-0198 /chuck@silktownroofing.com
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship? ☐ YES ☒ NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? ☐ YES ☒ NO

If you have answered YES to either question, explain. \_\_\_\_\_

## PART 2 - CURRENTLY HELD CONTRACTS

LIST ALL PUBLIC AND PRIVATE PROJECTS OF \$20,000 OR MORE THAT YOUR FIRM HAS UNDER CONTRACT ON THIS DATE REGARDLESS OF WHEN OR WHETHER THE WORK COMMENCED.

1	2	3	4	5	6	7
PROJECT TITLE & LOCATION	WORK CATEGORY	START AND END DATES	ON SCHEDUL E (yes / no)	CONTRACT PRICE	% NOT COMPLETE	\$ VALUE OF WORK NOT COMPLETE (col. 5 X col. 6)
Perelli Conversion to Hotel New Haven, CT	Roofing/Sheet Metal	TBD	Y	\$795,200.	100	\$795,200.
John F. Kennedy Mid. School Enfield, CT	"	6/29/20-5/15/2022	Y	\$2,081,719.	100	\$2,081,719.
UConn Storrs, NWQuad Utility Plant, Storrs, CT	"	6/08/20-6/01-2021	Y	\$476,200.	0	Complete
Springfield Prep Charter Sch. Springfield, MA	"	10/2020-8/01/2021	Y	\$831,500.	0	Complete
Birch Grove Primary School Tolland, CT	"	6/16/20-8/1/2021	Y	\$882,500.	0	Complete

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH INCOMPLETE PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
Perelli	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: Consigli GC Michael Trzesniowski	Contact Person	Telephone 860-239-0243 mtrzesniowski@consigli.com
John F. Kennedy	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: Gilbane GC Building Co.	Contact Person	Telephone
UConn Utility Plant	OWNER: Owner UConn	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: Bond Brothers	Contact Person	Telephone
Springfield Prep Charter	OWNER: Owner STVINC	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: Fontaine GC Bros. Inc.	Contact Person	Telephone
Birch Grove Primary	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer JCI	Contact Person	Telephone
	GC: D'Amato GC Construction	Contact Person	Telephone
	OWNER: Owner	Contact Person	Telephone
	DESIGNER: Designer	Contact Person	Telephone
	GC: GC	Contact Person	Telephone

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship? ☐ YES ☒ NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? ☐ YES ☒ NO

If you have answered YES to either question, explain. \_\_\_\_\_

## PART 2 - CURRENTLY HELD CONTRACTS

LIST ALL PUBLIC AND PRIVATE PROJECTS OF \$20,000 OR MORE THAT YOUR FIRM HAS UNDER CONTRACT ON THIS DATE REGARDLESS OF WHEN OR WHETHER THE WORK COMMENCED.

1	2	3	4	5	6	7
PROJECT TITLE & LOCATION	WORK CATEGORY	START AND END DATES	ON SCHEDULE (yes / no)	CONTRACT PRICE	% NOT COMPLETE	\$ VALUE OF WORK NOT COMPLETE (col. 5 X col. 6)
Manchester Memorial Hospital Boiler House	Roofing and Sheet Metal	4/1/21-12/1/21	Y	\$240,118.		
USPS Boston IMCVMF	Roofing and Sheet Metal	Per NTP	Y	\$135,250.	100	\$135,250.
Curley Community Center	Roofing and Sheetmetal	NTP-11/22/2021	Y	\$530,000.		
Shaker Farms Fire Dept.	Roofing and Sheet Metal	3/1/2021-12/1/2021	Y	\$235,000.		
Dept. of Navy-PWD New London	Roofing & Sheet Metal	12/20-1/30/2022	Y	\$1,116,565.	40	\$446,626.
**Faniel Branch Library	"	2/22/21-6/15/2021	Y	\$277,000.00	0	Complete

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH INCOMPLETE PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE	COMPANY NAME	CONTACT PERSON	TELEPHONE
<del>MMH Boiler House</del>	OWNER: Owner Prospect Medical Holdings DESIGNER: Designer	Contact Person Anne Gorman Contact Person	Telephone agorman@echm.org Telephone
	GC: Silktown GC Roofing, Inc.	Contact Person Bill Leonard, PM	Telephone 860-647-0198/Bill@silktownroofing.com
USPS Boston	OWNER: Owner USPS DESIGNER: Designer	Contact Person Contact Person	Telephone Telephone
	GC: Roth, a GC Sodexo Co.	Contact Person Gina Feyre	Telephone 330-793-5571 E-mail :
<del>** Faneuil Branch Library Co Brighton, MA</del>	OWNER: Owner Town of Brighton DESIGNER: Designer	Contact Person Contact Person	Telephone Telephone
	GC: Boston Bldg & Bridge Corp	Contact Person John McGonagle	Telephone 617-333-0342/JMcGonagle@BBBCorp.com
Curley Community Center Boston, MA	OWNER: Owner City of Boston DESIGNER: Designer	Contact Person Contact Person	Telephone Telephone
<del>Boston Bldg &amp; Bridge Corp</del>	GC: GC	Contact Person John McGonagle	Telephone 617-333-0342/JMcGonagle@BBBCorp.com
<del>Shaker Pines Fire Dept. Reno</del>	OWNER: Owner Town of Enfield/Shaker Pines Fire Dept. DESIGNER: Designer Moser Pilon Newson Architects	Contact Person Contact Person	Telephone Telephone
	GC: Enfield GC Builders	Contact Person Brian Maxellon	Telephone 860-463-0909/bmaxellon@enfieldbuilders.com
Dept of Navy-PWD New London B493, 17, 37, 135 Roof Replace Groton Naval Sub Base	OWNER: Owner Dept. of the Navy DESIGNER: Designer Navy	Contact Person Contact Person	Telephone Telephone
	GC: Enfield GC Enterprises	Contact Person Jeff East	Telephone eastj@enfieldenterprises.com/413-788-2688

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship? ☐ YES ☒ NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? ☐ YES ☒ NO

If you have answered YES to either question, explain. \_\_\_\_\_

If you have answered YES to either question, explain. \_\_\_\_\_

**PART 2 – PROJECTS IN PROGRESS CONTRACTS**

List all public and private projects of \$20,000 or more your company has under contract on this date regardless of when or whether the work commenced.

1	2	3	4	5	6	7
PROJECT TITLE & LOCATION	WORK CATEGORY	START AND END DATES (MM/YYYY)	ON SCHEDULE (yes / no)	CONTRACT PRICE	% NOT COMPLETE	\$ VALUE OF WORK NOT COMPLETE (col. 5 X col. 6)
USPS Wakefield, MA	Roofing	NTP-120 Days	Yes	\$443,000.00	100	\$443,000.00
Fire Alarm Bldg#7193 Boston, MA	Roofing	11/16/21-4/4/22	Yes	\$313,389.00	100	\$313,389.00
Freshpoint-CT-Htfd.	Roofing	4/2/22-4/27/22	Yes	\$514,520.00	100	\$514,520.00
Pleasant Valley ES	Roofing	7/5/22-10/23/23	Yes	\$2,081,000.00	100	\$2,081,000.00
HPS Sports & Med. Sci.	Roofing	11/23/21-6/6/22	Yes	\$1,019,439.00	100	\$1,019,439.00



PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH INCOMPLETE PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE		COMPANY NAME	CONTACT PERSON	TELEPHONE	EMAIL ADDRESS
USPS Wakefield	OWNER:	USPS			
	DESIGNER	USPS			
	GC:	Roth(Sodexo Co.)	Tammy Knipp-Buyer	330-793-5571	Tammy.Knipp@sodexo.com
Fire Alarm Bldg#7193	OWNER:	City of Boston			
	DESIGNER	CSS Architects		781-245-8400	
	GC:	Paul J. Rogan Co, Inc.	Paul Rogan, VP Ron Bergman, PM	781-843-1900 617-293-0757	pauljr@pauljroganco.com ronb@pauljroganco.com
Freshpoint CT Hartford	OWNER:	Sysco/FreshPoint	Robt. Gordan, President	860-522-2226	
	DESIGNER	Northeast Roofing Consultants	Jeff Radel	207-310-8320	
	GC:	Silktown Roofing, Inc.	Ryeen Arnold, PM	860-647-0198	Ryeen@silktownroofing.com
Pleasant Valley	OWNER:	Town of South Windsor			
	DESIGNER	Drummey Rosane Anderson	James Barrett	860-644-8300	
	GC:	Gilbane Building Co.	Stephanie Greenman	860-368-5100	SGreenman@GilbaneCo.com
HPS Sports & Medical Science	OWNER:	City of Hartford	PWADM		
	DESIGNER	AArcadis-O&G Ind.			
	GC:	Arcadis-O&G Ind	Emily Sifuentes	860-906-1577	EMILYSIFUENTES@AARCADIS-OGIND.COM
	OWNER:				
	DESIGNER				
	GC:				

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship? ☐ YES ☒ NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? ☐ YES ☒ NO

If you have answered YES to either question, explain. \_\_\_\_\_

If you have answered YES to either question, explain. \_\_\_\_\_

**PART 2 – PROJECTS IN PROGRESS CONTRACTS**

List all public and private projects of \$20,000 or more your company has under contract on this date regardless of when or whether the work commenced.

1	2	3	4	5	6	7
PROJECT TITLE & LOCATION	WORK CATEGORY	START AND END DATES (MM/YYYY)	ON SCHEDULE (yes / no)	CONTRACT PRICE	% NOT COMPLETE	\$ VALUE OF WORK NOT COMPLETE (col. 5 X col. 6)
No. Oxford Fire Station	Roof Replacement	NTP-11/15/22	Yes	\$189,189.00	100	\$189,189.00
Eversource Southborough	Truck Canopy-Roofing	12/16-3/1/22	Yes	\$110,000.00	100	\$110,000.00
RI State Police-Gutter	Gutter Replacement	12/16/21-6/6/22	Yes	\$230,000.00	100	\$230,000.00
Sysco Connecticut	Roofing	3-30-22/9-23-22	Yes	\$1,698,187.00	100	\$1,698,187.00
USPS Randolph	Roofing	NTP-180 Days	Yes	\$939,000.00	100	\$939,000.00

PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH INCOMPLETE PROJECT LISTED ON THE PREVIOUS PAGE.

PROJECT TITLE		COMPANY NAME	CONTACT PERSON	TELEPHONE	EMAIL ADDRESS
No. Oxford Fire	OWNER:	Town of Oxford, MA	Jennifer Callahan, Town Mgr.	508-987-6027X8	manager@oxfordma.us
	DESIGNER	N/A			
	GC:	Silktown Roofing, Inc.	Jason Woz, Branch Mgr.		
Eversource	OWNER:	Eversource Energy			
	DESIGNER	Eversource			
	GC:	Standard Blders, Inc.	Bryan Bakas PM	860-594-7143	bbakas@standardbuilders.com
RI State Police	OWNER:	State of RI-State Police			
	DESIGNER	LLB Architects		401-421-7715	
	GC:	Dimeo Construction-CM		401-781-9800	www.dimeo.com
Sysco CT	OWNER:	Sysco CT, LLC-Rocky Hill	Joseph Radetich, Reg. Pres.	860-571-5600	
	DESIGNER	Northeast Rfg. Consultants	Jeff Radel	207-310-8320	
	GC:	Silktown Roofing, Inc.	Chuck Arnold	860-647-0198	chuck@silktownroofing.com
USPS Randolph MA	OWNER:	USPS	Sandra G Chong Ham PM	860-285-7186	sandra.g.chongham@usps.gov
	DESIGNER	USPS			
	GC:	Silktown Roofing, Inc.	Jason Woz, Branch Mgr.	508-887-8908	jason@silktownroofing.com
	OWNER:				
	DESIGNER				
	GC:				

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship? ☐ YES ☒ NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? ☐ YES ☒ NO

If you have answered YES to either question, explain. \_\_\_\_\_



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
4/28/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER  
Sinclair Insurance Group, Inc.  
35 Thorpe Ave  
Ste 200  
Wallingford CT 06492

CONTACT  
NAME: Renee Wozniak

PHONE  
(A/C, No, Ext): 203-284-3226

FAX  
(A/C, No): 203-284-3228

E-MAIL  
ADDRESS: rwozniak@srfm.com

## INSURER(S) AFFORDING COVERAGE

NAIC #

License#: 2328358  
SILKROO-05

INSURER A: National Fire Co. of Hartford

20478

INSURER B: American Casualty of Reading

20427

INSURER C: Indemnity Ins Co of N America

43575

INSURER D: Zurich Insurance

16535

INSURER E: Allied World Assurance Co.

22730

INSURER F:

INSURED  
Silktown Roofing Inc.  
27 Pleasant Street  
Manchester, CT 06040

## COVERAGES

CERTIFICATE NUMBER: 1761457533

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> XCU Included <input checked="" type="checkbox"/> Contractual Liab GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC <input checked="" type="checkbox"/> OTHER: NO Residen Excl		5092136340	5/1/2021	6/1/2022	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 500,000 MED EXP (Any one person) \$ 15,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY <input checked="" type="checkbox"/> CA9848		Q 5092135337	5/1/2021	5/1/2022	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
C	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$ 10,000		N1106940A	5/1/2021	5/1/2022	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N N/A	WC 5 92135354	5/1/2021	5/1/2022	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
D E	Excess Liability Poll/Prof Incl MOLD		AEC3140017 0310-6865	5/1/2021 5/1/2021	5/1/2022 5/1/2022	Ea Occ/Aggregate Aggregate Limit 5,000,000 10,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

## CERTIFICATE HOLDER

## CANCELLATION

Evidence of Insurance

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

*R C Wozniak*

# 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 March in the year 2022  
(In words, indicate day, month and year.)

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

Town of Fairfield  
725 Old Post Road  
Fairfield CT 06824

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

Silktown Roofing Inc.  
151 Water Street  
Derby CT 06418  
Phone: 203-735-0552

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

Roger Ludlowe Middle School Roof Replacement  
689 Unquowa Road  
Fairfield CT 06825  
Bid #2022-129  
State Project No. 051-0152 RR

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

Silver Petrucelli & Associates, Inc.  
3190 Whitney Avenue  
Hamden CT 06518  
Phone: 203-230-9007

The Owner and Contractor agree as follows.

### **ADDITIONS AND DELETIONS:**

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as 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 necessary information and 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.

## TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS

*(Paragraph Deleted)*

### ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form 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 parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

### ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

### 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.
- ☐ A date set forth in a notice to proceed issued by the Owner.
- ☒ Established as follows:

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

Ten (10) calendar days after receipt of Notice to Proceed or signing of Contract whichever comes sooner.

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

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**User Notes:**

(3B9ADA42)



§ 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.

☒ By the following date: August 19, 2022

§ 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.

(Paragraph Deleted)

#### 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 Two Million Nine Hundred Eighty-Three Thousand Two Hundred Twenty Dollars and Zero Cents (\$ 2,983,220.00 ), subject to additions and deductions as provided in the Contract Documents.

(Base Bid \$3,016,500 – Allowance #1 \$17,280 – Alt #4 \$16,000 = Total Contract Sum \$2,983,220).

#### § 4.2 Alternates

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

Item	Price
Deduct Alternate No. 4: Smoke Hatches:	-\$16,000.00
deduct from base bid.	

§ 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
None		

§ 4.3 Allowances, if any, included in the Contract Sum:

(Identify each allowance.)

Item	Price
Deduct from Base Bid Allowance No. 1:	-\$17,280.00
Metal Deck Replacement	

**§ 4.4** Unit prices, if any:

*(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
1. Metal roof deck, thickness to match existing roof deck to be removed (including deteriorated roof deck removal, credit and add)	SF	\$4.00
2. Add pressure treated wood blocking, as specified, cut to fit around roof structure and systems installed.	BF	8.50
3. Deduct pressure treated wood blocking, as specified, cut to fit around roof structure and system installed	BF	6.50

**§ 4.5** Liquidated damages, if any:

*(Insert terms and conditions for liquidated damages, if any.)*

Liquidated damages shall be as listed in S.I.B.1.1.B

**§ 4.6** Other:

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

None

**ARTICLE 5 PAYMENTS**

**§ 5.1 Progress Payments**

**§ 5.1.1** Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall 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** Provided that an Application for Payment is received by the Architect not later than the 25th day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the last day of the following month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than forty-five ( 45 ) days after the Architect receives the Application for Payment.

*(Federal, state or local laws may require payment within a certain period of time.)*

**§ 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. 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.

**§ 5.1.6** In accordance with AIA Document A201™-2017, General Conditions of the Contract for Construction, 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;

Init.

- .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; and
- .5 Retainage withheld pursuant to Section 5.1.7.

### **§ 5.1.7 Retainage**

**§ 5.1.7.1** For each progress payment made prior to Substantial Completion of the Work, 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.)*

Retainage of five (5) % plus CHRO retainage.

**§ 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.)*

None

**§ 5.1.7.2** Reduction or limitation of retainage, if any, shall be as follows:

*(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 modifications.)*

The 2% CHRO retainage will be returned in full after CHRO approves Silkdown Roofing, Inc. affirmative action plan.

**§ 5.1.7.3** Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

*(Insert any other conditions for release of retainage upon Substantial Completion.)*

if agreed to by the Owner

**§ 5.1.8** If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with 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.

### **§ 5.2 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 Contract 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; and
- .2 a final Certificate for Payment has been issued by the Architect.

**§ 5.2.2** The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment.

### **§ 5.3 Interest**

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

*(Paragraph Deleted)*

## **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

☒ Litigation in a court of competent jurisdiction

☐ Other *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

## **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 a termination fee as follows:

*(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)*

None

§ 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)

Gerald Foley,  
Town of Fairfield  
Purchasing Department  
725 Old Post Road  
Fairfield CT 06824

§ 8.3 The Contractor's representative:  
(Name, address, email address, and other information)

John McConville, President  
Silktown Roofing, Inc.  
151 Water Street  
Derby CT 06418  
Phone: 203-735-0552

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

#### § 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance per the Owner's Instructions to Bidders in the specifications manual.

§ 8.5.2 The Contractor shall provide bonds per the Owner's Invitation to Bid in the specifications manual.

#### § 8.6 Intentionally Omitted

(Paragraph Deleted)

§ 8.7 Other provisions:

None

#### ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor

.2

AIA Document A201™–2017, General Conditions of the Contract for Construction

(Paragraphs Deleted)

.3

Drawings

: See Exhibit "C" attached to this Agreement.

Init.

(Table Deleted)

**.4 Specifications**

: See Exhibit "B" attached to this Agreement.

Section	Title	Date	Pages
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**.5 Addenda, if any:**

Number	Date	Pages
1.	January 27, 2022	6
2.	January 31, 2022	2
3.	February 1, 2022	1
4.	February 1, 2022	1

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.

**.6 Other Exhibits:**

*(Check all boxes that apply and include appropriate information identifying the exhibit where required.)*

(Paragraphs Deleted)

(Paragraph Deleted)

(Table Deleted)

**[ X ]** Supplementary and other Conditions of the Contract: See Exhibit "A" attached to this Agreement.

Document	Title	Date	Pages
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**.7 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.)*

None

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

Init.

\_\_\_\_\_  
**OWNER** *(Signature)*

Brenda L. Kupchick, First Selectwoman  
*(Printed name and title)*

\_\_\_\_\_  
**CONTRACTOR** *(Signature)*

John McConville President  
*(Printed name and title)*

\_\_\_\_\_  
**OWNER** *(Signature)*

Gerald Foley, Director of Purchasing  
*(Printed name and title)*

Init.



# **AIA® Document A201® – 2007**

## **General Conditions of the Contract for Construction**

### **for the following PROJECT:**

*(Name and location or address)*

Roger Ludlowe Middle School Roof Replacement

689 Unquowa Road Fairfield CT 06824

Bid #2022-129

State Project No. 051-0152 RR

### **THE OWNER:**

*(Name, legal status and address)*

Town of Fairfield

725 Old Post Road Fairfield CT 06824

### **THE ARCHITECT:**

*(Name, legal status and address)*

Silver Petrucelli & Associates Inc.

3190 Whitney Avenue Hamden CT 06518

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### **ADDITIONS AND DELETIONS:**

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as 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 necessary information and 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.

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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, Conditions of the Contract (General, Supplementary and other Conditions), 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 proposal, or portions of Addenda relating to bidding requirements.

#### **§ 1.1.2 THE CONTRACT**

The Contract Documents form the Contract for Construction. 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 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. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

#### **§ 1.1.3 THE WORK**

The term "Work" means the construction and services required 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. 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.

#### **§ 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 and certify termination of the Agreement under Section 14.2.2.

### **§ 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.

**§ 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.

### **§ 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 Architect and the Architect’s consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment 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 this Project is not to be construed as publication in derogation of the Architect’s or Architect’s consultants’ reserved rights.

**§ 1.5.2** The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them 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 material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect’s consultants.

### **§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM**

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

## **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 Section 4.2.1, the Architect does not have such authority. The term “Owner” means the Owner or the Owner’s authorized representative.

**§ 2.1.2** The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic’s lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner’s interest therein.

### **§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER**

**§ 2.2.1** Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner’s obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner’s ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or

the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

**§ 2.2.2** Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure 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.

**§ 2.2.3** The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

**§ 2.2.4** The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

**§ 2.2.5** Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

### **§ 2.3 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 repeatedly 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.

### **§ 2.4 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 ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

## **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 shall be lawfully licensed, if 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.

**§ 3.1.3** The Contractor shall not be relieved of 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.

## **§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR**

**§ 3.2.1** Execution of the Contract by the Contractor is a representation that the Contractor has 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.

**§ 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 2.2.3, 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 make 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. 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.

## **§ 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 coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

**§ 3.3.2** The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their 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.

## **§ 3.4 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 authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

**§ 3.4.3** 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.

### **§ 3.5 WARRANTY**

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, 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.

### **§ 3.6 TAXES**

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

### **§ 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, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

**§ 3.7.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

**§ 3.7.3** If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, 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 21 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 decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment 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 in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

**§ 3.7.5** If, in the course of the Work, the Contractor encounters human remains 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 Sum and 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 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.

**§ 3.9.2** The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

**§ 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.

### **§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES**

**§ 3.10.1** The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

**§ 3.10.2** The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be 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, 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 schedules submitted to the Owner and Architect.



### **§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE**

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work 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 the way by which 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.

**§ 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 requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing 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 written 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. 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 cause such services or certifications to be provided by a properly licensed design professional, 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, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, 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. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

### **§ 3.13 USE OF SITE**

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

### **§ 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 and patching shall be restored to the condition existing prior to the cutting, fitting and 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 such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

### **§ 3.15 CLEANING UP**

**§ 3.15.1** The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or 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 Owner shall be entitled to reimbursement from the Contractor.

### **§ 3.16 ACCESS TO WORK**

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

### **§ 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 and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such 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 the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

### **§ 3.18 INDEMNIFICATION**

**§ 3.18.1** To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them 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, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not 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, 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 under workers' compensation acts, disability benefit acts or other employee benefit acts.

## **ARTICLE 4 ARCHITECT**

### **§ 4.1 GENERAL**

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

**§ 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.

**§ 4.1.3** If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

### **§ 4.2 ADMINISTRATION OF THE CONTRACT**

**§ 4.2.1** The Architect 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.

**§ 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 the Work, when fully completed, 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, except as provided in Section 3.3.1.

**§ 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 report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) 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 FACILITATING CONTRACT ADMINISTRATION**

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

**§ 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 13.5.2 and 13.5.3, whether or not such 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, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

**§ 4.2.7** The Architect will review and approve, 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, unless otherwise specifically stated by the Architect, 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 authorize 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 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 duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

**§ 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.

## **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 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. 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 or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

**§ 5.2.2** The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

**§ 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 previously selected if the Owner or Architect makes reasonable objection to such substitution.

### **§ 5.3 SUBCONTRACTUAL RELATIONS**

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by 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, which the Contractor, by these 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 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 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 for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; 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.

**§ 5.4.2** Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

**§ 5.4.3** Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

#### **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 Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

**§ 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 in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

**§ 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 other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the 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** Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

##### **§ 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 report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report 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, except as to defects not then reasonably discoverable.

**§ 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, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

**§ 6.2.4** The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors 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.

### **§ 6.3 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.

## **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, 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, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the 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 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.

### **§ 7.3 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:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

.4 As provided in Section 7.3.7.

**§ 7.3.4** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

**§ 7.3.5** Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and 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.

**§ 7.3.6** 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.

**§ 7.3.7** If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and 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, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, 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 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

**§ 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 of a Construction Change Directive to the Owner, 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 the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's 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 has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.



## **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 certified by the Architect in accordance with Section 9.8.

**§ 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 Contractor confirms that the Contract Time is a reasonable period for performing the Work.

**§ 8.2.2** The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

**§ 8.2.3** The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion 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 an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor’s control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

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

**§ 8.3.3** This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## **ARTICLE 9 PAYMENTS AND COMPLETION**

### **§ 9.1 CONTRACT SUM**

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.

### **§ 9.2 SCHEDULE OF VALUES**

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor’s Applications for Payment.

### **§ 9.3 APPLICATIONS FOR PAYMENT**

**§ 9.3.1** At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor’s right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

**§ 9.3.1.1** 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.

**§ 9.3.1.2** 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 material 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, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, 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, storage and transportation to the site for such materials and equipment stored off the site.

**§ 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, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

#### **§ 9.4 CERTIFICATES FOR PAYMENT**

**§ 9.4.1** The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part 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 comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. 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. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. 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 material 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;
- .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 for labor, materials or equipment;
- .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; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

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

**§ 9.5.3** 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 material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

## **§ 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 pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

**§ 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 material and equipment 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 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, except as may otherwise be required by law.

**§ 9.6.5** Contractor payments to material and equipment suppliers shall be treated in a manner similar to that 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.

**§ 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 and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the 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, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

## **§ 9.7 FAILURE OF PAYMENT**

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written 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 reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

## **§ 9.8 SUBSTANTIAL COMPLETION**

**§ 9.8.1** Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

**§ 9.8.2** When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, 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. Failure to include an item on such list 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 list, 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 so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, 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 or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list 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 such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

## **§ 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 as required under Section 11.3.1.5 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 a list to the Architect as provided under Section 9.8.2. 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.

**§ 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 written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds 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 on-site visits and inspections, the Work has been completed in accordance with terms and conditions of 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.

**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit 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 and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor 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. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

**§ 9.10.3** If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor 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 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 written consent of 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** The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

**§ 9.10.5** Acceptance of final payment by the Contractor, a Subcontractor or material 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 in connection with the performance of the Contract.

### **§ 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 or the Contractor's Subcontractors or Sub-subcontractors; 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 applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

**§ 10.2.3** The Contractor shall 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 owners and users of adjacent sites and utilities.

**§ 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 exercise utmost care and carry on such activities under supervision of properly qualified personnel.

**§ 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, except damage or loss 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. The foregoing obligations of the Contractor are 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, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

#### **§ 10.3 HAZARDOUS MATERIALS**

**§ 10.3.1** The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

**§ 10.3.2** Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

**§ 10.3.3** To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them 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 in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

**§ 10.3.4** The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

**§ 10.3.5** The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

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

#### **§ 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.

### **ARTICLE 11 INSURANCE AND BONDS**

#### **§ 11.1 CONTRACTOR'S LIABILITY INSURANCE**

**§ 11.1.1** The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

**§ 11.1.2** The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction

of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

**§ 11.1.3** Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

**§ 11.1.4** The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, 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) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

## **§ 11.2 OWNER'S LIABILITY INSURANCE**

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

## **§ 11.3 PROPERTY INSURANCE**

**§ 11.3.1** Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

**§ 11.3.1.1** Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

**§ 11.3.1.2** If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

**§ 11.3.1.3** If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

**§ 11.3.1.4** This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

**§ 11.3.1.5** Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or



otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

#### **§ 11.3.2 BOILER AND MACHINERY INSURANCE**

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

#### **§ 11.3.3 LOSS OF USE INSURANCE**

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

**§ 11.3.4** If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

**§ 11.3.5** If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

**§ 11.3.6** Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

#### **§ 11.3.7 WAIVERS OF SUBROGATION**

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, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, 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 covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

**§ 11.3.8** A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

**§ 11.3.9** If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the

Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

**§ 11.3.10** The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

#### **§ 11.4 PERFORMANCE BOND AND PAYMENT BOND**

**§ 11.4.1** 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 Contract Documents on the date of execution of the Contract.

**§ 11.4.2** 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.

### **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 request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect'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 has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

#### **§ 12.2 CORRECTION OF WORK**

##### **§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION**

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after 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 one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an 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 after receipt of written 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. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. 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 2.4.

**§ 12.2.2.2** The one-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 one-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, whether completed or partially completed, of the Owner or separate contractors 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 establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific 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.

### **§ 12.3 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 except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

### **§ 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 as a whole without written consent of the other. If either party attempts to make such 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. The Contractor shall execute all consents reasonably required to facilitate such assignment.

### **§ 13.3 WRITTEN NOTICE**

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

### **§ 13.4 RIGHTS AND REMEDIES**

**§ 13.4.1** 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 or available by law.

**§ 13.4.2** 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 there under, except as may be specifically agreed in writing.

### **§ 13.5 TESTS AND INSPECTIONS**

**§ 13.5.1** Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. 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 timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

**§ 13.5.2** 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 13.5.1, 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 13.5.3, shall be at the Owner's expense.

**§ 13.5.3** If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 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.

**§ 13.5.4** 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.

**§ 13.5.5** 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.

**§ 13.5.6** Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

### **§ 13.6 INTEREST**

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

### **§ 13.7 TIME LIMITS ON CLAIMS**

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time 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 13.7.

## **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 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public 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;

- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

**§ 14.1.2** The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, 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 seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

**§ 14.1.4** If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

#### **§ 14.2 TERMINATION BY THE OWNER FOR CAUSE**

**§ 14.2.1** The Owner may 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 for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

**§ 14.2.2** When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written 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, 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 as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. 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 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 written 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 Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

### **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, 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.

##### **§ 15.1.2 NOTICE OF CLAIMS**

Claims by either the Owner or Contractor must be initiated by written 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 must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

##### **§ 15.1.3 CONTINUING CONTRACT PERFORMANCE**

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 Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

##### **§ 15.1.4 CLAIMS FOR ADDITIONAL COST**

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

##### **§ 15.1.5 CLAIMS FOR ADDITIONAL TIME**

**§ 15.1.5.1** If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

**§ 15.1.5.2** 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.

### **§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES**

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

### **§ 15.2 INITIAL DECISION**

**§ 15.2.1** Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, 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 arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no 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 of 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 Owner to authorize retention of such persons at the Owner'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 such 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. Upon 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.

**§ 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 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 an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, 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 Sections 9.10.4, 9.10.5, and 15.1.6 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** 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 ARBITRATION**

**§ 15.4.1** If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

**§ 15.4.1.1** A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

**§ 15.4.2** The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

**§ 15.4.3** The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

### **§ 15.4.4 CONSOLIDATION OR JOINDER**

**§ 15.4.4.1** Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

**§ 15.4.4.2** Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an



additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

**§ 15.4.4.3** The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

ROOF REPLACEMENT

**ROGER LUDLOWE MIDDLE SCHOOL  
689 UNQUOWA ROAD  
FAIRFIELD, CT 06824  
STATE PROJECT #051-0152 RR  
BID #2022-129**

S/P+A PROJECT NO. 21.162

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ROOF REPLACEMENT

**ROGER LUDLOWE MIDDLE SCHOOL**  
**689 UNQUOWA ROAD**  
**FAIRFIELD, CT 06824**  
**STATE PROJECT #051-0152 RR**  
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ROOF REPLACEMENT

**ROGER LUDLOWE MIDDLE SCHOOL  
689 UNQUOWA ROAD  
FAIRFIELD, CT 06824  
STATE PROJECT #051-0152 RR  
BID #2022-129**

S/P+A PROJECT NO. 21.162

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END OF DRAWING LIST



# **PROJECT MANUAL**

**TOWN OF FAIRFIELD**

**CONNECTICUT**

**Roof Replacement  
Roger Ludlowe Middle School  
689 Unquowa Road  
Fairfield, Connecticut 06824**

**Bid #2022-129  
State Project No. 051-0152 RR  
S/P+A Project No. 21.162**

**VOLUME 1 OF 1**



**CD/BC/PCR Submission: November 4, 2021  
Issued for Bid: January 19, 2022**



**Architect/Engineers/Interior Designers  
Silver/Petrucelli + Associates, Inc.  
3190 Whitney Avenue, Hamden, Connecticut 06518  
One Post Hill Place, New London, Connecticut 06320**





## ROOF REPLACEMENT

**ROGER LUDLOWE MIDDLE SCHOOL**  
**689 UNQUOWA ROAD**  
**FAIRFIELD, CT 06824**  
**STATE PROJECT #051-0152 RR**  
**BID #2022-129**

S/P+A PROJECT NO. 21.162

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## Town of Fairfield

Sullivan Independence Hall  
725 Old Post Road

Fairfield, Connecticut 06824  
Purchasing Department

(203) 256-3060  
FAX (203) 256-3080

**BID #2022-129**

**State Project No. 051-0152 RR**

Roof Replacement – Roger Ludlowe Middle School

TOWN OF FAIRFIELD  
PURCHASING AUTHORITY  
725 OLD POST ROAD  
INDEPENDENCE HALL  
FAIRFIELD, CT 06824.

Date Submitted \_\_\_\_\_, 2022

SEALED BIDS are subject to the standard instructions set forth on the attached sheets. Any modifications must be specifically accepted by the Town of Fairfield, Purchasing Authority.

Bidder:

\_\_\_\_\_  
Doing Business As (Trade Name)

\_\_\_\_\_  
Address

\_\_\_\_\_  
Town, State, Zip

\_\_\_\_\_  
(Mr. / Ms.) Name and Title, Printed

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Telephone

\_\_\_\_\_  
Fax

\_\_\_\_\_  
E-mail

*Thomas R. Ricci*  
First Selectwoman  
*[Signature]*  
Director of Purchasing  
01/18/2022  
Date

Sealed bids will be received by the Purchasing Authority at the office of the Director of Purchasing, First Floor, Independence Hall, 725 Old Post Road, Fairfield, Connecticut 06824, up to:

**11:00am, Thursday, 3<sup>rd</sup> February, 2022**

To provide labor, materials, equipment, and all else necessary, to fully replace the existing roof areas, as noted in plans and specifications, at Roger Ludlowe Middle School (RLMS), as specified in the attached contract documents prepared by Silver Petrucelli + Associates.

**NOTES:**

1. Bidders are to complete all requested data in the upper right corner of this page and must return this page and the Proposal page with their bid.
2. No bid shall be accepted from, or contracts awarded to, any person/company/affiliate or entity under common control who is in arrears to the Town of Fairfield upon debt, or contract or who has been within the prior five (5) years, a defaulter as surety or otherwise upon obligations to the Town of Fairfield, and shall be determined by the Town.
3. Bid proposals are to be submitted in a sealed envelope and clearly marked "BID #2022-129" on the outside of the envelope, including all outer packaging, such as, DHL, FedEx, UPS, etc.
4. It is the sole responsibility of the bidder to see that the bid is received by the Fairfield Purchasing Department prior to the time and date noted above. Bid proposals are not to be submitted via email or fax.
5. Bid proposals are not to be submitted with plastic binders or covers, nor may the bid proposal contain any plastic inserts or pages.

## INVITATION TO BID

The Town of Fairfield (Town), on behalf of Fairfield Public Schools is seeking competitive bid submissions from qualified contractors to fully replace the existing roof areas, as noted in the plans and specifications, at the Roger Ludlowe Middle School facility, 689 Unquowa Road, Fairfield, CT 06824.

The project scope shall include all work as specified in the attached contract documents prepared by Silver/Petrucelli + Associates, 3190 Whitney Avenue, Hamden, CT 06518.

This is a State of Connecticut, Department of Administrative Services (DAS) Pre-Qualified Contractor (Contractor Classification – “Roofing”), Commission on Human Rights & Opportunity (CHRO), and Department of Labor (DOL) Prevailing Wage project. No exceptions.

## SCHEDULE

***The awarded Contractor shall have site access from Monday, June 20, 2022 with all work to be completed on or before August 19, 2022. Time is of the essence.***

## PRE-BID MEETING

A site meeting will commence in the Main Lobby, Roger Ludlowe Middle School, 689 Unquowa Road, Fairfield at **11:00 am on Friday, January 21, 2022** for all prospective bidders to inspect and scope the facility existing conditions.

- Prospective bidders are strongly encouraged to inspect relevant facilities prior to submitting a bid.
- No special arrangements or private tours shall be accommodated outside of the scheduled meeting.
- While the meeting is non-mandatory, prospective bidders will be required to sign-in at commencement of the meeting. The sign-in sheet will be posted on the Purchasing Department website.
- All requests for information will be answered in writing as specified below under Addenda.

## ADDENDA/REQUESTS FOR INFORMATION (RFI)

Addenda concerning important information and/or modifications to specifications will be posted on the Fairfield Purchasing Department website at [www.fairfieldct.org/purchasing](http://www.fairfieldct.org/purchasing).

- It is each Bidder's sole responsibility to monitor the above website for all updated information.
- Addenda will not be mailed, e-mailed or faxed out.
- Written requests for information will not be accepted after **11:00 am on Tuesday, January 25, 2022**.
- Verbal requests for information via phone or other means will not be accepted.
- Failure to comply with these conditions will result in the Bidder waiving the right to dispute bid specifications and conditions, no exceptions.

Questions concerning this bid must be submitted in writing and directed only to:

**Lee A. Flaherty, Junior Buyer:** [lflaherty@fairfieldct.org](mailto:lflaherty@fairfieldct.org)

Response will be in the form of an addendum that will be posted approximately **Thursday, January 27, 2022** to the Fairfield Purchasing Department website, which is [www.fairfieldct.org/purchasing](http://www.fairfieldct.org/purchasing). It is the responsibility of each Bidder to retrieve addenda from the website. Any contact about this bid between a Bidder and any other Town official and/or department manager and/or Town of Fairfield employee, other than as set forth above, may be grounds for disqualification of that Bidder. No questions or clarifications shall be answered by phone, in person or in any other manner than specified above.

## BID BOND/BID SECURITY

A five percent (5%) bid bond or equal approved security as stated per the Terms and Conditions must be submitted with the proposal.

All bonds, including payment and performance bonds when applicable, shall be written by a surety company or companies licensed to issue bonds in the State of Connecticut, and shall have at least an A-VII policy holders rating, as reported by A.M. Best Rating Services, or otherwise deemed acceptable by the Town. The Town always reserves the right to reject surety companies, if an approved surety bond cannot be provided, the bidder shall be deemed non-responsive.

A complete list of certified surety companies can be accessed on the U.S. Government Department of Treasury website: [https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570\\_a-z.htm](https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570_a-z.htm)

## PREVAILING WAGE REQUIREMENTS

This is a prevailing wage rates project and is subject to all CTDOL requirements. Certified Payroll will be required for all work completed.

## **DEPARTMENT OF ADMINISTRATIVE SERVICES (DAS) PREQUALIFICATIONS**

In accordance with Connecticut General Statutes Section, the Contractor shall hold a current “DAS Contractor Prequalification Certificate” (Contractor Classification – “Roofing”), (not a predetermination letter) from the Department of Administrative Services of the State of Connecticut according to C.G.S. §4b-91. Bidders are advised that both the DEPARTMENT OF ADMINISTRATIVE SERVICES PREQUALIFICATION CERTIFICATE and UPDATE (BID) STATEMENT must accompany the bid proposal for bids of Five Hundred Thousand Dollars (\$500,000) or more (C.G.S. 4b-91), or must be in-place at the time of contract signing. Failure to supply these documents with the bid will result in rejection of the bid. Further information may be obtained from the Department of Administrative Services (DAS) Contractor Prequalification Program: <http://das.ct.gov/cr1.aspx?page=10>. Note: All Bidders shall be DAS Prequalified Construction Contractors with a classification of General Building Construction (Group B) as a minimum.

## **COMMISSION ON HUMAN RIGHTS & OPPORTUNITIES (CHRO)**

The contractor who is selected to perform this State project must comply with CONN. GEN. STAT. §§ 4a-60, 4a-60a, 4a-60g, and 46a-68b through 46a-68f, inclusive, as amended by June 2015 Special Session Public Act 15-5. An Affirmative Action Plan must be filed with and approved by the Commission on Human Rights and Opportunities prior to the commencement of construction.

State law requires a minimum of twenty-five percent (25%) of the state-funded portion of the contract for award to Subcontractors holding current certification from the Connecticut Department of Administrative Services (“DAS”) under the provisions of CONN. GEN. STAT. § 4a-60g, as amended. (Twenty-five percent (25%) of the work with DAS certified Small and Minority owned businesses and twenty-five percent (25%) of that work with DAS certified Minority, Women and/or Disabled owned businesses.) The Contractor must demonstrate good faith effort to meet the twenty-five percent (25%) set-aside goals.

For municipal public works contracts and quasi-public agency projects, the contractor must file a written or electronic non-discrimination certification with the Commission on Human Rights and Opportunities. Forms can be found at [http://www.ct.gov/opm/cwp/view.asp?a=2982&q=390928&opmNav\\_GID=1806](http://www.ct.gov/opm/cwp/view.asp?a=2982&q=390928&opmNav_GID=1806)

## **REQUIREMENTS**

- A. Any sizes or estimate of quantities as shown on Drawings are approximate and are not guaranteed in any respect. Prospective Bidders are to visit the site to verify scope of the work, measurements, quantities, etc., prior to bidding. The Town reserves the right at all times to increase or decrease the amount of work if deemed in its best interest.
- B. Price is to include all labor, materials, tools, equipment, plans, mobilization, permits, insurances, etc., required to properly complete the project, including but not limited to the following:
  - Local building department approval of Drawings and Specifications, including obtaining building permit prior to construction and installation.
  - Preparation as required and specified to perform the work.
  - Demolition where/if illustrated on the Drawings and delineated in the Specifications.
  - The scope of work consists of, but is not limited, the replacement of the existing school roof with new SBS-modified bituminous roofing and associated metal flashing.
  - Clean up and proper disposal offsite of all surplus waste and material.
- C. The Town of Fairfield reserves the right to award the bid with multiple items:
  - to more than one (1) bidder, based on meeting the item(s) specification, cost, availability, or any combination of these criteria;
  - to a single bidder who meets the specifications for all items, and offers the best combination of lowest cost, best availability, and broadest product range;
  - and may add, subtract, or delete any item and/or quantity as deemed in the best interest of the Town.
- D. The Bidder must not discriminate, nor permit discrimination, against any person on the grounds of race, color, national origin, religion, sex, handicap, or veteran status, in their employment practices, in any of their contractual arrangements, in all service and accommodations they offer to the public, and in any of their other business operations.
- E. The successful bidder MUST secure all required licenses and permits (local, state, federal) prior to commencing work on the site. Upon application for a building permit the Town will waive the cost of the permit, exclusive of the State of Connecticut Education Fee where applicable.
- F. The awarded Contractor will have access to the building immediately upon award of contract. All work must be completed in a timely manner. Time is of the essence. Access to the building shall be from 7:00am

to 3:30pm, Monday through Friday. A custodian is on site until 3:30pm, Monday – Friday. At the Contractor's option, he/she may have access to the building on holidays, Saturdays, and Sundays, if the Contractor pays the cost of \$65.00 per hour (including all overtime) of the custodial service for this time. All work must be coordinated with the Manager of Safety, Security & Construction.

- G. Award of the project, either partial or in its entirety, is contingent upon funding approval by the applicable boards of the Town of Fairfield, including State and Federal agencies.
- H. Upon Award, all bidding documents shall constitute a legal contract including but not limited to the following: Bid Invitation, Project Manual, Addenda, CHRO Compliance, CT DOL Prevailing Wage Documents, Contractor's Bid Submission, Award Resolution, Town Purchase Order, and AIA Contract or equivalent when applicable.
- I. In the instance the Contractor discovers unanticipated hazardous material, whether it be in nature or capacity, the Town reserves the right to terminate the Contract and regain possession of the project site.

## **ENCLOSURES**

- 1. Project manual and Construction Documents prepared by Silver/Petrucelli + Associates, Inc.
- 2. Draft AIA Documents – AIA Document A701 (Instructions to Bidders), AIA Document 201 (General Conditions of the Contract for Construction), AIA Document G702 (Sample Application for Payment)
- 3. CT DOL Prevailing Wage Rate package
- 4. Commission of Human Rights and Opportunities Contract Compliance Regulations Notification to Bidders (CHRO)

## **INSTRUCTIONS TO BIDDERS**

### **THE WORK**

Supply labor, materials, tools, equipment, and all else necessary, to fully replace existing roof areas, as noted in the plans and specifications, at Roger Ludlowe Middle School, 689 Unquowa Road, Fairfield. The project shall include all work as specified in the attached contract documents prepared by Silver/Petrucelli + Associates, 3190 Whitney Avenue, Building 2, Hamden, CT 06518.

### **PRICES**

Prices quoted must be firm, for acceptance by the Town of Fairfield, for a period of ninety (90) days. Prices shall include all applicable duties. Bidders shall be required to deliver awarded items at prices quoted in their original bid. The price(s) and amount of the bid will have been arrived at independently and without consultation, communication, or agreement with any other Contractor or bidder.

### **GUARANTEE**

Equipment, materials, and/or work executed shall be guaranteed for a minimum period of one (1) year against defective material and workmanship. The cost of all labor, materials, shipping charges, and other expenses in conjunction with the replacement of defective equipment, and/or unsatisfactory work, shall be borne by the Contractor.

The Contractor shall upon written notice remedy any and all defects in materials or workmanship resulting from work done under this contract and repair any damage to any structures or property caused by the Contractor incidental to this work, all such repairs to be done in accordance with instructions furnished by the Manager of Facilities or Manager of Construction, Security and Safety, and paid for by the Contractor.

### **OBLIGATION OF CONTRACTOR**

The Contractor shall do all the work and furnish all the materials, tools, and appliances necessary or proper for performing and completing work required by this contract in a manner specified. All the work, labor, and materials to be done and furnished under this contract shall be done and furnished strictly pursuant to and in conformity with the specifications hereto attached and other directions of the Town, as given from time to time during the progress of the work under the terms of the contract. The Contractor shall complete all work to be done under this contract to the satisfaction of the Town and in accordance with the specifications and drawings (where provided) herein mentioned at the prices herein agreed upon.

### **METHOD OF DOING WORK**

The Contractor shall conduct the work in such a manner so as not to interfere with or willfully annoy employees and officials of Fairfield Public Schools, employees of public utilities, residents, or the general public.

The Contractor shall employ only competent employees trained/certified/licensed to perform the work.

Where the Town shall notify the Contractor, in writing, that any employee on the work is, in the Town's opinion, incompetent, unfaithful, disorderly, and otherwise unsatisfactory, such employee shall be discharged from the work and shall not again be employed on it, except with the consent of the Town.

At the site of the work, the Contractor shall employ at all times while work is in progress personnel who have full authority to act for the Contractor, and shall be acceptable by the Town.

In connection with the execution of the bid, subsequent purchase orders, and/or contracts, the Contractor shall not discriminate against any employee or applicant for employment because of age, race, religion, color, sex, or natural origin.

Executive order #11246 inclusive of all its amendments thereto relative to equal employment opportunities and implementation rule and regulations of the Department of Labor and equal employment opportunities are incorporated herein by specific reference.

The Town of Fairfield reserves the right to require the successful bidder(s) to enter into such security arrangements and/or written contracts as deemed necessary by the Town of Fairfield and/or Fairfield Public Schools to protect its property and goods and interests.

#### EXECUTION OF AGREEMENT

The successful bidder to whom the contract is awarded shall deliver to the Town, Certificates of Insurance and such Labor and Payment and Performance Bonds as required in the Terms and Conditions.

Bonds and Certificates of Insurance shall be approved by the Town before the successful bidder may proceed with the work. Failure or refusal to provide Bonds or Certificates of Insurance in a form satisfactory to the Town shall subject for cancellation of the Contract.

Bonds and Certificates or other evidence of insurance requested by the Town shall be approved in writing before the successful bidder may proceed with the work. Failure or refusal to provide the Bonds or requested evidence of insurance in a form satisfactory to the Town shall subject the successful bidder to loss of time from the allowable construction period equal to the time of delay in furnishing the required material.

#### LIABILITY OF CONTRACTOR

The Contractor shall at all times safely guard the Town's property from injury or loss in connection with this contract. The Contractor shall take all responsibility for the work and take precautions for preventing injuries to persons and property in or about the work. The Contractor shall assume the defense of and indemnify and save harmless the Town and its officers, agents, and employees from all claims relating to labor and materials furnished for the work, to inventions, patents, and patent rights used in doing the work, or in consequence of any improper materials, implements, or labor used therein and to any act, omission, or neglect of the Contractor and his/her employees therein.

#### ASSIGNMENTS

The Contractor shall not sublet, sell, transfer, assign, or otherwise dispose of the contract or any portion thereof or of the work provided for therein, or of his/her right, title, interest therein, to any person, firm, partnership, or corporation without the written consent of the Town. If any part of the work is sublet, sold, transferred, assigned, or otherwise disposed of, the Contractor will not be relieved of any responsibility in connection therewith.

#### RIGHT OF OWNER ("TOWN") TO TERMINATE CONTRACT

If the work to be done under this Contract shall be abandoned, or if at any time the Town is of the opinion that the Contractor is willfully violating any of the conditions of this contract or is not executing said contract in good faith or that the work is unnecessarily delayed and will not be finished within the prescribed time, the Town may notify the Contractor and Surety, in writing to that effect. If the Contractor does not, within five (5) business days thereafter, take such measures as will, in the judgment of the Town, insure the satisfactory completion of the work aforesaid, the Town shall have the power to notify the Contractor to discontinue all work or any portion thereof, under this contract. A copy of this contract shall go to the surety.

Thereupon the Contractor shall cease to continue said work, on such part thereof as the Town shall designate. The Town shall thereupon have the power to place such and so many persons as deemed proper, by contract or otherwise, to work at and complete the work herein described and to use such materials, tools, and appliances found upon the work or to procure other materials, tools, and appliances for the completion of the same and charge the expenses of said labor, materials, tools, and appliances to the Contractor; and the expense so charged shall be deducted and paid by the Town out of such money as may be then due, or may at any time thereafter grow due to the Contractor under and by virtue of this agreement, or any part thereof; and in case the expense so charged is less than

the sum which would have been payable under this contract if the same had been completed by the Contractor, the Contractor shall be entitled to receive the difference; and in case greater, the Contractor shall pay amount of such excess so due.

#### DEFINITIONS

Whenever the words defined occur in this Contract and in the specifications hereto attached, they shall have the meanings here given:

1. Owner: The Owner shall mean the Town of Fairfield (Town) or any duly authorized official thereof acting in an official capacity.
2. Contractor: Whenever the word "Contractor" is used in these specifications, it shall be understood to mean the person or persons, co-partnership or corporation, who has entered into this contract as the party of the second part, or his/her or their legal representative.
3. Sub-Contractor: Any individual, firm, partnership, or corporation to whom the Contractor sublets or assigns any part or parts of the project covered by the contract with the approval of the Town.

#### TERMS AND CONDITIONS OF BID

In order to receive consideration, make bids in strict accordance with the following:

1. Make bids upon the forms provided, properly signed and with all items filled out. Do not change the wording of the bid form, and do not add words to the bid form. Unauthorized conditions, limitations, or provisions attached to the bid may be cause for rejection of the bid. If alterations by erasure or interlineations are made for any reason, explain over such erasure or interlineations with a signed statement from the bidder.
2. Bid proposals are to be submitted in a sealed envelope and clearly marked with the bid number "2022-129" on the outside of the envelope. All prices and notations must be printed in ink or typewritten. No erasures permitted. Bid proposals are to be in the office of the Purchasing Agent, First Floor, Independence Hall, 725 Old Post Road, Fairfield, Connecticut, prior to date and time specified, at which time they will be publicly opened. It is the sole responsibility of the bidder to see that the bid is received on time.
3. No telegraphic bid or telegraphic modification of a bid will be considered. No bids received after the time fixed for receiving them will be considered. Late bids will be returned to the bidder unopened.

#### PROTESTS

No protest regarding the validity or appropriateness of the specifications or of the invitation for bids will be considered, unless the protest is filed in writing with the Director of Purchasing, prior to the closing date for the bids.

#### EXCEPTION TO SPECIFICATIONS

All bid proposals rendered shall be considered meeting the attached specifications unless exceptions are noted on a separate page dated and signed by the bidder.

#### QUALIFICATIONS

Bidders, if requested, must be able to present satisfactory evidence that they have been regularly engaged in the business of such work as they propose to execute and that they are fully prepared with the necessary capital, personnel, materials, tools, and equipment, in order to conduct the work to be contracted for the satisfaction of the Town and to begin work promptly when ordered.

#### INTERPRETATION OF CONTRACT DOCUMENTS PRIOR TO BIDDING

Any person contemplating submitting a bid for the work that is in doubt as to the true meaning of any part of the proposed contract documents, or finds discrepancies in or omissions from any part of the proposed contract documents, he/she may submit to the person responsible a written request for interpretation thereof no later than the time and date as indicated. The person submitting the request shall be responsible for its prompt delivery.

Interpretation of correction of proposed Contract Documents will be made only by Addendum posted to the Town of Fairfield, Purchasing Department website: [www.fairfieldct.org/purchasing](http://www.fairfieldct.org/purchasing).

The Town will not be responsible for any other explanations or interpretations of the proposed Contract Documents.



## CHECKLIST

The following must be submitted with proposal:

- Cover page, completed and signed.
- Addenda (where issued) acknowledged.
- List of references where projects performed of comparable size and scope within the past three (3) years.
- List of all proposed Subcontractors identifying each trade, hourly rates, and Tax ID number. (All Subcontractors are subject to approval by the Town prior to award of contract.)
- Complete list of scheduled values for all lump sum amounts.
- Proposal includes Prevailing Wage Rates as appended to this document.
- DAS Pre-Qualification Certificate and Update (Bid) Statement.
- Bid Bond or equal approved security.
- Stated exceptions (if any are to apply).

The Bidder hereby certifies that any and all defects, errors, inconsistencies or omissions of which he/she is aware, either directly or by notification from any sub-bidder or material supplier found in the Contract Documents are listed herewith.

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*Name of Authorized Representative (Printed)*

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*Title*

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*Signature*

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*Date*

**PURCHASING AUTHORITY  
TOWN OF FAIRFIELD  
INSTRUCTIONS FOR BIDDERS  
TERMS AND CONDITIONS OF BID**

**BID PROPOSALS**

Bid proposals are to be submitted in a sealed envelope and clearly marked on the outside “**BID #2022-129**” including all outer packaging such as DHL, FedEx, UPS, etc. All prices and notations must be printed in ink or typewritten. No erasures are permitted. Bid proposals are to be in the office of the Purchasing Authority, First Floor, Independence Hall, 725 Old Post Road, Fairfield, Connecticut, prior to date and time specified, at which time they will be publicly opened.

**RIGHT TO ACCEPT/REJECT**

AFTER REVIEW OF ALL FACTORS, TERMS, AND CONDITIONS, INCLUDING PRICE, THE PURCHASING AUTHORITY OF THE TOWN OF FAIRFIELD RESERVES THE RIGHT TO REJECT ANY AND ALL BIDS, OR ANY PART THEREOF, OR WAIVE DEFECTS IN SAME, OR ACCEPT ANY PROPOSAL DEEMED TO BE IN THE BEST INTEREST OF THE TOWN OF FAIRFIELD.

**QUESTIONS**

Questions concerning conditions, bidding guidelines and specifications should only be directed in writing to:

**Ms. Lee A. Flaherty, Junior Buyer:** [lflaherty@fairfieldct.org](mailto:lflaherty@fairfieldct.org)

Inquiries must reference date of bid opening, requisition, or contract number, and must be received no later than as indicated in the bid documents prior to date of bid opening. Failure to comply with these conditions will result in the bidder waiving the right to dispute the bid specifications and conditions.

**PRICES**

Prices quoted must be firm, for acceptance by the Town of Fairfield, for a period of one hundred fifty (150) days. Prices shall include all applicable duties. Bidders shall be required to deliver awarded items at prices quoted in their original bid.

**F.O.B. DESTINATION**

Prices quoted shall be Net – Delivered to destination. Bids quoting other than F.O.B. Destination may be rejected.

**BID BOND**

The BID BOND furnished, as bid security, must be duly executed by the bidder as principal. It must be in the amount equal to five percent (5%) of the total estimated bid, as guarantee that, in case the contract is awarded to the bidder, the bidder will, within ten (10) days thereafter, execute such contract and furnish a Performance Bond and Payment Bond.

Small businesses may elect to obtain an irrevocable letter of credit or cashier's check in lieu of the Bid Bond. Such surety must also be in an amount equal to at least five percent (5%) of the total estimated bid.

All bid bonds shall be written by a surety company or companies licensed in the State of Connecticut, and shall have at least an A-VII policy holders rating, as reported by A.M. Best Rating Services, or otherwise deemed acceptable by the Town. The Town always reserves the right to reject surety companies, if an approved surety bond cannot be provided, the bidder shall be deemed non-responsive.

A complete list of certified surety companies can be accessed on the U.S. Government Department of Treasury website: [https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570\\_a-z.htm](https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570_a-z.htm)

NOTE: Failure to provide a Bid Bond or equivalent security is not cause for a waiver defect. Any bid not accompanied by such security will be excluded from consideration.

**PERMITS**

The Contractor will be responsible for securing all necessary permits, state and local, as required by the Town of Fairfield. The Town will waive its application and permit fees for Town of Fairfield projects except for the State Education permit cost of \$0.26/\$1,000 value.

**PAYMENT PROCEDURES**

No voucher, claim, or charge against the Town shall be paid without the approval of the Fiscal Officer for correctness and legality. Appropriate checks shall be drawn by the Fiscal Officer for approved claims or charges and they shall be valid without countersignature unless the Board of Selectmen otherwise prescribed.

### **PAYMENT PERIOD**

The Town of Fairfield shall put forth its best effort to make payment within thirty (30) days after delivery of the item acceptance of the work, or receipt of a properly completed invoice, whichever is later. Payment period shall be net thirty (30) days unless otherwise specified. For projects that do not require a performance or bid bond, The Town of Fairfield reserves the right to retain five percent (5%) of total bid amount, which is payable ninety (90) days after final payment or acceptance of the work.

### **THE CONTRACTOR**

The Contractor for the work described shall be thoroughly familiar with the requirements of all specifications, and the actual physical conditions of various job sites. The submission of a proposal shall be construed as evidence that the Contractor has examined the actual job conditions, requirements, and specifications. Any claim for labor, equipment, or materials required, or difficulties encountered which could have been foreseen had such an examination been carefully made will not be recognized.

### **ASSIGNMENT OF CONTRACT**

No contract may be assigned or transferred without the consent of the Purchasing Authority.

### **AWARD OF BIDS**

Contracts and purchases will be made or entered into with the lowest responsible bidder meeting specifications, except as otherwise specified in the invitation. If more than one (1) item is specified in the invitation, the Town of Fairfield reserves the right to determine the low bidder on an individual basis or on the basis of all items included in the Invitation for Bids, unless otherwise expressed by the Town. Additionally, the Town reserves the right to consider other factors in an award, such as the Town's prior experience with a vendor for services previously provided.

### **PERFORMANCE AND LABOR AND MATERIAL BOND**

The successful bidder, within seven (7) business days after notification of award, will be required to furnish Performance and Labor and Material Bond provided by a company authorized to issue such bonds in the State of Connecticut, or Certified Check or properly executed Irrevocable Letter of Credit equal to a hundred percent (100%) of the award.

In the event that the Contractor where required to provide evidence of insurance and a performance bond does not do so before beginning work, the Town of Fairfield reserves the right to withhold payment from such supplier until the evidence of insurance and performance bond has been received by the Town.

All payment and performance bonds shall be written by a surety company or companies licensed to issue bonds in the State of Connecticut, and shall have at least an A-VIII policy holders rating, as reported by A.M. Best Rating Services, or otherwise deemed acceptable by the Town. The Town always reserves the right to reject surety companies, if approved surety bonds cannot be provided the contract shall be terminated.

A complete list of certified surety companies can be accessed on the U.S. Government Department of Treasury website: [https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570\\_a-z.htm](https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570_a-z.htm)

### **BOND REQUIREMENT – NON-RESIDENT CONTRACTORS**

1. Non-resident contractors are required to deposit with the Department of Revenue Services a sum equivalent to five percent (5%) of the total contract value, as assurance that personal property taxes and/or any other State taxes assessed and due the State during the contract will be paid.
2. If this surety is not deposited with the State, the Town is required to deduct and submit to the State five percent (5%) of the total contract value.

### **GUARANTEE**

Equipment, materials, and/or work executed shall be guaranteed for a minimum period of one (1) year against defective material and workmanship. The cost of all labor, materials, shipping charges, and other expenses in conjunction with the replacement of defective equipment, and/or unsatisfactory work, shall be borne by the Contractor.

### **CATALOGUE REFERENCE**

Unless expressly stated otherwise, any and all reference to commercial types, sales, trade names, and catalogues are intended to be descriptive only and not restrictive; the intent is to indicate the kind and quality of the articles that will be acceptable. Bids on other equivalent makes, or with reference to other catalogue items will be considered. The Bidder is to clearly state exactly what will be furnished. Where possible and feasible, submit an illustration, descriptive material, and/or product sample.

### **INSURANCE**

The Contractor shall not commence any work under this Contract until all insurance required by this section has been obtained and Certificates of Insurance and any other evidence of required coverage requested by the Town, including a copy of the policy itself, have been received and approved by the Town.

Such policies shall stipulate that no coverage can be changed or canceled, including for non-payment of premium, unless the Town has had thirty (30) days prior notice in writing. Certificates of renewals or changes in policies shall be delivered to the Owner at least thirty (30) days prior to the expiration of the policy.

The Town always reserves the right to reject insurance companies, if approved insurance policies cannot be provided the contract shall be terminated.

The insurance requirements set forth below are minimum limits of coverage only and in no way limit the Contractor's liability.

The following insurance is required to be maintained in full force until all work required by the contract has been fully completed, except that Products/Completed Operations coverage shall be maintained for five (5) years. Insurance will be primary and non/contributory with a 30-day notice of cancelation in favor of the Town of Fairfield. Insurance carriers will be no less than A-rated and admitted carrier or subject to review by Town of Fairfield.

Worker's Compensation Insurance: The Contractor shall carry Worker's Compensation and Employer's Liability Insurance in the form and in such amounts as may be currently required to comply with the Labor Laws of the State of Connecticut.

Automobile Insurance: The Contractor shall carry and maintain during the life of the Contract a policy with a combined single limit of \$1,000,000 and rider CA9948 or equivalent.

This policy shall include all liability of the Contractor arising from the operation of all self-owned motor vehicles used in the performance of the Contract; and shall also include a "non-Ownership" provision covering the operation of motor vehicles not owned by the Contractor, but used in the performance of the work.

Comprehensive General Liability:

- Bodily Injury and Property Damage \$1,000,000 each occurrence/\$2,000,000 aggregate
- Products/Completed Operations \$1,000,000 each occurrence/\$2,000,000 aggregate

This policy shall include Subcontractor's Liability coverage, protecting the Contractor and the Town against liability arising out of the activities of Subcontractors engaged by him in the performance of the work.

Umbrella/Excess Policy: An umbrella policy in the amount of \$5,000,000, with respect to all operations the Contractor performs, is required.

Waiver of Subrogation: Waiver of subrogation is required on all policies.

Pollution Liability Insurance: Where applicable, a policy in the amount of \$5,000,000 including coverage for transport and other offsite risks. Such policy must be given to the Town for review and determination of acceptability before an award will be made.

Additional Insureds: The Town of Fairfield, Fairfield Board of Education, its officers, officials, employees, agents, Boards, and Commissions shall be named as Additional Insureds on the General Contractor's and Subcontractors' Comprehensive General Liability, (for ongoing and completed projects), Automobile, and Umbrella. The coverage shall be primary and non-contributory and contain no special limitations on the scope of protection afforded to the Town of Fairfield. A waiver of subrogation applies under general liability, auto liability and workers compensation.

Subcontractor's Insurance: Each Subcontractor engaged by the Contractor to perform any work under the Contract shall obtain all insurance required of the Contractor in the same amounts and subject to the same provisions specified above for the Contractor, including the Additional Insured requirement. Certificates of Insurance shall be submitted to the Contractor and the Town and approved by the Town, before commencing any work.

**HOLD HARMLESS**

Contractor shall defend, indemnify, and hold harmless the Town of Fairfield, its officers, employees, agents, or volunteers, from and against any and all claims and demands of any nature for any loss, damage, or injury which any person may suffer by reason of, or in any way arising out of, this Agreement, unless caused by the sole negligence of the Town.

**OSHA**

The bidder will certify all equipment complies with all regulations and conditions stipulated under the Williams-Steiger Occupational Safety and Health Act of 1971, as amended. The successful bidder will further certify that all items furnished under this project will conform and comply with Federal and State of Connecticut OSHA standards. The successful bidder will agree to indemnify and hold harmless the Town of Fairfield for any and all damages that may be assessed against the Town.

**LIFE CYCLE COSTING**

Where applicable, Life Cycle Costing will be used as a criterion for awarding bids. This is a method of calculating total cost of ownership of an item over the life of the product, which may include operation and maintenance expenses, transportation, salvage value, and/or disposal costs.

**FEDERAL, STATE, AND LOCAL LAWS**

All applicable Federal, State, and local laws, rules, and regulations of all authorities having jurisdiction over the locality of the project shall apply to the contract and are deemed to be included herein. If the total amount of the project, including any current or future change orders, exceeds \$100,000.00 all work is to be done in accordance with Connecticut Department of Labor (CT-DOL) rules and regulations. More information may be obtained from: [www.ctdol.state.ct.us](http://www.ctdol.state.ct.us)

The Davis-Bacon and Related Acts shall apply to contractors and subcontractors performing on federally funded or assisted contracts in excess of \$2,000 for the construction, alteration, or repair (including painting and decorating) of public buildings or public works. More information may be obtained from: <https://www.dol.gov/whd/govcontracts/dbra.htm>

NOTE: The Town shall apply the most current wage decision applicable at the time of contract award.

**CONFLICT OF INTEREST**

No officer or employee or member of any elective or appointive board, commission, or committee of the Town, whether temporary or permanent, shall have or acquire any financial interest gained from a successful bid, direct or indirect, aggregating more than one hundred dollars (\$100.00), in any project, matter, contract, or business within his/her jurisdiction or the jurisdiction of the board, commission, or committee of which he/she is a member. Nor shall the officer/employee/member have any financial interest, direct or indirect, aggregating more than one hundred dollars (\$100.00) in any contract or proposed contract for materials or services to be furnished or used in connection with any project, matter, or thing which comes under his/her jurisdiction or the jurisdiction of the board, commission, committee of which he/she is a member.

**EXCEPTION TO SPECIFICATIONS**

No protest regarding the validity or appropriateness of the specifications or of the Invitation for Bids will be considered, unless the protest is filed in writing with the Purchasing Authority prior to the closing date for the bids. All bid proposals rendered shall be considered meeting the attached specifications unless exceptions are noted on a separate page dated and signed by the bidder.

**UNLESS OTHERWISE NOTED**

It will be assumed that all terms and conditions and specifications will be complied with and will be considered as part of the Bid Proposal.

**TAX EXEMPT**

Federal Tax Exemption 06-6001998.

Exempt from State Sales Tax under State General Statutes Chapter 219-Section 12-412 Subsection A.

No exemption certificates are required, and none will be issued.

**REFERENCES**

Provide reference details of most recent similar scope projects performed:

**REFERENCE #1:**

Name of Company \_\_\_\_\_

Phone \_\_\_\_\_

Contact Person \_\_\_\_\_

Cell \_\_\_\_\_

Company Address \_\_\_\_\_

Fax \_\_\_\_\_

Date work completed \_\_\_\_\_

Email \_\_\_\_\_

**REFERENCE #2:**

Name of Company \_\_\_\_\_

Phone \_\_\_\_\_

Contact Person \_\_\_\_\_

Cell \_\_\_\_\_

Company Address \_\_\_\_\_

Fax \_\_\_\_\_

Date work completed \_\_\_\_\_

Email \_\_\_\_\_

**REFERENCE #3:**

Name of Company \_\_\_\_\_

Phone \_\_\_\_\_

Contact Person \_\_\_\_\_

Cell \_\_\_\_\_

Company Address \_\_\_\_\_

Fax \_\_\_\_\_

Date work completed \_\_\_\_\_

Email \_\_\_\_\_

**REFERENCE #4:**

Name of Company \_\_\_\_\_

Phone \_\_\_\_\_

Contact Person \_\_\_\_\_

Cell \_\_\_\_\_

Company Address \_\_\_\_\_

Fax \_\_\_\_\_

Date work completed \_\_\_\_\_

Email \_\_\_\_\_

**REFERENCE #5:**

Name of Company \_\_\_\_\_

Phone \_\_\_\_\_

Contact Person \_\_\_\_\_

Cell \_\_\_\_\_

Company Address \_\_\_\_\_

Fax \_\_\_\_\_

Date work completed \_\_\_\_\_

Email \_\_\_\_\_

**SUBCONTRACTORS**

Provide subcontractor details if any are to be employed as part of this contract, including labor rates:

**SUBCONTRACTOR #1:**

Name of Company \_\_\_\_\_ Fed ID # \_\_\_\_\_  
Contact Person \_\_\_\_\_ Title \_\_\_\_\_  
Company Address \_\_\_\_\_ Phone \_\_\_\_\_  
Trade \_\_\_\_\_ Email \_\_\_\_\_  
Rates: Supervisor \$ \_\_\_\_\_ /hr Foreman \$ \_\_\_\_\_ /hr Journeyman \$ \_\_\_\_\_ /hr Apprentice \$ \_\_\_\_\_ /hr

**SUBCONTRACTOR #2:**

Name of Company \_\_\_\_\_ Fed ID # \_\_\_\_\_  
Contact Person \_\_\_\_\_ Title \_\_\_\_\_  
Company Address \_\_\_\_\_ Phone \_\_\_\_\_  
Trade \_\_\_\_\_ Email \_\_\_\_\_  
Rates: Supervisor \$ \_\_\_\_\_ /hr Foreman \$ \_\_\_\_\_ /hr Journeyman \$ \_\_\_\_\_ /hr Apprentice \$ \_\_\_\_\_ /hr

**SUBCONTRACTOR #3:**

Name of Company \_\_\_\_\_ Fed ID # \_\_\_\_\_  
Contact Person \_\_\_\_\_ Title \_\_\_\_\_  
Company Address \_\_\_\_\_ Phone \_\_\_\_\_  
Trade \_\_\_\_\_ Email \_\_\_\_\_  
Rates: Supervisor \$ \_\_\_\_\_ /hr Foreman \$ \_\_\_\_\_ /hr Journeyman \$ \_\_\_\_\_ /hr Apprentice \$ \_\_\_\_\_ /hr

**SUBCONTRACTOR #4:**

Name of Company \_\_\_\_\_ Fed ID # \_\_\_\_\_  
Contact Person \_\_\_\_\_ Title \_\_\_\_\_  
Company Address \_\_\_\_\_ Phone \_\_\_\_\_  
Trade \_\_\_\_\_ Email \_\_\_\_\_  
Rates: Supervisor \$ \_\_\_\_\_ /hr Foreman \$ \_\_\_\_\_ /hr Journeyman \$ \_\_\_\_\_ /hr Apprentice \$ \_\_\_\_\_ /hr

**NOTE:**

**All sub-contractors are subject to approval by the Town of Fairfield and are required to provide Fed ID #.**





# DRAFT AIA® Document A701™ – 2018

## Instructions to Bidders

for the following Project:

(Name, location, and detailed description)

<< >>  
<< >>  
<< >>

### THE OWNER:

(Name, legal status, address, and other information)

<< >>< >>  
<< >>  
<< >>  
<< >>

### THE ARCHITECT:

(Name, legal status, address, and other information)

<< >>< >>  
<< >>  
<< >>  
<< >>

## TABLE OF ARTICLES

- 1 DEFINITIONS
- 2 BIDDER'S REPRESENTATIONS
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- 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™-2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

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## ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

## ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- .1 the Bidder has read and understands the Bidding Documents;
- .2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- .3 the Bid complies with the Bidding Documents;
- .4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- .5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- .6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

## ARTICLE 3 BIDDING DOCUMENTS

### § 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

*(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)*

« »

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper

documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

## § 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.  
*(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)*

« »

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

## § 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

### § 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

### § 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

*(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)*

« »

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

## ARTICLE 4 BIDDING PROCEDURES

### § 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

### § 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

*(Insert the form and amount of bid security.)*

« »

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall

affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning « » days after the opening of Bids, withdraw its Bid and request the return of its bid security.

### § 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:

*(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)*

« »

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

### § 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:

*(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)*

« »

## ARTICLE 5 CONSIDERATION OF BIDS

### § 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

### § 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

### **§ 5.3 Acceptance of Bid (Award)**

**§ 5.3.1** It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

**§ 5.3.2** Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

## **ARTICLE 6 POST-BID INFORMATION**

### **§ 6.1 Contractor's Qualification Statement**

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

### **§ 6.2 Owner's Financial Capability**

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

### **§ 6.3 Submittals**

**§ 6.3.1** After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

**§ 6.3.2** The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

**§ 6.3.3** Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

**§ 6.3.4** Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

## **ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND**

### **§ 7.1 Bond Requirements**

**§ 7.1.1** If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

**§ 7.1.2** If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

**§ 7.1.3** The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.



§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

*(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)*

« »

## § 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

## ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.

*(Insert the complete AIA Document number, including year, and Document title.)*

« »

- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.

*(Insert the complete AIA Document number, including year, and Document title.)*

« »

- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.

*(Insert the complete AIA Document number, including year, and Document title.)*

« »

- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

*(Insert the date of the E203-2013.)*

« »

- .5 Drawings

Number

Title

Date

- .6 Specifications

Section

Title

Date

Pages

.7 Addenda:

Number	Date	Pages

.8 Other Exhibits:

*(Check all boxes that apply and include appropriate information identifying the exhibit where required.)*

[ ☐ ] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:  
*(Insert the date of the E204-2017.)*

« »

[ ☐ ] The Sustainability Plan:

Title	Date	Pages

[ ☐ ] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents listed below:

*(List here any additional documents that are intended to form part of the Proposed Contract Documents.)*

« »



PART 1 - GENERAL

1.1 COMPLETION DATE

- A. All work as required by these specifications and drawings shall be completed by the date stipulated in the Contractor's bid form. There is no exception to this contract requirement, unless approved otherwise by contract change order.
- B. If the Contractor neglects, fails or refuses to achieve substantial completion by 11:59 pm by the date stipulated in the Contractor's bid form for each of the bid components requiring durations or deadlines, liquidated damages of One Thousand Dollars (\$1,000.00) per day or part thereof shall be due for each bid component to the Owner and subtracted from the unpaid contract amount or bond held by the Owner. "Substantial completion" is as defined in the General Conditions of the Contract for Construction, AIA Document A201 included in this project manual. "Substantial completion" is further defined as the date at which the local authorities with jurisdiction over this project grant a temporary or permanent certificate of occupancy (if required for occupancy) for each project area.

1.2 RESPONSIBILITY FOR MEASUREMENT OF QUANTITIES

- A. The Contractor shall have sole responsibility for the accuracy of all measurements and for estimating the material quantities required to satisfy these specifications.

1.3 DISCREPANCIES AND ADDENDA

- A. Should a Bidder find any discrepancies in the Drawings and Specifications, or should they be in doubt as to their meaning, they shall notify the Owner at once, who will post a written Addendum to the Town's website at [www.fairfieldct.org/purchasing](http://www.fairfieldct.org/purchasing). Oral instructions or decisions, unless confirmed by Addenda, will not be considered valid, legal, or binding. No change order requests will be authorized or considered because of the failure of the Contractor to include work called for in the Addenda in their bid.

1.4 MODIFICATIONS TO AIA DOCUMENT A701, Instructions to Bidders, 2018.

The following sections modify the provisions and procedures to the degree listed in the sections and articles listed in these supplementary instructions.

**ARTICLE 3 Make the following changes:**

3.1.1 **Delete** all but the first sentence and “, as indicated below,” from the first sentence.

3.1.2 **Delete** in its entirety.

3.2.2 **Delete** in its entirety.

3.3.2.1 **Delete** all but the first sentence.

3.4.1 **Revise** to read as follows: Addenda will be posted to the Town of Fairfield's website, [www.fairfieldct.org/purchasing](http://www.fairfieldct.org/purchasing).

- 3.4.3 **Revise** to read as follows: Addenda will be issued no later than January 27, 2022 except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of bids.

**ARTICLE 4 Make the following changes:**

- 4.2.1 **Revise to read as follows:** “Each Bid shall be accompanied by the bid security as indicated on the Invitation to Bid.”
- 4.2.3 **Revise** to read as follows: Bid surety to be furnished on standard forms by Bidder’s surety.
- 4.2.4 **Revise last sentence to read as follows:** “However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may withdraw its Bid and request the return of its bid security after the length of time on the Invitation to Bid.”
- 4.3.1 **Add to the end the following:** “Paper copy”.
- 4.4.3 **Add to the end the following:** “Owner will return bid security to the Bidder.”

**ARTICLE 5 Make the following changes:**

- 5.1 **Revise** to read as follows: The properly identified Bids received on time will be publicly opened and read aloud. An abstract of the Bids may be made available to Bidders and will be posted on the Town of Fairfield’s website, [www.fairfieldct.org/purchasing](http://www.fairfieldct.org/purchasing).

**ARTICLE 6 Make the following changes:**

- 6.1 **Delete** the phrase “properly executed AIA Document A305”.

**Add the following:**

- 6.1.1 The Owner will make investigations as he deems necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish the Owner all such information and data for this purpose as the Owner may request.
- 6.2 **Delete** in its entirety.

**6.4 Work Phasing Schedule**

Bidders to whom award of the Contractor is under consideration shall submit to the Architect within fifteen (15) days of the Contract date, a detailed work Phasing Schedule describing the bodies of work to be undertaken and areas of the project to be addressed in per week periods between the Award of the Contract and the Bidder's proposed date of Substantial Completion.

**ARTICLE 7 Make the following changes:**

- 7.2.2 **Delete** in its entirety.
- 7.3 The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

- 7.4 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except to participate in conferences as provided in Subparagraph 7.5.1.
- 7.5 If there is no Owner Default, the Surety's obligation under this Bond shall arise after:
- 7.5.1 The Owner has notified the Contractor and the Surety at its address described in Paragraph 7.12 below that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Construction Contract. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default and
- 7.5.2 The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the contract. Such Contractor Default shall not be declared earlier than twenty (20) days after the Contractor and the Surety have received notice as provided in Subparagraph 7.5.1; and
- 7.5.3 The Owner has agreed to pay the Balance of the Contract Price to the Surety in accordance with the terms of the Construction Contract or to a contractor selected to perform the Construction Contract in accordance with the terms of the contract with the Owner.
- 7.6 When the Owner has satisfied the conditions of Paragraph 7.5.3, the Surety shall promptly and at the Surety's expense take one of the following actions:
- 7.6.1 Arrange for the Contractor, with consent of the Owner, to perform and complete the Construction Contract; or
- 7.6.2 Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors; or
- 7.6.3 Obtain bids from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and the contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages (as described in Paragraph 7.8) in excess of the Balance of the Contract Price incurred by the Owner resulting from the Contractor's default: or
- 7.6.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:
- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, tender payment therefore to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner citing reasons therefore.

- 7.7 If the Surety does not proceed as provided in Paragraph 7.6 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen (15) days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Subparagraph 7.6.4, and the Owner refuses the payment rendered or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
- 7.8 After the Owner has terminated the Contractor's right to complete the Construction Contract, and if the Surety elects to act under Subparagraph 7.6.1, 7.6.2, or 7.6.3 above, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. To the limit of the amount of this Bond, but subject to commitment by the Owner of the Balance of the Contract Price to mitigation of costs and damages on the Construction Contract, the Surety is obligated without duplication for:
- 7.8.1 The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- 7.8.2 Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 7.6; and
- 7.8.3 Late delivery penalties or if penalties are not specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
- 7.9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, or successors.
- 7.10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
- 7.11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two (2) years after Contractor Default or within two (2) years after the Contractor ceased working or within two (2) years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
- 7.12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.
- 7.13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions

conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common-law bond.

7.14 Definitions.

7.14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

7.14.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

7.14.3 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.

7.14.4 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

**ARTICLE 8      Make the following changes:**

**Delete** in its entirety.

**Add the following Articles:**

**ARTICLE 9      MISCELLANEOUS REQUIREMENTS**

**9.1      Watchman**

The employment of continuous watchman service to guard the property during any and all hours shall be at the discretion of the Contractor. However, the Contractor shall remove and restore all work or temporary structures damaged by fire, vandalism, or similar acts at no extra cost to the Owner.

**9.2      Overtime**

The Contractor must include within their base price all overtime, nights, holidays, and weekends as required to meet the Project Completion date.

**9.3      Supervision**

The Contractor must provide full-time, properly qualified on-site supervision for the entire duration of the project, while workpersons are on site.

**9.4      Department of Administrative Services (DAS)**

In accordance with Connecticut General Statute Secs. 4a-100 and 4b-91, a responsible bid that exceeds \$500,000 for this vertical building project must contain two (2) documents: **The Contractor Prequalification Certificate and the Update (Bid) Statement**. These two (2) documents must be submitted with the bid form. Contact the DAS Contractor Prequalification Unit at 860-713-5280 for more information. The classification ROOFING is required as a minimum.

**9.5 Commission on Human Rights and Opportunities (CHRO)**

The Contractor who is selected to perform this State project must comply with CT General Statutes 4a-60, 4a-60a, 4a-60g, and 46a-68b through 46a-68f, inclusive, as amended by June 2015 Special Session Public Act 15-5. An Affirmative Action Plan must be filed with and approved by the Commission on Human Rights and Opportunities prior to the commencement of construction.

State law requires a minimum of twenty-five (25%) percent of the state-funded portion of the contract be set aside for award to subcontractors holding current certification from the Connecticut Department of Administrative Services (DAS) under the provisions of CT General Statute 4a-60g, as amended. **(25% of the work with DAS certified Small and Minority owned businesses and 25% of that work with DAS certified Minority, Women and/or Disabled owned businesses.)** The Contractor must demonstrate good faith effort to meet the twenty-five percent (25%) set-aside goals.

For municipal public works contracts and quasi-public agency projects, the contractor must file a written or electronic non-discrimination certification with the Commission on Human Rights and Opportunities. Forms can be found at

[http://www.ct.gov/opm/cwp/view.asp?a=2982&q=390928&opmNav\\_GID=1806](http://www.ct.gov/opm/cwp/view.asp?a=2982&q=390928&opmNav_GID=1806).

**9.6 Public Health Emergency**

The Contractor shall anticipate and incorporate in their Bid all potential costs related to a public health emergency such as the COVID-19/Coronavirus Pandemic, including rules, regulations, and recommendations issued by public authorities. The potential costs may include, but are not limited to, costs related to social distancing, manpower levels, project scheduling, construction coordination, material/product supplies and delivery delays, material escalation costs, increased subcontractor/supplier costs, loss of productivity and inefficiency costs, extended general conditions costs, and any other potential costs.

**ARTICLE 10 BIDDERS REPRESENTATION**

Each bidder shall fully acquaint himself with conditions as they exist, so that he fully understands the complexities and restrictions attending the execution of the Work included in the Bid Documents. The failure to receive or examine any form, instrument, or document, or to visit the site to become acquainted with field conditions, shall in no way relieve the Bidder from any obligation with respect to the Bidder's proposal.

END OF SECTION

(To be submitted in duplicate)

BIDDER:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Address

To: **Town of Fairfield  
c/o Purchasing Department  
725 Old Post Road  
Fairfield, CT 06825**

Project: **Roger Ludlowe Middle School Roof Replacement  
689 Unquowa Road  
Fairfield, CT 06824  
State Project #051-0152 RR  
Bid #2022-129**

In preparing this bid, we have carefully examined the Bidding Documents for this Project. We have visited the site and noted the conditions affecting the Work.

The Bidding Documents referred to include Drawings and Project Manual dated November 4, 2021, prepared by Silver/Petrucelli + Associates, Inc., Hamden, Connecticut.

We propose to perform the work described in the Bidding Documents, in keeping with definitions of Article 1 of the Instructions to Bidders, for the Base Bid Sum as follows:

**Base Bid:**

**Entire Project** for the Total Cost of:

\$ \_\_\_\_\_ Dollars (\$) .00).  
written figure

We will commence work on the project \_\_\_\_\_ calendar days after receipt of "Notice to Proceed" or signing of Contract, whichever is sooner. We will be able to substantially complete the project by the date indicated in the Invitation to Bid. (Also refer to SIB 1.1.B).

**Allowances: (See Section 012100)**

Allowance No. 1: Metal Deck Replacement (part of Base Bid) \$ \_\_\_\_\_

**Alternates:**

The undersigned proposes to furnish all Labor, Materials, Equipment and Services necessary to construct the items listed in the Alternates described in Section 012300 for the stipulated sum of:

**ADD ALTERNATE NO. 1: Interior Painting:** Add to the Base Bid a Total of:

\$ \_\_\_\_\_ Dollars (\$) .00).  
written figure

The project schedule will be (increased/decreased) by \_\_\_\_\_ calendar days to complete the work indicated under Add Alternate 1.

**DEDUCT ALTERNATE NO. 2: Twenty (20) Year Warranty:** Deduct from the Base Bid a Total of:

\$ \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ .00).  
written figure

The project schedule will be (increased/decreased) by \_\_\_\_\_ calendar days to complete the work indicated under Deduct Alternate 2.

**Unit Prices:**

As required by the Base Bid, should deteriorated or damaged materials be required to be removed as determined by the Architect or Owner, the cost to remove and replace the referenced material, (or credit for specified material not provided or installed) including all labor, material, equipment, and related furnishings is as follows:

Item	Description	Unit Price
1.	Metal roof deck, thickness to match existing roof deck to be removed (including deteriorated roof deck removal, credit and add)	\$ sf
2.	Add pressure treated wood blocking, as specified, cut to fit around roof structure and systems installed	\$ bf
3.	Deduct pressure treated wood blocking, as specified, cut to fit around roof structure and system installed	\$ bf

If written notice of the acceptance of this Bid is mailed, telegraphed, or delivered to the undersigned at the Address designated below, within ninety (90) days after the date of Bid Opening, or any time thereafter before this Bid is withdrawn, the undersigned will, within ten (10) days after the date of mailing, telegraphing, or delivering of the notice, execute and deliver a contract in the Standard Form of Agreement Between the Owner and Contractor, AIA Document A101, or similar contract modified as may be mutually agree upon.

The undersigned acknowledges that he has examined the documents, visited and examined the site as required under "Instructions to Bidders", examined the availability of labor and materials and further agrees to comply with all the requirements as to the conditions of employment and wage rates set forth by the Department of Labor.

**Addenda:**

The undersigned acknowledges receipt of the following addenda to the Contract Documents, listed by number and date:

Number \_\_\_\_\_, Dated: \_\_\_\_\_  
Number \_\_\_\_\_, Dated: \_\_\_\_\_

Number \_\_\_\_\_, Dated: \_\_\_\_\_  
Number \_\_\_\_\_, Dated: \_\_\_\_\_

Exceptions: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**ATTACHMENTS – Attached hereto is:**

- 1. Contractor Prequalification Statement**
- 2. Update Bid Statement**
- 3. CHRO Bidder Contract Compliance Monitoring Report**
- 4. Refer to Checklist on Town of Fairfield's Instructions to Bidders for additional items.**

**NON-COLLUSIVE BID STATEMENT**

The undersigned bidder certifies that this bid is made independently and without collusion, agreement, understanding or planned course of action with any other bidder and that the contents of the bid shall not be disclosed to anyone other than employees, agents, or sureties prior to the official bid opening.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name and Title  
of Agent submitting bid: \_\_\_\_\_

Name of Company: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

E-mail: \_\_\_\_\_

This Bid may be withdrawn prior to the scheduled Bid Opening or any postponement thereof.



**COMMISSION ON HUMAN RIGHTS AND OPPORTUNITIES**  
**CONTRACT COMPLIANCE REGULATIONS**  
**NOTIFICATION TO BIDDERS**

(Revised 09/3/15)

The contract to be awarded is subject to contract compliance requirements mandated by Sections 4a-60 and 4a-60a of the Connecticut General Statutes; and, when the awarding agency is the State, Sections 46a-71(d) and 46a-81i(d) of the Connecticut General Statutes. There are Contract Compliance Regulations codified at Section 46a-68j-21 through 43 of the Regulations of Connecticut State Agencies, which establish a procedure for awarding all contracts covered by Sections 4a-60 and 46a-71(d) of the Connecticut General Statutes.

According to Section 46a-68j-30(9) of the Contract Compliance Regulations, every agency awarding a contract subject to the contract compliance requirements has an obligation to “aggressively solicit the participation of legitimate minority business enterprises as bidders, contractors, subcontractors and suppliers of materials.” “Minority business enterprise” is defined in Section 4a-60 of the Connecticut General Statutes as a business wherein fifty-one percent or more of the capital stock, or assets belong to a person or persons: “(1) Who are active in daily affairs of the enterprise; (2) who have the power to direct the management and policies of the enterprise; and (3) who are members of a minority, as such term is defined in subsection (a) of Section 32-9n.” “Minority” groups are defined in Section 32-9n of the Connecticut General Statutes as “(1) Black Americans . . . (2) Hispanic Americans . . . (3) persons who have origins in the Iberian Peninsula . . . (4) Women . . . (5) Asian Pacific Americans and Pacific Islanders; (6) American Indians . . .” An individual with a disability is also a minority business enterprise as provided by Section 4a-60g of the Connecticut General Statutes. The above definitions apply to the contract compliance requirements by virtue of Section 46a-68j-21(11) of the Contract Compliance Regulations.

The awarding agency will consider the following factors when reviewing the bidder’s qualifications under the contract compliance requirements:

- (a) the bidder’s success in implementing an affirmative action plan;
- (b) the bidder’s success in developing an apprenticeship program complying with Sections 46a-68-1 to 46a-68-17 of the Administrative Regulations of Connecticut State Agencies, inclusive;
- (c) the bidder’s promise to develop and implement a successful affirmative action plan;
- (d) the bidder’s submission of employment statistics contained in the “Employment Information Form”, indicating that the composition of its workforce is at or near parity when compared to the racial and sexual composition of the workforce in the relevant labor market area; and
- (e) the bidder’s promise to set aside a portion of the contract for legitimate minority business enterprises. See Section 46a-68j-30(10)(E) of the Contract Compliance Regulations.

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**INSTRUCTIONS AND OTHER INFORMATION**

The following **BIDDER CONTRACT COMPLIANCE MONITORING REPORT** must be completed in full, signed, and submitted with the bid for this contract. The contract awarding agency and the Commission on Human Rights and Opportunities will use the information contained thereon to determine the bidders compliance to Sections 4a-60 and 4a-60a CONN. GEN. STAT., and Sections 46a-68j-23 of the Regulations of Connecticut State Agencies regarding equal employment opportunity, and the bidder’s good faith efforts to include minority business enterprises as subcontractors and suppliers for the work of the contract.

**1) Definition of Small Contractor**

Section 4a-60g CONN. GEN. STAT. defines a small contractor as a company that has been doing business under the same management and control and has maintained its principal place of business in Connecticut for a one year period immediately prior to its application for certification under this section, had gross revenues not exceeding fifteen million dollars in the most recently completed fiscal year, and at least fifty-one percent of the ownership of which is held by a person or persons who are active in the daily affairs of the company, and have the power to direct the management and policies of the company, except that a nonprofit corporation shall be construed to be a small contractor if such nonprofit corporation meets the requirements of subparagraphs (A) and (B) of subdivision 4a-60g CONN. GEN. STAT.

**MANAGEMENT:** Managers plan, organize, direct, and control the major functions of an organization through subordinates who are at the managerial or supervisory level. They make policy decisions and set objectives for the company or departments. They are not usually directly involved in production or providing services. Examples include top executives, public relations managers, managers of operations specialties (such as financial, human resources, or purchasing managers), and construction and engineering managers.

**BUSINESS AND FINANCIAL OPERATIONS:** These occupations include managers and professionals who work with the financial aspects of the business. These occupations include accountants and auditors, purchasing agents, management analysts, labor relations specialists, and budget, credit, and financial analysts.

**MARKETING AND SALES:** Occupations related to the act or process of buying and selling products and/or services such as sales engineer, retail sales workers and sales representatives including wholesale.

**LEGAL OCCUPATIONS:** In-House Counsel who is charged with providing legal advice and services in regards to legal issues that may arise during the course of standard business practices. This category also includes assistive legal occupations such as paralegals, legal assistants.

**COMPUTER SPECIALISTS:** Professionals responsible for the computer operations within a company are grouped in this category. Examples of job titles in this category include computer programmers, software engineers, database administrators, computer scientists, systems analysts, and computer support specialists.

**ARCHITECTURE AND ENGINEERING:** Occupations related to architecture, surveying, engineering, and drafting are included in this category. Some of the job titles in this category include electrical and electronic engineers, surveyors, architects, drafters, mechanical engineers, materials engineers, mapping technicians, and civil engineers.

**OFFICE AND ADMINISTRATIVE SUPPORT:** All clerical-type work is included in this category. These jobs involve the preparing, transcribing, and preserving of written communications and records; collecting accounts; gathering and distributing information; operating office machines and electronic data processing equipment; and distributing mail. Job titles listed in this category include telephone operators, bill and account collectors, customer service representatives, dispatchers, secretaries and administrative assistants, computer operators and clerks (such as payroll, shipping, stock, mail and file).

**BUILDING AND GROUNDS CLEANING AND MAINTENANCE:** This category includes occupations involving landscaping, housekeeping, and janitorial services. Job titles found in this category include supervisors of landscaping or housekeeping, janitors, maids, grounds maintenance workers, and pest control workers.

**CONSTRUCTION AND EXTRACTION:** This category includes construction trades and related occupations. Job titles found in this category include boilermakers, masons (all types), carpenters, construction laborers, electricians, plumbers (and related trades), roofers, sheet metal workers, elevator installers, hazardous materials removal workers, paperhangers, and painters. Paving, surfacing, and tamping equipment operators; drywall and ceiling tile installers; and carpet, floor and tile installers and finishers are also included in this category. First line supervisors, foremen, and helpers in these trades are also grouped in this category..

**INSTALLATION, MAINTENANCE AND REPAIR:** Occupations involving the installation, maintenance, and repair of equipment are included in this group. Examples of job titles found here are heating, ac, and refrigeration mechanics and installers; telecommunication line installers and repairers; heavy vehicle and mobile equipment service technicians and mechanics; small engine mechanics; security and fire alarm systems installers; electric/electronic repair, industrial, utility and transportation equipment; millwrights; riggers; and manufactured building and mobile home installers. First line supervisors, foremen, and helpers for these jobs are also included in the category.

**MATERIAL MOVING WORKERS:** The job titles included in this group are Crane and tower operators; dredge, excavating, and lading machine operators; hoist and winch operators; industrial truck and tractor operators; cleaners of vehicles and equipment; laborers and freight, stock, and material movers, hand; machine feeders and offbearers; packers and packagers, hand; pumping station operators; refuse and recyclable material collectors; and miscellaneous material moving workers.

**PRODUCTION WORKERS:** The job titles included in this category are chemical production machine setters, operators and tenders; crushing/grinding workers; cutting workers; inspectors, testers sorters, samplers, weighers; precious stone/metal workers; painting workers; cementing/gluing machine operators and tenders; etchers/engravers; molders, shapers and casters except for metal and plastic; and production workers.

<p><u>White</u> (not of Hispanic Origin)- All persons having origins in any of the original peoples of Europe, North Africa, or the Middle East.</p> <p><u>Black</u>(not of Hispanic Origin)- All persons having origins in any of the Black racial groups of Africa.</p> <p><u>Hispanic</u>- All persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.</p>	<p><u>Asian or Pacific Islander</u>- All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes China, India, Japan, Korea, the Philippine Islands, and Samoa.</p> <p><u>American Indian or Alaskan Native</u>- All persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.</p>
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## BIDDER CONTRACT COMPLIANCE MONITORING REPORT

### PART I - Bidder Information

Company Name Street Address City & State Chief Executive	Bidder Federal Employer Identification Number _____ Or Social Security Number _____
Major Business Activity (brief description)	Bidder Identification (response optional/definitions on page 1)  -Bidder is a small contractor. Yes ___ No ___ -Bidder is a minority business enterprise Yes ___ No ___ (If yes, check ownership category) Black ___ Hispanic ___ Asian American ___ American Indian/Alaskan Native ___ Iberian Peninsula ___ Individual(s) with a Physical Disability ___ Female ___
Bidder Parent Company (If any)	- Bidder is certified as above by State of CT Yes ___ No ___
Other Locations in Ct. (If any)	

### PART II - Bidder Nondiscrimination Policies and Procedures

1. Does your company have a written Affirmative Action/Equal Employment Opportunity statement posted on company bulletin boards? <div style="text-align: right;">Yes___ No___</div>	7. Do all of your company contracts and purchase orders contain non-discrimination statements as required by Sections 4a-60 & 4a-60a Conn. Gen. Stat.? <div style="text-align: right;">Yes___ No___</div>
2. Does your company have the state-mandated sexual harassment prevention in the workplace policy posted on company bulletin boards? <div style="text-align: right;">Yes___ No___</div>	8. Do you, upon request, provide reasonable accommodation to employees, or applicants for employment, who have physical or mental disability? <div style="text-align: right;">Yes___ No___</div>
3. Do you notify all recruitment sources in writing of your company's Affirmative Action/Equal Employment Opportunity employment policy?  Yes___ No___	9. Does your company have a mandatory retirement age for all employees? <div style="text-align: right;">Yes___ No___</div>
4. Do your company advertisements contain a written statement that you are an Affirmative Action/Equal Opportunity Employer? Yes ___ No ___	10. If your company has 50 or more employees, have you provided at least two (2) hours of sexual harassment training to all of your supervisors? <div style="text-align: right;">Yes ___ No ___ NA ___</div>
5. Do you notify the Ct. State Employment Service of all employment openings with your company? Yes ___ No ___	11. If your company has apprenticeship programs, do they meet the Affirmative Action/Equal Employment Opportunity requirements of the apprenticeship standards of the Ct. Dept. of Labor? <div style="text-align: right;">Yes ___ No ___ NA ___</div>
6. Does your company have a collective bargaining agreement with workers? <div style="text-align: right;">Yes___ No___</div> 6a. If yes, do the collective bargaining agreements contain non-discrimination clauses covering all workers? Yes___ No___	12. Does your company have a written affirmative action Plan? Yes ___ No ___ If no, please explain.
6b. Have you notified each union in writing of your commitments under the nondiscrimination requirements of contracts with the state of Ct? <div style="text-align: right;">Yes___ No___</div>	13. Is there a person in your company who is responsible for equal employment opportunity? <div style="text-align: right;">Yes ___ No ___</div> If yes, give name and phone number. _____

1. Will the work of this contract include subcontractors or suppliers?    Yes\_\_ No\_\_

1a. If yes, please list all subcontractors and suppliers and report if they are a small contractor and/or a minority business enterprise. (defined on page 1 / use additional sheet if necessary)

1b. Will the work of this contract require additional subcontractors or suppliers other than those identified in 1a. above? Yes\_\_ No\_\_

PART IV - Bidder Employment Information Date:

JOB CATEGORY *	OVERALL TOTALS	WHITE (not of Hispanic origin)		BLACK (not of Hispanic origin)		HISPANIC		ASIAN or PACIFIC ISLANDER		AMERICAN INDIAN or ALASKAN NATIVE	
		Male	Female	Male	Female	Male	Female	Male	Female	male	female
Management											
Business & Financial Ops											
Marketing & Sales											
Legal Occupations											
Computer Specialists											
Architecture/Engineering											
Office & Admin Support											
Bldg/ Grounds Cleaning/Maintenance											
Construction & Extraction											
Installation , Maintenance & Repair											
Material Moving Workers											
Production Occupations											
TOTALS ABOVE											
Total One Year Ago											
FORMAL ON THE JOB TRAINEES (ENTER FIGURES FOR THE SAME CATEGORIES AS ARE SHOWN ABOVE)											
Apprentices											
Trainees											

\*NOTE: JOB CATEGORIES CAN BE CHANGED OR ADDED TO (EX. SALES CAN BE ADDED OR REPLACE A CATEGORY NOT USED IN YOUR COMPANY)

1. Which of the following recruitment sources are used by you? (Check yes or no, and report percent used)				2. Check (X) any of the below listed requirements that you use as a hiring qualification  (X)		3. Describe below any other practices or actions that you take which show that you hire, train, and promote employees without discrimination
SOURCE	YES	NO	% of applicants provided by source			
State Employment Service					Work Experience	
Private Employment Agencies					Ability to Speak or Write English	
Schools and Colleges					Written Tests	
Newspaper Advertisement					High School Diploma	
Walk Ins					College Degree	
Present Employees					Union Membership	
Labor Organizations					Personal Recommendation	
Minority/Community Organizations					Height or Weight	
Others (please identify)					Car Ownership	
					Arrest Record	
					Wage Garnishments	

Certification (Read this form and check your statements on it CAREFULLY before signing). I certify that the statements made by me on this BIDDER CONTRACT COMPLIANCE MONITORING REPORT are complete and true to the best of my knowledge and belief, and are made in good faith. I understand that if I knowingly make any misstatements of facts, I am subject to be declared in non-compliance with Section 4a-60, 4a-60a, and related sections of the CONN. GEN. STAT.

(Signature)	(Title)	(Date Signed)	(Telephone)
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# DRAFT 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 « »  
(In words, indicate day, month and year.)

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

« »  
« »  
« »  
« »

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

« »  
« »  
« »  
« »

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

« »  
« »  
« »

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

« »  
« »  
« »  
« »

The Owner and Contractor agree as follows.

### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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.

**ELECTRONIC COPYING** of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

## TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS

## EXHIBIT A INSURANCE AND BONDS

### ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form 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 parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

### ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

### 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.

☐ A date set forth in a notice to proceed issued by the Owner.

☐ Established as follows:

*(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.

[ « » ] By the following date: « »

§ 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.

#### 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 « » (\$ « » ), 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, if any:  
(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:  
(Insert terms and conditions for liquidated damages, if any.)

« »

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

« »

## ARTICLE 5 PAYMENTS

### § 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall 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, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the « » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « » day of the « » month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than « » ( « » ) days after the Architect receives the Application for Payment.

*(Federal, state or local laws may require payment within a certain period of time.)*

§ 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. 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.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, 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;
- .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; and
- .5 Retainage withheld pursuant to Section 5.1.7.

### § 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, 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.)*

« »

§ 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.)

<< >>

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:  
(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 modifications.)

<< >>

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:  
(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, the Owner shall pay the Contractor any additional amounts in accordance with 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.

## § 5.2 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 Contract 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; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

<< >>

## § 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

<< >> % << >>

## 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

☐ Litigation in a court of competent jurisdiction

☐ Other *(Specify)*

☐

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

## 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 a termination fee as follows:

*(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner’s convenience.)*

☐

§ 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)*

☐

☐

☐

☐

☐

☐

§ 8.3 The Contractor’s representative:

*(Name, address, email address, and other information)*

☐

☐

☐

☐

☐

☐

§ 8.4 Neither the Owner’s nor the Contractor’s representative shall be changed without ten days’ prior notice to the other party.

## § 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

*(If other than in accordance with AIA Document E203–2013, 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.)*

« »

§ 8.7 Other provisions:

« »

## ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

*(Insert the date of the E203-2013 incorporated into this Agreement.)*

« »

- .5 Drawings

Number	Title	Date

- .6 Specifications

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.

- .8 Other Exhibits:

*(Check all boxes that apply and include appropriate information identifying the exhibit where required.)*

[ « » ] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:  
*(Insert the date of the E204-2017 incorporated into this Agreement.)*

<< >>

[ < > ] The Sustainability Plan:

Title	Date	Pages

[ < > ] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

**.9** 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.)*

<< >>

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

\_\_\_\_\_  
**OWNER** (Signature)

<< >>< >>

\_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
**CONTRACTOR** (Signature)

<< >>< >>

\_\_\_\_\_  
(Printed name and title)



# DRAFT AIA® Document A201® – 2017

## General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

<< >>  
<< >>

THE OWNER:

(Name, legal status and address)

<< >>< >>  
<< >>

THE ARCHITECT:

(Name, legal status and address)

<< >>< >>  
<< >>

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### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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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, Conditions of the Contract (General, Supplementary and other Conditions), 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 proposal, or portions of Addenda relating to bidding or proposal requirements.

#### **§ 1.1.2 The Contract**

The Contract Documents form the Contract for Construction. 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 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. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

#### **§ 1.1.3 The Work**

The term "Work" means the construction and services required 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. 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.

#### **§ 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.

### **§ 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.

**§ 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.

### **§ 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 Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. 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 Architect's or Architect's consultants' reserved rights.

**§ 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 protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

### **§ 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 protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, 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 Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

**§ 2.1.2** The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

### **§ 2.2 Evidence of the Owner's Financial Arrangements**

**§ 2.2.1** Prior to commencement of the Work and 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. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

**§ 2.2.2** Following commencement of the Work and 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 only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

**§ 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 and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure 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.

**§ 2.3.2** The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect 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 to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

**§ 2.3.4** The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

**§ 2.3.5** The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work 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 to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

#### **§ 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 repeatedly 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.

#### **§ 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 ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. 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.

### **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 shall be lawfully licensed, if 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.

**§ 3.1.3** 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.

#### **§ 3.2 Review of Contract Documents and Field Conditions by Contractor**

**§ 3.2.1** Execution of the Contract by the Contractor is a representation that the Contractor has 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.

**§ 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, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. 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.

### **§ 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 coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

**§ 3.3.2** The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their 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.

### **§ 3.4 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 consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

**§ 3.4.3** 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.



### **§ 3.5 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, 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** 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.

### **§ 3.6 Taxes**

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

### **§ 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, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

**§ 3.7.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

**§ 3.7.3** If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, 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 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 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 Sum and 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 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.

**§ 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.

**§ 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.

### **§ 3.10 Contractor's Construction and Submittal Schedules**

**§ 3.10.1** The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. 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 schedules submitted to the Owner and Architect.

### **§ 3.11 Documents and Samples at the Site**

The Contractor shall make available, at the Project site, the Contract Documents, including 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. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work 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.

**§ 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, 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, 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**

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

### **§ 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.

### **§ 3.15 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.

### **§ 3.16 Access to Work**

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

### **§ 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 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 and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them 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, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not 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, 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 under workers' compensation acts, disability benefit acts, or other employee benefit acts.

## **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 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.

**§ 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 the Work, when fully completed, 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.

**§ 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.

§ 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.

§ 4.2.7 The Architect will review and approve, 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 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 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.

## 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. 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. 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.

**§ 5.2.2** The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

**§ 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.

## **§ 5.3 Subcontractual Relations**

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by 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 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 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 for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and 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.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 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 to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

## **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 in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 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 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

### **§ 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 in the construction or operations by the Owner or Separate Contractor that would 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 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 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, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work 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.

### § 6.3 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.

## 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, 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.

### § 7.2 Change Orders

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

### § 7.3 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:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 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, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, 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 of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .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.

§ 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 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 of a Construction Change Directive to the Owner, 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 the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's 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 certified by the Architect in accordance with Section 9.8.

§ 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 Contractor confirms that the Contract Time is a reasonable period for performing the Work.

**§ 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 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) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

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

**§ 8.3.3** This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## **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** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

### **§ 9.2 Schedule of Values**

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, 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, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of 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** At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application 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 liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

**§ 9.3.1.1** 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.

**§ 9.3.1.2** 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, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, 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, storage, and transportation to the site, for such materials and equipment stored off the site.

**§ 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.

#### **§ 9.4 Certificates for Payment**

**§ 9.4.1** The Architect will, within seven days after receipt of the Contractor's Application for Payment, 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, 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;
  - .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;
  - .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;
- or

.7 repeated failure to carry out the Work in accordance with 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. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

## § 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 pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 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 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.

§ 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 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 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from 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. 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.

## **§ 9.7 Failure of Payment**

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven 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 reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

## **§ 9.8 Substantial Completion**

**§ 9.8.1** Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

**§ 9.8.2** When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, 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. Failure to include an item on such list 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 list, 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 so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, 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 or designated portion thereof is substantially complete, 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, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list 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. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

## **§ 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 a list to the Architect as provided under Section 9.8.2. 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.

**§ 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 will promptly make such inspection. When the Architect finds 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 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.

**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit 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, (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, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, 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, to the extent and in such form as may be designated by the Owner. If a Subcontractor 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 a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

**§ 9.10.3** If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor 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 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** The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

**§ 9.10.5** Acceptance of final payment by the Contractor, a 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 in connection with the performance of the Contract.

### **§ 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 applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 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.

§ 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 exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 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. The foregoing obligations of the Contractor are 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 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

#### § 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed



by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

**§ 10.3.3** To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them 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 in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

**§ 10.3.4** The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

**§ 10.3.5** The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

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

#### **§ 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.

### **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 to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

**§ 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 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. 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 described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

**§ 11.2.2 Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

**§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance.** Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from 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; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

## **§ 11.3 Waivers of Subrogation**

**§ 11.3.1** 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 property insurance required by the Agreement or other property insurance applicable to the Project, 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. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 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** If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

## **§ 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 the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary 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 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and 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.

## **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 request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect'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 has not specifically requested to examine prior to its being covered, the Architect 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 one year after the date of Substantial Completion of the Work or designated portion thereof 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 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. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. 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 one-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 one-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 establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific 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.

### § 12.3 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. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

### § 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 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.

§ 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. 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 or available by law.

§ 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.

### § 13.4 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 laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. 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

timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 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.

§ 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 from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

## 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 30 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 public 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;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, 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, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, 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 seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred 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, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract

Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

## **§ 14.2 Termination by the Owner for Cause**

**§ 14.2.1** The Owner may 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 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

**§ 14.2.2** When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner 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, 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. 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 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; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

## **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 21 days after occurrence of the event giving rise to such Claim or within 21 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 Contract 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 decision of the Initial Decision Maker.

#### **§ 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 cost and of probable effect of delay on 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.

#### **§ 15.1.7 Waiver of Claims for Consequential Damages**

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of 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 30 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 of 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 Owner to authorize retention of such persons at the Owner'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. Upon 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.

**§ 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 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 Sections 9.10.4, 9.10.5, and 15.1.7, 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 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

### § 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party

provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

**§ 15.4.4.2** Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

**§ 15.4.4.3** The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

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GENERAL CONDITIONS

The Work of this Contract shall be subject to the American Institute of Architects Document A201, "General Conditions of the Contract for Construction", herein referred to as the General Conditions.

SUPPLEMENTARY CONDITIONS

The supplementary Conditions contain changes and additions to the General Conditions. Where any part of the General Conditions is modified or voided by the Supplementary Conditions, the remaining unaltered provisions shall remain in effect.

**ARTICLE 1 Make the following changes:**

1.2.3 **Add the following:** When applied to materials and equipment required for the Work, the words "furnish", "install" and "provide" shall mean the following:

- .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, greater quantity, or costlier work will be assumed to be and shall be included in the Contract price. 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.

**Add the following:**

- 1.2.4 All work shown or referred to in the Contract Documents shall be included in the Contract excepting those items which are specifically noted as being "provided under another contract" or "provided by the Owner", or "not in contract (NIC)".
- 1.2.5 Parties to the Contract 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 he may deem necessary for completion of the work in a satisfactory and acceptable manner.

**ARTICLE 2 Make the following changes:**

- 2.3.4 **Delete** the phrase "and utility locations".
- 2.3.6 **Revise to read as follows:** "Contractor shall be furnished up to three (3) sets 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."

**ARTICLE 3 Make the following changes:**

**Add the following:**

- 3.4.4 Should the Contractor wish to substitute another product or method for products or methods specified or shown in the Contract Documents, whether specified or shown in Contract Documents, whether or not such phrases as "equal to" or "based on" are used, he shall apply in writing for approval. He shall enclose such data as Architect requires to evaluate products. The Architect's decision shall be final. Contractor is responsible for space requirements of substitutions, he shall execute necessary changes in adjacent and relocated situations, he shall execute necessary changes in adjacent and relocated work which are due to such substitutions, without additional cost and he shall be responsible for delays required for evaluation of proposed substitutions.
- 3.5.3 Project Warranty: Unless otherwise specified, Contractor shall warrant (guaranty) all 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 one (1) year from the date of issuance of the Certificate of Substantial Completion for the Project.
- 3.5.4 Specified Product 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.
- 3.5.5 Coincidental Product Warranty: Available on a product incorporated into the work, by virtue of manufacturer's publication of warranty without regard for application requirement, a non-specified warranty. Contractor shall identify such warranties as they apply.

3.5.6 Warranty Obligations

- .1 Contractor shall restore or remove-and-replace warranted work to its originally specified condition, at such time during warranty as it does not comply with or fulfill terms of warranty.
- .2 Contractor shall restore or remove-and-replace other work which has been damaged by failure of warranted work, or which must be removed and replaced to gain access to warranted work.
- .3 Cost of restoration or removal-and-replacement is Contractor's obligation, without regard to whether Owner has already benefited from use of failing work.
- .4 Except as otherwise indicated or required by governing regulations, warranties do not cover consequential damage to property other than the Work of the Contract.
- .5 Upon restoration or removal-and-replacement of warranted work which has failed, Contractor shall reinstate the warranty by issuing newly executed form, for at least the remaining period of time of the original warranty, but for not less than half of the original warranty period.
- .6 Warranties and warranty periods shall not diminish implied warranties, and shall not deprive Owner of actions, rights, and remedies otherwise available if the Contractor fails 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.

3.5.7 Contractor shall furnish fully executed warranties to Owner in accordance with the General Conditions and Section 017700.

3.6 **Add the following:** No amount shall be included in the bid for State Sales Tax or for Federal Excise Tax on materials or supplies purchased for this project. The Owner will supply tax exempt number.

3.7.1 **Add the following:** The Contractor shall pay costs charged by utility companies for service connections, inspections and tests, and related utility company fees normally assessed as part of the construction process.

ARTICLE 4 **Make the following changes:**

4.2.13 Add to the first sentence, after "...relating to aesthetic effect..."

"and except for claims which have been waived by making or acceptance of final payment as provided by Subparagraphs 9.10.3 and 9.10.4,"

**Add the following:**

4.3 The provisions of Article 15 notwithstanding, the Contractor expressly agrees to joinder in arbitration proceedings between Owner/Architect upon specific written request of the Owner. This agreement shall be valid with the Architect's acceptance of an equal provision in their respective contracts.

**ARTICLE 6 Add the following:**

- 6.3.1 In a dispute between the Owner and the Contractor concerning rubbish and orderliness on the site, the Owner may have the rubbish removed and charge the cost to the Contractor. Upon written notification from the Architect that the project requires cleaning, the Contractor shall within 24 hours remove all rubbish and hazards from the project and shall arrange his material and equipment in an orderly manner on the site. If this cleaning is not completed within 24 hours, the Owner may engage labor to clean up the projects to his satisfaction and deduct the costs from any monies due the Contractor.

**ARTICLE 7 Add the following:**

- 7.2.2 The Contractor's proposal for changes in the Work shall be itemized completely and in detail and shall include material costs and quantities, labor wages, time, insurance, pensions, and equipment rental other than small tools, and the number of additional calendar days, if any, which are required to complete the Work.

Where unit prices have been established, the proposal shall state the quantity involved and the applicable unit price.

**7.5 Allowance for Overhead and Profit**

- 7.5.1 The allowance for overhead and profit is compensation for administration, superintendence, materials for temporary structures, additional premiums on bonds and the use of small tools.
- 7.5.2 For additions, deletions or other changes in the Work ordered under method 7.3.3.3, the Contractor may apply an allowance of up to fifteen percent (15%) for profit and overhead to the net cost of the work actually performed by him.
- 7.5.3 Work to be performed by a subcontractor may include an allowance for the subcontractor's overhead and profit not to exceed ten percent (10%) of the net cost. The Contractor is permitted up to a **five percent (5%)** allowance to be applied against the net cost to a subcontractor. In no case shall the total allowance exceed fifteen percent (15%) of the net cost of work performed by the subcontractor.
- 7.5.4 The Contractor's allowance of up to ten percent (10%) on changes involving more than one (1) subcontractor shall be applied only to the combined net of cost additions and deductions of all subcontractors.
- 7.5.5 There shall be no allowance for overhead and profit for the Contractor or any subcontractor on changes resulting in a net deduction.
- 7.5.6 The provisions of this Article shall apply only to subcontractors as defined in Article 5. Allowance for overhead and profit will be accepted only for those who are direct subcontractors.

**ARTICLE 8 Add the following:**

- 8.3.4 No extension of time will be allowed 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 agency.

**ARTICLE 9 Make the following changes:**

- 9.3.1 **Revise** “ten days” to read “fifteen (15) days”.

**Add the following:**

- 9.3.1.3 During progress of the Work, the Owner will pay Contractor ninety-five percent (95%) of the total amount of each monthly payment due. The remaining five percent (5%) will be retained by the Owner until the Project is substantially completed. There will be no further reduction considered until final acceptance of the Project in accordance with the Contract Documents.

- 9.3.2 **Add the following:** If the Contractor does not submit evidence of payment to vendor for material and equipment stored, the Architect will recommend deduction of the amount previously allowed for the items stored from the current or subsequent Application for Payment.

**Add the following:**

- 9.3.2.1 Contractor may include in Application for Payment the delivered cost of equipment and non-perishable materials delivered and stored at the site but not incorporated in the work, under the following conditions:

- .1 Items to be protected from fire, theft, vandalism, weather, and other damage.
- .2 Storage procedures and areas to be approved.
- .3 Items to be available at all times for inspection by the Owner and Architect.

- 9.3.4 Contractor shall furnish with Application for Payment an invoice establishing value of material and equipment stored at the site along with a statement of amount to be paid the vendor.

- .1 Such stored items are subject to inspection by Architect before payment is recommended.
- .2 Contractor shall furnish Owner with Certificate of Insurance in accordance with Contract Documents for the full value of the items stored at the site.

- 9.6.2.1 Contractor shall furnish Architect with satisfactory evidence of payment to vendors supplying material and equipment for approved storage. This shall be done within thirty (30) days after the date of progress payment. Satisfactory evidence of payment shall be one (1) of the following:

- .1 Contractor's canceled check in correct amount with identification of invoices paid.

- .2 A letter or telegram from vendor with authorized signature stating amounts and invoices paid.
- .3 A receipted invoice.

9.6.7.1 Payment for material and equipment delivered and stored shall not relieve Contractor of responsibility for furnishing equipment and material required for the work in the same manner as if such payment were not made.

9.10.6 A prerequisite to final payment shall be that the Contractor furnish proof that he has completed all specification requirements covering the following item as applicable:

Warranties.

**ARTICLE 10 Add the following:**

- 10.3.4.1 The Contractor shall not bring hazardous materials onto the site nor use in the Work without compliance with the following conditions.
- .2 The Contractor shall be solely responsible for the handling, storage, and use of explosive or other hazardous materials when their use is permitted. For such use, the Contractor shall obtain necessary permits from regulating agencies and submit copies of permits to the Architect for review before proceeding with use.
- .3 Contractor shall obtain insurance for use of hazardous material and furnish certificates of insurance in keeping with Conditions of the Contract.

**ARTICLE 11 Make the following changes:**

11.1.1 **Revise** “authorized to do business in the jurisdiction in which the Project is located” to read “licensed to do business in Connecticut”.

11.1.2 **Revise** “authorized to do business in the jurisdiction in which the Project is located” to read “licensed to do business in Connecticut”.

11.2.2 **Revise** “prior to commencement of the Work” to read “within ten (10) days of Notice of Award”.

**Add the following:**

**11.6 Miscellaneous Insurance Requirements**

Insurance shall be provided as required in Town of Fairfield Instructions to Bidders Terms and Conditions of Bid. Furthermore, the Certificate must name as Additional Insured: Silver/Petrucelli + Associates, Inc. The coverage must be on a primary, non-contributory basis.

**ARTICLE 13 Make the following changes:**

13.6 **Delete** in its entirety.

**ARTICLE 15 Make the following changes:**

15.3.2 **Revise to read as follows:** In addition to and prior to arbitration, the parties shall endeavor to settle disputes by mediation in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect unless the

parties mutually agree otherwise. Demand for mediation shall be filed in writing with the other party to this Agreement and with the American Arbitration Association. A demand for mediation shall be made within a reasonable time after the claim, dispute or other matter in question has arisen. In no event shall the demand for mediation be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations. The provisions of Article 15 notwithstanding, the Contractor expressly agrees to joinder in mediation proceedings between Owner/Architect upon specific written request of the Owner. This agreement shall be valid with the Architect's acceptance of an equal provision in their respective contracts.

15.4.1 **Delete** in its entirety.

15.4.2 **Delete** in its entirety.

15.4.3 **Delete** in its entirety.

END OF SECTION





Application and Certificate for Payment

TO OWNER:

PROJECT:

FROM CONTRACTOR:

VIA ARCHITECT:

APPLICATION NO:

PERIOD TO:

CONTRACT FOR:

CONTRACT DATE:

PROJECT NOS:

Distribution to:

OWNER:

ARCHITECT:

CONTRACTOR:

FIELD:

OTHER:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. AIA Document G703®, Continuation Sheet, is attached.

1. ORIGINAL CONTRACT SUM

\$0.00

2. NET CHANGE BY CHANGE ORDERS

\$0.00

3. CONTRACT SUM TO DATE (Line 1 ± 2)

\$0.00

4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)

\$0.00

5. RETAINAGE:

a. 0 % of Completed Work (Column D + E on G703)

\$0.00

b. 0 % of Stored Material (Column F on G703)

\$0.00

Total Retainage (Lines 5a + 5b or Total in Column I of G703)

\$0.00

6. TOTAL EARNED LESS RETAINAGE

\$0.00

7. LESS PREVIOUS CERTIFICATES FOR PAYMENT

\$0.00

8. CURRENT PAYMENT DUE

\$0.00

9. BALANCE TO FINISH, INCLUDING RETAINAGE

\$0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$0.00	\$0.00
Total approved this Month	\$0.00	\$0.00
TOTALS	\$0.00	\$0.00
NET CHANGES by Change Order		\$0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By:

State of:

County of:

Subscribed and sworn to before me this day of

Notary Public:

My Commission expires:

Date:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED

\$0.00

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By:

Date:

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.



## Continuation Sheet

[illegible]



CONNECTICUT DEPARTMENT OF LABOR  
WAGE AND WORKPLACE STANDARDS DIVISION

**CONTRACTORS WAGE CERTIFICATION FORM**  
**Construction Manager at Risk/General Contractor/Prime Contractor**

I, \_\_\_\_\_ of \_\_\_\_\_  
Officer, Owner, Authorized Rep. Company Name

do hereby certify that the \_\_\_\_\_  
Company Name  
\_\_\_\_\_  
Street  
\_\_\_\_\_  
City

and all of its subcontractors will pay all workers on the

\_\_\_\_\_  
Project Name and Number  
\_\_\_\_\_  
Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

\_\_\_\_\_  
Signed

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
Notary Public

Return to:

Connecticut Department of Labor  
Wage & Workplace Standards Division  
200 Folly Brook Blvd.  
Wethersfield, CT 06109

*Rate Schedule Issued (Date):* \_\_\_\_\_

**Minimum Rates and Classifications for  
Building Construction**

ID#: 22-30336

**Connecticut Department of Labor  
Wage and Workplace Standards Division**

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number: #2022-129

Project Town: Fairfield

State#: #2022-129

FAP#: Fairfield

Project: Roof Replacement at Roger Ludlowe Middle School Facility (Fairfield)

<b>CLASSIFICATION</b>	<b>Hourly Rate</b>	<b>Benefits</b>
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**		
1c) Asbestos Worker/Heat and Frost Insulator	43.72	30.99
2) Boilermaker	38.34	26.01
3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	36.18	34.59 + a
3b) Tile Setter	34.9	25.87
3c) Terrazzo Mechanics and Marble Setters	31.69	22.35
3d) Tile, Marble & Terrazzo Finishers	26.7	21.75
3e) Plasterer	33.48	32.06
-----LABORERS-----		
4) Group 1: Laborers (common or general), acetylene burners, concrete specialists, wrecking laborers, fire watchers.	31.5	23.25
4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofers/mixer/nozzleman (Person running mixer and spraying fireproof only).	31.75	23.25

Project: Roof Replacement at Roger Ludlowe Middle School Facility (Fairfield)

4b) Group 3: Jackhammer operators/pavement breaker, mason tender (brick), mason tender (cement/concrete), forklift operators and forklift operators (masonry).	32.0	23.25
4c) **Group 4: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license) (the pipelayer rate shall apply only to one or two employees of the total crew who primary task is to actually perform the mating of pipe sections) P6 and P7 rate is \$26.80.	32.5	23.25
4d) Group 5: Air track operator, sand blaster and hydraulic drills.	32.25	23.25
4e) Group 6: Blasters, nuclear and toxic waste removal.	34.5	23.25
4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped).	32.5	23.25
4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew.	29.78	23.25
4h) Group 9: Top men on open air caisson, cylindrical work and boring crew.	29.24	23.25
4i) Group 10: Traffic Control Signalman	18.0	23.25
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.	35.57	25.65
5a) Millwrights	35.64	26.49
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)	40.4	30.07+3% of gross wage
7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	56.96	35.825+a+b
-----LINE CONSTRUCTION-----		
Groundman	26.5	6.5% + 9.00
Linemen/Cable Splicer	48.19	6.5% + 22.00
8) Glazier (Trade License required: FG-1,2)	39.98	22.90 + a

9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	38.17	38.02 + a
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----OPERATORS----

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer 2 drums or over, front end loader (7 cubic yards or over), work boat 26 ft. and over and Tunnel Boring Machines. (Trade License Required)	43.88	25.80 + a
Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver (\$3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	43.53	25.80 + a
Group 3: Excavator; Backhoe/Excavator under 2 cubic yards; Cranes (under 100 ton rated capacity), Grader/Blade; 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 Fine Grade. (slopes, shaping, laser or GPS, etc.). (Trade License Required)	42.72	25.80 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper).	42.3	25.80 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; 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	41.65	25.80 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller; Pile Testing Machine.	41.65	25.80 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	41.31	25.80 + a
Group 7: Asphalt roller, concrete saws and cutters (ride on types), vermeer concrete cutter, Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24	40.94	25.80 + a
Group 8: Mechanic, grease truck operator, hydroblaster; barrier mover; power stone spreader; welding; work boat under 26 ft.; transfer machine.	40.51	25.80 + a
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).	40.04	25.80 + a
Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	37.81	25.80 + a
Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	37.81	25.80 + a



Group 12: Wellpoint operator.	37.74	25.80 + a
Group 13: Compressor battery operator.	37.11	25.80 + a
Group 14: Elevator operator; tow motor operator (solid tire no rough terrain).	35.87	25.80 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	35.43	25.80 + a
Group 16: Maintenance Engineer/Oiler.	34.72	25.80 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	39.42	25.80 + a
Group 18: Power safety boat; vacuum truck; zim mixer; sweeper; (Minimum for any job requiring a CDL license).	36.77	25.80 + a
-----PAINTERS (Including Drywall Finishing)-----		
10a) Brush and Roller	36.42	22.90
10b) Taping Only/Drywall Finishing	37.17	22.90
10c) Paperhanger and Red Label	36.92	22.90
10e) Blast and Spray	39.42	22.90
11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	45.83	33.50
12) Well Digger, Pile Testing Machine	37.26	24.05 + a
Rofer: Cole Tar Pitch	43.0	20.05 + a
Rofer: Slate, Tile, Composition, Shingles, Singly Ply and Damp/Waterproofing	41.5	20.05 + a
15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	47.52	44.20
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)	45.83	33.50

-----TRUCK DRIVERS-----

17a) 2 Axle	30.16	27.16 + a
17b) 3 Axle, 2 Axle Ready Mix	30.27	27.16 + a
17c) 3 Axle Ready Mix	30.33	27.16 + a
17d) 4 Axle, Heavy Duty Trailer up to 40 tons	30.39	27.16 + a
17e) 4 Axle Ready Mix	30.44	27.16 + a
17f) Heavy Duty Trailer (40 Tons and Over)	30.66	27.16 + a
17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	30.44	27.16 + a
18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	47.55	26.60 + a
19) Theatrical Stage Journeyman	25.76	7.34

Project: Roof Replacement at Roger Ludlowe Middle School Facility (Fairfield)

*Welders: Rate for craft to which welding is incidental.*

*\*Note: Hazardous waste removal work receives additional \$1.25 per hour for truck drivers.*

*\*\*Note: Hazardous waste premium \$3.00 per hour over classified rate*

***ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra \$4.00 premium in addition to the hourly wage rate and benefit contributions:***

- 1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)***
- 2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson***
- 3) Cranes (under 100 ton rated capacity)***

Crane with 150 ft. boom (including jib) - \$1.50 extra

Crane with 200 ft. boom (including jib) - \$2.50 extra

Crane with 250 ft. boom (including jib) - \$5.00 extra

Crane with 300 ft. boom (including jib) - \$7.00 extra

Crane with 400 ft. boom (including jib) - \$10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyman instructing and supervising the work of each apprentice in a specific trade.

*The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.*

*Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.*

*It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.*

*The annual adjustments will be posted on the Department of Labor's Web page: [www.ct.gov/dol](http://www.ct.gov/dol). For those without internet access, please contact the division listed below.*

*The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.*

*All subsequent annual adjustments will be posted on our Web Site for contractor access.*

*Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.*

***Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage***

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

**As of:** January 6, 2022

Project: Roof Replacement at Roger Ludlowe Middle School Facility (Fairfield)

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

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

**Important Information:**

For use with Building, Heavy/Highway, and Residential

Welders: Rate for craft to which welding is incidental.

\*Note: Hazardous waste removal work receives additional \$1.25 per hour for truck drivers.

\*\*Note: Hazardous waste premium \$3.00 per hour over classified rate.

**ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra \$4.00 premium in addition to the hourly wage rate and benefit contributions:**

- 1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)
- 2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson
- 3) Cranes (under 100 ton rated capacity)

**Crane with boom including jib, 150 feet - \$1.50 extra.**

**Crane with boom including jib, 200 feet - \$2.50 extra.**

**Crane with boom including jib, 250 feet - \$5.00 extra.**

**Crane with boom including jib, 300 feet - \$7.00 extra.**

**Crane with boom including jib, 400 feet - \$10.00 extra.**

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

- Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyman instructing and supervising the work of one apprentice in a specific trade.

**Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work**

- The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.
- Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
- It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.
- The annual adjustments will be posted on the Department of Labor's Web page: [www.ctdol.state.ct.us](http://www.ctdol.state.ct.us).
- The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.
- All subsequent annual adjustments will be posted on our Web Site for contractor access.

**Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage.**

- All Persons who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.
- All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)
- Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

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

***Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.***

**Connecticut Department of Labor  
Wage and Workplace Standards Division  
FOOTNOTES**

- ⇒ Please Note: If the “Benefits” listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the “Benefits” section for the occupation lists only a dollar amount, disregard the information below.

**Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons**  
(Building Construction) and  
(Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

- a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

**Elevator Constructors: Mechanics**

- a. Paid Holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Veterans’ Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.
- b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

**Glaziers**

- a. Paid Holidays: Labor Day and Christmas Day.

**Power Equipment Operators**  
(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year’s Day, Good Friday, Memorial day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

### **Ironworkers**

- a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

### **Laborers (Tunnel Construction)**

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

### **Roofers**

- a. Paid Holidays: July 4<sup>th</sup>, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

### **Sprinkler Fitters**

- a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

### **Truck Drivers**

(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.



## STATUTE 31-55a

### - SPECIAL NOTICE -

#### **To All State and Political Subdivisions, Their Agents, and Contractors Connecticut General Statute 31-55a - Annual adjustments to wage rates by contractors doing state work.**

*Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of section 31-54 of the general statutes, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 of the general statutes shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July first.*

- The prevailing wage rates applicable to any contract or subcontract awarded on or after October 1, 2002 are subject to annual adjustments each July 1st for the duration of any project which was originally advertised for bids on or after October 1, 2002.
- Each contractor affected by the above requirement shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
- It is the **contractor's** responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's Web Site. The annual adjustments will be posted on the Department of Labor Web page: [www.ctdol.state.ct.us](http://www.ctdol.state.ct.us). For those without internet access, please contact the division listed below.
- The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project. All subsequent annual adjustments will be posted on our Web Site for contractor access.

**Any questions should be directed to the Contract Compliance Unit, Wage and Workplace Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.**

## Information Bulletin

### *Occupational Classifications*

The Connecticut Department of Labor has the responsibility to properly determine "job classification" on prevailing wage projects covered under C.G.S. Section 31-53(d).

*Note: This information is intended to provide a sample of some occupational classifications for guidance purposes only. It is not an all-inclusive list of each occupation's duties. This list is being provided only to highlight some areas where a contractor may be unclear regarding the proper classification. If unsure, the employer should seek guidelines for CTDOL.*

**Below are additional clarifications of specific job duties performed for certain classifications:**

- **ASBESTOS WORKERS**

Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.

- **ASBESTOS INSULATOR**

Handle, install apply, fabricate, distribute, prepare, alter, repair, dismantle, heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.

- **BOILERMAKERS**

Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.

- **BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS. STONE MASONS, TERRAZZO WORKERS, TILE SETTERS**

Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.

- **CARPENTERS, MILLWRIGHTS. PILEDRIVERMEN. LATHERS. RESILIENT FLOOR LAYERS, DOCK BUILDERS, DIKERS, DIVER TENDERS**

Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard. Installs, assembles, dismantles, moves industrial machinery. Drives piling into ground to provide foundations for structures such as buildings and bridges, retaining walls for earth embankments, such as cofferdams. Fastens wooden, metal or rockboard lath to walls, ceilings and partitions of buildings, acoustical tile layer, concrete form builder. Applies firestopping materials on fire resistive joint systems only. Installation of curtain/window walls only where attached to wood or metal studs. Installation of insulated material of all types whether blown, nailed or attached in other ways to walls, ceilings and floors of buildings. Assembly and installation of modular furniture/furniture systems. Free-standing furniture is not covered. This includes free standing: student chairs, study top desks, book box desks, computer furniture, dictionary stand, atlas stand, wood shelving, two-position information access station, file cabinets, storage cabinets, tables, etc.

- **LABORER, CLEANING**

- The clean up of any construction debris and the general (heavy/light) cleaning, including sweeping, wash down, mopping, wiping of the construction facility and its furniture, washing, polishing, and dusting.

- **DELIVERY PERSONNEL**

- If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages are not required. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site then they would have to be paid prevailing wages for the type of work performed: laborer, equipment operator, electrician, ironworker, plumber, etc.

- An example of this would be where delivery of drywall is made to a building and the delivery personnel distribute the drywall from one "stockpile" location to further sub-locations on each floor. Distribution of material around a construction site is the job of a laborer or tradesman, and not a delivery personnel.

- **ELECTRICIANS**

Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring. ***\*License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.***

- **ELEVATOR CONSTRUCTORS**

Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. *\*License required by Connecticut General Statutes: R-1,2,5,6.*

- **FORK LIFT OPERATOR**

Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.

Power Equipment Operator Group 9 - operates forklift to assist any trade, and to assist a mason to a height over nine (9) feet.

- **GLAZIERS**

Glazing wood and metal sash, doors, partitions, and 2 story aluminum storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers, which require equal composite workforce.

- **IRONWORKERS**

Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which require equal composite workforce.

- **INSULATOR**

- Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings.

- **LABORERS**

Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), decorative security fence (non-metal)).

installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.

- **PAINTERS**

Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic art work and drywall hhg for any and all types of building and residential work.

- **LEAD PAINT REMOVAL**

- Painter's Rate

1. Removal of lead paint from bridges.
2. Removal of lead paint as preparation of any surface to be repainted.
3. Where removal is on a Demolition project prior to reconstruction.

- Laborer's Rate

1. Removal of lead paint from any surface NOT to be repainted.
2. Where removal is on a *TOTAL* Demolition project only.

- **PLUMBERS AND PIPEFITTERS**

Installation, repair, replacement, alteration or maintenance of all plumbing, heating, cooling and piping. ***\*License required per Connecticut General Statutes: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2 S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4.***

- **POWER EQUIPMENT OPERATORS**

Operates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment. ***\*License required, crane operators only, per Connecticut General Statutes.***

- **ROOFERS**

Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (demolition or removal of any type of roofing and or clean-up of any and all areas where a roof is to be relaid.)

- **SHEETMETAL WORKERS**

Fabricate, assemble, install and repair sheetmetal products and equipment in such areas as ventilation, air-conditioning, warm air heating, restaurant equipment, architectural sheet metal work, sheetmetal roofing, and aluminum gutters. Fabrication, handling, assembling, erecting, altering, repairing, etc. of coated metal material panels and composite metal material panels when used on building exteriors and interiors as soffits, fascia, louvers, partitions, canopies, cornice, column covers, awnings, beam covers, cladding, sun shades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc. The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal and composite lockers and shelving, kitchen equipment, and walk-in coolers. To include testing and air –balancing ancillary to installation and construction.

- **SPRINKLER FITTERS**

Installation, alteration, maintenance and repair of fire protection sprinkler systems.

***\*License required per Connecticut General Statutes: F-1,2,3,4.***

- **TILE MARBLE AND TERRAZZO FINISHERS**

Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.

- **TRUCK DRIVERS**

~How to pay truck drivers delivering asphalt is under REVISION~

Truck Drivers are required to be paid prevailing wage for time spent "working" directly on the site. These drivers remain covered by the prevailing wage for any time spent transporting between the actual construction location and facilities (such as fabrication, plants, mobile factories, batch plant, borrow pits, job headquarters, tool yards, etc.) dedicated exclusively, or nearly so, to performance of the contract or project, which are so located in proximity to the actual construction location that it is reasonable to include them. ***\*License required, drivers only, per Connecticut General Statutes.***

***For example:***

- Material men and deliverymen are not covered under prevailing wage as long as they are not directly involved in the construction process. If, they unload the material, they would then be covered by prevailing wage for the classification they are performing work in: laborer, equipment operator, etc.
- Hauling material off site is not covered provided they are not dumping it at a location outlined above.
- Driving a truck on site and moving equipment or materials on site would be considered covered work, as this is part of the construction process.

➤ *Any questions regarding the proper classification should be directed to:*  
*Public Contract Compliance Unit*  
*Wage and Workplace Standards Division*  
*Connecticut Department of Labor*  
*200 Folly Brook Blvd, Wethersfield, CT 06109*  
*(860) 263-6543.*

**Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions.** (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 on such public works 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.

(b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance. The Labor Commissioner or said commissioner's designee shall enforce this section.

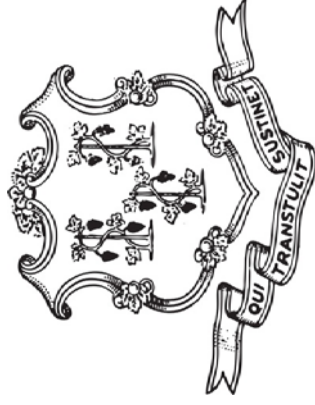
(c) Not later than January 1, 2009, the Labor Commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to implement the provisions of subsections (a) and (b) of this section. Such regulations shall require that the ten-hour construction safety and health courses required under subsection (a) of this section be conducted in accordance with federal Occupational Safety and Health Administration Training Institute standards, or in accordance with Federal Mine Safety and Health Administration Standards or in accordance with 29 CFR 1910.268, as appropriate. The Labor Commissioner shall accept as sufficient proof of compliance with the provisions of subsection (a) or (b) of this section a student course completion card issued by the federal Occupational Safety and Health Administration Training Institute, or such other proof of compliance said commissioner deems appropriate, dated no earlier than five years before the commencement date of such public works project.

(d) This section shall not apply to employees of public service companies, as defined in section 16-1, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

(P.A. 06-175, S. 1; P.A. 08-83, S. 1.)



History: P.A. 08-83 amended Subsec. (a) by making provisions applicable to public works project contracts entered into on or after July 1, 2009, replacing provision re total cost of work with reference to Sec. 31-53(g), requiring proof in certified payroll form that new mechanic, laborer or worker has completed a 10-hour or more construction safety course and adding provision re new miner training program, amended Subsec. (b) by substituting "person" for "employee" and adding "or program", amended Subsec. (c) by adding "or in accordance with Federal Mine Safety and Health Administration Standards" and setting new deadline of January 1, 2009, deleted former Subsec. (d) re "public building", added new Subsec. (d) re exemptions for public service company employees and delivery drivers who perform no labor other than delivery and made conforming and technical changes, effective January 1, 2009.



# THIS IS A PUBLIC WORKS PROJECT

Covered by the

# PREVAILING WAGE LAW

CT General Statutes Section 31-53

**If you have QUESTIONS regarding your wages  
CALL (860) 263-6790**

Section 31-55 of the CT State Statutes requires every contractor or subcontractor performing work for the state to post in a prominent place the prevailing wages as determined by the Labor Commissioner.

# **Informational Bulletin**

## **THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE**

(applicable to public building contracts entered into *on or after July 1, 2007*, where the total cost of all work to be performed is at least \$100,000)

- (1) This requirement was created by Public Act No. 06-175, which is codified in Section 31-53b of the Connecticut General Statutes (pertaining to the prevailing wage statutes);
- (2) The course is required for public building construction contracts (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2007;
- (3) It is required of private employees (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public building project where the total cost of all work to be performed is at least \$100,000;
- (4) The ten-hour construction course pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, and, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;
- (5) The internet website for the federal OSHA Training Institute is [http://www.osha.gov/fso/ote/training/edcenters/fact\\_sheet.html](http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html);
- (6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;
- (7) Within 30 days of receiving a contract award, a general contractor must furnish proof to the Labor Commissioner that all employees and apprentices performing manual labor on the project will have completed such a course;
- (8) Proof of completion may be demonstrated through either: (a) the presentation of a *bona fide* student course completion card issued by the federal OSHA Training Institute; *or* (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;
- (9) Any card with an issuance date more than 5 years prior to the commencement date of the construction project shall not constitute proof of compliance;

- (10) Each employer shall affix a copy of the construction safety course completion card to the certified payroll submitted to the contracting agency in accordance with Conn. Gen. Stat. § 31-53(f) on which such employee's name first appears;
- (11) Any employee found to be in non-compliance shall be subject to removal from the worksite if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in noncompliance;
- (12) Any such employee who is determined to be in noncompliance may continue to work on a public building construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;
- (13) The Labor Commissioner may make complaint to the prosecuting authorities regarding any employer or agent of the employer, or officer or agent of the corporation who files a false certified payroll with respect to the status of an employee who is performing manual labor on a public building construction project;
- (14) The statute provides the minimum standards required for the completion of a safety course by manual laborers on public construction contracts; any contractor can exceed these minimum requirements; and
- (15) Regulations clarifying the statute are currently in the regulatory process, and shall be posted on the CTDOL website as soon as they are adopted in final form.
- (16) Any questions regarding this statute may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of <http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm>; or by telephone at (860)263-6790.

**THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE, AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTIMATELY ARISE CONCERNING THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.**

November 29, 2006

**Notice**  
**To All Mason Contractors and Interested Parties**  
**Regarding Construction Pursuant to Section 31-53 of the**  
**Connecticut General Statutes (Prevailing Wage)**

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute.

Over the past few years the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute.

The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

**Forklift Operator:**

- **Laborers (Group 4) Mason Tenders** - operates forklift solely to assist a mason to a maximum height of nine feet only.
- **Power Equipment Operator (Group 9)** - operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

***Since this is a classification matter and not one of jurisdiction, effective January 1, 2007 the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.***


Your cooperation in filing appropriate and accurate certified payrolls is appreciated.

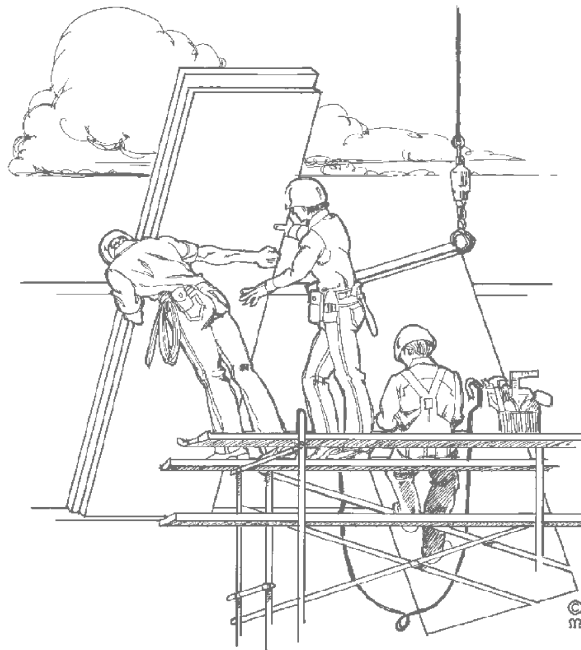
## ~NOTICE~

### TO ALL CONTRACTING AGENCIES

Please be advised that Connecticut General Statutes Section 31-53, requires the contracting agency to certify to the Department of Labor, the total dollar amount of work to be done in connection with such public works project, regardless of whether such project consists of one or more contracts.

Please find the attached “Contracting Agency Certification Form” to be completed and returned to the Department of Labor, Wage and Workplace Standards Division, Public Contract Compliance Unit.

 Inquiries can be directed to (860)263-6543.



CONNECTICUT DEPARTMENT OF LABOR  
WAGE AND WORKPLACE STANDARDS DIVISION  
CONTRACT COMPLIANCE UNIT

*CONTRACTING AGENCY CERTIFICATION FORM*

I, \_\_\_\_\_, acting in my official capacity as \_\_\_\_\_,  
authorized representative title

for \_\_\_\_\_, located at \_\_\_\_\_,  
contracting agency address

do hereby certify that the total dollar amount of work to be done in connection with

\_\_\_\_\_, located at \_\_\_\_\_,  
project name and number address

shall be \$\_\_\_\_\_, which includes all work, regardless of whether such project  
consists of one or more contracts.

*CONTRACTOR INFORMATION*

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Authorized Representative: \_\_\_\_\_

Approximate Starting Date: \_\_\_\_\_

Approximate Completion Date: \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Return To: Connecticut Department of Labor  
Wage & Workplace Standards Division  
Contract Compliance Unit  
200 Folly Brook Blvd.  
Wethersfield, CT 06109

Date Issued: \_\_\_\_\_





**\*FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker's compensation, income taxes, etc.).

Please specify the type of benefits provided:

- 1) Medical or hospital care \_\_\_\_\_ 4) Disability \_\_\_\_\_  
2) Pension or retirement \_\_\_\_\_ 5) Vacation, holiday \_\_\_\_\_  
3) Life Insurance \_\_\_\_\_ 6) Other (please specify) \_\_\_\_\_

**CERTIFIED STATEMENT OF COMPLIANCE**

For the week ending date of \_\_\_\_\_,

I, \_\_\_\_\_ of \_\_\_\_\_, (hereafter known as

Employer) in my capacity as \_\_\_\_\_ (title) do hereby certify and state:

**Section A:**

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

- a) The records submitted are true and accurate;
- b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;
- c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);
- d) Each such employee of the Employer is covered by a worker's compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;
- e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and
- f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such employee's name first appears.

\_\_\_\_\_  
(Signature) (Title) Submitted on (Date)

**Section B: Applies to CONNDOT Projects ONLY**

**That pursuant to CONNDOT contract requirements for reporting purposes only, all employees listed under Section B who performed work on this project are not covered under the prevailing wage requirements defined in Connecticut General Statutes Section 31-53.**

\_\_\_\_\_  
(Signature) (Title) Submitted on (Date)

Note: CTDOL will assume all hours worked were performed under Section A unless clearly delineated as Section B WWS-CP1 as such. Should an employee perform work under both Section A and Section B, the hours worked and wages paid must be segregated for reporting purposes.

\*\*\*THIS IS A PUBLIC DOCUMENT\*\*\*

\*\*\*DO NOT INCLUDE SOCIAL SECURITY NUMBERS\*\*\*

**Weekly Payroll Certification For  
Public Works Projects (Continued)**

## PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

**Week-Ending Date:** \_\_\_\_\_  
**Contractor or Subcontractor Business Name:** \_\_\_\_\_

## WEEKLY PAYROLL

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION  Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE							Total ST Hours	BASE HOURLY RATE	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS			GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				S	M	T	W	TH	F	S					FICA WITH- HOLDING	FEDERAL STATE	LIST OTHER		
											\$	1. \$							
											Base Rate	2. \$							
											\$	3. \$							
											Cash Fringe	4. \$							
											\$	5. \$							
											Cash Fringe	6. \$							
											\$	1. \$							
											Base Rate	2. \$							
											\$	3. \$							
											Cash Fringe	4. \$							
											\$	5. \$							
											Cash Fringe	6. \$							
											\$	1. \$							
											Base Rate	2. \$							
											\$	3. \$							
											Cash Fringe	4. \$							
											\$	5. \$							
											Cash Fringe	6. \$							

\*IF REQUIRED

# 2021-2022 Fairfield Public Schools Student Calendar

Approved by BoE October 27, 2020

July 2021						
Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

July 5—Independence Day (Observed)

August 2021 (2)						
Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

August 25—PD Day

August 26—PD Day

August 27—6th and 9th grade orientations

August 30—First Day of School

September 2021 (19)						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

September 6—Labor Day

September 7—Rosh Hashanah

September 16—Yom Kippur

September 28—Early Dismissal PK-12 (PD)

October 2021 (21)						
Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Oct 7—Early Dismissal, Conference Day  
PK-8 (Not HS)

Oct 12—Early Dismissal, Conference Day  
PK-8 PM Conf (Not HS)

Oct 13—Early Dismissal, PK-12,  
Conference Day and HS PSAT

November 2021 (18)						
Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

November 2—All Day PD

November 11—Veterans Day

November 24—Early Dismissal PK-12

November 25-26—Thanksgiving

December 2021 (17)						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

December 23—Early Dismissal PK-12

December 24-31—Winter Break

January 2022 (19)						
Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

January 3—New Year's Day (Observed)

January 14—Early Dismissal PK-12 (PD)

January 17—Martin Luther King, Jr. Day

February 2022 (18)						
Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

Feb 17—Early Dismissal PK-12 (PD)

Feb 18—February Break

Feb 21—Presidents' Day

March 2022 (23)						
Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

March 8—Early Dismissal PK-12 (PD)

March 16, 17, 24—Early Dismissal PK-5  
Elementary Only (Conference Days, PM Conf on  
Mar 24)

April 2022 (15)						
Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

April 15—Good Friday

April 18-22—Spring Break

May 2022 (20)						
Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

May 30—Memorial Day

May 31—All Day PD

June 2022 (10)						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

June 13—Early Dismissal PK-12, High School  
Graduation (tentative)

June 14—Early Dismissal PK-12 and  
Last Day of School

The first 6 snow days will extend the length of the school year and the date of high school graduation, tentatively scheduled for June 13, 2022. The Board of Education will set the graduation date in April 2022. Additional snow days will reduce the April Break beginning with the last day, April 22nd.

No School

No School and Professional Development for Staff

Early Dismissal

Early Dismissal and Professional Development or Conferences

The last 2 days are Early Dismissal days for students only



# 2022-2023 Fairfield Public Schools Student Calendar

182 Instructional Days / 187 Teacher Days

Approved by BoE December 14, 2021

July 2022						
Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

July 4—Independence Day

August 2022 (3)						
Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

August 24-26—PD Days

August 26—6th & 9th grade orientation

August 29—First Day of School

September 2022 (20)						
Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

September 5—Labor Day

September 23—Early Dismissal PK-12 (PD)

September 26—Rosh Hashanah

October 2022 (20)						
Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Oct 4—Early Dismissal, Conference Day **PK-8** PM Conf (Not HS)

Oct 5 - Yom Kippur

Oct 12—Early Dismissal, **PK-12**, Conference Day and HS PSAT

Oct 13—Early Dismissal, Conference Day **PK-8** PM Conf (Not HS)

November 2022 (18)						
Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

November 8—Election Day All Day PD

November 11—Veterans Day

November 23—Early Dismissal PK-12

November 24-25—Thanksgiving

December 2022 (17)						
Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

December 23—Early Dismissal PK-12

December 26-30—Winter Break

January 2023 (20)						
Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

January 2—New Year's Day (Observed)

January 13—Early Dismissal PK-12 (PD)

January 16—Martin Luther King, Jr. Day

February 2023 (18)						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

Feb 16—Early Dismissal PK-12 (PD)

Feb 17—February Break

Feb 20—Washington's Birthday

March 2023 (23)						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

March 7—Early Dismissal PK-12 (PD)

March 15,16,23—Early Dismissal **PK-5** Elementary Only (Conference Days, *PM Conf* on Mar 23)

April 2023 (14)						
Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

April 7—Good Friday

April 10-14—Spring Break

May 2023 (21)						
Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

May 29—Memorial Day

May 30—All Day PD

June 2023 (8)						
Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

June 9—Early Dismissal PK-12

June 12—Early Dismissal PK-12, High School Graduation (tentative) and Last Day of School

June 19—Juneteenth

The first 6 snow days will extend the length of the school year and the date of high school graduation, tentatively scheduled for June 12, 2023. The Board of Education will set the graduation date in April 2023. Additional snow days will reduce the April Break beginning with the last day, April 14th.

No School

No School and Professional Development for Staff

Early Dismissal

Early Dismissal and Professional Development or Conferences

The last 2 days are Early Dismissal days for students only

ROOF REPLACEMENT

**ROGER LUDLOWE MIDDLE SCHOOL  
689 UNQUOWA ROAD  
FAIRFIELD, CT 06824  
STATE PROJECT #051-0152 RR  
BID #2022-129**

S/P+A PROJECT NO. 21.162

<u>Drawing Number</u>	<u>Drawing Name</u>
	COVER SHEET
C1	CODE INFORMATION
A1	OVERALL ROOF PLAN
A2	PART PLAN 'A'
A3	PART PLAN 'B'
A4	ROOF DETAILS

END OF DRAWING LIST



SECTION 011000 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 PROJECT DESCRIPTION

- A. The Work of the Project is defined by the Contract Documents and consists of a roof replacement of an existing building.
- B. The Work generally includes, but is not necessarily limited to the following major elements:
  - 1. Removal of existing membrane roofing, insulation, cant strips and tapered edges, and metal flashings.
  - 2. Offsite disposal of all removed materials.
  - 3. Removal and replacement of existing smoke hatches and other roof accessories.
  - 4. Removal and replacement of deteriorated roof decking and wood blocking.
  - 5. Removal and replacement of existing roof drains and related insulation.
  - 6. Provision and installation of modified bituminous membranes, underlayment, and flat and tapered insulations.
  - 7. Provision and installation of new flashings, caps, fasciae, and other trim metal work as detailed and specified, including new collection boxes, downspouts, and scuppers.
  - 8. Painting of existing metal stairs and railing.

1.3 CONTRACTOR USE OF PREMISES

- A. General: Limit use of the premises to construction activities in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
- B. Confine operations to as small work areas and accessways as possible. As much as possible and without damage to the finishes, doors, and related building systems, access the project area via the service doors designated by Owner.
- C. Keep driveways and entrances serving the premises clear and available to the Owner and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
- D. Maintain existing egress patterns, exit doors, and means of egress during construction, which will include the provision of temporary walkways, sidewalks, or other means necessary to provide adequate life safety for the building occupants, particularly at exitways which must continue to be open and serviceable while adjacent construction activity occurs.

- E. Use of the Existing Building: Maintain the existing building in a weathertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.
  - 1. Contractor is responsible to secure project area/site from intrusions during unoccupied (after hours) period of time. Any temporary doors and /or window coverings that may be necessary to complete repairs are the Contractors responsibility to furnish and install as part of the project scope.

#### 1.4 OWNER OCCUPANCY

- A. Full Owner Occupancy: The Owner's administrative and maintenance staff will occupy the site and existing building during the entire construction period, with children on site during the school year. Cooperate with the Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with the Owner's operations. Pre-schedule construction operations with the Owner for areas that must be evacuated for extended periods, giving the Owner the opportunity to relocate administrative or educational operations to non-affected areas.
  - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
  - 2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

#### 1.5 SPECIAL REQUIREMENTS

- A. The Contractor shall insure that all work performed is done so in a safe manner and that all his/her employees shall adhere to all applicable safety procedures and practices at all times. There may be children and staff in the vicinity of the work area during normal working hours. The Contractor shall be aware at all times that additional safety considerations should be taken. Particular care shall be taken by the Contractor, Subcontractors and all those in their employ, that all tools, equipment, ladders, etc. are never left unsupervised.
- B. Meaningful Instruction: Meaningful instruction (as determined by the Owner) must be facilitated and possible within the building at all times. This requirement may limit the Contractor's demolition and construction operations as the distraction represented by hammering, material movement, etc. may disrupt classes. No down time or mobilization charges will be permitted should the meaningful instruction requirement suspend the Contractor's operations for any length of time.
- C. Testing: During the school year, Smarter Balanced Assessment Consortium may be administered to portions of the student population, which requires absolute concentration on the part of the students. The Owner may prohibit operations during the administration of these assessments. Cooperate with the Owner to determine the schedule, locations of the testing and where operations may proceed with disrupting classroom or roofing operations.
- D. Under no circumstances shall the buildings' occupants be subjected to excessive construction noise or vibrations, nor shall they be subject to fumes, odors, or other deleterious effects of the operation. Should material delivery, demolition or construction operations, inclement weather



or related schedule conditions produce this situation (as determined by the Owner), the Contractor shall be required to suspend operations that produce the offending effects until such time as the building is not occupied, or as approved by the Owner.

- E. Smoking will not be permitted inside the building or on the grounds. Strict adherence to the smoking regulations will be enforced for the entire duration of the construction.
- F. There will be absolutely **no** fraternizing with the students by construction personnel. Anyone caught doing so will be required to leave the jobsite and will not be permitted to return. Such dismissal shall not give the contractor grounds for default on any other contract requirements, including the construction schedule.
- G. Site Security – Identification Badges
  - 1. The Contractor shall provide a list of all contact persons. The list shall include each trade, name of Contractor, contact person(s), phone numbers, fax numbers, Federal Employer Identification Number (FEIN), social security number if FEIN is not available, and Connecticut Tax Registration number.
  - 2. Prior to the start of work all Contractor and Sub-Contractor personnel assigned to perform work shall be required to fill out and submit to a background check at a cost provided by the Contractor. All information shall be submitted to the Town of Fairfield. Information for background check includes the following:
    - a. Identity Verification
    - b. Criminal Background
    - c. Additional checks as deemed warranted.
  - 3. Security badges will be worn by all project personnel during construction activities. The Contractor will provide badges at no cost to the Owner. The Contractor will be responsible for monitoring the display of badges, including those of the personnel of all subcontractors and visitors to the project site.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000



## SECTION 012100 - ALLOWANCES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
  - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to the Contractor. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
  - 1. Quantity allowances.
- C. Related Sections:
  - 1. Section 012200 "Unit Prices" for procedures for using unit prices.
  - 2. Divisions 02 through 49 Sections for items of Work covered by allowances.

## 1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

## 1.4 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- C. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

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

#### 1.5 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

#### 1.6 QUANTITY/LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
  - 1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

#### 1.7 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
  - 1. Include installation costs in purchase amount only where indicated as part of the allowance.
  - 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
  - 3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
  - 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
  - 1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
  - 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

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

3.3 SCHEDULE OF ALLOWANCES

- A. **Allowance No. 1: Metal Roof Deck Replacement:** Include in the Base Bid an allowance to replace 4,320 square feet of metal decking that may be deteriorated under the existing roofs. Should metal decking be encountered that at the Architect's direction requires removal, the Contractor shall do so, deducting the amount of the affected installation(s) from the allowance amount. Removal and replacement, to match existing, shall include all fasteners, accessories, removal, and disposal (including all manpower, tools, and materials). Refer to Section 053100 "Steel Decking" for additional information.

END OF SECTION 012100



SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Sections:
  - 1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.3 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

- A. A list of unit prices is included in the Bid Form.

END OF SECTION 012200



## SECTION 012300 - ALTERNATES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

## 1.3 DEFINITIONS

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

## 1.4 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
  - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract. No extensions of time shall be granted for accepted alternates.
- D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

- A. **ADD ALTERNATE NO. 1: Interior Painting:** Add to the Base Bid the labor, material, and equipment to prepare and paint the interior side of exposed metal decks of Roofs 'A' and 'G'. Refer to Section 099123 "Interior Painting" or additional information.
- B. **DEDUCT ALTERNATE NO. 1: Twenty (20) Year Warranty:** Deduct from the Base Bid the cost associated from reducing the specified warranty by five (5) years for a total of twenty (20) on the roofing membrane system indicated in Section 075216 "Styrene-Butadiene-Styrene (SBS) Modified Bituminous Membrane Roofing".

END OF SECTION 012300

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Sections:
  - 1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
  - 2. Divisions 02 through 49 Sections for specific requirements and limitations for substitutions.

1.3 DEFINITIONS

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

1.4 SUBMITTALS

- A. Substitution Requests: Submit three (3) copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Substitution Request Form: Use **CSI Form 1.5C, 13.1A** or comparable form.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
    - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    - c. Detailed, SIDE-BY-SIDE comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such

- as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
  - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
  - e. Samples, where applicable or requested.
  - f. Certificates and qualification data, where applicable or requested.
  - g. List of similar installations for completed projects with project names and addresses and names and addresses of Architects and Owners.
  - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
  - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
  - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
  - k. Cost information, including a proposal of change, if any, in the Contract Sum.
  - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
  - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven (7) days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within fifteen (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
  - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

## 1.5 QUALITY ASSURANCE

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

## 1.6 PROCEDURES

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

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Procurement Substitution Request: Submit to Architect seven (7) days prior to date of bid opening.
- B. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than fifteen (15) days prior to time required for preparation and review of related submittals.
  - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
    - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - b. Substitution request is fully documented and properly submitted.
    - c. Requested substitution will not adversely affect Contractor's construction schedule.
    - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
    - e. Requested substitution is compatible with other portions of the Work.
    - f. Requested substitution has been coordinated with other portions of the Work.
    - g. Requested substitution provides specified warranty.
    - h. If requested substitution involves more than one (1) contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- C. Substitutions for Convenience: Architect will consider requests for substitution if received within sixty (60) days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.
  - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
    - a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
    - b. Requested substitution does not require extensive revisions to the Contract Documents.
    - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - d. Substitution request is fully documented and properly submitted.
    - e. Requested substitution will not adversely affect Contractor's construction schedule.

- f. Requested substitution has received necessary approvals of authorities having jurisdiction.
- g. Requested substitution is compatible with other portions of the Work.
- h. Requested substitution has been coordinated with other portions of the Work.
- i. Requested substitution provides specified warranty.
- j. If requested substitution involves more than one (1) contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections:
  - 1. Section 016000 "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 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, "Architect's Supplemental Instructions."

1.4 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. Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
  - 2. Within time specified in Proposal Request or twenty (20) days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include costs of labor and supervision directly attributable to the change.
    - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
    - e. Quotation Form: Use forms acceptable to Architect.

- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to the Architect.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
  2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
  3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  4. Include costs of labor and supervision directly attributable to the change.
  5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
  6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
  7. Proposal Request Form: Use form acceptable to Architect.

#### 1.5 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.
- B. Unit Price Adjustment: Refer to Section 012200 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit price work.

#### 1.6 CHANGE ORDER PROCEDURES

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

#### 1.7 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction 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.



PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600



SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections:
  - 1. Section 012200 "Unit Prices" for administrative requirements governing the use of unit prices.
  - 2. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
  - 3. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.
  - 4. Section 013300 "Submittal Procedures" for administrative requirements governing the preparation and submittal of the submittal schedule.

1.3 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
  - 1. Correlate line items in the schedule of values with other required administrative forms and schedules, including the following:
    - a. Application for Payment forms with continuation sheets.
    - b. Submittal schedule.
    - c. Items required to be indicated as separate activities in Contractor's construction schedule.
  - 2. Submit the schedule of values to Architect at earliest possible date but no later than seven (7) days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one (1) line item for each Specification Section.
  - 1. Identification: Include the following Project identification on the schedule of values:
    - a. Project name and location.
    - b. Name of Architect.
    - c. Architect's project number.
    - d. Contractor's name and address.

- e. Date of submittal.
- 2. Arrange schedule of values consistent with format of AIA Document G703.
- 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent (5%) of Contract Sum.
- 4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
- 5. 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. If required, include evidence of insurance.
- 6. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
- 7. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
- 8. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
  - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
- 9. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

#### 1.4 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
  - 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: 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. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. 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.
  4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
  5. Include updated and approved Contractor's construction schedule, potential Change Order Log and Product Submittal Log.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
  2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
  3. Provide summary documentation for stored materials indicating the following:
    - a. Materials previously stored and included in previous Applications for Payment.
    - b. Work completed for this Application utilizing previously stored materials.
    - c. Additional materials stored with this Application.
    - d. Total materials remaining stored, including materials with this Application.
- F. Transmittal: Submit three (3) signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One (1) 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 liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
  2. When an application shows completion of an item, submit conditional final or full waivers.
  3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
  4. 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 waivers of lien on forms, executed in a manner 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. Schedule of unit prices.
  6. Submittal schedule (preliminary if not final).
  7. List of Contractor's staff assignments.
  8. List of Contractor's principal consultants.
  9. Copies of building permits.
  10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
  11. Initial progress report.
  12. Report of preconstruction conference.
  13. Certificates of insurance and insurance policies.
  14. Performance and payment bonds.
  15. Data needed to acquire Owner's insurance.
- I. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing one hundred percent (100%) 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 Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. 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, "Contractor's Affidavit of Payment of Debts and Claims."
  5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
  6. AIA Document G707, "Consent of Surety to Final Payment."
  7. Evidence that claims have been settled.
  8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
  9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900





SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General project coordination procedures.
  - 2. Administrative and supervisory personnel.
  - 3. Requests for Information (RFIs).
  - 4. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Sections:
  - 1. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
  - 2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
  - 3. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

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

1.4 COORDINATION

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

- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
  - 1. Prepare similar memoranda for Owner and separate Contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  - 1. Preparation of Contractor's construction schedule.
  - 2. Preparation of the schedule of values.
  - 3. Installation and removal of temporary facilities and controls.
  - 4. Delivery and processing of submittals.
  - 5. Progress meetings.
  - 6. Pre-installation conferences.
  - 7. Startup and adjustment of systems.
  - 8. Project closeout activities.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
  - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

#### 1.5 KEY PERSONNEL

- A. Key Personnel Names: Within fifteen (15) days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and email addresses. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
  - 1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

#### 1.6 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
  - 1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
  - 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
  2. Project number.
  3. Date.
  4. Name of Contractor.
  5. Name of Architect.
  6. RFI number, numbered sequentially.
  7. RFI subject.
  8. Specification Section number and title and related paragraphs, as appropriate.
  9. Drawing number and detail references, as appropriate.
  10. Field dimensions and conditions, as appropriate.
  11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  12. Contractor's signature.
  13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
    - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: AIA Document G716 or comparable form.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven (7) working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for coordination information already indicated in the Contract Documents.
    - d. Requests for adjustments in the Contract Time or the Contract Sum.
    - e. Requests for interpretation of Architect's actions on submittals.
    - f. Incomplete RFIs or inaccurately prepared RFIs.
  2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
  3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
    - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within ten (10) days of receipt of the RFI response.

- E. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven (7) days if Contractor disagrees with response.
- F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:
  - 1. Project name.
  - 2. Name and address of Contractor.
  - 3. Name and address of Architect.
  - 4. RFI number including RFIs that were dropped and not submitted.
  - 5. RFI description.
  - 6. Date the RFI was submitted.
  - 7. Date Architect's response was received.
  - 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

#### 1.7 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
  - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
  - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  - 3. Minutes: General Contractor or Construction Manager is responsible for recording significant discussions and agreements achieved. General Contractor or Construction Manager is also responsible for distributing the meeting minutes to everyone concerned including Owner and Architect, within three (3) days of the meeting.
- B. Preconstruction/Preinstallation Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than fifteen (15) days after execution of the Agreement.
  - 1. Conduct the conference to review responsibilities and personnel assignments.
  - 2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 3. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing and long-lead items.
    - d. Designation of key personnel and their duties.
    - e. Lines of communications.
    - f. Procedures for processing field decisions and Change Orders.
    - g. Procedures for RFIs.
    - h. Procedures for testing and inspecting.
    - i. Procedures for processing Applications for Payment.

- j. Distribution of the Contract Documents.
  - k. Submittal procedures.
  - l. Preparation of record documents.
  - m. Work restrictions.
  - n. Working hours.
  - o. Owner's occupancy requirements.
  - p. Responsibility for temporary facilities and controls.
  - q. Procedures for moisture and mold control.
  - r. Procedures for disruptions and shutdowns.
  - s. Parking availability.
  - t. Office, work, and storage areas.
  - u. Equipment deliveries and priorities.
  - v. First aid.
  - w. Security.
  - x. Progress cleaning.
  - y. **Refer to Section 070150.19 "Preparation for Reroofing" for additional items.**
4. Minutes: General Contractor or Construction Manager is responsible for recording and distributing meeting minutes.
- C. Progress Meetings: Conduct progress meetings at biweekly intervals.
- 1. Coordinate dates of meetings with preparation of payment requests.
  - 2. Attendees: In addition to representatives of Owner and Architect, each Contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
      - 1) Review schedule for next period.
    - b. Review present and future needs of each entity present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Status of submittals.
      - 4) Deliveries.
      - 5) Off-site fabrication.
      - 6) Access.
      - 7) Site utilization.
      - 8) Temporary facilities and controls.

- 9) Progress cleaning.
  - 10) Quality and work standards.
  - 11) Status of correction of deficient items.
  - 12) Field observations.
  - 13) Status of RFIs.
  - 14) Status of proposal requests.
  - 15) Pending changes.
  - 16) Status of Change Orders.
  - 17) Pending claims and disputes.
  - 18) Documentation of information for payment requests.
4. Minutes: General Contractor or Construction Manager is responsible for recording and distributing meeting minutes.
- a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Contractor's construction schedule.
  - 2. Daily construction reports.
  - 3. Material location reports.
  - 4. Field condition reports.
- B. Related Sections:
  - 1. Section 013300 "Submittal Procedures" for submitting schedules and reports.
  - 2. Section 014000 "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
  - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
  - 2. Predecessor Activity: An activity that precedes another activity in the network.
  - 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum, unless otherwise approved by Architect.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Float: The measure of leeway in starting and completing an activity.
  - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.

2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

- F. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:

1. PDF electronic file.

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

1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.

- C. Daily Construction Reports: Submit at weekly intervals.

- D. Material Location Reports: Submit at weekly intervals.

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

#### 1.5 QUALITY ASSURANCE

- A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to the Contractor's construction schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Discuss constraints, including phasing, work stages and area separations.
3. Review delivery dates for Owner-furnished products.
4. Review schedule for work of Owner's separate contracts.
5. Review time required for review of submittals and resubmittals.
6. Review requirements for tests and inspections by independent testing and inspecting agencies.
7. Review time required for completion and startup procedures.
8. Review and finalize list of construction activities to be included in schedule.
9. Review submittal requirements and procedures.
10. Review procedures for updating schedule.

#### 1.6 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.



- B. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
  - 1. Secure time commitments for performing critical elements of the Work from entities involved.
  - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

## PART 2 - PRODUCTS

### 2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion.
  - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
  - 1. Activity Duration: Define activities so no activity is longer than twenty (20) days, unless specifically allowed by Architect.
  - 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than sixty (60) days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
  - 3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
  - 4. Startup and Testing Time: Include not less than fifteen (15) days for startup and testing.
  - 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
  - 6. Punch List and Final Completion: Include not more than thirty (30) days for punch list and final completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule and show how the sequence of the Work is affected.
  - 1. Phasing: Arrange list of activities on schedule by phase.
  - 2. Work Restrictions: Show the effect of the following items on the schedule:
    - a. Coordination with existing construction.
    - b. Uninterruptible services.
    - c. Use of premises restrictions.
    - d. Provisions for future construction.
    - e. Seasonal variations.
    - f. Environmental control.

3. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
    - a. Subcontract awards.
    - b. Submittals.
    - c. Purchases.
    - d. Fabrication.
    - e. Sample testing.
    - f. Deliveries.
    - g. Installation.
    - h. Tests and inspections.
    - i. Adjusting.
    - j. Startup and placement into final use and operation.
  4. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
    - a. Completion of mechanical installation.
    - b. Completion of electrical installation.
    - c. Substantial Completion.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.
- E. Cost Correlation: At the head of schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of the Work performed as of dates used for preparation of payment requests.
1. Refer to Section 012900 "Payment Procedures" for cost reporting and payment procedures.
- F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
1. Unresolved issues.
  2. Unanswered RFIs.
  3. Rejected or unreturned submittals.
  4. Notations on returned submittals.
- G. Recovery Schedule: When periodic update indicates the Work is fourteen (14) or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.
- H. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's construction schedule within seven (7) days of date established for the Notice to Proceed.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
  - 1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in ten percent (10%) increments within time bar.

2.3 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
  - 1. List of subcontractors at Project site.
  - 2. List of separate contractors at Project site.
  - 3. Approximate count of personnel at Project site.
  - 4. Equipment at Project site.
  - 5. Material deliveries.
  - 6. High and low temperatures and general weather conditions, including presence of rain or snow.
  - 7. Accidents.
  - 8. Meetings and significant decisions.
  - 9. Stoppages, delays, shortages, and losses.
  - 10. Meter readings and similar recordings.
  - 11. Emergency procedures.
  - 12. Orders and requests of authorities having jurisdiction.
  - 13. Change Orders received and implemented.
  - 14. Construction Change Directives received and implemented.
  - 15. Services connected and disconnected.
  - 16. Equipment or system tests and startups.
  - 17. Partial completions and occupancies.
  - 18. Substantial Completions authorized.
- B. Material Location Reports: At weekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.
- C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one (1) week before each regularly scheduled progress meeting.
  - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
  - 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  - 3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect, Construction Administrator, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
  - 1. Post copies in Project meeting rooms and temporary field offices.
  - 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

## SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Periodic construction photographs.
- B. Related Sections:
  - 1. Section 013300 "Submittal Procedures" for submitting photographic documentation.
  - 2. Section 017700 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.

### PART 2 - PRODUCTS

#### 2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of eight (8) megapixels, and at an image resolution of not less than 1600 by 1200 pixels and 400 dpi.

### PART 3 - EXECUTION

#### 3.1 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
  - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
  - 1. Date and Time: Include date and time in file name for each image.
  - 2. Field Office Images: Maintain one (1) set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.

- C. Periodic Construction Photographs: Take eighteen to twenty (18-20) photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- D. Additional Photographs: Architect may request photographs in addition to periodic photographs specified.
  - 1. In emergency situations, take additional photographs within twenty-four (24) hours of request.
  - 2. Circumstances that could require additional photographs include, but are not limited to, the following:
    - a. Immediate follow-up when on-site events result in construction damage or losses.
    - b. Substantial Completion of a major phase or component of the Work.

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Sections:
  - 1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
  - 2. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
  - 3. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
  - 4. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as action submittals.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as informational submittals.
- C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.
- D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making

corrections or modifications to submittals noted by the Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Submit concurrently with Contractor's construction schedule. Include submittals required during the first sixty (60) days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Format: Arrange the following information in a tabular format:
  - a. Scheduled date for first submittal.
  - b. Specification Section number and title.
  - c. Submittal Category: Action, informational.
  - d. Name of subcontractor.
  - e. Description of the Work covered.
  - f. Scheduled date for Architect's final release or approval.
  - g. Scheduled dates for purchasing.
  - h. Scheduled dates for installation.

#### 1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic copies of CAD Drawings of the Contract Drawings will **not** be provided by Architect for Contractor's use in preparing submittals unless requested and Architect's user agreement properly completed.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
  4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Architect reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
  1. Initial Review: Allow seven (7) days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.



2. Resubmittal Review: Allow five (5) days for review of each resubmittal.
  3. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow seven (7) days for initial review of each submittal.
- D. Identification and Information: Place a permanent label or title block on each paper copy submittal item for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
  2. Provide a space on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
  3. Include the following information for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Name of subcontractor.
    - f. Name of supplier.
    - g. Name of manufacturer.
    - h. Submittal number or other unique identifier, including revision identifier.
      - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
- E. Identification and Information: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file with links enabling navigation to each item.
  2. Name file with submittal number or other unique identifier, including revision identifier.
    - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
  3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
  4. Include the following information on an inserted cover sheet:
    - a. Project name.
    - b. Date.
    - c. Name and address of Architect.

- d. Name of Contractor.
  - e. Name of firm or entity that prepared submittal.
  - f. Name of subcontractor.
  - g. Name of supplier.
  - h. Name of manufacturer.
  - i. Number and title of appropriate Specification Section.
  - j. Drawing number and detail references, as appropriate.
  - k. Location(s) where product is to be installed, as appropriate.
  - l. Related physical samples submitted directly.
  - m. Other necessary identification.
5. Include the following information as keywords in the electronic file metadata:
- a. Project name.
  - b. Number and title of appropriate Specification Section.
  - c. Manufacturer name.
  - d. Product name.
- F. Options: Identify options requiring selection by the Architect.
- G. Deviations: Identify deviations from the Contract Documents on submittals.
- H. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
- I. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review received from sources other than Contractor.
1. Transmittal Form: Provide locations on form for the following information:
- a. Project name.
  - b. Date.
  - c. Destination (To:).
  - d. Source (From:).
  - e. Names of subcontractor, manufacturer, and supplier.
  - f. Category and type of submittal.
  - g. Submittal purpose and description.
  - h. Specification Section number and title.
  - i. Indication of full or partial submittal.
  - j. Drawing number and detail references, as appropriate.
  - k. Transmittal number, numbered consecutively.
  - l. Submittal and transmittal distribution record.
  - m. Remarks.
  - n. Signature of transmitter.
2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents,

including minor variations and limitations. Include same identification information as related submittal.

- J. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
  - 1. Note date and content of previous submittal.
  - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  - 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- K. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- L. Use for Construction: Use only final submittals that are marked with approval notation from Architect's action stamp.

## PART 2 - PRODUCTS

### 2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
  - 1. Submit electronic submittals via email as PDF electronic files.
    - a. Architect will return annotated file. Annotate and retain one (1) copy of file as an electronic Project record document file.
  - 2. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
  - 3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
    - a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
    - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
  - 4. Test and Inspection Reports Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
  2. Mark each copy of each submittal to show which products and options are applicable.
  3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.
    - e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
    - h. Availability and delivery time information.
  4. For equipment, include the following in addition to the above, as applicable:
    - a. Wiring diagrams showing factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.
    - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
  5. Submit Product Data before or concurrent with Samples.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
    - f. Relationship and attachment to adjoining construction clearly indicated.
    - g. Seal and signature of professional engineer if specified.
  2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8½ by 11 inches but no larger than 30 by 42 inches.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one (1) submittal package.
  2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.

- c. Sample source.
  - d. Number and title of applicable Specification Section.
- 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
  - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
  - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
  - 1. Type of product. Include unique identifier for each product indicated in the Contract Documents.
  - 2. Manufacturer and product name, and model number if applicable.
  - 3. Number and name of room or space.
  - 4. Location within room or space.
- F. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."
- G. Application for Payment: Comply with requirements specified in Section 012900 "Payment Procedures."
- H. Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures."
- I. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
  - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
  - 2. Number and title of related Specification Section(s) covered by subcontract.
  - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- J. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Architects and Owners, and other information specified.
- K. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on American Welding Society (AWS) forms. Include names of firms and personnel certified.

- L. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- M. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- N. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- O. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- P. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- Q. Product Test Reports: Submit written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- R. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
  - 1. Name of evaluation organization.
  - 2. Date of evaluation.
  - 3. Time period when report is in effect.
  - 4. Product and manufacturers' names.
  - 5. Description of product.
  - 6. Test procedures and results.
  - 7. Limitations of use.
- S. Schedule of Tests and Inspections: Comply with requirements specified in Section 014000 "Quality Requirements."
- T. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- U. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- V. Field Test Reports: Submit reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

- W. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."

### PART 3 - EXECUTION

#### 3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Project Closeout and Maintenance/Material Submittals: Refer to requirements in Section 017700 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

#### 3.2 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- C. Informational Submittals: Architect will review each submittal and will not return it or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- E. Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- F. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300





SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and -control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections:
  - 1. Divisions 02 through 49 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract enforcement activities performed by Architect.
- C. Preconstruction Testing: Tests and inspections performed specifically for the Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- D. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency

qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

- E. Source Quality-Control Tests: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.
- F. Field Quality-Control Tests: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade or trades.
- I. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed a minimum of five (5) previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

#### 1.4 CONFLICTING REQUIREMENTS

- A. Conflicting Standards and Other Requirements: If compliance with two (2) or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for direction before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems.
  - 1. Seismic-force-resisting system, designated seismic system, or component listed in the Statement of Special Inspections.
  - 2. Main wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.

- B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- C. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  - 1. Specification Section number and title.
  - 2. Entity responsible for performing tests and inspections.
  - 3. Description of test and inspection.
  - 4. Identification of applicable standards.
  - 5. Identification of test and inspection methods.
  - 6. Number of tests and inspections required.
  - 7. Time schedule or time span for tests and inspections.
  - 8. Requirements for obtaining samples.
  - 9. Unique characteristics of each quality-control service.
- D. Reports: Prepare and submit certified written reports and documents as specified.
- E. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

#### 1.6 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Name and signature of laboratory inspector.
  - 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
  - 1. Name, address, and telephone number of technical representative making report.
  - 2. Statement on condition of substrates and their acceptability for installation of product.
  - 3. Statement that products at Project site comply with requirements.

4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  6. Statement whether conditions, products, and installation will affect warranty.
  7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
  2. Statement that equipment complies with requirements.
  3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  4. Statement whether conditions, products, and installation will affect warranty.
  5. Other required items indicated in individual Specification Sections.

#### 1.7 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

## 1.8 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
  - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
  - 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
  - 3. Costs for testing that is cancelled will be charged to the Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify that the Work complies with requirements.
  - 1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  - 2. Engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  - 3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  - 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  - 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  - 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
  - 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  - 6. Do not perform any duties of Contractor.
- G. Associated Contractor Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
  - 1. Access to the Work.
  - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
  - 3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
  - 4. Facilities for storage and field curing of test samples.
  - 5. Delivery of samples to testing agencies.
  - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  - 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
  - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.

## 1.9 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
  2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect, Contractor and to authorities having jurisdiction.
  4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
  5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
  6. Retesting and reinspecting corrected work.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 TEST AND INSPECTION LOG

- A. Prepare a record of tests and inspections. Include the following:
1. Date test or inspection was conducted.
  2. Description of the Work tested or inspected.
  3. Date test or inspection results were transmitted to Architect.
  4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.
1. Submit log at Project closeout as part of Project Record Documents.

### 3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000



## SECTION 014200 - REFERENCES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

## 1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

1. For standards referenced by applicable building codes, comply with dates of standards as listed in building codes.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

#### 1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

1. AABC - Associated Air Balance Council; [www.aabc.com](http://www.aabc.com).
2. AAMA - American Architectural Manufacturers Association; [www.aamanet.org](http://www.aamanet.org).
3. AAPFCO - Association of American Plant Food Control Officials; [www.aapfco.org](http://www.aapfco.org).
4. AASHTO - American Association of State Highway and Transportation Officials; [www.transportation.org](http://www.transportation.org).
5. AATCC - American Association of Textile Chemists and Colorists; [www.aatcc.org](http://www.aatcc.org).
6. ABMA - American Bearing Manufacturers Association; [www.americanbearings.org](http://www.americanbearings.org).
7. ABMA - American Boiler Manufacturers Association; [www.abma.com](http://www.abma.com).
8. ACI - American Concrete Institute; (Formerly: ACI International); [www.concrete.org](http://www.concrete.org).
9. ACPA - American Concrete Pipe Association; [www.concrete-pipe.org](http://www.concrete-pipe.org).
10. AEIC - Association of Edison Illuminating Companies, Inc. (The); [www.aeic.org](http://www.aeic.org).
11. AF&PA - American Forest & Paper Association; [www.afandpa.org](http://www.afandpa.org).
12. AGA - American Gas Association; [www.aga.org](http://www.aga.org).
13. AHAM - Association of Home Appliance Manufacturers; [www.aham.org](http://www.aham.org).
14. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); [www.ahrinet.org](http://www.ahrinet.org).
15. AI - Asphalt Institute; [www.asphaltinstitute.org](http://www.asphaltinstitute.org).
16. AIA - American Institute of Architects (The); [www.aia.org](http://www.aia.org).
17. AISC - American Institute of Steel Construction; [www.aisc.org](http://www.aisc.org).
18. AISI - American Iron and Steel Institute; [www.steel.org](http://www.steel.org).
19. AITC - American Institute of Timber Construction; [www.aitc-glulam.org](http://www.aitc-glulam.org).
20. AMCA - Air Movement and Control Association International, Inc.; [www.amca.org](http://www.amca.org).
21. ANSI - American National Standards Institute; [www.ansi.org](http://www.ansi.org).
22. AOSA - Association of Official Seed Analysts, Inc.; [www.aosaseed.com](http://www.aosaseed.com).
23. APA - APA - The Engineered Wood Association; [www.apawood.org](http://www.apawood.org).
24. APA - Architectural Precast Association; [www.archprecast.org](http://www.archprecast.org).
25. API - American Petroleum Institute; [www.api.org](http://www.api.org).
26. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
27. ARI - American Refrigeration Institute; (See AHRI).
28. ARMA - Asphalt Roofing Manufacturers Association; [www.asphaltroofing.org](http://www.asphaltroofing.org).
29. ASCE - American Society of Civil Engineers; [www.asce.org](http://www.asce.org).
30. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
31. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; [www.ashrae.org](http://www.ashrae.org).

32. ASME - ASME International; (American Society of Mechanical Engineers); [www.asme.org](http://www.asme.org).
33. ASSE - American Society of Sanitary Engineering; [www.asse-plumbing.org](http://www.asse-plumbing.org).
34. ASSP - American Society of Safety Professionals (The); [www.assp.org](http://www.assp.org).
35. ASTM - ASTM International; [www.astm.org](http://www.astm.org).
36. ATIS - Alliance for Telecommunications Industry Solutions; [www.atis.org](http://www.atis.org).
37. AVIXA - Audiovisual and Integrated Experience Association; (Formerly: Infocomm International); [www.soundandcommunications.com](http://www.soundandcommunications.com).
38. AWEA - American Wind Energy Association; [www.awea.org](http://www.awea.org).
39. AWI - Architectural Woodwork Institute; [www.awinet.org](http://www.awinet.org).
40. AWMAC - Architectural Woodwork Manufacturers Association of Canada; [www.awmac.com](http://www.awmac.com).
41. AWWA - American Water Works Association; [www.awwa.org](http://www.awwa.org).
42. AWS - American Welding Society; [www.aws.org](http://www.aws.org).
43. AWWA - American Water Works Association; [www.awwa.org](http://www.awwa.org).
44. BHMA - Builders Hardware Manufacturers Association; [www.buildershardware.com](http://www.buildershardware.com).
45. BIA - Brick Industry Association (The); [www.gobrick.com](http://www.gobrick.com).
46. BICSI - BICSI, Inc.; [www.bicsi.org](http://www.bicsi.org).
47. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); [www.bifma.org](http://www.bifma.org).
48. BISSC - Baking Industry Sanitation Standards Committee; [www.bissc.org](http://www.bissc.org).
49. BWF - Badminton World Federation; (Formerly: International Badminton Federation); [www.bissc.org](http://www.bissc.org).
50. CDA - Copper Development Association; [www.copper.org](http://www.copper.org).
51. CE - Conformite Europeenne; [www.ec.europa.eu/growth/single-market/ce-marking](http://www.ec.europa.eu/growth/single-market/ce-marking).
52. CEA - Canadian Electricity Association; [www.electricity.ca](http://www.electricity.ca).
53. CFFA - Chemical Fabrics and Film Association, Inc.; [www.chemicalfabricsandfilm.com](http://www.chemicalfabricsandfilm.com).
54. CFSEI - Cold-Formed Steel Engineers Institute; [www.cfsei.org](http://www.cfsei.org).
55. CGA - Compressed Gas Association; [www.cganet.com](http://www.cganet.com).
56. CIMA - Cellulose Insulation Manufacturers Association; [www.cellulose.org](http://www.cellulose.org).
57. CISCA - Ceilings & Interior Systems Construction Association; [www.cisca.org](http://www.cisca.org).
58. CISPI - Cast Iron Soil Pipe Institute; [www.cispi.org](http://www.cispi.org).
59. CLFMI - Chain Link Fence Manufacturers Institute; [www.chainlinkinfo.org](http://www.chainlinkinfo.org).
60. CPA - Composite Panel Association; [www.compositepanel.org](http://www.compositepanel.org).
61. CRI - Carpet and Rug Institute (The); [www.carpet-rug.org](http://www.carpet-rug.org).
62. CRRC - Cool Roof Rating Council; [www.coolroofs.org](http://www.coolroofs.org).
63. CRSI - Concrete Reinforcing Steel Institute; [www.crsi.org](http://www.crsi.org).
64. CSA - CSA Group; [www.csa-group.org](http://www.csa-group.org).
65. CSI - Construction Specifications Institute (The); [www.csiresources.org](http://www.csiresources.org).
66. CSSB - Cedar Shake & Shingle Bureau; [www.cedarbureau.org](http://www.cedarbureau.org).
67. CTA - Consumer Technology Association; [www.cta.tech](http://www.cta.tech).
68. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); [www.coolingtechnology.org](http://www.coolingtechnology.org).
69. CWC - Composite Wood Council; (See CPA).
70. DASMA - Door and Access Systems Manufacturers Association; [www.dasma.com](http://www.dasma.com).
71. DHA - Decorative Hardwoods Association; (Formerly: Hardwood Plywood & Veneer Association); [www.decorativehardwoods.org](http://www.decorativehardwoods.org).
72. DHI - Door and Hardware Institute; [www.dhi.org](http://www.dhi.org).
73. ECA - Electronic Components Association; (See ECIA).
74. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
75. ECIA - Electronic Components Industry Association; [www.ecianow.org](http://www.ecianow.org).

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76. EIA - Electronic Industries Alliance; (See TIA).
  77. EIMA - EIFS Industry Members Association; [www.eima.com](http://www.eima.com).
  78. EJMA - Expansion Joint Manufacturers Association, Inc.; [www.ejma.org](http://www.ejma.org).
  79. EOS/ESD Association; (Electrostatic Discharge Association); [www.esda.org](http://www.esda.org).
  80. ESTA - Entertainment Services and Technology Association; (See PLASA).
  81. ETL - Intertek (See Intertek); [www.intertek.com](http://www.intertek.com).
  82. EVO - Efficiency Valuation Organization; [www.evo-world.org](http://www.evo-world.org).
  83. FCI - Fluid Controls Institute; [www.fluidcontrolsinstitute.org](http://www.fluidcontrolsinstitute.org).
  84. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); [www.fiba.com](http://www.fiba.com).
  85. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); [www.fivb.org](http://www.fivb.org).
  86. FM Approvals - FM Approvals LLC; [www.fmglobal.com](http://www.fmglobal.com).
  87. FM Global - FM Global; (Formerly: FMG - FM Global); [www.fmglobal.com](http://www.fmglobal.com).
  88. FRSA - Florida Roofing, Sheet Metal Contractors Association, Inc.; [www.floridarroof.com](http://www.floridarroof.com).
  89. FSA - Fluid Sealing Association; [www.fluidsealing.com](http://www.fluidsealing.com).
  90. FSC - Forest Stewardship Council U.S.; [www.fscus.org](http://www.fscus.org).
  91. GA - Gypsum Association; [www.gypsum.org](http://www.gypsum.org).
  92. GANA - Glass Association of North America; (See NGA).
  93. GS - Green Seal; [www.greenseal.org](http://www.greenseal.org).
  94. HI - Hydraulic Institute; [www.pumps.org](http://www.pumps.org).
  95. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
  96. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
  97. HPVA - Hardwood Plywood & Veneer Association; (See DHA).
  98. HPW - H. P. White Laboratory, Inc.; [www.hpwhite.com](http://www.hpwhite.com).
  99. IAPSC - International Association of Professional Security Consultants; [www.iapsc.org](http://www.iapsc.org).
  100. IAS - International Accreditation Service; [www.iasonline.org](http://www.iasonline.org).
  101. ICBO - International Conference of Building Officials; (See ICC).
  102. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
  103. ICEA - Insulated Cable Engineers Association, Inc.; [www.icea.net](http://www.icea.net).
  104. ICPA - International Cast Polymer Association; [www.theicpa.com](http://www.theicpa.com).
  105. ICRI - International Concrete Repair Institute, Inc.; [www.icri.org](http://www.icri.org).
  106. IEC - International Electrotechnical Commission; [www.iec.ch](http://www.iec.ch).
  107. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); [www.ieee.org](http://www.ieee.org).
  108. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); [www.ies.org](http://www.ies.org).
  109. IESNA - Illuminating Engineering Society of North America; (See IES).
  110. IEST - Institute of Environmental Sciences and Technology; [www.iest.org](http://www.iest.org).
  111. IGMA - Insulating Glass Manufacturers Alliance; [www.igmaonline.org](http://www.igmaonline.org).
  112. IGSHPA - International Ground Source Heat Pump Association; [www.igshpa.org](http://www.igshpa.org).
  113. II - Infocomm International; (See AVIXA).
  114. ILI - Indiana Limestone Institute of America, Inc.; [www.iliai.com](http://www.iliai.com).
  115. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); [www.intertek.com](http://www.intertek.com).
  116. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); [www.isa.org](http://www.isa.org).
  117. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).
  118. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); [www.isfanow.org](http://www.isfanow.org).
  119. ISO - International Organization for Standardization; [www.iso.org](http://www.iso.org).

120. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
121. ITU - International Telecommunication Union; [www.itu.int](http://www.itu.int).
122. KCMA - Kitchen Cabinet Manufacturers Association; [www.kcma.org](http://www.kcma.org).
123. LMA - Laminating Materials Association; (See CPA).
124. LPI - Lightning Protection Institute; [www.lightning.org](http://www.lightning.org).
125. MBMA - Metal Building Manufacturers Association; [www.mbma.com](http://www.mbma.com).
126. MCA - Metal Construction Association; [www.metalconstruction.org](http://www.metalconstruction.org).
127. MFMA - Maple Flooring Manufacturers Association, Inc.; [www.maplefloor.org](http://www.maplefloor.org).
128. MFMA - Metal Framing Manufacturers Association, Inc.; [www.metalframingmfg.org](http://www.metalframingmfg.org).
129. MHI - Material Handling Industry of America; [www.mhia.org](http://www.mhia.org).
130. MIA - Marble Institute of America; (See NSI).
131. MMPA - Moulding & Millwork Producers Association; [www.wmmpa.com](http://www.wmmpa.com).
132. MPI - Master Painters Institute; [www.paintinfo.com](http://www.paintinfo.com).
133. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; [www.mss-hq.org](http://www.mss-hq.org).
134. NAAMM - National Association of Architectural Metal Manufacturers; [www.naamm.org](http://www.naamm.org).
135. NACE - NACE International; (National Association of Corrosion Engineers International); [www.nace.org](http://www.nace.org).
136. NADCA - National Air Duct Cleaners Association; [www.nadca.com](http://www.nadca.com).
137. NAIMA - North American Insulation Manufacturers Association; [www.naima.org](http://www.naima.org).
138. NALP - National Association of Landscape Professionals; [www.landscapeprofessionals.org](http://www.landscapeprofessionals.org).
139. NBGQA - National Building Granite Quarries Association, Inc.; [www.nbgqa.com](http://www.nbgqa.com).
140. NBI - New Buildings Institute; [www.newbuildings.org](http://www.newbuildings.org).
141. NCAA - National Collegiate Athletic Association (The); [www.ncaa.org](http://www.ncaa.org).
142. NCMA - National Concrete Masonry Association; [www.ncma.org](http://www.ncma.org).
143. NEBB - National Environmental Balancing Bureau; [www.nebb.org](http://www.nebb.org).
144. NECA - National Electrical Contractors Association; [www.necanet.org](http://www.necanet.org).
145. NeLMA - Northeastern Lumber Manufacturers Association; [www.nelma.org](http://www.nelma.org).
146. NEMA - National Electrical Manufacturers Association; [www.nema.org](http://www.nema.org).
147. NETA - InterNational Electrical Testing Association; [www.netaworld.org](http://www.netaworld.org).
148. NFHS - National Federation of State High School Associations; [www.nfhs.org](http://www.nfhs.org).
149. NFPA - National Fire Protection Association; [www.nfpa.org](http://www.nfpa.org).
150. NFPA - NFPA International; (See NFPA).
151. NFRC - National Fenestration Rating Council; [www.nfrc.org](http://www.nfrc.org).
152. NGA - National Glass Association (The); (Formerly: Glass Association of North America); [www.glass.org](http://www.glass.org).
153. NHLA - National Hardwood Lumber Association; [www.nhla.com](http://www.nhla.com).
154. NLGA - National Lumber Grades Authority; [www.nlga.org](http://www.nlga.org).
155. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
156. NOMMA - National Ornamental & Miscellaneous Metals Association; [www.nomma.org](http://www.nomma.org).
157. NRCA - National Roofing Contractors Association; [www.nrca.net](http://www.nrca.net).
158. NRMCA - National Ready Mixed Concrete Association; [www.nrmca.org](http://www.nrmca.org).
159. NSF - NSF International; [www.nsf.org](http://www.nsf.org).
160. NSI - National Stone Institute; (Formerly: Marble Institute of America); [www.naturalstoneinstitute.org](http://www.naturalstoneinstitute.org).
161. NSPE - National Society of Professional Engineers; [www.nspe.org](http://www.nspe.org).
162. NSSGA - National Stone, Sand & Gravel Association; [www.nssga.org](http://www.nssga.org).
163. NTMA - National Terrazzo & Mosaic Association, Inc. (The); [www.ntma.com](http://www.ntma.com).
164. NWFA - National Wood Flooring Association; [www.nwfa.org](http://www.nwfa.org).

165. NWRA - National Waste & Recycling Association; [www.wasterecycling.org](http://www.wasterecycling.org)
166. PCI - Precast/Prestressed Concrete Institute; [www.pci.org](http://www.pci.org).
167. PDI - Plumbing & Drainage Institute; [www.pdionline.org](http://www.pdionline.org).
168. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); [www.plasa.org](http://www.plasa.org).
169. RCSC - Research Council on Structural Connections; [www.boltcouncil.org](http://www.boltcouncil.org).
170. RFCI - Resilient Floor Covering Institute; [www.rfci.com](http://www.rfci.com).
171. RIS - Redwood Inspection Service; [www.redwoodinspection.com](http://www.redwoodinspection.com).
172. SAE - SAE International; [www.sae.org](http://www.sae.org).
173. SCTE - Society of Cable Telecommunications Engineers; [www.scte.org](http://www.scte.org).
174. SDI - Steel Deck Institute; [www.sdi.org](http://www.sdi.org).
175. SDI - Steel Door Institute; [www.steeldoor.org](http://www.steeldoor.org).
176. SEFA - Scientific Equipment and Furniture Association (The); [www.sefalabs.com](http://www.sefalabs.com).
177. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
178. SIA - Security Industry Association; [www.siaonline.org](http://www.siaonline.org).
179. SJI - Steel Joist Institute; [www.steeljoist.org](http://www.steeljoist.org).
180. SMA - Screen Manufacturers Association; [www.smainfo.org](http://www.smainfo.org).
181. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; [www.smacna.org](http://www.smacna.org).
182. SMPTE - Society of Motion Picture and Television Engineers; [www.smpte.org](http://www.smpte.org).
183. SPFA - Spray Polyurethane Foam Alliance; [www.sprayfoam.org](http://www.sprayfoam.org).
184. SPIB - Southern Pine Inspection Bureau; [www.spib.org](http://www.spib.org).
185. SPRI - Single Ply Roofing Industry; [www.spri.org](http://www.spri.org).
186. SRCC - Solar Rating & Certification Corporation; [www.solar-rating.org](http://www.solar-rating.org).
187. SSINA - Specialty Steel Industry of North America; [www.ssina.com](http://www.ssina.com).
188. SSPC - SSPC: The Society for Protective Coatings; [www.sspc.org](http://www.sspc.org).
189. STI - Steel Tank Institute; [www.steeltank.com](http://www.steeltank.com).
190. SWI - Steel Window Institute; [www.steelwindows.com](http://www.steelwindows.com).
191. SWPA - Submersible Wastewater Pump Association; [www.swpa.org](http://www.swpa.org).
192. TCA - Tilt-Up Concrete Association; [www.tilt-up.org](http://www.tilt-up.org).
193. TCNA - Tile Council of North America, Inc.; [www.tileusa.com](http://www.tileusa.com).
194. TEMA - Tubular Exchanger Manufacturers Association, Inc.; [www.tema.org](http://www.tema.org).
195. TIA - Telecommunications Industry Association (The); (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); [www.tiaonline.org](http://www.tiaonline.org).
196. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
197. TMS - The Masonry Society; [www.masonrysociety.org](http://www.masonrysociety.org).
198. TPI - Truss Plate Institute; [www.tpinst.org](http://www.tpinst.org).
199. TPI - Turfgrass Producers International; [www.turfgrasssod.org](http://www.turfgrasssod.org).
200. TRI - Tile Roofing Institute; [www.tilerroofing.org](http://www.tilerroofing.org).
201. UL - Underwriters Laboratories Inc.; [www.ul.com](http://www.ul.com).
202. UNI - Uni-Bell PVC Pipe Association; [www.uni-bell.org](http://www.uni-bell.org).
203. USAV - USA Volleyball; [www.usavolleyball.org](http://www.usavolleyball.org).
204. USGBC - U.S. Green Building Council; [www.usgbc.org](http://www.usgbc.org).
205. USITT - United States Institute for Theatre Technology, Inc.; [www.usitt.org](http://www.usitt.org).
206. WA - Wallcoverings Association; [www.wallcoverings.org](http://www.wallcoverings.org).
207. WCLIB - West Coast Lumber Inspection Bureau; [www.wclib.org](http://www.wclib.org).
208. WCMA - Window Covering Manufacturers Association; [www.wcmanet.org](http://www.wcmanet.org).
209. WDMA - Window & Door Manufacturers Association; [www.wdma.com](http://www.wdma.com).



210. WI - Woodwork Institute; [www.wicnet.org](http://www.wicnet.org).
211. WSRCA - Western States Roofing Contractors Association; [www.wsrca.com](http://www.wsrca.com).
212. WWPA - Western Wood Products Association; <http://www.wwpa.org>.

B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.

1. IAPMO - International Association of Plumbing and Mechanical Officials; [www.iapmo.org](http://www.iapmo.org).
2. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
3. ICC-ES - ICC Evaluation Service, LLC; [www.icc-es.org](http://www.icc-es.org).

C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.

1. COE - Army Corps of Engineers; [www.usace.army.mil](http://www.usace.army.mil).
2. CPSC - Consumer Product Safety Commission; [www.cpsc.gov](http://www.cpsc.gov).
3. DOC - Department of Commerce; National Institute of Standards and Technology; [www.nist.gov](http://www.nist.gov).
4. DOD - Department of Defense; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
5. DOE - Department of Energy; [www.energy.gov](http://www.energy.gov).
6. EPA - Environmental Protection Agency; [www.epa.gov](http://www.epa.gov).
7. FAA - Federal Aviation Administration; [www.faa.gov](http://www.faa.gov).
8. FG - Federal Government Publications; [www.gpo.gov/fdsys](http://www.gpo.gov/fdsys).
9. GSA - General Services Administration; [www.gsa.gov](http://www.gsa.gov).
10. HUD - Department of Housing and Urban Development; [www.hud.gov](http://www.hud.gov).
11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; [www.eetd.lbl.gov](http://www.eetd.lbl.gov).
12. OSHA - Occupational Safety & Health Administration; [www.osha.gov](http://www.osha.gov).
13. SD - Department of State; [www.state.gov](http://www.state.gov).
14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; [www.trb.org](http://www.trb.org).
15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; [www.ars.usda.gov](http://www.ars.usda.gov).
16. USDA - Department of Agriculture; Rural Utilities Service; [www.usda.gov](http://www.usda.gov).
17. USDOJ - Department of Justice; Office of Justice Programs; National Institute of Justice; [www.ojp.usdoj.gov](http://www.ojp.usdoj.gov).
18. USP - U.S. Pharmacopeial Convention; [www.usp.org](http://www.usp.org).
19. USPS - United States Postal Service; [www.usps.com](http://www.usps.com).

D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CFR - Code of Federal Regulations; Available from Government Printing Office; [www.govinfo.gov](http://www.govinfo.gov).
2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).

3. DSCC - Defense Supply Center Columbus; (See FS).
4. FED-STD - Federal Standard; (See FS).
5. FS - Federal Specification; Available from DLA Document Services;  
[www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
  - a. Available from Defense Standardization Program; [www.dsp.dla.mil](http://www.dsp.dla.mil).
  - b. Available from General Services Administration; [www.gsa.gov](http://www.gsa.gov).
  - c. Available from National Institute of Building Sciences/Whole Building Design Guide; [www.wbdg.org](http://www.wbdg.org).
6. MILSPEC - Military Specification and Standards; (See DOD).
7. USAB - United States Access Board; [www.access-board.gov](http://www.access-board.gov).
8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200



SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes requirements for temporary support, security, and protection facilities.
- B. Related Requirements:
  - 1. Section 011000 "Summary of Work" for work restrictions and limitations on utility interruptions.

1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Architect, testing agencies, and authorities having jurisdiction.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typesets, graphic elements, and message content.

1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading, if required. Unit must be large enough for regular job meetings, plan review areas, submittal storage and other job file and administrative functions.
- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
  - 1. Sheds to be metal box storage units or have wood floors raised above the ground.
  - 2. Store combustible materials apart from building.

2.2 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

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

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
  - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- D. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.

- E. Telephone Service: The Contractor shall maintain at his expense a job telephone, not a "Pay Telephone". The job telephone shall be available to the Architect, the Owner's staff, Municipal Officials or Inspectors and all subcontractors. All calls shall be paid for by the Contractor.

### 3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
  - 1. Provide construction for temporary sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
  - 2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
  - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
  - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Parking: Provide temporary parking areas for construction personnel.
- D. Project Signs: Provide Project signs as required by Owner. Unauthorized signs are not permitted.
  - 1. Identification Signs: Provide Project identification signs.
  - 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
    - a. Provide temporary, directional signs for construction personnel and visitors.
  - 3. Maintain and touch up signs so they are legible at all times.
- E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."
- F. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
  - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- G. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
  - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- C. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- D. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- B. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
  - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
  - 2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Sections:
  - 1. Section 012500 "Substitution Procedures" for requests for substitutions.
  - 2. Section 014200 "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one (1) week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within seven (7) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
  - a. Form of Approval: As specified in Section 013300 "Submittal Procedures."
  - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

#### 1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two (2) or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
  1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
  2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

#### 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
  1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
  1. Store products to allow for inspection and measurement of quantity or counting of units.
  2. Store materials in a manner that will not endanger Project structure.
  3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.

4. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
5. Protect stored products from damage and liquids from freezing.
6. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

#### 1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
  1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
  2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
  1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
  2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
  3. Refer to Divisions 02 through 49. Sections for specific content requirements and particular requirements for submitting special warranties.

### PART 2 - PRODUCTS

#### 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
  1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  4. Where products are accompanied by the term "as selected," Architect will make selection.
  5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
  6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:
  - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one (1) of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered, unless otherwise indicated.
  - b. Non-Restricted List: Where Specifications include a list of names of both available manufacturers and products, provide one (1) of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
4. Manufacturers:
  - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one (1) of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered, unless otherwise indicated.
  - b. Non-Restricted List: Where Specifications include a list of available manufacturers, provide a product by one (1) of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one (1) of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one (1) of the other named manufacturers.

C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with



requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

## 2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  2. Detailed, SIDE-BY-SIDE comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  3. Evidence that proposed product provides specified warranty.
  4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
  5. Samples, if requested.

## PART 3 - EXECUTION (Not Used)

END OF SECTION 016000



## SECTION 017300 - EXECUTION

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Installation of the Work.
  - 2. Cutting and patching.
  - 3. Progress cleaning.
  - 4. Starting and adjusting.
  - 5. Protection of installed construction.
  - 6. Correction of the Work.
- B. Related Sections:
  - 1. Section 013300 "Submittal Procedures" for submitting surveys.

## 1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

## 1.4 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
  - 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from the Architect before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
  - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
  - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to the Architect for the visual and functional performance of in-place materials.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
  1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
    - a. Description of the Work.
    - b. List of detrimental conditions, including substrates.
    - c. List of unacceptable installation tolerances.
    - d. Recommended corrections.
  2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to

other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

### 3.3 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

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### 3.4 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Temporary Support: Provide temporary support of work to be cut.
- C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- D. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching.
- E. Existing Utility Services: Where existing services are required to be removed, relocated, or abandoned, bypass such systems before cutting to minimize interruption to occupied areas.
- F. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  - 4. Proceed with patching after construction operations requiring cutting are complete.
- G. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
  - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
  - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  - 3. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.

- 4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- H. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

### 3.5 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily at the end of each workday, including common areas. Empty or remove dumpsters at the end of each work week. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold waste materials more than seven (7) days during normal weather or three (3) days if the temperature is expected to rise above 80 deg F (27 deg C).
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    - a. Utilize containers intended for holding waste materials of type to be stored.
  - 4. Coordinate progress cleaning for joint-use areas where more than one installer has worked.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

### 3.6 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

### 3.7 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

### 3.8 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
  - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300



SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Substantial Completion procedures.
  - 2. Final completion procedures.
  - 3. Warranties.
- B. Related Sections:
  - 1. Section 017300 "Execution" for progress cleaning of Project site.
  - 2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
  - 3. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
  - 4. Divisions 02 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete with request.
  - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  - 2. Advise Owner of pending insurance changeover requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, and similar final record information.
  - 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
  - 7. Complete startup testing of systems.
  - 8. Submit test/adjust/balance records.

9. Terminate and remove temporary facilities from Project site, along with construction tools and similar elements.
10. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
11. Complete final cleaning requirements, including touchup painting.
12. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

#### 1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
5. Secure and provide both temporary and final Certificate of Occupancy from the Building Official, meeting all local and state permit closeout requirements.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

C. CT DOE OSCG&R Closeout Assistance:

1. The Contractor shall assist the Architect and Owner with the Office of School Construction Grants and Review closeout and any audit of the project by providing supplemental cost or scope information related to their work or change orders that were executed during the course of the project. This assistance may require administrative support from the Contractor's office but may also require in-person attendance at

- meetings with the Owner, and any information requested by the Owner must be provided within five (5) calendar days of the request.
2. This closeout service shall be provided at no additional expense to the project and may be required as much as twenty-four (24) months after the final date of substantial completion of the project.

#### 1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use **CSI Form 14.1A** or comparable form.
  1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
  2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  3. Include the following information at the top of each page:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Page number.
  4. Submit list of incomplete items in the following format:
    - a. PDF electronic file. Architect will return annotated file.

#### 1.6 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within fifteen (15) days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
  1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8½-by-11-inch paper.
  2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

4. Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide table of contents at beginning of document.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## PART 3 - EXECUTION (Not Used)

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
  - 1. Operation and maintenance documentation directory.
  - 2. Emergency manuals.
  - 3. Operation manuals for systems, subsystems, and equipment.
  - 4. Product maintenance manuals.
  - 5. Systems and equipment maintenance manuals.
- B. Related Sections:
  - 1. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
  - 2. Divisions 02 through 49 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual specification sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
  - 1. Where applicable, clarify and update reviewed manual content to correspond to modifications and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
  - 1. Three (3) paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Architect will return two (2) copies.

- C. Initial Manual Submittal: Submit draft copy of each manual at least thirty (30) days before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least fifteen (15) days before commencing demonstration and training. Architect will return copy with comments.
  - 1. Correct or modify each manual to comply with Architect's comments. Submit copies of each corrected manual within fifteen (15) days of receipt of Architect's comments and prior to commencing demonstration and training.

## PART 2 - PRODUCTS

### 2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Organization: Include a section in the directory for each of the following:
  - 1. List of documents.
  - 2. List of systems.
  - 3. List of equipment.
  - 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

### 2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
  - 1. Title page.
  - 2. Table of contents.
  - 3. Manual contents.
- B. Title Page: Include the following information:
  - 1. Subject matter included in manual.

2. Name and address of Project.
  3. Name and address of Owner.
  4. Date of submittal.
  5. Name and contact information for Contractor.
  6. Name and contact information for Architect.
  7. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
  8. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
1. If operation or maintenance documentation requires more than one (1) volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one (1) system into a single binder.
- E. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8½-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
    - a. If two (2) or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders, if necessary, to provide essential information for proper operation or maintenance of equipment or system.
    - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
  2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
  3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
  4. Supplementary Text: Prepared on 8½-by-11-inch white bond paper.
  5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
    - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

## 2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
1. Type of emergency.
  2. Emergency instructions.
  3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
1. Fire.
  2. Flood.
  3. Gas leak.
  4. Water leak.
  5. Power failure.
  6. Water outage.
  7. System, subsystem, or equipment failure.
  8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
1. Instructions on stopping.
  2. Shutdown instructions for each type of emergency.
  3. Operating instructions for conditions outside normal operating limits.
  4. Required sequences for electric or electronic systems.
  5. Special operating instructions and procedures.

## 2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
  2. Performance and design criteria if Contractor is delegated design responsibility.
  3. Operating standards.
  4. Operating procedures.
  5. Operating logs.
  6. Wiring diagrams.
  7. Control diagrams.
  8. Piped system diagrams.
  9. Precautions against improper use.
  10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:



1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed and identify color-coding where required for identification.

## 2.5 PRODUCT MAINTENANCE MANUALS

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
  2. Types of cleaning agents to be used and methods of cleaning.
  3. List of cleaning agents and methods of cleaning detrimental to product.
  4. Schedule for routine cleaning and maintenance.
  5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

## 2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
1. Standard maintenance instructions and bulletins.
  2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
  3. Identification and nomenclature of parts and components.
  4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
  2. Troubleshooting guide.
  3. Precautions against improper maintenance.
  4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  5. Aligning, adjusting, and checking instructions.
  6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
  2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

### PART 3 - EXECUTION

#### 3.1 MANUAL PREPARATION

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
  2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one (1) item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and

flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1. Do not use original project record documents as part of operation and maintenance manuals.
  2. Comply with requirements of newly prepared record Drawings in Section 017839 "Project Record Documents."
- F. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

## SECTION 017839 - PROJECT RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
  - 4. Miscellaneous record submittals.
- B. Related Sections:
  - 1. Section 017700 "Closeout Procedures" for general closeout procedures.
  - 2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
  - 3. Divisions 02 through 49 Sections for specific requirements for project record documents of the Work in those Sections.

#### 1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit one (1) set(s) of marked-up record prints.
- B. Record Specifications: Submit one (1) paper copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one (1) paper copy of each submittal.
  - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

### PART 2 - PRODUCTS

#### 2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one (1) set of marked-up paper copies of the Contract Drawings and Shop Drawings.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an acceptable drawing technique.
    - c. Record data as soon as possible after obtaining it.
    - d. Record and check the markup before enclosing concealed installations.
    - e. Cross-reference record prints to corresponding archive photographic documentation.
  2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Revisions to routing of piping and conduits.
    - d. Revisions to electrical circuitry.
    - e. Actual equipment locations.
    - f. Locations of concealed internal utilities.
    - g. Changes made by Change Order or Construction Change Directive.
    - h. Changes made following Architect's written orders.
    - i. Details not on the original Contract Drawings.
    - j. Field records for variable and concealed conditions.
    - k. Record information on the Work that is shown only schematically.
  3. Mark the Contract Drawings and Shop Drawings completely and accurately. Utilize personnel proficient at recording graphic information in production of marked-up record prints.
  4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  2. Format: Paper copy.
  3. Identification: As follows:
    - a. Project name.
    - b. Date.
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Architect.
    - e. Name of Contractor.

## 2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  - 4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
  - 5. Note related Change Orders, record Product Data, and record Drawings where applicable.
- B. Format: Submit record Specifications as paper copy.

## 2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
  - 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as paper copy.
  - 1. Include record Product Data directory organized by specification section number and title, electronically linked to each item of record Product Data.

## PART 3 - EXECUTION

### 3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one (1) copy of each submittal during the construction period for project record document purposes. Post changes and modifications to project record documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION 017839





## SECTION 042000 - UNIT MASONRY

## 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. Clay face brick.
2. Mortar and grout.
3. Embedded flashing.
4. Miscellaneous masonry accessories.

## B. Related Requirements:

1. Section 076200 "Sheet Metal Flashing and Trim" for exposed sheet metal flashing and for furnishing manufactured reglets installed in masonry joints.

## 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

## 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

## B. Shop Drawings: For the following:

1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
2. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.

## C. Samples: For each type and color of the following:

1. Clay face brick, in the form of straps of five (5) or more bricks.
2. Special brick shapes.
3. Pigmented mortar. Make Samples using same sand and mortar ingredients to be used on Project.
4. Weep vents.
5. Accessories embedded in masonry.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing agency.

## B. Material Certificates: For each type and size of the following:

1. Masonry units.
    - a. Include material test reports substantiating compliance with requirements.
    - b. For brick, include size-variation data verifying that actual range of sizes falls within specified tolerances.
    - c. For exposed brick, include test report for efflorescence according to ASTM C 67.
  2. Cementitious materials. Include brand, type, and name of manufacturer.
  3. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
  4. Grout mixes. Include description of type and proportions of ingredients.
  5. Anchors, ties, and metal accessories.
- C. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109 for compressive strength, ASTM C 1506 for water retention, and ASTM C 91 for air content.
  2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.
- D. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.
- 1.6 QUALITY ASSURANCE
- A. Testing Agency Qualifications: Qualified according to ASTM C 1093 for testing indicated.
- 1.7 DELIVERY, STORAGE, AND HANDLING
- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
  - B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
  - C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
  - D. Deliver preblended, dry mortar mix in moisture-resistant containers. Store preblended, dry mortar mix in delivery containers on elevated platforms in a dry location or in covered weatherproof dispensing silos.
  - E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

## 1.8 FIELD CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
  - 1. Extend cover a minimum of 24 inches down both sides of walls and hold cover securely in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three (3) days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
  - 1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
  - 2. Protect sills, ledges, and projections from mortar droppings.
  - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
  - 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
  - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and higher and will remain so until masonry has dried, but not less than seven (7) days after completing cleaning.
- E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.
- B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

## 2.2 UNIT MASONRY, GENERAL

- A. Masonry Standard: Comply with ACI 530.1/ASCE 6/TMS 602, except as modified by requirements in the Contract Documents.
- B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects will be exposed in the completed Work.

## 2.3 BRICK

- A. General: Provide shapes indicated and as follows, with exposed surfaces matching finish and color of exposed faces of adjacent units:
  - 1. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.
  - 2. Provide special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.
  - 3. Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.
  - 4. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.
- B. Clay Face Brick: Facing brick complying with ASTM C 216.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. The Belden Brick Company, distributed by The Homer C. Godfrey Company
    - b. Mack Brick Company
    - c. Watsontown Brick
    - d. Substitutions: Under provisions of Section 012500 "Substitution Procedures".
  - 2. Grade: SW.
  - 3. Type: FBS.
  - 4. Initial Rate of Absorption: Less than 30 g/30 sq. in. per minute when tested per ASTM C 67.
  - 5. Efflorescence: Provide brick that has been tested according to ASTM C 67 and is rated "not effloresced."
  - 6. Size (Actual Dimensions): 3-5/8 inches wide by 2 1/4 inches high by 7-5/8 inches long.
  - 7. Application: Use where brick is exposed unless otherwise indicated.
  - 8. Color and Texture: Red blended veneer, to match existing brickwork exactly in color range, texture, and size, where exposed.

## 2.4 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

1. Alkali content shall not be more than 0.1 percent when tested according to ASTM C114.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979. Use only pigments with a record of satisfactory performance in masonry mortar.
  1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Davis Colors; **True Tone Mortar Colors**
    - b. Lanxess Corporation; **Bayferrox Iron Oxide Pigments**
    - c. Solomon Colors, Inc.; **SGS Mortar Colors**
    - d. Substitutions: Under provisions of Section 012500 "Substitution Procedures".
- D. Colored Cement Products: Packaged blend made from Portland cement and hydrated lime and mortar pigments, all complying with specified requirements, and containing no other ingredients.
  1. Colored Portland Cement-Lime Mix:
    - a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
      - 1) Capital Materials Corporation; **Riverton Portland Cement Lime Custom Color**
      - 2) Holcim (US) Inc.; **Rainbow Mortamix Custom Color Cement/Lime**
      - 3) Lafarge North America Inc.; **Eaglebond Portland & Lime**
      - 4) Lehigh Cement Company; **Lehigh Custom Color Portland/Lime Cement**
      - 5) Substitutions: Under provisions of Section 012500 "Substitution Procedures".
  2. Formulate blend as required to produce color indicated or, if not indicated, as selected from manufacturer's standard colors.
  3. Pigments shall not exceed ten percent (10%) of Portland cement by weight.
- E. Aggregate for Mortar: ASTM C 144.
  1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
  2. For joints less than ¼-inch-thick, use aggregate graded with one hundred percent (100%) passing the No. 16 sieve.
  3. White-Mortar Aggregates: Natural white sand or crushed white stone.
- F. Aggregate for Grout: ASTM C 404.
- G. Water: Potable.

## 2.5 EMBEDDED FLASHING MATERIALS

- A. Metal Flashing: Provide metal flashing complying with Section 076200 "Sheet Metal Flashing and Trim".

## 2.6 MISCELLANEOUS MASONRY ACCESSORIES

- A. Weep Vent Products: Use the following unless otherwise indicated:

- 1. Cellular Plastic Weep Vent: One-piece, flexible extrusion made from UV-resistant polypropylene copolymer, full height and width of head joint and depth 1/8-inch less than depth of outer wythe, in color selected by Architect and Owner from manufacturer's entire range.
  - a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - 1) Advanced Building Products Inc.; **Mortar Maze weep vent**
    - 2) Heckmann Building Products Inc.; **No. 85 Cell Vent**
    - 3) Hohmann & Barnard, Inc.; **Quadro-Vent**
    - 4) Substitutions: Under provisions of Section 012500 "Substitution Procedures".

## 2.7 MASONRY CLEANERS

- A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
  - 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. Diedrich Technologies, Inc.
    - b. EaCo Chem, Inc.
    - c. ProSoCo, Inc.
    - d. Substitutions: Under provisions of Section 012500 "Substitution Procedures".

## 2.8 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
  - 1. Do not use calcium chloride in mortar or grout.
  - 2. Use Portland cement-lime mortar unless otherwise indicated.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

- C. Mortar for Unit Masonry: Comply with ASTM C 270, Property Specification. Provide the following types of mortar for applications stated unless another type is indicated.
  - 1. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type N.
- D. Pigmented Mortar: Use colored cement product.
  - 1. Application: Use pigmented mortar for exposed mortar joints with the following units:
    - a. Face brick.
- E. Grout for Unit Masonry: Comply with ASTM C 76.
  - 1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
  - 2. Proportion grout in accordance with ASTM C 476, Table 1.
  - 3. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
  - 1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
  - 2. Verify that substrates are free of substances that impair mortar bond.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION, GENERAL

- A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.
- B. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- C. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.
- D. **Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry and mortar where exposed.**

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### 3.3 TOLERANCES

#### A. Dimensions and Locations of Elements:

1. For dimensions in cross section or elevation do not vary by more than plus  $\frac{1}{2}$ -inch or minus  $\frac{1}{4}$ -inch.
2. For location of elements in plan do not vary from that indicated by more than plus or minus  $\frac{1}{2}$ -inch.
3. For location of elements in elevation do not vary from that indicated by more than plus or minus  $\frac{1}{4}$ -inch in a story height or  $\frac{1}{2}$ -inch total.

#### B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls do not vary from level by more than  $\frac{1}{4}$ -inch in 10 feet, or  $\frac{1}{2}$ -inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than  $\frac{1}{8}$ -inch in 10 feet,  $\frac{1}{4}$ -inch in 20 feet, or  $\frac{1}{2}$ -inch maximum.
3. For vertical lines and surfaces do not vary from plumb by more than  $\frac{1}{4}$ -inch in 10 feet,  $\frac{3}{8}$ -inch in 20 feet, or  $\frac{1}{2}$ -inch maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than  $\frac{1}{8}$ -inch in 10 feet,  $\frac{1}{4}$ -inch in 20 feet, or  $\frac{1}{2}$ -inch maximum.
5. For lines and surfaces do not vary from straight by more than  $\frac{1}{4}$ -inch in 10 feet,  $\frac{3}{8}$ -inch in 20 feet, or  $\frac{1}{2}$ -inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than  $\frac{1}{4}$ -inch in 10 feet, or  $\frac{1}{2}$ -inch maximum.
7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than  $\frac{1}{16}$ -inch except due to warpage of masonry units within tolerances specified for warpage of units.

#### C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus  $\frac{1}{8}$ -inch, with a maximum thickness limited to  $\frac{1}{2}$ -inch.
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than  $\frac{1}{8}$ -inch.
3. For head and collar joints, do not vary from thickness indicated by more than plus  $\frac{3}{8}$ -inch or minus  $\frac{1}{4}$ -inch.
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus  $\frac{1}{8}$ -inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than  $\frac{1}{8}$ -inch.
5. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than  $\frac{1}{16}$ -inch from one (1) masonry unit to the next.

### 3.4 LAYING MASONRY WALLS

- #### A.
- Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.



- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- C. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

### 3.5 MORTAR BEDDING AND JOINTING

- A. Lay hollow brick as follows:
  - 1. Bed face shells in mortar and with head joints of depth equal to bed joints.
  - 2. Bed webs in mortar in grouted masonry.
  - 3. Fully bed units and fill cells with mortar.
- B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

### 3.6 CONTROL AND EXPANSION JOINTS

- A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
- B. Form expansion joints in brick as follows:
  - 1. Build flanges of factory-fabricated, expansion-joint units into masonry.
  - 2. Form open joint full depth of brick wythe and of width indicated, but not less than 3/8-inch for installation of sealant and backer rod specified in Section 079200 "Joint Sealants."

### 3.7 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS

- A. General: Install embedded flashing and weep vents in masonry where indicated.
- B. Install weep vents in exterior wythes and veneers in head joints of first course of masonry immediately above embedded flashing and as follows:
  - 1. Use specified products to form weep vents.
  - 2. Space weep vents 24 inches o.c. unless otherwise indicated.

### 3.8 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.
- B. Inspections: Special inspections according to Level B in TMS 402/ACI 530/ASCE 5.
  - 1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
  - 2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
  - 3. Place grout only after inspectors have verified proportions of site-prepared grout.
- C. Testing Prior to Construction: One (1) set of tests.
- D. Clay Masonry Unit Test: For each type of unit provided, according to ASTM C 67 for compressive strength.
- E. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C 780.
- F. Mortar Test (Property Specification): For each mix provided, according to ASTM C 780. Test mortar for mortar air content and compressive strength.
- G. Grout Test (Compressive Strength): For each mix provided, according to ASTM C 1019.

### 3.9 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep vents, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
  - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
  - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.

3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
5. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.

3.10 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.
- B. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above or recycled, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 042000



## SECTION 053100 - STEEL DECKING

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. The General Documents, as listed on the Table of Contents, and applicable parts of Division 01 General Requirements shall be included in and made a part of this Section.

## 1.2 SUMMARY

## A. Section Includes:

- 1. Steel decking includes roof deck types. Provide all edge and end closures, deck support angles at columns, butt strips, ridge, and valley plates, reinforcing angles, recessed sump pans, cell closures, composite finish strips and pour stops.

## B. Related Sections:

- 1. Section 012100 "Allowances".
- 2. Section 012200 "Unit Prices".

## 1.3 QUALITY ASSURANCE

- A. Codes and Standards: Comply with provisions of the following codes and standards, except as otherwise shown or specified:

- 1. AISI "Specification for the Design of Cold-Formed Steel Structural Members".
- 2. AWS "Structural Welding Code".
- 3. SDI "Design Manual for Floor Decks and Roof Decks".

- B. Qualification of Field Welding: Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure".

- C. Completed decking in place is subject to inspection and testing. Expense of removing and replacing portions of decking for testing purposes will be borne by Owner if welds are found to be satisfactory. Remove work found to be defective and replace with new acceptable work.

## 1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications showing physical properties and installation instructions for each type of decking and accessories. Include manufacturer's certification as may be required to show compliance with these specifications.

## B. Shop Drawings:

- 1. Submit shop drawings of all members to be furnished. Detail drawings of the members and their connections shall follow standard practice as set forth in the AISC "Manual of Structural Steel Detailing" (Second Edition). In particular, welding shall be shown, using standard AWS welding symbols. Show on detail drawings the paint to be used.

2. Shop drawings will not be reviewed unless accompanied by erection drawings which locates and identifies the members. Copies or reproductions of contract drawings will not be accepted or reviewed as shop drawings.

## PART 2 - PRODUCTS

- 2.1 MATERIALS: Steel for Galvanized Metal Deck Units: ASTM A 653 coating class G-60, Minimum yield point,  $F_y = 33\text{ksi}$ .

- A. Roof Decking: To match existing but as a minimum:

1. 1½-inch-wide rib, galvanized steel deck with nesting flat side laps, formed from hot dipped galvanized steel sheets. Minimum section properties as follows:

Gage	$I_p$ (in <sup>4</sup> )	$I_n$ (in <sup>4</sup> )	$S_p$ (in <sup>3</sup> )	$S_n$ (in <sup>3</sup> )
20	0.22	0.24	0.25	0.26

- B. Miscellaneous Steel Shapes: ASTM A 36.
- C. Sheet Metal Accessories: ASTM A 526, commercial quality galvanized.
- D. Galvanizing Repair Paint: High zinc-dust content paint for repair of damaged galvanized surfaces complying with Military Specifications MIL-P-21035 (Ships).
- E. Galvanizing: ASTM A 653, G60.

## PART 3 - EXECUTION

### 3.1 INSPECTION

- A. Installer must examine areas and conditions under which metal decking is to be installed and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to installer.

### 3.2 INSTALLATION

- A. General: Install deck units and accessories in accordance with manufacturer's recommendations and final shop drawings, and as specified herein.
- B. Do not use roof deck units for storage or working platforms until permanently secured.
- C. Shop drawings shall fully address all edge conditions and pour stops, including overhangs, as described in structural and architectural details.
- D. Fastening Deck Units: Welding of roof deck shall not be permitted.
  1. Roof decks (1½-inch-depth) shall be pneumatically fastened in place 12 inches o.c. using Hilti pneumatic fasteners, (or equal), with a 36/4 fastening pattern (unless otherwise indicated on the Drawings). Mechanically fasten side laps of adjacent deck units between

supports, at intervals not exceeding 18 inches o.c., using plated self-tapping No. 10-14 screws, with a minimum of four (4) #10 plated self-tapping screws per span.

- E. Cutting and Fitting: Cut neatly and fit deck units and accessories around other work projecting through or adjacent to the decking, as shown.
- F. Reinforcement at Openings: Provide additional metal reinforcement and closure pieces as required for strength, continuity of decking, and to provide support for concrete and other work shown.
- G. Roof Sump Pans: Place over openings provided in roof decking and weld to top decking surface. Space welds not more than 12 inches o.c. with at least one (1) weld at each corner. Cut opening in roof sump bottom to accommodate drain size indicated.
- H. Touch-up Painting: After decking installation, wire brush, clean and paint scarred areas, rust spots on top and bottom surfaces of roof decking units and supporting steel members.
  - 1. Touch-up galvanized surfaces with galvanized repair paint applied in accordance with manufacturer's instructions.

END OF SECTION 053100





SECTION 061000 - ROUGH CARPENTRY

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. Rooftop equipment bases and support curbs.
  - 2. Wood blocking and nailers.

1.3 DEFINITIONS

- A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.
- C. Lumber grading agencies, and the abbreviations used to reference them, include the following:
  - 1. NeLMA: Northeastern Lumber Manufacturers' Association.
  - 2. NLGA: National Lumber Grades Authority.
  - 3. WCLIB: West Coast Lumber Inspection Bureau.
  - 4. WWPA: Western Wood Products Association.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
  - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
  - 2. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

1.5 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For the following, from ICC-ES:
  - 1. Wood-preservative-treated wood.
  - 2. Power-driven fasteners.
  - 3. Post-installed anchors.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

### 2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
  - 1. Factory mark each piece of lumber with grade stamp of grading agency.
- B. Maximum Moisture Content of Lumber: Fifteen percent (15%) unless otherwise indicated.

### 2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWP A U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.
  - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of fifteen percent (15%). Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:
  - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
  - 2. Wood sills, sleepers, blocking, furring, stripping and similar concealed members in contact with masonry or concrete.

### 2.3 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
  - 1. Blocking.
  - 2. Nailers.
- B. Dimension Lumber Items: Standard, Stud, or No. 3 grade lumber of any of the following species:

1. Hem-fir (north); NLGA.
2. Hem-fir; WCLIB or WWP.
3. Spruce-pine-fir (south); NeLMA, WCLIB, or WWP.

- C. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

## 2.4 FASTENERS

- A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.
  1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless-steel.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- D. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01 or ICC-ES AC193 as appropriate for the substrate.
  1. Material: Stainless-steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

## 2.5 MISCELLANEOUS MATERIALS

- A. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025-inch.

# PART 3 - EXECUTION

## 3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Do not splice structural members between supports unless otherwise indicated.

- D. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
- E. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- F. Comply with AWP A M4 for applying field treatment to cut surfaces of preservative-treated lumber.
  - 1. Use copper naphthenate for items not continuously protected from liquid water.
- G. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- H. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
  - 2. ICC-ES evaluation report for fastener.
- I. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

### 3.2 WOOD BLOCKING AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

END OF SECTION 061000

SECTION 070150.19 - PREPARATION FOR REROOFING

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. Full tear-off of roof system at areas indicated on Drawings.
- 2. Removal of flashings and counterflashings.

B. Related Requirements:

- 1. Section 011000 "Summary of Work" for use of the premises and phasing requirements.
- 2. Section 015000 "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for reroofing preparation.

1.3 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.
- B. Full Roof Tear-Off: Removal of existing roofing system down to existing roof deck.

1.4 PREINSTALLATION MEETINGS

- A. Preliminary Roofing Conference: Before starting removal work, conduct conference at Project site.
  - 1. Meet with Owner; Architect; Owner's insurer if applicable; testing and inspecting agency representative; roofing system manufacturer's representative; roofing Installer, including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing, including installers of roof deck, roof accessories, and roof-mounted equipment.
  - 2. Review methods and procedures related to roofing tear-off, including, but not limited to, the following:
    - a. Reroofing preparation, including roofing system manufacturer's written instructions.
    - b. Temporary protection requirements for existing roofing system components that are to remain.
    - c. Existing roof drains and roof drainage during each stage of reroofing, and roof-drain plugging and plug removal.
    - d. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to avoid delays.

- e. Existing roof deck conditions requiring notification of Architect.
    - f. Existing roof deck removal procedures and Owner notifications.
    - g. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
    - h. Structural loading limitations of roof deck during reroofing.
    - i. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that affect reroofing.
    - j. HVAC shutdown and sealing of air intakes.
    - k. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
    - l. Governing regulations and requirements for insurance and certificates if applicable.
    - m. Existing conditions that may require notification of Architect before proceeding.
  - B. Comply with additional requirements in Section 013100 "Project Management and Coordination".
- 1.5 ACTION SUBMITTALS
- A. Product Data: For each type of product.
- 1.6 INFORMATIONAL SUBMITTALS
- A. Field Test Reports:
    - 1. Fastener pull-out test report.
  - B. Photographs: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations.
    - 1. Submit before Work begins.
  - C. Landfill Records: Indicate receipt and acceptance of demolished roofing materials by a landfill facility licensed to accept them.
- 1.7 QUALITY ASSURANCE
- A. Regulatory Requirements:
    - 1. Comply with governing EPA notification regulations before beginning roofing removal.
    - 2. Comply with hauling and disposal regulations of authorities having jurisdiction.
- 1.8 FIELD CONDITIONS
- A. Existing Roofing System: EPDM .
  - B. Owner will occupy portions of building adjacent to reroofing area.
    - 1. Conduct reroofing so Owner's operations are not disrupted.
    - 2. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.

3. Coordinate work activities daily with Owner so Owner has adequate advance notice to place protective dust and water-leakage covers over sensitive equipment and furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below work area.
4. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below affected area.
  - a. Verify that occupants below work area have been evacuated before proceeding with work over impaired deck area.
- C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- E. Conditions existing at time of inspection for bidding are maintained by Owner as far as practical.
- F. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
  1. Remove only as much roofing in one (1) day as can be made watertight in the same day.
- G. Hazardous Materials: It is not expected that hazardous materials, such as asbestos-containing materials, will be encountered in the Work.
  1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner.
    - a. Hazardous materials will be removed by Owner under a separate contract.

## PART 2 - PRODUCTS

### 2.1 REPLACEMENT MATERIALS

- A. Steel deck is specified in Section 053100 "Steel Decking."
- B. Wood blocking, curbs, and nailers are specified in Section 061000 "Rough Carpentry."

### 2.2 AUXILIARY REROOFING MATERIALS

- A. General: Use auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of existing and new roofing system.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Seal or isolate windows that may be exposed to airborne substances created in removal of existing materials.
- B. Shut off rooftop utilities and service piping before beginning the Work.
- C. Test existing roof drains to verify that they are not blocked or restricted.
  - 1. Immediately notify Architect of any blockages or restrictions.
- D. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work.
  - 1. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- E. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- F. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday.
  - 1. Prevent debris from entering or blocking roof drains and conductors.
    - a. Use roof-drain plugs specifically designed for this purpose.
    - b. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
  - 2. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new roofing system, provide alternative drainage method to remove water and eliminate ponding.
    - a. Do not permit water to enter into or under existing roofing system components that are to remain.

### 3.2 ROOF TEAR-OFF

- A. Notify Owner each day of extent of roof tear-off proposed for that day and obtain authorization to proceed.
- B. Lower removed roofing materials to ground and onto lower roof levels, using dust-tight chutes or other acceptable means of removing materials from roof areas.
- C. Full Roof Tear-Off: Where indicated on Drawings, remove existing roofing and other roofing system components down to the existing roof deck.
  - 1. Remove substrate board, vapor retarder, underlayment, roof insulation and cover board.
  - 2. Remove base flashings and counter flashings.
  - 3. Remove perimeter edge flashing and gravel stops.
  - 4. Remove expansion-joint covers.
  - 5. Remove flashings at pipes, curbs, mechanical equipment, and other penetrations.



6. Remove roof drains indicated on Drawings to be removed.
7. Remove wood blocking, curbs, and nailers.
8. Remove excess asphalt from steel deck.
  - a. A maximum of 15 lb./100 sq. ft. of asphalt is permitted to remain on steel decks.
9. Remove fasteners from deck.

### 3.3 DECK PREPARATION

- A. Inspect deck after tear-off of roofing system.
- B. If broken or loose fasteners that secure deck panels to one another or to structure are observed, or if deck appears or feels inadequately attached, immediately notify Architect.
  1. Do not proceed with installation until directed by Architect.
- C. If deck surface is unsuitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect.
  1. Do not proceed with installation until directed by Architect.
- D. Provide additional deck securement as recommended by manufacturer.
- E. Replace decking as directed by Architect. Deck replacement will be paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.

### 3.4 BASE FLASHING REMOVAL

- A. Remove existing base flashings.
  1. Clean substrates of contaminants, such as asphalt, sheet materials, dirt, and debris.
- B. Do not damage metal counterflashings that are to remain.
  1. Replace metal counterflashings damaged during removal with counterflashings specified in Section 076200 "Sheet Metal Flashing and Trim."
- C. When directed by Architect, replace wood blocking, curbs, and nailers to comply with Section 061000 "Rough Carpentry."

### 3.5 FASTENER PULL-OUT TESTING

- A. Retain independent testing and inspecting agency to conduct fastener pull-out tests according to Chapter 16 of the International Building Code and submit test report to Architect and roofing manufacturer before installing new roofing system.
  1. Obtain Architect's and roofing manufacturer's approval to proceed with specified fastening pattern.
    - a. Architect and roofing manufacturer may furnish revised fastening pattern commensurate with pull-out test results.

3.6 DISPOSAL

- A. Collect demolished materials and place in containers.
  - 1. Promptly dispose of demolished materials.
  - 2. Do not allow demolished materials to accumulate on-site.
  - 3. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 070150.19

SECTION 072713 - MODIFIED BITUMINOUS SHEET AIR BARRIERS

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 self-adhering (peel-and-stick), vapor-retarding, modified bituminous sheet air barriers.

1.3 DEFINITIONS

- A. Air-Barrier Material: A primary element that provides a continuous barrier to the movement of air.
- B. Air-Barrier Accessory: A transitional component of the air barrier that provides continuity.
- C. Air-Barrier Assembly: The collection of air-barrier materials and accessory materials applied to an opaque wall, including joints and junctions to abutting construction, to control air movement through the wall.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include manufacturer's written instructions for evaluating, preparing, and treating substrate; technical data; and tested physical and performance properties of products.
- B. Shop Drawings: For air-barrier assemblies.
  - 1. Show locations and extent of air barrier materials, accessories, and assemblies specific to Project conditions.
  - 2. Include details for substrate joints and cracks, counterflashing strips, penetrations, inside and outside corners, terminations, and tie-ins with adjoining construction.
  - 3. Include details of interfaces with other materials that form part of air barrier.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Certificates: From air-barrier manufacturer, certifying compatibility of air barriers and accessory materials with Project materials that connect to or that come in contact with air barrier.
- C. Product Test Reports: For each air-barrier assembly, for tests performed by a qualified testing agency.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Remove and replace liquid materials that cannot be applied within their stated shelf life.
- B. Protect stored materials from direct sunlight.

1.8 FIELD CONDITIONS

- A. Environmental Limitations: Apply air barrier within the range of ambient and substrate temperatures recommended by air-barrier manufacturer.
  - 1. Protect substrates from environmental conditions that affect air-barrier performance.
  - 2. Do not apply air barrier to a damp or wet substrate or during snow, rain, fog, or mist.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Source Limitations: Obtain primary air-barrier materials and air-barrier accessories from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Air-Barrier Performance: Air barrier assembly and seals with adjacent construction shall be capable of performing as a continuous air barrier. Air-barrier assemblies shall be capable of accommodating substrate movement and of sealing substrate expansion and control joints, construction material changes, penetrations, and transitions at perimeter conditions without deterioration and air leakage exceeding specified limits.
- B. Air-Barrier Assembly Air Leakage: Maximum 0.04 cfm/sq. ft. of surface area at 1.57 lbf/sq. ft., when tested according to ASTM E 283 or ASTM E 2357.
- C. VOC Content: 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24) and complying with VOC content limits of authorities having jurisdiction.

2.3 SELF-ADHERING SHEET AIR BARRIER

- A. Modified Bituminous Sheet: 40-mil-thick, self-adhering sheet consisting of 36 mils of rubberized asphalt laminated to a 4-mil-thick, cross-laminated polyethylene film with release liner on adhesive side and formulated for application with primer that complies with VOC limits of authorities having jurisdiction.
  - 1. Basis of Design:
    - a. GCP Applied Technologies, Inc.; **Perm-A-Barrier Wall Membrane**

2. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
  - a. Carlisle Coatings & Waterproofing Inc.
  - b. Meadows, W. R., Inc.
  - c. Tremco Incorporated, an RPM company
  - d. Substitutions: Under provisions of Section 012500 "Substitution Procedures".
3. Physical and Performance Properties:
  - a. Air Permeance: Maximum 0.004 cfm/sq. ft. of surface area at 1.57-lbf/sq. ft. pressure difference; ASTM E 2178.
  - b. Tensile Strength: Minimum 400 psi; ASTM D 412, Die C.
  - c. Ultimate Elongation: Minimum two hundred percent (200%); ASTM D 412, Die C.
  - d. Puncture Resistance: Minimum 40 lbf; ASTM E 154.
  - e. Water Absorption: Maximum 0.15 percent weight gain after forty-eight (48) hour immersion at 70 deg F; ASTM D 570.
  - f. Vapor Permeance: Maximum 0.05 perm; ASTM E 96, Water Method.

## 2.4 ACCESSORY MATERIALS

- A. Requirement: Provide primers, transition strips, termination strips, joint sealants, counterflashing strips, flashing sheets and metal termination bars, termination mastic, substrate patching materials, adhesives, tapes, foam sealants, lap sealants, and other accessory materials that are recommended in writing by air-barrier manufacturer to produce a complete air-barrier assembly and that are compatible with primary air-barrier material and adjacent construction to which they may seal.
- B. Primer: Liquid waterborne primer recommended for substrate by air-barrier material manufacturer.
- C. Termination Mastic: Air-barrier manufacturer's standard cold fluid-applied elastomeric liquid; trowel grade.
- D. Adhesive and Tape: Air-barrier manufacturer's standard adhesive and pressure-sensitive adhesive tape.
- E. Modified Bituminous Transition Strip: Vapor retarding, 40 mils thick, smooth surfaced, self-adhering; consisting of 36 mils of rubberized asphalt laminated to a 4-mil-thick polyethylene film with release liner backing.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

1. Verify that substrates are sound and free of oil, grease, dirt, excess mortar, or other contaminants.
2. Verify that substrates have cured and aged for minimum time recommended in writing by air-barrier manufacturer.
3. Verify that substrates are visibly dry and free of moisture. Test concrete substrates for capillary moisture by plastic sheet method according to ASTM D 4263.
4. Verify that masonry joints are flush and completely filled with mortar.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 SURFACE PREPARATION

- A. Clean, prepare, treat, fill, and seal substrate and joints and cracks in substrate according to manufacturer's written instructions and details. Provide clean, dust-free, and dry substrate for air-barrier application.
- B. Mask off adjoining surfaces not covered by air barrier to prevent spillage and overspray affecting other construction.
- C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from substrate.
- D. Remove fins, ridges, mortar, and other projections and fill honeycomb, aggregate pockets, holes, and other voids in substrate with substrate-patching membrane.
- E. At changes in substrate plane, apply sealant or termination mastic beads at sharp corners and edges to form a smooth transition from one (1) plane to another.
- F. Bridge and cover expansion joints and discontinuous wall-to-wall, deck-to-wall, and deck-to-deck joints with overlapping modified bituminous strips.

### 3.3 INSTALLATION

- A. Install materials according to air-barrier manufacturer's written instructions and details and according to recommendations in ASTM D 6135 to form a seal with adjacent construction and ensure continuity of air and water barrier.
  1. When ambient and substrate temperatures range between 25 and 40 deg F (minus 4 and plus 5 deg C), install self-adhering, modified bituminous air-barrier sheet produced for low-temperature application. Do not install low-temperature sheet if ambient or substrate temperature is higher than 60 deg F (16 deg C).
  2. Unless manufacturer recommends in writing against priming, apply primer to substrates at required rate and allow it to dry.
- B. Prepare, treat, and seal vertical and horizontal surfaces at terminations and penetrations with termination mastic and according to ASTM D 6135.
- C. Apply primer to substrates at required rate and allow it to dry. Limit priming to areas that will be covered by air-barrier sheet on same day. Reprime areas exposed for more than 24 hours.

- D. Apply and firmly adhere air-barrier sheets over area to receive air barrier. Accurately align sheets and maintain uniform 2½-inch-minimum lap widths and end laps. Overlap and seal seams, and stagger end laps to ensure airtight installation.
    - 1. Apply sheets in a shingled manner to shed water.
    - 2. Roll sheets firmly to enhance adhesion to substrate.
  - E. Apply continuous air-barrier sheets over modified bituminous strips bridging substrate cracks, construction, and contraction joints.
  - F. Seal exposed edges of sheet at seams, cuts, penetrations, and terminations not concealed by metal counterflashings or ending in reglets with termination mastic.
  - G. Install air-barrier sheet and accessory materials to form a seal with adjacent construction and to maintain a continuous air barrier.
    - 1. Coordinate air-barrier installation with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.
    - 2. Install transition strip on roofing membrane or base flashing so that a minimum of 3 inches of coverage is achieved over each substrate.
  - H. Connect and seal exterior wall air-barrier sheet continuously to roofing-membrane air barrier, concrete below-grade structures, floor-to-floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings, using accessory materials.
  - I. At end of each working day, seal top edge of air-barrier material to substrate with termination mastic.
  - J. Apply joint sealants forming part of air-barrier assembly within manufacturer's recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
  - K. Repair punctures, voids, and deficient lapped seams in air barrier. Slit and flatten fishmouths and blisters. Patch with air-barrier sheet extending 6 inches beyond repaired areas in all directions.
  - L. Do not cover air barrier until it has been tested and inspected by Owner's testing agency.
  - M. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air-barrier components.
- 3.4 FIELD QUALITY CONTROL
- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
  - B. Inspections: Air-barrier materials, accessories, and installation are subject to inspection for compliance with requirements.
  - C. Tests: As determined by testing agency from among the following tests:

1. Air-Leakage-Volume Testing: Air-barrier assemblies will be tested for air leakage according to ASTM E 783.
  2. Adhesion Testing: Air-barrier assemblies will be tested for required adhesion to substrate according to ASTM D 4541 for each 600-sq. ft. of installed air barrier or part thereof.
- D. Air barriers will be considered defective if they do not pass tests and inspections.
1. Apply additional air-barrier material, according to manufacturer's written instructions, where inspection results indicate insufficient thickness.
  2. Remove and replace deficient air-barrier components for retesting as specified above.
- E. Repair damage to air barriers caused by testing; follow manufacturer's written instructions.
- F. Prepare test and inspection reports.
- 3.5 CLEANING AND PROTECTION
- A. Protect air-barrier system from damage during application and remainder of construction period, according to manufacturer's written instructions.
1. Protect air barrier from exposure to UV light and harmful weather exposure as recommended in writing by manufacturer. If exposed to these conditions for longer than recommended, remove and replace air barrier or install additional, full-thickness, air-barrier application after repairing and preparing the overexposed membrane according to air-barrier manufacturer's written instructions.
  2. Protect air barrier from contact with incompatible materials and sealants not approved by air-barrier manufacturer.
- B. Clean spills, stains, and soiling from construction that would be exposed in the completed Work, using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 072713



SECTION 075216 - STYRENE-BUTADIENE-STYRENE (SBS) MODIFIED BITUMINOUS MEMBRANE ROOFING

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. Styrene-butadiene-styrene (SBS) modified bituminous membrane roofing.
2. Roof insulation.
3. Walkways.

B. Related Sections:

1. Section 012300 "Alternates".
2. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking, and for wood-based, structural-use roof deck panels.
3. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
4. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.
5. Section 221423 "Storm Drainage Piping Specialties" for roof drains.

1.3 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to Work of this Section.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Roofing Conference: Conduct conference at Project site. **Refer to Section 070150.19 "Preparation for Reroofing" for additional items.**

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- B. Shop Drawings: Include plans, sections, details, and attachments to other work, including the following:

1. Layout and thickness of insulation.
2. Base flashings and membrane terminations.
3. Flashing details at penetrations.
4. Tapered insulation, including slopes.

5. Roof plan showing orientation of steel roof deck and orientation of roof membrane, fastening spacings, and patterns for mechanically fastened roofing system.
6. Crickets, saddles, and tapered edge strips, including slopes.
7. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.

C. Samples: For the following products:

1. Sheet roofing materials, including roofing membrane base sheet, flashing backer sheet, membrane cap sheet and flashing sheet, of color specified.
2. Roof insulation.
3. Walkway pads or rolls, of color required.
4. Six (6) insulation fasteners of each type, length, and finish.

D. Wind Uplift Resistance Submittal: For roofing system indicating compliance with wind uplift performance requirements.

## 1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer, manufacturer, and testing agency.

B. Manufacturer Certificates:

1. Performance Requirement Certificate: Signed by roof membrane manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
  - a. Submit evidence of complying with performance requirements.
2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

C. Product Test Reports: For roof membrane and insulation, tests performed by a qualified testing agency, indicating compliance with specified requirements.

D. Evaluation Reports: For components of membrane roofing system, from ICC-ES.

E. Field quality-control reports.

F. Sample Warranties: For manufacturer's special warranties.

## 1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system to include in maintenance manuals.

## 1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for roofing system identical to that used for this Project.

B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer.
  - 1. Protect stored liquid material from direct sunlight.
  - 2. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources.
  - 1. Store in a dry location.
  - 2. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.10 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.11 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
  - 1. Special warranty includes membrane roofing, base flashings, roof insulation, fasteners, cover boards, roofing accessories, metal flashings, roof drainage fabrications, and other components of roofing system for an edge-to-edge warranty.
  - 2. Warranty Period: Twenty-five (25) years, non-prorated, no-dollar-limit, from date of Substantial Completion.
- B. Roofing Installer's Warranty: Signed by Installer, in which Installer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: Two (2) years from date of Substantial Completion.
- C. Provide self-adhesive emblems for each roof hatch, door, or access way, notifying the user of the roof condition, precautionary measures and other conditions of use or maintenance of the roofing membranes.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. CertainTeed Corp.
  - 2. Firestone Building Products
  - 3. GAF Materials Corporation
  - 4. Siplast, Inc.
  - 5. Substitutions: Under provisions of Section 012500 "Substitution Procedures".
- B. Source Limitations: Obtain components for roofing system from roof membrane manufacturer or manufacturer approved by roof membrane manufacturer.

### 2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing system and flashings shall remain watertight.
  - 1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
  - 2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
- C. Roofing System Design: Tested by a qualified testing agency to resist the uplift requirements as indicated on the Drawings.
- D. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class C; for application and roof slopes indicated; testing by a qualified testing agency.
  - 1. Identify products with appropriate markings of applicable testing agency.
- E. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated.
  - 1. Identify products with appropriate markings of applicable testing agency.

### 2.3 ROOFING SHEET MATERIALS

- A. Roofing Membrane Base Sheet: ASTM D 6163, Grade S, Type I or II, SBS-modified asphalt sheet (reinforced with glass fiber fabric); smooth surfaced; suitable for application method specified.

- B. Granule-Surface Roofing Membrane Cap Sheet: ASTM D 6164, Grade G, Type I, SBS-modified asphalt sheet (reinforced with polyester fabric); granular surfaced; suitable for application method specified, and as follows:

- 1. Granule Color: As selected by Architect and Owner from manufacturer's entire range.

#### 2.4 BASE FLASHING SHEET MATERIALS

- A. Backer Sheet: ASTM D 6163, Grade S, Type I or II, SBS-modified asphalt sheet (reinforced with glass fiber fabric) smooth surfaced; suitable for application method specified.
- B. Granule-Surfaced Flashing Sheet: ASTM D 6164, Grade G, Type I, SBS-modified asphalt sheet (reinforced with polyester fabric) granular surfaced; suitable for application method specified, and as follows:

- 1. Granule Color: As selected by Architect and Owner from manufacturer's entire range, to match cap sheet.

#### 2.5 AUXILIARY ROOFING MEMBRANE MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane.
  - 1. Adhesives and Sealants: Comply with VOC limits of authorities having jurisdiction.
- B. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- C. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1-by-1/8-inch-thick; with anchors.
- D. Cold-Applied Asphalt Adhesive: ASTM D 3019, Type III, roof membrane manufacturer's standard asphalt-based, one- or two-part, asbestos-free, cold-applied adhesive, specially formulated for compatibility and use with roofing membrane and base flashings.
- E. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required by roofing system manufacturer for application.
- F. Mastic Sealant: Polyisobutylene, plain or modified bitumen; nonhardening, nonmigrating, non-skinning, and nondrying.
- G. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate; tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer.
- H. Roofing Granules: Ceramic-coated roofing granules, No. 11 screen size with one hundred percent (100%) passing No. 8 sieve and ninety-eight percent (98%) of mass retained on No. 40 sieve, color to match roofing membrane.
- I. Miscellaneous Accessories: Provide those recommended by roofing system manufacturer.

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## STYRENE-BUTADIENE-STYRENE (SBS) MODIFIED BITUMINOUS MEMBRANE ROOFING

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- J. Penetration Flashing: Two-part, liquid-applied flashing material that cures to a durable, elastomeric film. Flashing system consists of primer, flashing cement, and polyester scrim.

1. System must be compatible with roofing membrane system and be part of the warranty.

### 2.6 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by roof membrane manufacturer.

- B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 3, felt or glass-fiber mat facer on both major surfaces.

1. Compressive Strength: 25 psi.

- C. Perlite Board Insulation: ASTM C 728, Type 1, rigid, mineral-aggregate thermal insulation board composed of expanded perlite, cellulosic fibers, binders, and waterproofing agents with top surface seal coated.

- D. Tapered Insulation: Provide factory-tapered insulation boards.

1. Material: Match roof insulation.
2. Minimum Thickness: ¼-inch.
3. Slope:

- a. Roof Field: ¼-inch per foot unless otherwise indicated on Drawings.
- b. Saddles and Crickets: ½-inch per foot unless otherwise indicated on Drawings.

### 2.7 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with roofing.

- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.

- C. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:

1. Modified asphaltic, asbestos-free, cold-applied adhesive.

- D. Insulation Cant Strips: ASTM C 728, perlite insulation board.

- E. Wood Nailer Strips: Comply with requirements in Section 061000 "Rough Carpentry."

- F. Tapered Edge Strips: ASTM C 728, perlite insulation board.

- G. Cover Board: ASTM C 1289, Type II, Class 4, Grade 2, polyisocyanurate board substrate with glass-fiber mat facer on both major surfaces.

2.8 WALKWAYS

- A. Walkway Pads: Reinforced asphaltic composition pads with slip-resisting mineral-granule surface, manufactured as a traffic pad for foot traffic and acceptable to roofing system manufacturer, 3/8-inch-thick, minimum.
  - 1. Pad Size: Manufacturer's standard.
  - 2. Color: In contrasting color of roofing membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work:
  - 1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
  - 2. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
  - 3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation in accordance with roofing system manufacturer's written instructions.
  - 1. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction.
  - 1. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Perform fastener-pullout tests according to roof system manufacturer's recommendations.
  - 1. Submit test result within 24 hours of performing tests.
    - a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.

3.3 INSTALLATION, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast.

1. Remove and discard temporary seals before beginning work on adjoining roofing.
- C. Substrate-Joint Penetrations: Prevent roofing adhesives from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.

### 3.4 INSULATION INSTALLATION

- A. Coordinate installation of roofing system components, so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Nailer Strips: Mechanically fasten 4-inch nominal-width wood nailer strips of same thickness as insulation perpendicular to sloped roof deck at the following spacing:
  1. 48 inches apart for roof slopes greater than 3 inches per 12 inches (3:12).
- D. Insulation Cant Strips: Install and secure preformed 45-degree insulation cant strips at junctures of roofing membrane system with vertical surfaces or angle changes more than 45 degrees.
- E. Install tapered insulation under area of roofing to conform to slopes indicated.
- F. Install insulation boards with long joints in a continuous straight line with end joints staggered between rows, abutting edges, and ends between boards. Fill gaps exceeding ¼-inch with insulation.
  1. Cut and fit insulation within ¼-inch of nailers, projections, and penetrations.
- G. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or more, install two (2) or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.
  1. Where installing composite and non-composite insulation in two (2) or more layers, install non-composite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
- H. Trim surface of insulation boards where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- I. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.
- J. Mechanically Fastened and Adhered Insulation (Metal Decks): Install first layer of insulation to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
  1. Fasten first layer of insulation to resist uplift pressure at corners, perimeter, and field of roof.
  2. Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.



- K. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints a minimum of 6 inches in each direction from joints of insulation below. Loosely butt cover boards together. Tape joints if required by roofing system manufacturer.
  - 1. Set in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

### 3.5 ROOFING MEMBRANE INSTALLATION, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions and applicable recommendations in ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing".
- B. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.
- C. Where roof slope exceeds ¾-inch per 12 inches (1:18), install roofing membrane sheets parallel with slope.
  - 1. Backnail roofing sheets to nailer strips according to roofing system manufacturer's written instructions.
- D. Coordinate installation of roofing system so insulation and other components of the roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
  - 1. Provide tie-offs at end of each day's work to cover exposed roofing sheets and insulation with a course of coated felt set in roofing cement, with joints and edges sealed.
  - 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system.
  - 3. Remove and discard temporary seals before beginning work on adjoining roofing.

### 3.6 SBS-MODIFIED BITUMINOUS MEMBRANE INSTALLATION

- A. Install modified bituminous roofing membrane base sheet and cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets over and terminate beyond cants, installing in one (1) of the following ways:
  - 1. Adhere to substrate in a uniform coating of cold-applied adhesive.
  - 2. Unroll roofing membrane sheets and allow them to relax for minimum time period required by manufacturer.
- B. Laps: Accurately align roofing membrane sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Completely bond and seal laps, leaving no voids.
  - 1. Repair tears and voids in laps and lapped seams not completely sealed.
  - 2. Apply roofing granules to cover exuded bead at laps while bead is hot.
- C. Install roofing sheets so side and end laps shed water.

### 3.7 FLASHING AND STRIPPING INSTALLATION

- A. Install base flashing over cant strips and other sloped and vertical surfaces, at roof edges, and at penetrations through roof, and secure to substrates according to roofing system manufacturer's written instructions, and as follows:
  - 1. Prime substrates with asphalt primer if required by roofing system manufacturer.
  - 2. Backer Sheet Application:
    - a. Adhere backer sheet over roofing membrane at cants in cold-applied adhesive.
  - 3. Flashing Sheet Application: Adhere flashing sheet to substrate in cold-applied adhesive at rate required by roofing system manufacturer.
- B. Extend base flashing up walls or parapets a minimum of 8 inches above roofing membrane and 4 inches onto field of roofing membrane.
- C. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.
  - 1. Seal top termination of base flashing.
- D. Penetration Flashing: Tape off area to be flashed. Prime protrusion with system approved primer. Apply system base coat. While tacky, embed system polyester scrim. Apply system topcoat. Remove masking tape.
- E. Install roofing cap-sheet stripping where metal flanges and edgings are set on roofing according to roofing system manufacturer's written instructions.
- F. Roof Drains: Set 30-by-30-inch 4-pound metal flashing in bed of asphaltic adhesive on completed roofing membrane.
  - 1. Cover metal flashing with roofing cap-sheet stripping and extend a minimum of 6 inches beyond edge of metal flashing onto field of roofing membrane.
  - 2. Clamp roofing membrane, metal flashing, and stripping into roof-drain clamping ring.
  - 3. Install stripping according to roofing system manufacturer's written instructions.

### 3.8 WALKWAY INSTALLATION

- A. Walkway Pads: Install walkway pads using units of size indicated or, if not indicated, of manufacturer's standard size according to walkway pad manufacturer's written instructions.
  - 1. Adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

### 3.9 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to inspect substrate conditions, surface preparation, membrane application, flashings, protection, and drainage components, and to furnish reports to Architect.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.

1. Notify Architect and Owner 48 hours in advance of date and time of inspection.
- C. Roofing system will be considered defective if it does not pass tests and inspections.
  1. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.10 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period.
  1. When remaining construction does not affect or endanger roofing, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

END OF SECTION 075216



SECTION 076200 - SHEET METAL FLASHING AND TRIM

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. Formed roof-drainage sheet metal fabrications.
2. Formed low-slope roof sheet metal fabrications.

B. Related Requirements:

1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.
2. Section 077200 "Roof Accessories" for equipment supports, roof hatches, vents, and other manufactured roof accessory units.

1.3 COORDINATION

A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.

B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leak-proof, secure, and noncorrosive installation.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

B. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.
2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work.
3. Include identification of material, thickness, weight, and finish for each item and location in Project.
4. Include details for forming, including profiles, shapes, seams, and dimensions.
5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
6. Include details of termination points and assemblies.
7. Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.

8. Include details of roof-penetration flashing.
9. Include details of special conditions.
10. Include details of connections to adjoining work.
11. Detail formed flashing and trim at scale of not less than 3 inches per 12 inches (1:5).

C. Samples: For each type of sheet metal and accessory indicated with factory-applied finishes.

#### 1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

B. Product Test Reports: For each product, for tests performed by a qualified testing agency.

C. Sample Warranty: For special warranty.

#### 1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.

#### 1.7 QUALITY ASSURANCE

A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

#### 1.9 WARRANTY

A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
  - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
  - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
  - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: Twenty (20) years from date of Substantial Completion.

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PART 2 - PRODUCTS

## 2.1 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. Wind Design Standard: Manufacture and install roof edge flashings tested according to Chapter 16 of the International Building Code and capable of resisting the following design pressure:

1. Design Pressure: As indicated on Drawings.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

## 2.2 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth, flat surface.

1. Exposed Coil-Coated Finish:
  - a. Two-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than seventy percent (70%) PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
2. Color: As selected by Architect and Owner from manufacturer's full range, to match existing.

## 2.3 UNDERLAYMENT MATERIALS

A. Felt: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt; nonperforated.

B. Slip Sheet: Rosin-sized building paper, 3 lb./100 sq. ft. minimum.

## 2.4 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
  - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
  - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.

2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless-steel.

C. Sealant Tape: Pressure-sensitive, one hundred percent (100%) solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, non-sag, nontoxic, non-staining tape ½-inch-wide and 1/8-inch-thick.

D. Elastomeric Sealant: ASTM C 920, elastomeric polysulfide polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

F. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.

G. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

H. Downspout Boots: Of material and profile to align with and connect to storm water pipe riser.

## 2.5 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
2. Obtain field measurements for accurate fit before shop fabrication.
3. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.



- B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of ¼-inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
1. Form expansion joints of intermeshing hooked flanges, not less than 1-inch-deep, filled with butyl sealant concealed within joints.
  2. Use lapped expansion joints only where indicated on Drawings.
- D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.
- G. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use.
- H. Do not use graphite pencils to mark metal surfaces.

## 2.6 ROOF-DRAINAGE SHEET METAL FABRICATIONS

- A. Downspouts: Fabricate downspouts in rectangular profile and dimensions to match existing, complete with mitered elbows. Furnish with metal hangers from same material as downspouts and anchors. Shop fabricate elbows.
1. Fabricate from the following materials:
    - a. Aluminum: 0.040-inch-thick.
- B. Collection Boxes: Fabricate conductor heads with flanged back and stiffened top edge and of dimensions and shape required, complete with outlet tubes, exterior flange trim, and built-in overflows. Fabricate from the following materials:
1. Aluminum: 0.032-inch-thick.
- C. Parapet Scuppers: Fabricate scuppers to dimensions required, with closure flange trim to exterior, 4-inch-wide wall flanges to interior, and base extending 4 inches beyond cant or tapered strip into field of roof. Fabricate from the following materials:

1. Aluminum: 0.032-inch-thick.

## 2.7 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Caps, Fasciae, and Other Exposed Flashings: Fabricate in minimum 96-inch-long, but not exceeding 12-foot-long sections. Furnish with 6-inch-wide, joint cover plates.
1. Joint Style: Overlapped, 4 inches wide.

2. Fabricate from the following materials:
  - a. Aluminum: 0.050-inch-thick.
- B. Base Flashing: Fabricate from the following materials:
  1. Aluminum: 0.040-inch-thick.
- C. Counterflashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:
  1. Aluminum: 0.032-inch-thick.
- D. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with factory-mitered and -welded corners and junctions.
  1. Aluminum: 0.024-inch-thick.
  2. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
  3. Accessories:
    - a. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
  1. Verify compliance with requirements for installation tolerances of substrates.
  2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 UNDERLAYMENT INSTALLATION

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.
- B. Apply slip sheet, wrinkle free, directly on substrate before installing sheet metal flashing and trim.

### 3.3 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, protective coatings,

separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
3. Space cleats not more than 12 inches apart. Attach each cleat with at least two (2) fasteners. Bend tabs over fasteners.
4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
5. Torch cutting of sheet metal flashing and trim is not permitted.
6. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.

1. Coat concealed side of sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.

1. Form expansion joints of intermeshing hooked flanges, not less than 1-inch-deep, filled with sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1¼ inches for nails and not less than ¾ inch for wood screws.

E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Seal joints as required for watertight construction.

1. Use sealant-filled joints unless otherwise indicated. Embed hooked flanges of joint members not less than 1-inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for fifty percent (50%) movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

G. Rivets: Rivet joints in uncoated aluminum and zinc where indicated and where necessary for strength.

### 3.4 ROOF-DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.
- B. Downspouts: Join sections with 1½ inch telescoping joints.
1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at existing locations minimum, but at top and bottom and at approximately 60 inches o.c.
  2. Connect downspouts to underground drainage system.
- C. Collection Boxes: Anchor securely to wall, with elevation of conductor head rim at minimum of 1-inch below scupper discharge.
- D. Parapet Scuppers: Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
1. Anchor scupper closure trim flange to exterior wall and seal with elastomeric sealant to scupper.
- E. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated. Lap joints minimum of 4 inches in direction of water flow.

### 3.5 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Cap, Fasciae, and Other Exposed Flashings: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch centers.
- C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints minimum of 4 inches and bed in sealant. Secure in waterproof manner by means of interlocking folded seam or blind rivets and sealant unless otherwise indicated. Counterflashing: End counterflashing at termination bars as indicated on Drawings. Seal termination bar with sealant as specified in Section 079200 "Sealants".
- E. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.6 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of ¼-inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.7 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean off excess sealants.

C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. Maintain sheet metal flashing and trim in clean condition during construction.

D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 076200



SECTION 077100 - ROOF SPECIALTIES

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. Roof-edge specialties.

B. Related Requirements:

- 1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.
- 2. Section 076200 "Sheet Metal Flashing and Trim" for custom- and site-fabricated sheet metal flashing and trim.
- 3. Section 077200 "Roof Accessories" for set-on-type curbs, equipment supports, vents, and other manufactured roof accessory units.
- 4. Section 079200 "Joint Sealants" for field-applied sealants between roof specialties and adjacent materials.

C. Preinstallation Conference: Conduct conference at Project site.

- 1. Meet with Owner, Architect, Owner's insurer if applicable, roofing-system testing and inspecting agency representative, roofing Installer, roofing-system manufacturer's representative, Installer, structural-support Installer, and installers whose work interfaces with or affects roof specialties, including installers of roofing materials and accessories.
- 2. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
- 3. Review special roof details, roof drainage, and condition of other construction that will affect roof specialties.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

- 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For roof specialties.

- 1. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.
- 2. Include details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.

3. Indicate profile and pattern of seams and layout of fasteners, cleats, clips, and other attachments.
4. Detail termination points and assemblies, including fixed points.
5. Include details of special conditions.

C. Samples: For each type of roof specialty and for each color and texture specified.

#### 1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Product Test Reports: For roof-edge flashings, for tests performed by a qualified testing agency.

C. Sample Warranty: For manufacturer's special warranty.

#### 1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing specialties to include in maintenance manuals.

#### 1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are tested to specified design pressure.

B. Source Limitations: Obtain roof specialties approved by manufacturer providing roofing-system warranty specified in Section 075323 "Ethylene-Propylene-Diene-Monomer (EPDM) Roofing".

#### 1.7 DELIVERY, STORAGE, AND HANDLING

A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.

B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof-specialty installation.

#### 1.8 FIELD CONDITIONS

A. Field Measurements: Verify profiles and tolerances of roof-specialty substrates by field measurements before fabrication and indicate measurements on Shop Drawings.

B. Coordination: Coordinate roof specialties with flashing, trim, and construction of parapets, roof deck, roof and wall panels, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

#### 1.9 WARRANTY

A. Roofing-System Warranty: Roof specialties are included in warranty provisions in Section 075323 "Ethylene-Propylene-Diene-Monomer (EPDM) Roofing" .

B. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.



1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
  - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
  - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
  - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: Twenty (20) years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
- B. Wind Design Standard: Manufacture and install copings and roof-edge specialties tested according to Chapter 16 of the International Building Code and capable of resisting the following design pressures:
  1. Design Pressure: As indicated on Drawings.
- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

### 2.2 ROOF-EDGE SPECIALTIES

- A. Roof-Edge Fascia: Manufactured, two-piece, roof-edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding 12 feet and a continuous metal receiver with integral drip-edge cleat to engage fascia cover and secure single-ply roof membrane. Provide matching corner units.
  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. Firestone Building Products
    - b. Johns Manville
    - c. Perimeter Systems; a division of Southern Aluminum Finishing Company, Inc.
    - d. Substitutions: Under provisions of Section 012500 "Substitution Procedures".
  2. Formed Aluminum Sheet Fascia Covers: Aluminum sheet, minimum 0.050-inch-thick but thickness as required to meet performance requirements.
    - a. Surface: Smooth, flat finish.

- b. Finish: Two-coat fluoropolymer.
    - c. Color: As selected by Architect and Owner from manufacturer's entire range, to match existing.
  - 3. Corners: Factory mitered and continuously welded.
  - 4. Splice Plates: Concealed, of same material, finish, and shape as fascia cover.
  - 5. Receiver: Manufacturer's standard material and thickness.
- B. One-Piece Gravel Stops: Manufactured, one-piece, metal gravel stop in section lengths not exceeding 12 feet, with a horizontal flange and vertical leg, fascia, and concealed splice plates of same material, finish, and shape as gravel stop. Provide matching corner units.
- 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. Firestone Building Products
    - b. Johns Manville
    - c. Perimeter Systems; a division of Southern Aluminum Finishing Company, Inc.
    - d. Substitutions: Under provisions of Section 012500 "Substitution Procedures".
  - 2. Formed Aluminum Sheet Gravel Stops: Aluminum sheet, minimum 0.050-inch but thickness as required to meet performance requirements.
    - a. Surface: Smooth, flat finish.
    - b. Finish: Two-coat fluoropolymer.
    - a. Color: As selected by Architect and Owner from manufacturer's entire range, to match existing.
  - 3. Corners: Factory mitered and continuously welded.
  - 4. Accessories: Fascia extenders with continuous hold-down cleats.
- C. Metal Copings: Manufactured coping system consisting of metal coping cap in section lengths not exceeding 12 feet, concealed anchorage; with corner units, end cap units, and concealed splice plates with finish matching coping caps.
- 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. Firestone Building Products
    - b. Johns Manville
    - c. Perimeter Systems; a division of Southern Aluminum Finishing Company, Inc.
    - d. Substitutions: Under provisions of Section 012500 "Substitution Procedures".
  - 2. Formed Aluminum Sheet Coping Caps: Aluminum sheet, 0.050-inch-thick.
    - a. Surface: Smooth, flat finish.
    - b. Finish: Two-coat fluoropolymer.
    - c. Color: As selected by Architect and Owner from manufacturer's full range, to match existing.

## 2.3 MATERIALS

- A. Aluminum Sheet: ASTM B 209 alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.

## 2.4 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, non-perforated.
- B. Slip Sheet: Rosin-sized building paper, 3-lb./100 sq. ft. minimum.

## 2.5 MISCELLANEOUS MATERIALS

- A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
  - 1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
  - 2. Fasteners for Aluminum: Aluminum or Series 300 stainless-steel.
- B. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.
- C. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type joints with limited movement.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.
- E. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

## 2.6 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. Coil-Coated Aluminum Sheet Finishes:
  - 1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    - a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than seventy percent (70%) PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

- b. Concealed Surface Finish: Apply pretreatment and manufacturer's standard acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.
- C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage where applicable, and securely anchored.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 UNDERLAYMENT INSTALLATION

- A. Felt Underlayment: Install with adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.
- B. Slip Sheet: Install with tape or adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.

### 3.3 INSTALLATION, GENERAL

- A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.
  - 1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
  - 2. Provide uniform, neat seams with minimum exposure of sealant.
  - 3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
  - 4. Torch cutting of roof specialties is not permitted.
  - 5. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
  - 1. Coat concealed side of uncoated aluminum roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.

2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.
- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
1. Space movement joints at a maximum of 12 feet with no joints within 18 inches of corners or intersections unless otherwise indicated on Drawings.
  2. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for fifty percent (50%) movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
- D. Fastener Sizes: Use fasteners of sizes that penetrate wood blocking or sheathing not less than 1¼ inches for nails and not less than ¾ inch for wood screws.
- E. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F (4 deg C).

### 3.4 ROOF-EDGE SPECIALTIES INSTALLATION

- A. Install cleats, cants, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.
- C. Anchor copings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.
1. Interlock face and back leg drip edges of snap-on coping cap into cleated anchor plates anchored to substrate at manufacturer's required spacing that meets performance requirements.

### 3.5 CLEANING AND PROTECTION

- A. Clean off excess sealants.
- B. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.
- C. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077100



SECTION 077129 - MANUFACTURED ROOF EXPANSION JOINTS

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. Bellows-type roof expansion joints.

- B. Related Requirements:

- 1. Section 061000 "Rough Carpentry" for wooden curbs or cants for mounting roof expansion joints.
  - 2. Section 076200 "Sheet Metal Flashing and Trim" for shop- and field-fabricated sheet metal expansion-joint systems, flashing, and other sheet metal items.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- B. Shop Drawings: For roof expansion joints.

- 1. Include plans, elevations, sections, and attachment details.
  - 2. Include details of splices, intersections, transitions, fittings, method of field assembly, and location and size of each field splice.
  - 3. Provide isometric drawings of intersections, terminations, and changes in joint direction or planes, depicting how components interconnect with each other and adjacent construction to allow movement and achieve waterproof continuity.

- C. Samples: For each exposed product and for each color specified, 6 inches in size.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.

- B. Product Test Reports: For each fire-barrier provided as part of a roof-expansion-joint assembly, for tests performed by a qualified testing agency.

- C. Sample Warranties: For special warranties.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Installer of roofing membrane.

## 1.6 WARRANTY

- A. Special Warranty: Manufacturer and Installer agree to repair or replace roof expansion joints and components that leak, deteriorate beyond normal weathering, or otherwise fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two (2) years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General: Roof expansion joints shall withstand exposure to weather, remain watertight, and resist the movements indicated without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
- B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint seals, failure of connections, and other detrimental effects.
1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- C. Fire-Test-Response Characteristics: Provide fire-barrier assemblies with fire-test-response characteristics as determined by testing identical products, per test method indicated, by UL or another testing agency acceptable to authorities having jurisdiction. Assemblies shall be capable of anticipated movement while maintaining fire rating. Fire-barrier products shall bear classification marking of qualified testing agency.

### 2.2 BELLOWS-TYPE ROOF EXPANSION JOINTS

- A. Source Limitations: Obtain bellows-type roof expansion joints approved by roofing manufacturer and that are part of roofing membrane warranty.
- B. Flanged Bellows Roof Expansion Joint: Manufactured, continuous, waterproof, joint-cover assembly, consisting of exposed membrane bellows, laminated to flexible, closed-cell support foam, and secured along each edge to a 3- to 4-inch-wide metal flange for nailing to substrate. Provide each size and type indicated, factory-fabricated units for corner and joint intersections and horizontal and vertical transitions including those to other building expansion joints, splicing units, adhesives, and other components as recommended by roof-expansion-joint manufacturer for complete installation. Fabricate each assembly specifically for installation configuration indicated on Drawings.
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. Johns Manville; **Expand-O-Flash**
  - b. JointMaster, a division of InPro Corporation; **672**
  - c. MM Systems Corporation; **Series ERFL**



- d. Substitutions: Under provision of Section 012500 "Substitution Procedures".
- 2. Joint Movement Capability: Plus and minus fifty percent (+/-50%) of joint size.
- 3. Bellows: Neoprene flexible membrane, nominal 60 mils thick.
  - a. Color: Black.
- 4. Flanges: Aluminum, 0.032-inch-thick.
  - a. Form: As indicated on Drawings.
  - b. Mortar Flanges: Where flanges will be embedded in concrete or mortar, provide perforated-metal mortar flanges.
- 5. Fire Barrier: Manufacturer's standard fire-resistive joint system with ratings determined per ASTM E 119 to resist spread of fire and to accommodate building thermal movements without impairing its ability to resist the passage of fire and hot gases.
  - a. Fire-Resistance Rating: Not less than 2-hour.

## 2.3 MATERIALS

- A. Aluminum: ASTM B 209 for sheet and plate, ASTM B 221 for extrusions; alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.
  - 1. Apply manufacturer's standard protective coating on aluminum surfaces to be placed in contact with cementitious or preservative-treated wood materials.
  - 2. Mill Finish: As manufactured.
- B. Neoprene Membrane: Neoprene sheet recommended by EPDM manufacturer for resistance to hydrocarbons, non-aromatic solvents, grease, and oil; and as standard with roof-expansion-joint manufacturer for application.
- C. Adhesives: As recommended by roof-expansion-joint manufacturer and with a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- D. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to withstand design loads.
  - 1. Exposed Fasteners: Gasketed. Use screws with hex washer heads matching color of material being fastened.
- E. Mineral-Fiber Blanket: ASTM C 665.
- F. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Examine roof-joint openings, inside surfaces of parapets, and expansion-control joint systems that interface with roof expansion joints, for suitable conditions where roof expansion joints will be installed.
- C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. General: Comply with manufacturer's written instructions for handling and installing roof expansion joints.
  - 1. Anchor roof expansion joints securely in place, with provisions for required movement. Use fasteners, protective coatings, sealants, and miscellaneous items as required to complete roof expansion joints.
  - 2. Install roof expansion joints true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
  - 3. Provide for linear thermal expansion of roof expansion joint materials.
  - 4. Provide uniform profile of roof expansion joint throughout its length; do not stretch or squeeze membranes.
  - 5. Provide uniform, neat seams.
  - 6. Install roof expansion joints to fit substrates and to result in watertight performance.
  - 7. Torch cutting of roof expansion joints is not permitted.
  - 8. Do not use graphite pencils to mark aluminum surfaces.
- B. Splices: Splice roof expansion joints with materials provided by roof-expansion-joint manufacturer for this purpose, to provide continuous, uninterrupted, and waterproof joints.
- C. Fire Barrier: Install fire barrier where indicated to provide continuous, uninterrupted fire resistance throughout length of roof expansion joint, including transitions and end joints.
- D. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

### 3.3 PROTECTION

- A. Protect roof expansion joints from foot traffic, displacement, or other damage.
- B. Remove and replace roof expansion joints and components that become damaged by moisture or otherwise.

END OF SECTION 077129

SECTION 077200 - ROOF ACCESSORIES

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. Hatch-type heat and smoke vents.
- 2. Pipe supports.
- 3. Preformed flashing sleeves.

B. Related Sections:

- 1. Section 076200 "Sheet Metal Flashing and Trim" for shop- and field-formed metal flashing, roof-drainage systems, roof expansion-joint covers, and miscellaneous sheet metal trim and accessories.
- 2. Section 077100 "Roof Specialties" for manufactured fasciae and roof edge flashings.
- 3. Section 077129 "Manufactured Roof Expansion Joints" for manufactured roof expansion-joint covers.

1.3 COORDINATION

- A. Coordinate layout and installation of roof accessories with roofing membrane and base flashing and interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.
- B. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of roof accessory.

- 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For roof accessories.

- 1. Include plans, elevations, keyed details, and attachments to other work. Indicate dimensions, loadings, and special conditions. Distinguish between plant- and field-assembled work.

- C. Samples: For each exposed product and for each color and texture specified, prepared on Samples of size to adequately show color.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items. Show the following:
  - 1. Size and location of roof accessories specified in this Section.
  - 2. Method of attaching roof accessories to roof or building structure.
  - 3. Other roof-mounted items including mechanical and electrical equipment, ductwork, piping, and conduit.
  - 4. Required clearances.
- B. Sample Warranties: For manufacturer's special warranties.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For roof accessories to include in operation and maintenance manuals.

1.7 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace roof hatch that fails in materials or workmanship within specified warranty period.
  - 1. Warranty Period: Five (5) years from date of Substantial Completion.
- B. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finishes or replace roof accessories that show evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Finish Warranty Period: Five (5) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof accessories shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

2.2 HEAT AND SMOKE VENTS

- A. Hatch-Type Heat and Smoke Vents: Manufacturer's standard, with single-walled insulated curbs, welded or mechanically fastened and sealed corner joints, integral condensation gutter, and cap flashing. Fabricate with insulated double-walled lid and continuous weathertight perimeter lid gaskets, and equip with automatic self-lifting mechanisms and UL-listed fusible links rated at 165 deg F (74 deg C).
  - 1. Basis of Design:
    - a. Bilco Company (The); **Type DSH**

2. 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. Babcock-Davis
  - b. Nystrom
  - c. Substitutions: Under provisions of Section 012500 "Substitution Procedures".
3. Type and Size: Double-leaf lids, size to match existing.
4. Loads: Minimum 40-lbf/sq. ft. external live load and 30-lbf/sq. ft. internal uplift load.
  - a. When release is actuated, lid shall open against 10-lbf/sq. ft. snow or wind load and lock in position.
5. Heat and Smoke Vent Standard: Provide units that have been tested and listed to comply with UL 793.
6. Curb, Framing, and Lid Material: Aluminum sheet, 0.090-inch-thick.
  - a. Finish: Two-coat fluoropolymer.
  - b. Color: As selected by Architect and Owner from manufacturer's entire range.
7. Construction:
  - a. Insulation: Glass-fiber board.
  - b. Hatch Lid: Opaque, insulated, and double walled, with manufacturer's standard metal liner of same material and finish as outer metal lid.
  - c. Fabricate curbs to minimum height of 12 inches unless otherwise indicated.
  - d. Security Grille: Provide for all units.
  - e. Indicator Switch: Curb mounted, wired into a building's alarm system to send signal to the alarm control panel when covers are open.
8. Hardware: Manufacturer's standard, corrosion resistant or hot-dip galvanized; with hinges, hold-open devices, and independent manual-release devices for inside and outside operation of lids. Provide winch, pulleys, and cables for manual operation at stage level.

## 2.3 PIPE AND DUCT SUPPORTS

- A. Rubber Pipe Support Curbs: Provide manufacturer's standard low-profile rubber pipe support curbs.
  1. Basis-of-Design Product:
    - a. Advanced Support Products; **EcoCurb REC 9S**
  2. 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. MIFAB, Inc.
    - b. Rugger Triangle Co. (The)
    - c. Substitutions: Under provisions of Section 012500 "Substitution Procedures".

## 2.4 PREFORMED FLASHING SLEEVES

- A. Exhaust Vent Flashing: Double-walled metal flashing sleeve or boot, insulation filled, with integral deck flange, 12 inches high, with removable metal hood and slotted metal collar.
  - 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. Custom Solution Roof and Metal Products
    - b. Thaler Metal USA Inc
    - c. Substitutions: Under provisions of Section 012500 "Substitution Procedures".
  - 2. Metal: Aluminum sheet, 0.063-inch-thick.
  - 3. Diameter: As required.
  - 4. Finish: Manufacturer's standard.
- B. Vent Stack Flashing: Metal flashing sleeve, uninsulated, with integral deck flange.
  - 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. Custom Solution Roof and Metal Products
    - b. Milcor Inc.; Commercial Products Group of Hart & Cooley, Inc.
    - c. Thaler Metal USA Inc.
    - d. Substitutions: Under provisions of Section 012500 "Substitution Procedures".
  - 2. Metal: Aluminum sheet, 0.063-inch-thick.
  - 3. Height: 19 inches.
  - 4. Diameter: As required.
  - 5. Finish: Manufacturer's standard.

## 2.5 METAL MATERIALS

- A. Aluminum Sheet: ASTM B 209, manufacturer's standard alloy for finish required, with temper to suit forming operations and performance required.
  - 1. Mill Finish: As manufactured.
  - 2. Exposed Coil-Coated Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    - a. Two-Coat Fluoropolymer Finish: AAMA 2605. System consisting of primer and fluoropolymer color topcoat containing not less than seventy percent (70%) polyvinylidene fluoride (PVDF) resin by weight.
- B. Aluminum Extrusions and Tubes: ASTM B 221, manufacturer's standard alloy and temper for type of use, finished to match assembly where used; otherwise mill finished.

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2.6 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Glass-Fiber Board Insulation: ASTM C 726, nominal density of 3 lb./cu. ft., thermal resistivity of 4.3 deg F x h x sq. ft./Btu x in. at 75 deg F (29.8 K x m/W at 24 deg C), thickness as indicated.
- C. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, acceptable to authorities having jurisdiction, containing no arsenic or chromium, and complying with AWPA C2; not less than 1½ inches thick.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.
- E. Underlayment:
  - 1. Felt: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, non-perforated.
  - 2. Polyethylene Sheet: 6-mil-thick polyethylene sheet complying with ASTM D 4397.
  - 3. Slip Sheet: Building paper, 3-lb/100 sq. ft. minimum, rosin sized.
- F. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide non-removable fastener heads to exterior exposed fasteners. Furnish the following unless otherwise indicated:
  - 1. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless-steel.
- G. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, PVC, or silicone or a flat design of foam rubber, sponge neoprene, or cork.
- H. Elastomeric Sealant: ASTM C 920, elastomeric polymer sealant as recommended by roof accessory manufacturer for installation indicated; low modulus; of type, grade, class, and use classifications required to seal joints and remain watertight.
- I. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for expansion joints with limited movement.
- J. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

## 2.7 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- C. Verify dimensions of roof openings for roof accessories.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 INSTALLATION

- A. General: Install roof accessories according to manufacturer's written instructions.
  - 1. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.
  - 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
  - 3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
  - 4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
  - 1. Coat concealed side of uncoated aluminum roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
  - 2. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet, or install a course of polyethylene sheet.
  - 3. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof accessories for waterproof performance.
- C. Heat and Smoke Vent Installation:
  - 1. Install heat and smoke vent so top perimeter surfaces are level.
  - 2. Install and test heat and smoke vents and their components for proper operation according to NFPA 204.
- D. Roof Curb Installation: Install each roof curb so top surface is level.
- E. Preformed Flashing-Sleeve Installation: Secure flashing sleeve to roof membrane according to flashing-sleeve manufacturer's written instructions.
- F. Seal joints with elastomeric or butyl sealant as required by roof accessory manufacturer.



3.3 REPAIR AND CLEANING

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A 780.
- B. Clean exposed surfaces according to manufacturer's written instructions.
- C. Clean off excess sealants.
- D. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077200



SECTION 078413 - PENETRATION FIRESTOPPING

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. Fireproof firestopping and firesafing materials and accessories.

1.3 PERFORMANCE REQUIREMENTS

- A. Fireproofing Materials: ASTM E 119 and ASTM E 814 to achieve a fire rating as noted on Drawings.
- B. Surface Burning: ASTM E 84 with a flame spread/fuel contributed/smoke developed rating of 5/0/0.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated provide characteristics, performance and limitation criteria.
- B. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum three (3) years documented experience.
- B. Applicator: Company specializing in performing the work of this Section with minimum five (5) years documented experience.

1.6 REGULATORY REQUIREMENTS

- A. Conform to applicable State Building code for fire resistance ratings and surface burning characteristics.
- B. UL Classifications for these systems shall be (all two (2) hours or more):
  - 1. Duct Penetrations: C-AJ-7027
  - 2. Pipe Penetrations: C-AJ-1079
  - 3. Cable Penetrations: C-AJ-1079

4. Conduit Penetrations: C-AJ-1079

1.7 MOCK-UP

- A. Provide mock-up of applied firestopping material.
- B. Apply 1 lineal ft to a representative substrate surface.
- C. If accepted, mock-up will demonstrate minimum standard for the Work.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when temperature of substrate material and ambient air is below 60 degrees F.
- B. Maintain this minimum temperature before, during and for three (3) days after installation of materials.
- C. Provide ventilation in areas to receive solvent cured materials.

1.9 SEQUENCING

- A. Sequence Work to permit firestopping materials to be installed after adjacent and surrounding work is complete.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Thermal Ceramics; **Firemaster Putty, Bulk and Blankets**
- B. Tremco Incorporated; **Fyre-shield and Cerablanket FS Hilti, Inc.**
- C. United States Gypsum; **Thermafiber Safing Insulation and FIRECODE compound**
- D. Substitutions: Under provisions of Section 016310 "Equals and Substitutions".

2.2 MATERIALS

- A. Firestopping Material: Single component silicone elastomeric compounds; conforming to the following:
  - 1. Elongation & Shrinkage: Five percent (5%).
  - 2. Tensile Strength: 300 psi.
  - 3. Density: 8 lb/cu ft.
  - 4. Surface Durability: 35 (Shore Hardness).
  - 5. Durability and Longevity: Permanent.
  - 6. Side Effects during Installation: Non-toxic.
  - 7. Long Term Side Effects: None.
- B. Primer: Type recommended by firestopping manufacturer for specific substrate surfaces.

- C. Firesafing Blankets: ASTM C 665; 4 psf nominal density firesafing insulation.
- D. Putty Pads: UL CLIV; acoustic, intumescent pad; 3.2mm thickness.

## 2.3 ACCESSORIES

- A. Dam Material: Mineral fiber matting, permanent.
- B. Retainers: Stainless clips to support mineral fiber matting

## 2.4 FINISHES

- A. Color: Dark gray or manufacturer's standard color.

# PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 PREPARATION

- A. Surface Cleaning: Clean out openings immediately before installing penetration firestopping to comply with manufacturer's written instructions and with the following requirements:
  - 1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of penetration firestopping.
  - 2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with penetration firestopping. Remove loose particles remaining from cleaning operation.
  - 3. Remove laitance and form-release agents from concrete.
- B. Install backing materials to arrest liquid material leakage.

## 3.3 INSTALLATION

- A. General: Install penetration firestopping to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.
- B. Apply firestopping material to all wall and floor penetrations through rated assemblies. These penetrations include electrical conduit and raceways, plumbing and heating system penetrations, ducts and other system chases.
- C. Apply primer and materials in accordance with manufacturer's instructions.
- D. Apply firestopping material in sufficient thickness to achieve rating to a density of fifty percent (50%) to uniform density and texture.

- E. Install material at walls or partition openings which contain penetrating sleeves, piping, ductwork, conduit and other items requiring firestopping.
- F. Remove dam material after firestopping material has cured.

#### 3.4 CLEANING AND PROTECTION

- A. Clean off excess materials adjacent to openings as the Work progresses by methods and with cleaning materials that are approved in writing by penetration firestopping manufacturers and that do not damage materials in which openings occur.
- B. Provide final protection and maintain conditions during and after installation that ensure that penetration firestopping is without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, immediately cut out and remove damaged or deteriorated penetration firestopping and install new materials to produce systems complying with specified requirements.

#### 3.5 SCHEDULE

- A. See Construction Documents for rating information and construction details and conditions.
- B. Firesafe all penetrations through new and existing masonry and gypsum board construction in the project work areas, equal to the one (1) or two (2) hour rating of the appropriate spaces.

END OF SECTION 078413

SECTION 079200 - JOINT SEALANTS

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. Silicone joint sealants.
  - 2. Latex joint sealants.

1.3 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Joint-Sealant Schedule: Include the following information:
  - 1. Joint-sealant application, joint location, and designation.
  - 2. Joint-sealant manufacturer and product name.
  - 3. Joint-sealant formulation.
  - 4. Joint-sealant color.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.
- C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.
- D. Warranties: Sample of special warranties.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.
- C. Product Testing: Test joint sealants using a qualified testing agency.

1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

#### 1.6 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
  1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
  2. When joint substrates are wet.
  3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
  4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

#### 1.7 WARRANTY

- A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  1. Warranty Period: Five (5) years from date of Substantial Completion.
- B. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
  1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
  2. Disintegration of joint substrates from natural causes exceeding design specifications.
  3. Mechanical damage caused by individuals, tools, or other outside agents.
  4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. VOC Content of Sealants: Sealants and sealant primers used as part of the weatherproofing system shall comply with the following:
  1. Interior: VOC content of 50 g/L or less.
  2. Exterior: VOC content of 100 g/L or less.



- C. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- D. Stain-Test-Response Characteristics: Where sealants are specified to be non-staining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- E. Colors of Exposed Joint Sealants: As selected by Architect and Owner from manufacturer's full range, to match adjacent where required.

## 2.2 SILICONE JOINT SEALANTS

- A. Silicone, Non-Staining: Non-Staining, single-component, non-sag, plus fifty percent (+50%) and minus fifty percent (-50%) movement capability, non-traffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Dow Corning Corporation
    - b. Master Bond, Inc.
    - c. Pecora Corporation
    - d. Tremco Incorporated
    - e. Substitutions: Under provisions of Section 012500 "Substitution Procedures".

## 2.3 LATEX JOINT SEALANTS

- A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. BASF Building Systems; **Sonolac**
    - b. Bostik, Inc.; **Chem-Calk 600**
    - c. Pecora Corporation; **AC-20+**
    - d. Tremco Incorporated; **Tremflex 834**
    - e. Substitutions: Under provisions of Section 012500 "Substitution Procedures".

## 2.4 JOINT SEALANT BACKING

- A. General: Provide sealant backings of material that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type B (bi-cellular material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

## 2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
    - a. Concrete.
    - b. Masonry.
  - 3. Remove laitance and form-release agents from concrete.
  - 4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

- a. Metal.
  - b. Glass.
  - c. Porcelain enamel.
  - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

### 3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
  - 1. Do not leave gaps between ends of sealant backings.
  - 2. Do not stretch, twist, puncture, or tear sealant backings.
  - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
  - 1. Place sealants so they directly contact and fully wet joint substrates.
  - 2. Completely fill recesses in each joint configuration.
  - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Non-Sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
  - 1. Remove excess sealant from surfaces adjacent to joints.
  - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.
  - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

### 3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

### 3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

### 3.6 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal non-traffic surfaces.
  1. Joint Locations:
    - a. Control and expansion joints in unit masonry.
    - b. Joints between different materials.
    - c. Other joints as indicated.
  2. Joint Sealant: Silicone, non-staining, S, NS, 50, NT.
- B. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal non-traffic surfaces.
  1. Joint Locations:
    - a. Control and expansion joints on exposed interior surfaces of exterior walls.
    - b. Perimeter joints of exterior openings where indicated.
    - c. Other joints as indicated.
  2. Joint Sealant: Latex.

END OF SECTION 079200

SECTION 099113 - EXTERIOR PAINTING

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 surface preparation and the application of paint systems on the following exterior substrates:
  - 1. Galvanized metal.

1.3 DEFINITIONS

- A. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples: For each type of paint system and each color and gloss of topcoat.
  - 1. Submit Samples on rigid backing, 8 inches square.
  - 2. Step coats on Samples to show each coat required for system.
  - 3. Label each coat of each Sample.
  - 4. Label each Sample for location and application area.
- C. Product List: For each product indicated, include the following:
  - 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
  - 2. Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
  - 3. VOC content.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Paint: Five percent, (5%) but not less than 1 gal. of each material and color applied.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
  - 1. Maintain containers in clean condition, free of foreign materials and residue.
  - 2. Remove rags and waste from storage areas daily.

## 1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds eighty-five percent (85%); at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Behr Process Corporation
  - 2. Benjamin Moore & Co.
  - 3. Duron, Inc.
  - 4. ICI Paints
  - 5. PPG Architectural Finishes, Inc.
  - 6. Sherwin-Williams Company (The)
  - 7. Substitutions: Under provisions of Section 012500 "Substitution Procedures".

## 2.2 PAINT, GENERAL

- A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."
- B. Material Compatibility:
  - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- C. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.
- D. Colors: As selected by Architect and Owner from manufacturer's entire range, to match existing where required.

## 2.3 SOURCE QUALITY CONTROL

- A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:
  - 1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
  - 2. Testing agency will perform tests for compliance with product requirements.
  - 3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two (2) paints are incompatible.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
  - 1. Application of coating indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual."
  - 1. Use applicators and techniques suited for paint and substrate indicated.
  - 2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  - 3. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint undercoats same color as topcoat but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### 3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
  - 1. Contractor shall touch up and restore painted surfaces damaged by testing.
  - 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

### 3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.6 EXTERIOR PAINTING SCHEDULE

- A. Galvanized-Metal Substrates:



1. Water-Based Light Industrial Coating System:
  - a. Prime Coat: Primer, galvanized, water based, **MPI #134**.
  - b. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.
  - c. Topcoat: Light industrial coating, exterior, water based, semi-gloss (Gloss Level 5), **MPI #163**.

END OF SECTION 099113



SECTION 099123 - INTERIOR PAINTING

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 surface preparation and the application of paint systems on the following interior substrates:
  - 1. Galvanized metal.
- B. Related Requirements:
  - 1. Section 012300 "Alternates" for work of this Section included in alternates.
  - 2. Section 099113 "Exterior Painting" for surface preparation and the application of paint systems on exterior substrates.

1.3 DEFINITIONS

- A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
  - 1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
  - 2. Indicate VOC content.
- B. Samples: For each type of paint system and in each color and gloss of topcoat.
  - 1. Submit Samples on rigid backing, 8 inches square.
  - 2. Apply coats on Samples to show each coat required for system.
  - 3. Label each coat of each Sample.
  - 4. Label each Sample for location and application area.
- C. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: Five percent (5%), but not less than 1 gal. of each material and color applied.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
  1. Maintain containers in clean condition, free of foreign materials and residue.
  2. Remove rags and waste from storage areas daily.

#### 1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints when relative humidity exceeds eighty-five percent (85%); at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  1. Benjamin Moore & Co.
  2. ICI Paints
  3. Sherwin-Williams Company (The)
  4. Substitutions: Under provisions of Section 012500 "Substitution Procedures".

#### 2.2 PAINT, GENERAL

- A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."
- B. Material Compatibility:
  1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- C. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction and, for interior paints and coatings applied at Project site, the following VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
  1. Flat Paints and Coatings: 50 g/L.
  2. Non-Flat Paints and Coatings: 150 g/L.
  3. Primers, Sealers, and Undercoaters: 200 g/L.

- D. Colors: As selected by Architect and Owner from manufacturer's entire range, to match existing where required.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
  - 1. Application of coating indicates acceptance of surfaces and conditions.

#### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

#### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
  - 1. Use applicators and techniques suited for paint and substrate indicated.
  - 2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  - 3. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### 3.4 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.5 INTERIOR PAINTING SCHEDULE

- A. Galvanized-Metal Substrates:
  - 1. Institutional Low-Odor/VOC Latex System:
    - a. Prime Coat: Primer, galvanized, water based, **MPI #134**.
    - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
    - c. Topcoat: Latex, interior, institutional low odor/VOC, flat (Gloss Level 1), **MPI #143**.

END OF SECTION 099123

SECTION 220719 - PLUMBING PIPING 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 plumbing piping services:

1. Stormwater piping exposed to freezing conditions.
2. Roof drains and rainwater leaders.

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 pipe expansion joints for each type of insulation.
  3. Detail insulation application at elbows, fittings, flanges, valves, and specialties for each type of insulation.
  4. Detail removable insulation at piping specialties, equipment connections, and access panels.
  5. Detail application of field-applied jackets.
  6. 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. Preformed Pipe Insulation Materials: 12 inches long by NPS 2.
  2. Jacket Materials for Pipe: 12 inches long by NPS 2.
  3. Sheet Jacket Materials: 12 inches square.
  4. 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.
- C. Comply with the following applicable standards and other requirements specified for miscellaneous components:
  - 1. Supply and Drain Protective Shielding Guards: ICC A117.1.

#### 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 220529 "Hangers and Supports for Plumbing 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.

#### 1.8 SCHEDULING

- A. Schedule insulation application after pressure testing systems. 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. Pipe insulation thickness shall conform to ASHRAE 90.1 2007, Table 6.8.3.



- B. Comply with requirements in "Piping Insulation Schedule, General" and "Indoor Piping Insulation Schedule" articles for where insulating materials shall be applied.
- C. Products shall not contain asbestos, lead, mercury, or mercury compounds.
- D. 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.
- E. Insulation materials for use on austenitic stainless-steel shall be qualified as acceptable according to ASTM C 795.
- F. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.
- G. Mineral-Fiber, Preformed Pipe Insulation:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
    - a. Johns Manville; a Berkshire Hathaway company; **Micro-Lok**
    - b. Knauf Insulation; **Earthwool 1000 Degree Pipe Insulation with ECOSE Technology**
    - c. 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-SSL. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

## 2.2 INSULATING CEMENTS

- A. Mineral-Fiber Insulating Cement: Comply with ASTM C 195.
  - 1. Manufacturers: Subject to compliance with requirements, provide the following:
    - a. Ramco Insulation, Inc; **Super-Stik**
- B. Expanded or Exfoliated Vermiculite Insulating Cement: Comply with ASTM C 196.
  - 1. Manufacturers: Subject to compliance with requirements, provide the following:
    - a. Ramco Insulation, Inc; **Thermokote V**
- C. Mineral-Fiber, Hydraulic-Setting Insulating and Finishing Cement: Comply with ASTM C 449.
  - 1. Manufacturers: Subject to compliance with requirements, provide 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. Manufacturers: Subject to compliance with requirements, provide the following:
    - a. Foster Brand; H. B. Fuller Construction Products; **81-84**
  - 2. For indoor applications, adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- C. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
    - a. Childers Brand; H. B. Fuller Construction Products; **CP-127**
    - b. Eagle Bridges - Marathon Industries
    - c. Foster Brand; H. B. Fuller Construction Products; **85-60/85-70**
    - d. Mon-Eco Industries, Inc; **22-25**
  - 2. For indoor applications, adhesive shall have a VOC content of 80 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- D. ASJ Adhesive, and FSK Jacket Adhesive: Comply with MIL-A-3316C, Class 2, Grade A for bonding insulation jacket lap seams and joints.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
    - a. Childers Brand; H. B. Fuller Construction Products; **CP-82**
    - b. Eagle Bridges - Marathon Industries
    - c. Foster Brand; H. B. Fuller Construction Products; **85-20**
    - d. Mon-Eco Industries, Inc; **22-25**
  - 2. For indoor applications, adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

## 2.4 MASTICS

- A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.
  - 1. For indoor applications, use mastics that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Breather Mastic: Water based; suitable for indoor and outdoor use on above-ambient services.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
    - a. Childers Brand; H. B. Fuller Construction Products; **CP-10**
    - b. Eagle Bridges - Marathon Industries

- c. Foster Brand; H. B. Fuller Construction Products; **46-50**
  - d. Knauf Insulation; EXPERT Mastics - **KI-705 ASJ+**
  - e. Mon-Eco Industries, Inc; **55-50**
  - f. 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: Sixty percent (60%) by volume and sixty-six percent (66%) 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. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
    - a. Childers Brand; H. B. Fuller Construction Products; **CP-50 AHV2**
    - b. Foster Brand; H. B. Fuller Construction Products; **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. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
    - a. Childers Brand; H. B. Fuller Construction Products; **CP-76**
    - b. Eagle Bridges - Marathon Industries
    - c. Foster Brand; H. B. Fuller Construction Products; **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.
  - 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).
- B. FSK and Metal Jacket Flashing Sealants:

1. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
    - a. Childers Brand; H. B. Fuller Construction Products; **CP-76**
    - b. Eagle Bridges - Marathon Industries
    - c. Foster Brand; H. B. Fuller Construction Products; **95-44**
    - d. 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).
- C. ASJ Flashing Sealants, and Vinyl, PVDC, and PVC Jacket Flashing Sealants:
1. Manufacturers: Subject to compliance with requirements, provide the following:
    - a. Childers Brand; H. B. Fuller Construction Products; **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.
  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).

## 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 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. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:

- a. Johns Manville; a Berkshire Hathaway company; **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: Color-code jackets based on system. Color as selected by Architect.
  - 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. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
    - a. Avery Dennison Corporation, Specialty Tapes Division; **Fasson 0836**
    - b. Compac Corporation; **104 and 105**
    - c. Ideal Tape Co., Inc.,; an American Biltrite company; **428 AWF ASJ**
    - d. Knauf Insulation; EXPERT Tapes - **ASJ+ Tape**
    - e. 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: Two percent (2%).
  - 6. Tensile Strength: 40 lbf/inch in width.
  - 7. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.
- B. FSK Tape: Foil-face, vapor-retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C 1136.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
    - a. Avery Dennison Corporation, Specialty Tapes Division; **Fasson 0827**
    - b. Compac Corporation; **110 and 111**
    - c. Ideal Tape Co., Inc.,; an American Biltrite company; **491 AWF FSK**
    - d. Knauf Insulation; EXPERT Tapes - **FSK Tape**
    - e. 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: Two percent (2%).
  - 6. Tensile Strength: 40 lbf/inch in width.

7. FSK Tape Disks and Squares: Precut disks or squares of FSK tape.
- C. PVC Tape: White vapor-retarder tape matching field-applied PVC jacket with acrylic adhesive; suitable for indoor and outdoor applications.
1. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
    - a. Compac Corporation
    - b. Ideal Tape Co., Inc.,; an American Biltrite company; **370 White PVC tape**
    - c. Venture Tape; **1506 CW NS**
  2. Width: 2 inches.
  3. Thickness: 6 mils.
  4. Adhesion: 64 ounces force/inch in width.
  5. Elongation: Five hundred percent (500%).
  6. Tensile Strength: 18 lbf/inch in width.
- D. Aluminum-Foil Tape: Vapor-retarder tape with acrylic adhesive.
1. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
    - a. Avery Dennison Corporation, Specialty Tapes Division; **Fasson 0800**
    - b. Compac Corporation
    - c. Ideal Tape Co., Inc.,; an American Biltrite company; **488 AWF**
    - d. Knauf Insulation; EXPERT Tapes - **2 Mil Foil Tape**
    - e. Venture Tape; **3520 CW**
  2. Width: 2 inches.
  3. Thickness: 3.7 mils.
  4. Adhesion: 100 ounces force/inch in width.
  5. Elongation: Five percent (5%).
  6. Tensile Strength: 34 lbf/inch in width.
- 2.10 SECUREMENTS
- A. Bands:
1. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
    - a. ITW Insulation Systems; Illinois Tool Works, Inc; **Gerrard Strapping and Seals**
    - b. RPR Products, Inc; **Insul-Mate Strapping and Seals**
  2. Stainless-Steel: ASTM A 167 or ASTM A 240, Type 316; 0.015-inch-thick, ¾-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, ¾-inch-wide with wing seal or closed seal.
- B. Staples: Outward-clinching insulation staples, nominal ¾-inch-wide, stainless-steel or Monel.

- C. Wire: 0.062-inch soft-annealed, stainless-steel.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
    - a. C & F Wire

### PART 3 - EXECUTION

#### 3.1 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.

#### 3.2 PREPARATION

- A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.
- B. Mix insulating cements with clean potable water; if insulating cements are to be in contact with stainless-steel surfaces, use demineralized water.

#### 3.3 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. 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.
  - 4. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield.
- K. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.
- L. 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 1½ 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 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 pipe flanges and fittings.
- M. Cut insulation in a manner to avoid compressing insulation more than seventy-five percent (75%) of its nominal thickness.
- N. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.
- O. 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.
- P. 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. Cleanouts.



### 3.4 PENETRATIONS

- A. Insulation Installation at Roof Penetrations: Install insulation continuously through roof penetrations.
  - 1. Seal penetrations with flashing sealant.
  - 2. For applications requiring only indoor insulation, terminate insulation above roof 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 roof flashing at least 2 inches below top of roof flashing.
  - 4. Seal jacket to roof flashing 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."

### 3.5 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, mitered fittings made from same material and density as adjacent pipe insulation or PVC fitting cover manufacturer recommended flexible fiberglass inserts. 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 (2) times the thickness of pipe insulation, or one (1) 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 (2) times the thickness of pipe insulation, or one (1) 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 (2) times the thickness of pipe insulation, or one (1) 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 (2) 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 (2) 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.

### 3.6 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. 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 surfaces, secure laps with outward clinched staples at 6 inches o.c.
4. 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.

### 3.7 FIELD-APPLIED JACKET INSTALLATION

- A. Where glass-cloth jackets are indicated, install directly over bare insulation or insulation with factory-applied jackets.
  1. Draw jacket smooth and tight to surface with 2-inch overlap at seams and joints.
  2. Embed glass cloth between two (2) 0.062-inch-thick coats of lagging adhesive.
  3. Completely encapsulate insulation with coating, leaving no exposed insulation.
- B. Where FSK jackets are indicated, install as follows:
  1. Draw jacket material smooth and tight.
  2. Install lap or joint strips with same material as jacket.
  3. Secure jacket to insulation with manufacturer's recommended adhesive.
  4. Install jacket with 1½-inch laps at longitudinal seams and 3-inch-wide joint strips at end joints.
  5. Seal openings, punctures, and breaks in vapor-retarder jackets and exposed insulation with vapor-barrier mastic.
- C. Where PVC jackets are indicated, install with 1-inch overlap at longitudinal seams and end joints. Seal with manufacturer's recommended adhesive.
  1. Apply two (2) continuous beads of adhesive to seams and joints, one bead under lap and the finish bead along seam and joint edge.
- D. Where metal jackets are indicated, install with 2-inch overlap at longitudinal seams and end joints. Overlap longitudinal seams arranged to shed water. Seal end joints with weatherproof sealant recommended by insulation manufacturer. Secure jacket with stainless-steel bands 12 inches o.c. and at end joints.

### 3.8 FINISHES

- A. Insulation with ASJ, Glass-Cloth, or Other Paintable Jacket Material: Paint jacket with paint system identified below.
  1. Flat Acrylic Finish: Two (2) finish coats over a primer that is compatible with jacket material and finish coat paint. Add fungicidal agent to render fabric mildew proof.
    - a. Finish Coat Material: Interior, flat, latex-emulsion size.
- B. Flexible Elastomeric Thermal Insulation: After adhesive has fully cured, apply two (2) coats of insulation manufacturer's recommended protective coating.
- C. Color: As selected by Architect and Owner from manufacturer's entire range. Vary first and second coats to allow visual inspection of the completed Work.

- D. Do not field paint aluminum or stainless-steel jackets.

### 3.9 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
  - 1. Inspect pipe, fittings, strainers, and valves, 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 three (3) locations of straight pipe, three (3) locations of threaded fittings, three (3) locations of welded fittings, two (2) locations of threaded strainers, two (2) locations of welded strainers, three (3) locations of threaded valves, and three (3) locations of flanged valves for each pipe service defined in the "Piping Insulation Schedule, General" Article.
- C. All insulation applications 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. Stormwater and Overflow:
  - 1. All Pipe Sizes: Insulation shall be the following:
    - a. Mineral-Fiber, Preformed Pipe Insulation, Type I: 1-inch-thick.
- B. Roof Drain and Overflow Drain Bodies:
  - 1. All Pipe Sizes: Insulation shall be the following:
    - a. Mineral-Fiber, Preformed Pipe Insulation, Type I: 1-inch-thick.

### 3.12 INDOOR, FIELD-APPLIED JACKET SCHEDULE

- A. Install jacket over insulation material. For insulation with factory-applied jacket, install the field-applied jacket over the factory-applied jacket. If more than one material is listed, selection from materials listed is Contractor's option.
- B. Piping, Concealed:

1. None.

C. Piping, Exposed:

1. PVC: 20 mils thick.

END OF SECTION 220719

SECTION 221423 - STORM DRAINAGE PIPING SPECIALTIES

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. Roof drains.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 QUALITY ASSURANCE

- A. Drainage piping specialties shall bear label, stamp, or other markings of specified testing agency.

PART 2 - PRODUCTS

2.1 METAL ROOF DRAINS

- A. Cast-Iron, Large-Sump, General-Purpose Roof Drains:

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide Josam Company; **Series 21500** or comparable product by one (1) of the following:
    - a. Smith, Jay R. Mfg. Co.
    - b. Watts; a Watts Water Technologies company
    - c. Zurn Industries, LLC
  - 2. Standard: ASME A112.6.4, for general-purpose roof drains.
  - 3. Body Material: Cast iron.
  - 4. Dimension of Body: Nominal 15-inch diameter.
  - 5. Combination Flashing Ring and Gravel Stop: Required.
  - 6. Outlet: Bottom.
  - 7. Extension Collars: Required.
  - 8. Underdeck Clamp: Required.
  - 9. Sump Receiver Plate: Required.
  - 10. Dome Material: Cast iron.
  - 11. Perforated Gravel Guard: Not required.
  - 12. Vandal-Proof Dome: Required.

## B. Bi-Functional Roof Drain Dual Outlets:

1. Primary Drain Outlet: Attached to storm sewer.
2. Overflow Drain Outlet: Indicated on the Drawings.
3. Basis-of-Design Product: Subject to compliance with requirements, provide Froet Industries, LLC; **Model #100C2-OFS** or comparable product by one (1) of the following:
  - a. Josam Company
  - b. Watts; a Watts Water Technologies company
  - c. Zurn Industries, LLC
4. Compliance:
  - a. ANSI/ASME A112.6.4.
  - b. IAPMO IGC 187.
  - c. ICC-ES LC 1021.
5. Body:
  - a. Bi-functional.
  - b. Cast Iron: ASTM A 48, Class 25.
  - c. One-piece casting including both outlets free of internal bosses.
  - d. Anchor flange.
  - e. Powder coated.
  - f. Overflow riser pipe must be removable
6. Dome Strainer:
  - a. Cast Iron: ASTM A 48, Class 25.
  - b. Minimum Free Area by Drain Size: 2 inches-30 in<sup>2</sup>; 3 inches-62 in<sup>2</sup>; 4 inches-62 in<sup>2</sup>; 5 inches-95 in<sup>2</sup>; 6 inches-95 in<sup>2</sup>; 8 inches-163 in<sup>2</sup>.
7. Waterproofing Membrane Clamp Ring:
  - a. Width: 2.375 inches.
  - b. Cast Iron: ASTM A 48, Class 25.
  - c. Integral Gravel Stop: 1¼-inch height minimum.
  - d. Anchorage: Four (4) 1½-inch bolts pre-applied with anti-seize.
  - e. Free Area Height Above Roof: ¼-inch.
8. Pipe Size: Indicated on the Drawings.
9. Standard Bi-Functional Roof Drains:
  - a. Primary Strainer: 5 inches high.
  - b. Overflow Inlet: 6 inches high.
10. Low-Profile Bi-Functional Roof Drains:
  - a. Primary Strainer: 3 inches high.
  - b. Overflow Inlet: 4 inches high.



11. Deck Clamp: L-shaped clamp to hold drain body in place.
12. Elevation Ring (1.5, 2) is a pre-engineered ring with a fixed height to elevate drain so start of free drainage area is level with height of 1½-inch and 2-inch insulation to eliminate ponding around roof drain.
13. Drain Extension: Adjust proper primary outlet elevations in relation to roof deck thickness or to adjust drain inlet elevations in relation to insulation thickness.
14. Drain Pan: 14-gauge flat plate. Mount roof drain to drain pan.
15. Sump Pan: 14-gauge galvanized steel.
16. Deck Mounting Plate:
  - a. 14-gauge flat plate.
  - b. Allows drain to be directly mounted to plate elevated 2¼ inches above roof deck.
  - c. Eliminates need for deck clamp.
17. Finishing Ring: Recessed ring to allow drain body to be installed in flush configuration, either directly to roof deck or into drain pan.
18. Overflow Strainer:
  - a. Cast Iron: ASTM A 48, Class 25.
  - b. Minimum Free Area by Drain Size: 2 inches-73 in<sup>2</sup>; 3 inches-105 in<sup>2</sup>; 4 inches-105 in<sup>2</sup>; 5 inches-146 in<sup>2</sup>; 6 inches-146 in<sup>2</sup>; 8 inches-200 in<sup>2</sup>.
  - c. Type: Standard.
  - d. Debris strainer for overflow pipe.
  - e. Vandal resistant.
19. Vent Pipe:
  - a. 12-inch extension above primary drain strainer.
  - b. Used as plumbing vent pipe when overflow drain is not needed.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Install roof drains at low points of roof areas according to roof membrane manufacturer's written installation instructions.
  1. Install flashing collar or flange of roof drain to prevent leakage between drain and adjoining roofing. Maintain integrity of waterproof membranes where penetrated.
  2. Install expansion joints, if indicated, in roof drain outlets.
  3. Position roof drains for easy access and maintenance.

#### 3.2 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION 221423



Town of Fairfield

# Roger Ludlowe Middle School Roof Replacement

689 Unquowa Road  
Fairfield, Connecticut 06824

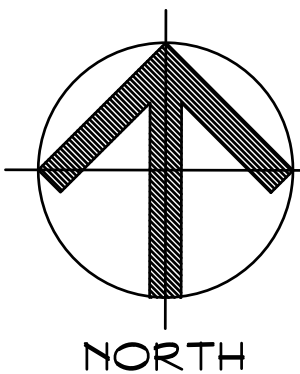


## DRAWING LIST:

- Cover Sheet
- C1 Code Information
- A1 Overall Roof Plan
- A2 Part Plan "A"
- A3 Part Plan "B"
- A4 Roof Details

SITE LOCATION MAP

SCALE: NONE



SILVER / PETRUCELLI + ASSOCIATES

*Architects / Engineers / Interior Designers*

3190 Whitney Avenue, Hamden, CT 06518-2340

One Post Hill Place, New London, CT 06320

Tel. 203 230 9007 Fax. 203 230 8247

[silverpetrucelli.com](http://silverpetrucelli.com)

## OFFICIALS:

Building Inspector: \_\_\_\_\_

Fire Marshal: \_\_\_\_\_

Sanitarian/Health Inspector: \_\_\_\_\_

ADA/504 Coordinator: \_\_\_\_\_



State Project #051-0152 RR

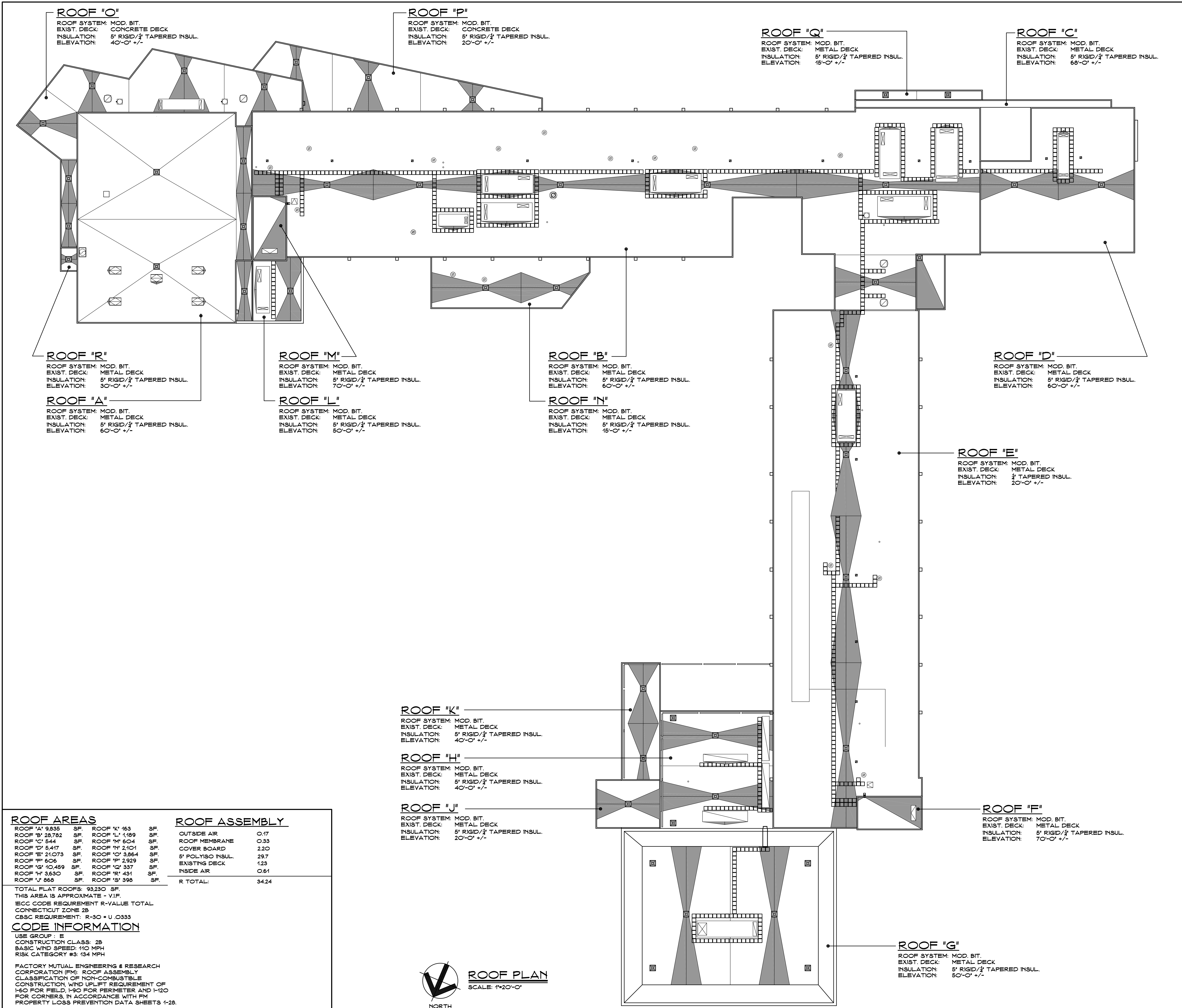


November 4, 2021









**SYMBOL LEGEND**

PLAN, SECTION, DETAIL OR ELEVATION NUMBER - SHEET NUMBER.

EXISTING OUTLINE OF BUILDING.

INDICATES SLOPE DIRECTION OF TAPERED INSULATION AT 1/4" PER FOOT MIN.

TAPERED INSULATION CRICKET SLOPED @ 1/4" PER FOOT.

CONTRACTOR TO VERIFY DIMENSION IN FIELD.

INDICATES SLOPE DIRECTION & INDICATES EXISTING ROOF PITCH.

INDICATES HIGH POINT OF INSULATION.

EXISTING ROOF DRAIN TO BE REMOVED. SEE DEMOLITION NOTES.

ROOF DRAIN & SUMP TO BE INSTALLED. SEE DETAIL A/A4.

SECONDARY OVERFLOW DRAIN TO BE INSTALLED. SEE DETAIL B/A4.

METAL COLLECTION BOX & METAL DOWNSPOUT. SEE DETAIL R/A4.

EMERGENCY OVERFLOW SCUPPER. SEE DETAIL P/A4.

EXIST. VENT STACK. SEE DETAIL J/A4.

PITCH POCKET DETAIL. SEE DETAIL J/A4.

EXIST. ROOFTOP FAN UNIT. SEE DETAIL D/A4.

EXIST. MECHANICAL UNIT. SEE DETAIL F/A4.

EXIST. ROOFTOP MECH. UNIT. SEE CONSTRUCTION NOTE #6.

WALKWAY PADS. SEE CONSTRUCTION NOTE #2.

METAL LADDER. TEMPORARILY REMOVE & RE-INSTALL.

METAL STAIRCASE. TEMPORARILY REMOVE & RE-INSTALL.

HOT FLUE. SEE DETAIL G/A4.

EXIST. DOOR. SEE DETAIL M/A4.

HARNESSE SUPPORT. SEE DETAIL K/A4.

CONDUIT CURB. SEE DETAIL S/A4.

SMOKE HATCH. SEE DETAIL H/A4.

EXPANSION JOINT. SEE DETAIL T/A4.

EXIST. ROOF HATCH TO REMAIN.

**GENERAL NOTES**

- ALL FLAT ROOFS TO RECEIVE 1/4" PER FOOT TAPERED RIGID INSULATION MINIMUM UNLESS OTHERWISE NOTED.
- FIELD VERIFY ALL DIMENSIONS & PERFORM TEST CUTS AT EACH ROOF PRIOR TO THE BID.
- ALL MATERIALS ARE NEW UNLESS OTHERWISE NOTED 'EXISTING'.
- ALL WOOD BLOCKING, PLYWOOD & NAILERS TO BE PRESSURE TREATED (P.T.)
- ALL WOOD BLOCKING INDICATED IN DETAILS ARE TO BE ANCHORED TO THE EXISTING STRUCTURE.
- ALL MEMBRANE FLASHING INDICATED IS TO EXTEND A MINIMUM OF 6" (VERTICAL OR HORIZONTAL).
- CONTRACTOR IS TO SURVEY THE EXISTING ROOF DECKS W/A LEVEL (AFTER DEMOLITION) TO VERIFY THE SLOPES INDICATED ON PLAN ARE ACCURATE. NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES PRIOR TO PERFORMING ANY ADDITIONAL ROOFING OPERATIONS.
- CONTRACTOR IS TO INSPECT THE UNDERSIDE OF ALL ROOF DECKS PRIOR TO ROOFING OPERATIONS TO INSURE THAT NO INTERIOR MATERIALS, EQUIPMENT, FINISHES OR OBJECTS WILL BE PIERCED OR DAMAGED.
- CONTRACTOR ASSUMES ALL RESPONSIBILITY DURING PROJECT & WILL REPLACE ANY & ALL DAMAGED EQUIPMENT W/NO ADDITIONAL COST TO OWNER.
- SITE AREAS DISTURBED SHALL BE CLEANED & RE-LEVELLED. W/LAWN AREAS MAGNETICALLY RAKED TO REMOVE ANY METAL DEBRIS & RE-SEED AS REQUIRED TO MATCH ADJACENT CONDITIONS.
- CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR CLEAN UP OF ROOFING MATERIALS & DEBRIS THAT PENETRATES THE INTERIOR ENVELOPE OF THE BUILDING W/NO ADDITIONAL COST TO THE OWNER.
- SLAKE/CLEAN OUT ALL EXISTING VERTICAL & HORIZONTAL LEADERS OUT TO NEAREST MANHOLE OUTSIDE OF BUILDING.
- ALL CRICKETS ARE TO BE SLOPED @ A MINIMUM OF 1/4" PER FOOT & COORDINATE CRICKETS AROUND EXIST. HVAC UNITS AS REQUIRED TO AVOID PONDING.
- CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL & RE-INSTALLATION OF ALL HVAC UNITS INCLUDING ANY ELECTRICAL OR MECHANICAL CONNECTIONS. THIS MAY INCLUDE THE EXTENSION OF EXISTING ELECTRICAL & DUCTWORK SYSTEMS TO ACCOMMODATE NEW MECHANICAL UNIT CURBING & NEW ROOFING SYSTEM.
- SLAKE/CLEAN OUT ALL EXISTING VENT STACKS BEFORE THE INSTALLATION OF METAL SLEEVE.
- ALL DRAIN PIPING IS INSULATED ABOVE THE CEILINGS. THE EXACT ROUTE WILL BE DETERMINED IN THE FIELD. MAKE MINOR ADJUSTMENT IN THE ROUTE AT NO ADDITIONAL COST TO OWNER.
- NEW ROOF INSULATION TO BE A MINIMUM OF R-30 AT ALL NEW ROOF DRAINS AND/OR THE LOW POINTS OF THE ROOF AREAS.
- ALL ANTENNAE, CONDUITS & ANY OTHER OBJECTS TO REMAIN AFFECTED BY SCOPE OF WORK, TO BE REMOVED & REINSTALLED.

**DEMOLITION NOTES**

- REMOVE ALL EXISTING INSULATION & ROOFING MEMBRANE.
- REMOVE ALL INDICATED EXISTING METAL FLASHING.
- REMOVE EXISTING ROOF DRAINS & SUMP.
- IF THE CONTRACTOR FINDS ANY SUSPECT HAZARDOUS MATERIALS DURING THE DEMOLITION PROCESS THAN THE CONTRACTOR MUST STOP WORK IN THIS AREA ONLY, NOT DISTURB SUSPECT MATERIAL(S) & NOTIFY THE OWNER/ARCHITECT.

**CONSTRUCTION NOTES**

- CONTRACTOR TO PROVIDE A SPECIFIED QUANTITY OF EXISTING DECK REPAIR & REPLACEMENT. SEE PROJECT MANUAL FOR ADDITIONAL INFORMATION.
- WALKWAY PADS TO BE INSTALLED. SEE PROJECT MANUAL FOR ADDITIONAL INFORMATION. COORDINATE & FINALIZE EXACT ROUTE W/OWNER & ARCHITECT.
- EXISTING METAL LADDER TO REMAIN. SCRAPE, PRIME & PAINT. SEE PROJECT MANUAL.
- EXISTING SOLAR PANEL INVERTER TO REMAIN. COORDINATE W/OWNER & SOLAR PANEL MANUFACTURER TO RAISE & ADJUST THE EXISTING INVERTER & CONDUIT HOUSING TO CONFORM W/NEW ROOF INSULATION HEIGHT.
- EXISTING PHOTOVOLTAIC CONDUIT TO REMAIN. COORDINATE W/OWNER & PHOTOVOLTAIC MANUFACTURER TO RAISE & ADJUST THE CONDUIT HOUSING TO CONFORM W/NEW ROOF INSULATION HEIGHT.
- EXISTING ROOFTOP MECHANICAL UNIT. RAISE ENTIRE UNIT MIN. 8" ABOVE HIGH POINT OF NEW ROOF INSULATION. EXTEND ALL DUCTWORK & ELECTRICAL WIRING. SEE DETAIL E/A4 & PROJECT MANUAL.
- EXISTING METAL SCREEN WALL TO REMAIN. TEMPORARILY REMOVE EXISTING METAL BLINDS TO ALLOW ROOFING OPERATIONS. SEE DETAIL J/A4.



## GENERAL NOTES

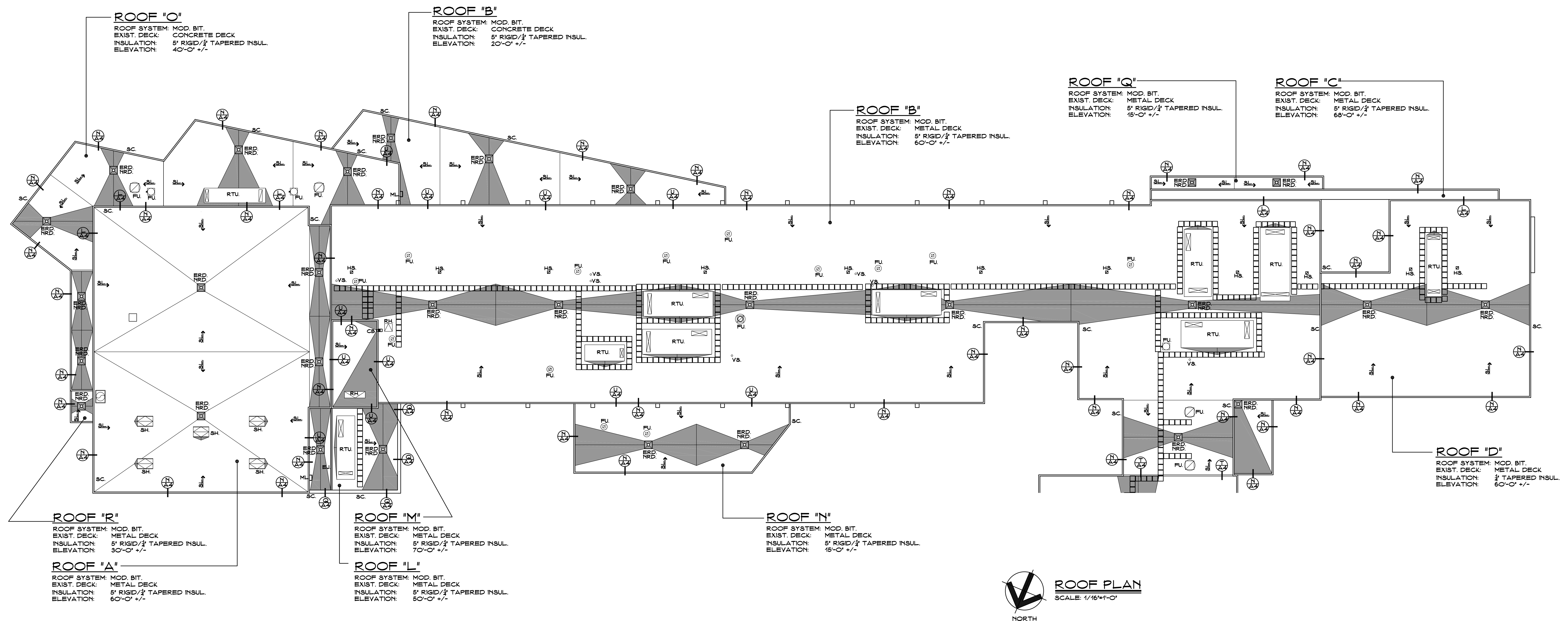
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CONSTRUCTION NOTES (X)  $\Rightarrow$

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. REMOVE ALL EXISTING INSULATION &amp; ROOFING MEMBRANE.</li> <li>2. REMOVE ALL INDICATED EXISTING METAL FLASHING.</li> <li>3. REMOVE EXISTING ROOF DRAINS &amp; SUMP.</li> <li>4. IF THE CONTRACTOR FINDS ANY SUSPECT HAZARDOUS MATERIAL DEMOLITION PROCESS THAN THE CONTRACTOR MUST STOP WORK AREA ONLY, NOT DISTURB SUSPECT MATERIAL(S) &amp; NOTIFY THE OWNER/ARCHITECT.</li> </ol> | <ol style="list-style-type: none"> <li>1. CONTRACTOR TO PROVIDE A SPECIFIED QUANTITY OF EXISTING DECK REPAIR &amp; REPLACEMENT. SEE PROJECT MANUAL FOR ADDITIONAL INFORMATION.</li> <li>2. WALKWAY PADS TO BE INSTALLED. SEE PROJECT MANUAL FOR ADDITIONAL INFORMATION. COORDINATE &amp; FINALIZE EXACT ROUTE W/OWNER &amp; ARCHITECT.</li> <li>3. EXISTING METAL LADDER TO REMAIN. SCRAPE, PRIME &amp; PAINT. SEE PROJECT MANUAL.</li> <li>4. EXISTING SOLAR PANEL INVERTER TO REMAIN. COORDINATE W/OWNER &amp; SOLAR PANEL MANUFACTURER TO RAISE &amp; ADJUST THE EXISTING INVERTER &amp; CONDUIT HOUSING TO CONFORM W/NEW ROOF INSULATION HEIGHT.</li> <li>5. EXISTING PHOTOVOLTAIC CONDUIT TO REMAIN. COORDINATE W/OWNER &amp; PHOTOVOLTAIC MANUFACTURER TO RAISE &amp; ADJUST THE CONDUIT HOUSING TO CONFORM W/NEW ROOF INSULATION HEIGHT.</li> <li>6. EXISTING ROOFTOP MECHANICAL UNIT. RAISE ENTIRE UNIT MIN. 8" ABOVE HIGH POINT OF NEW ROOF INSULATION. EXTEND ALL DUCTWORK &amp; ELECTRICAL WIRING. SEE DETAIL E/A4 &amp; PROJECT MANUAL.</li> <li>7. EXISTING METAL SCREEN WALL TO REMAIN. TEMPORARILY REMOVE EXISTING METAL BLINDS TO ALLOW ROOFING OPERATIONS. SEE DETAIL J/A4.</li> </ol> |
|---|---|

## ROOF ASSEMBLY

				12	
ROOF 'A' 9.935	SF.	ROOF 'K' 169	SF.	OUTSIDE AIR	0.17
ROOF 'B' 28.782	SF.	ROOF 'L' 163	SF.	ROOF MEMBRANE	0.33
ROOF 'C' 30.4	SF.	ROOF 'M' 60.4	SF.		
ROOF 'D' 5.417	SF.	ROOF 'N' 21.01	SF.	COVER BOARD	2.20
ROOF 'E' 21.073	SF.	ROOF 'O' 3.964	SF.	5' POLYSTY INSUL.	29.7
ROOF 'F' 6.06	SF.	ROOF 'P' 2.929	SF.	EXISTING DECK	1.23
ROOF 'G' 4.459	SF.	ROOF 'Q' 3.37	SF.	INSIDE AIR	0.61
ROOF 'H' 8.668	SF.	ROOF 'R' 431	SF.		
		ROOF 'S' 398	SF.	R TOTAL:	34.24
TOTAL FLAT ROOFS: 933.20 SF.					
THIS AREA IS APPROXIMATE - V.U.P.					
ECC CODE REQUIREMENT R-VALUE TOTAL					
CONNECTICUT ZONE 2B					
CBCS REQUIREMENT: R-30 = U .0333					
<b>CODE INFORMATION</b>					
USE GROUP: E					
CONSTRUCTION CLASS: 2B					
BASIC WIND SPEED: 110 MPH					
RISK CATEGORY #3: 134 MPH					
POLYCRY MUTUAL ENGINEERING & RESEARCH CORPORATION (PM): ROOF ASSEMBLY CLASSIFICATION OF NON-COMBUSTIBLE CONSTRUCTION WIND UPLIFT REQUIREMENT OF -160 FOR FIELD, -190 FOR PERIMETER AND -120 FOR CORNERS, IN ACCORDANCE WITH FM PROPERTY LOSS PREVENTION DATA SHEETS 1-28.					





ROOF 'A' 9.835	SF.	ROOF 'K' 163	SF.
ROOF 'B' 28.782	SF.	ROOF 'L' 1.189	SF.
ROOF 'C' 5.44	SF.	ROOF 'M' 6.04	SF.
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ROOF 'E' 21.073	SF.	ROOF 'O' 3.864	SF.
ROOF 'F' 6.06	SF.	ROOF 'P' 2.929	SF.
ROOF 'G' 10.459	SF.	ROOF 'Q' 337	SF.
ROOF 'H' 3.630	SF.	ROOF 'R' 431	SF.
ROOF 'J' 868	SF.	ROOF 'S' 398	SF.

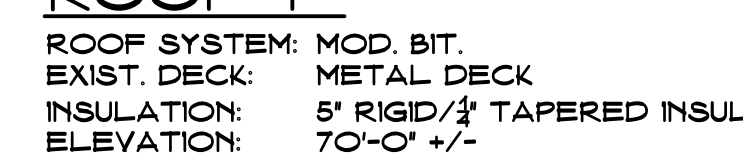
OUTSIDE AIR	0.17
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5" POLYISO INSUL.	29.7
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### CODE INFORMATION

USE GROUP : E  
CONSTRUCTION CLASS: 2B

CONSTRUCTION CLASS: 2B  
BASIC WIND SPEED: 110 MPH  
RISK CATEGORY #3: 134 MPH

FACTORY MUTUAL ENGINEERING & RESEARCH CORPORATION (FM): ROOF ASSEMBLY CLASSIFICATION OF NON-COMBUSTIBLE CONSTRUCTION, WIND UPLIFT REQUIREMENT OF I-60 FOR FIELD, I-90 FOR PERIMETER AND I-120 FOR CORNERS, IN ACCORDANCE WITH FM PROPERTY LOSS PREVENTION DATA SHEETS 1-28.



Roger Ludlowe Middle School Roof Replacement  
689 Unquowa Road  
Fairfield, Connecticut 06824



3190 Whitney Avenue, Hamden, CT 06518-2340  
One Post Hill Place, New London, CT 06320  
Tel. 203 230 9007 Fax. 203 230 8247  
*silverpetrucelli.com*

REVISION	DESCRIPTION	DATE	REVISION BY
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## Part Plan "B"

STATE PROJECT #051-0152 RR

11/01/2004

Scale:

1716-1-0

Drawn By:

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R. LINSLEY

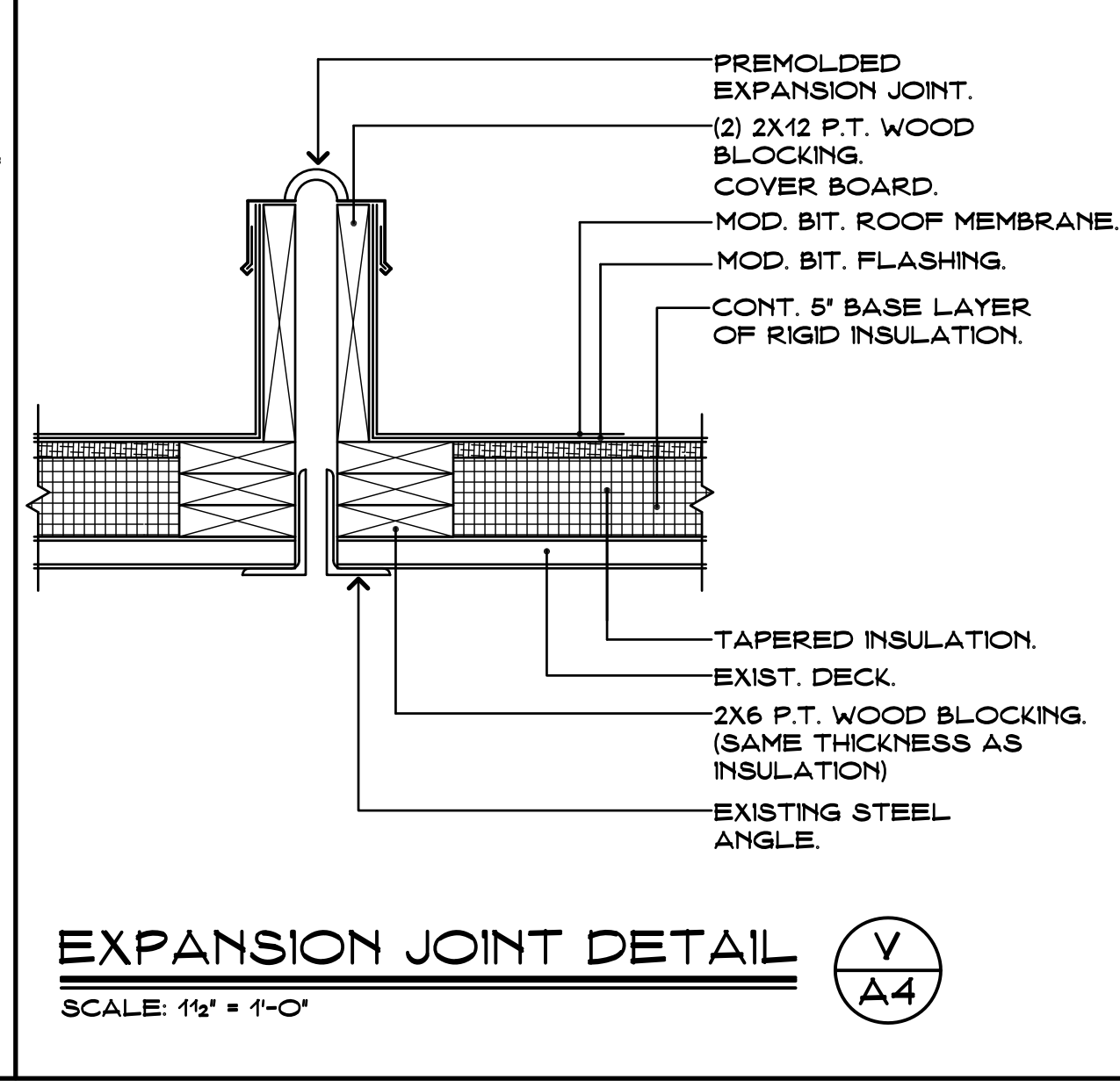
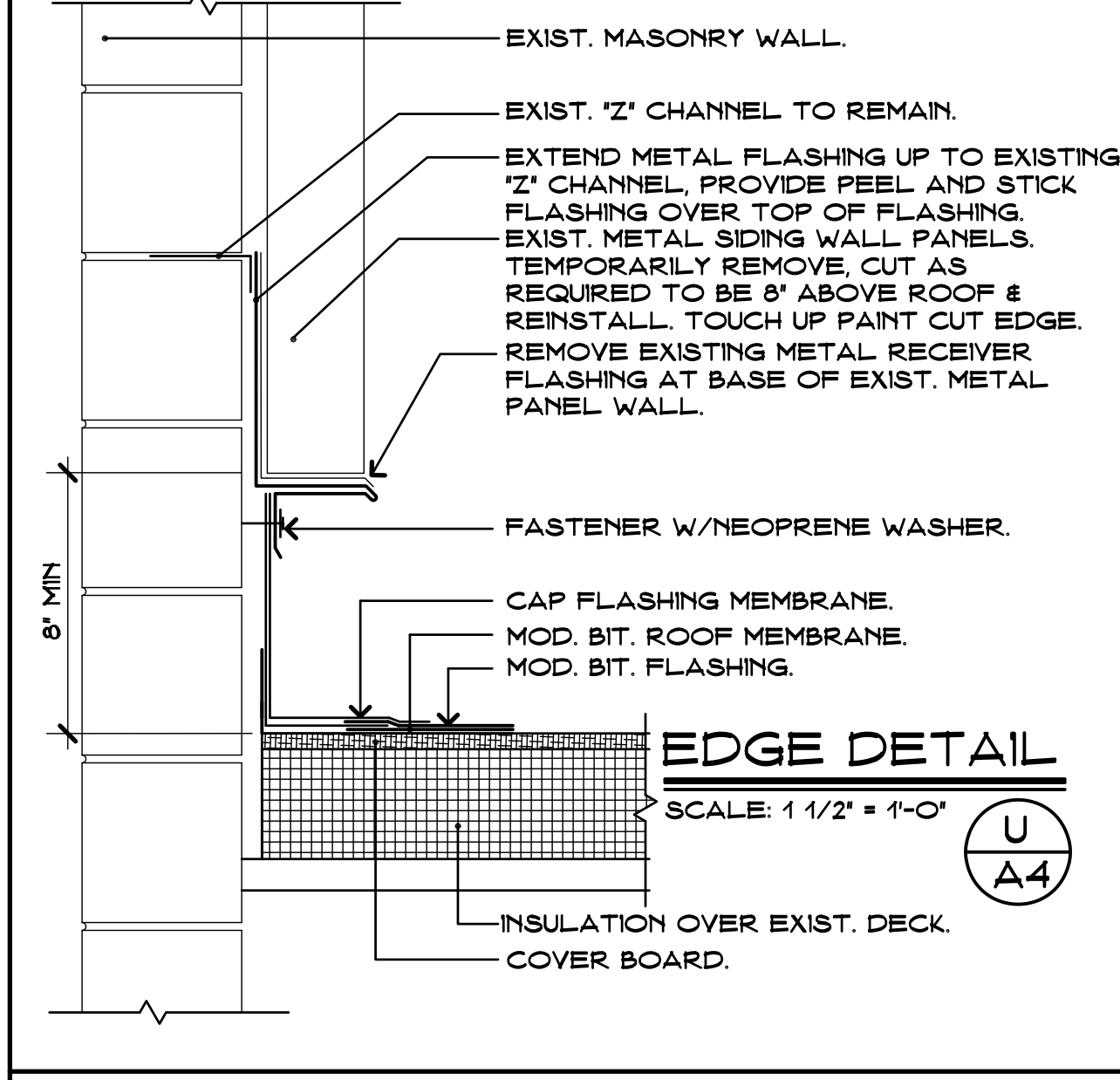
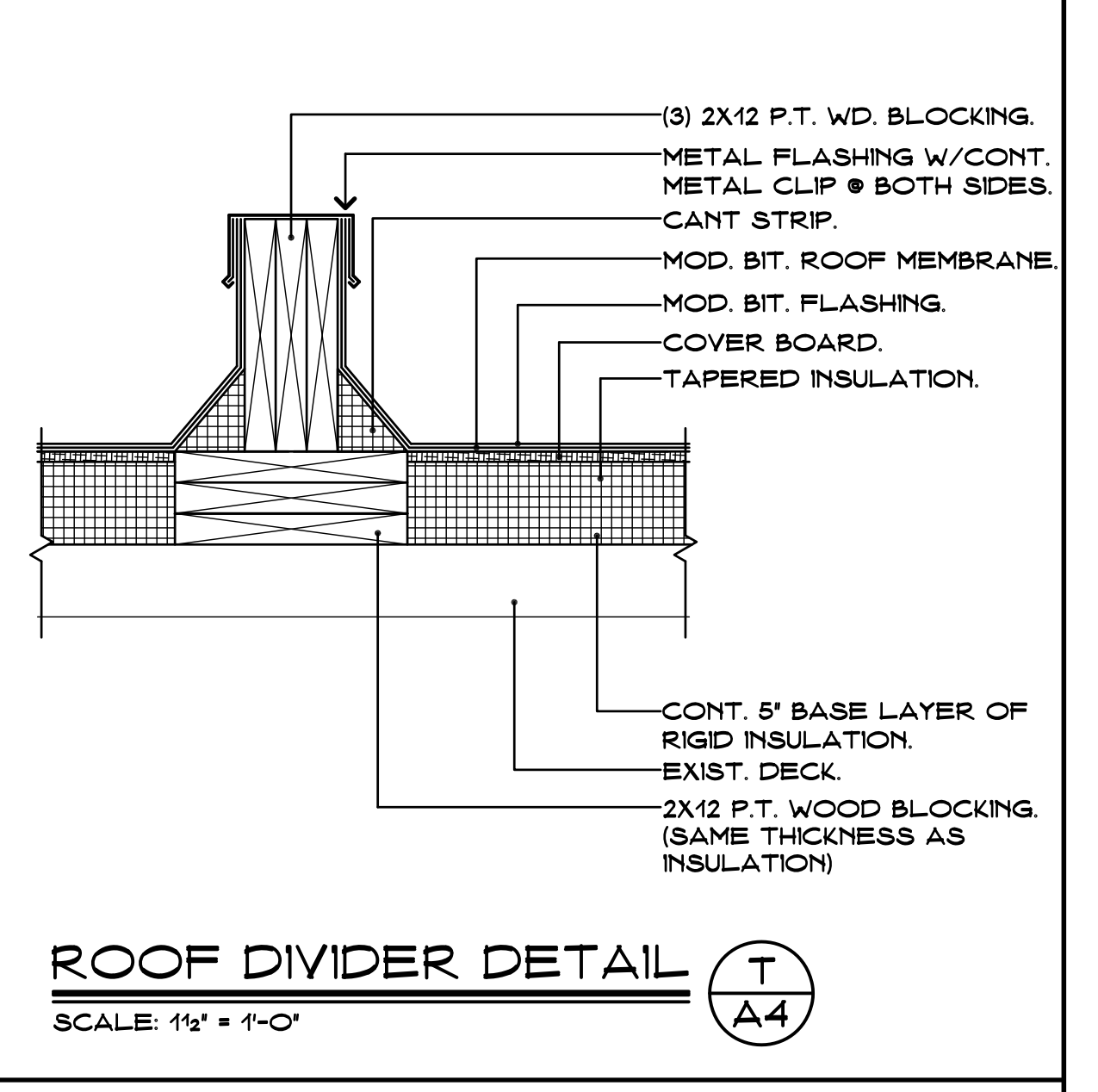
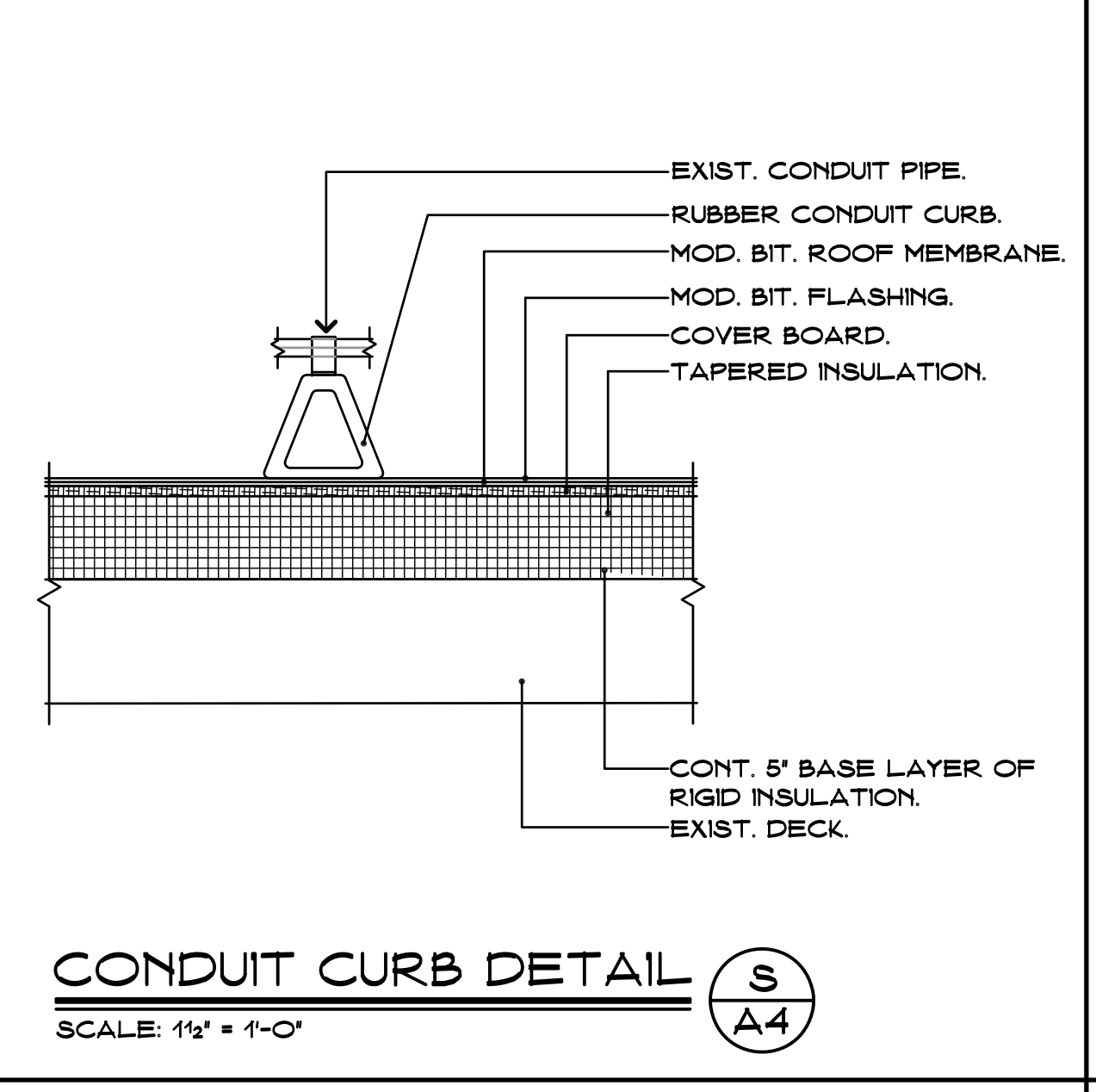
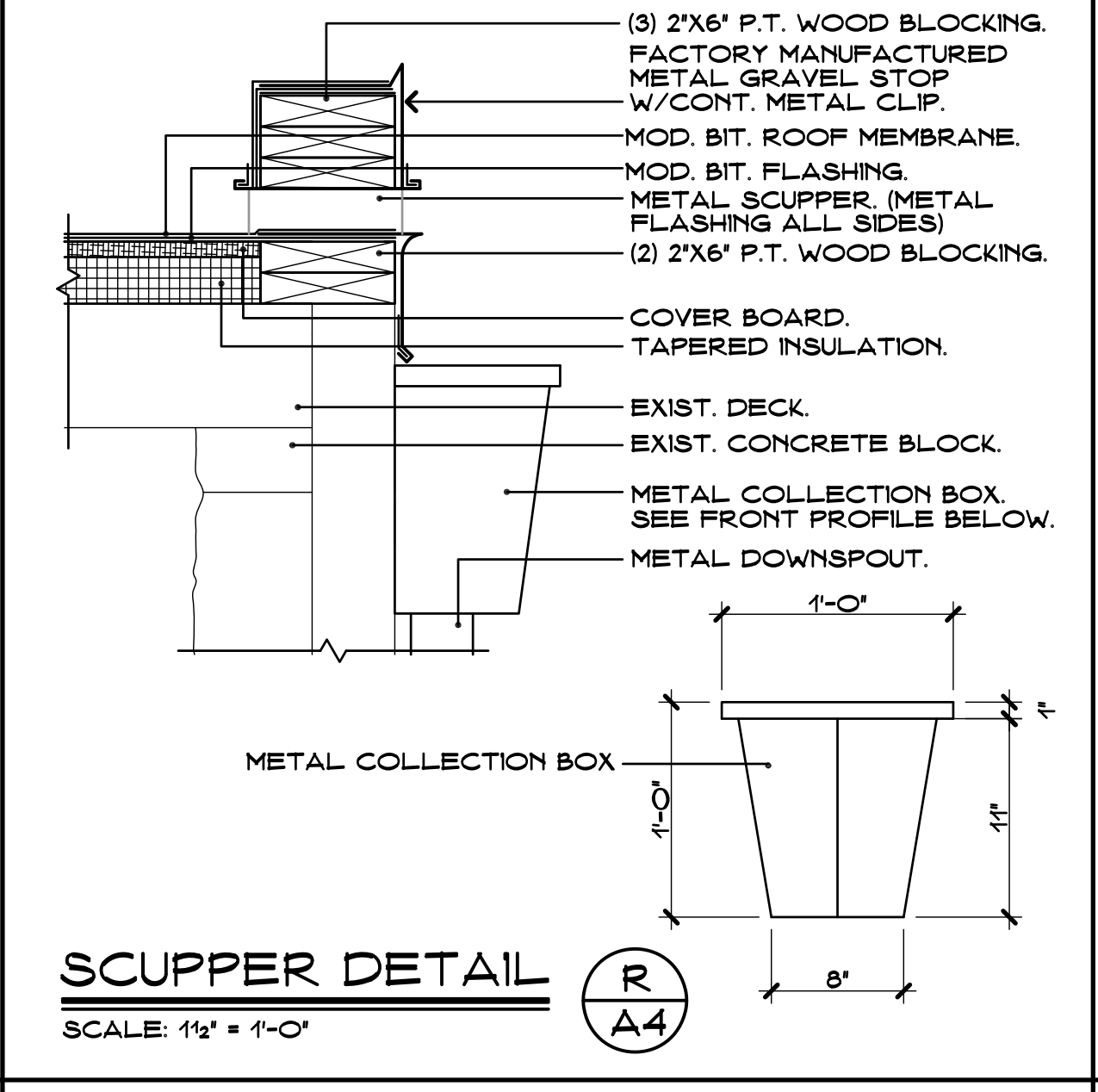
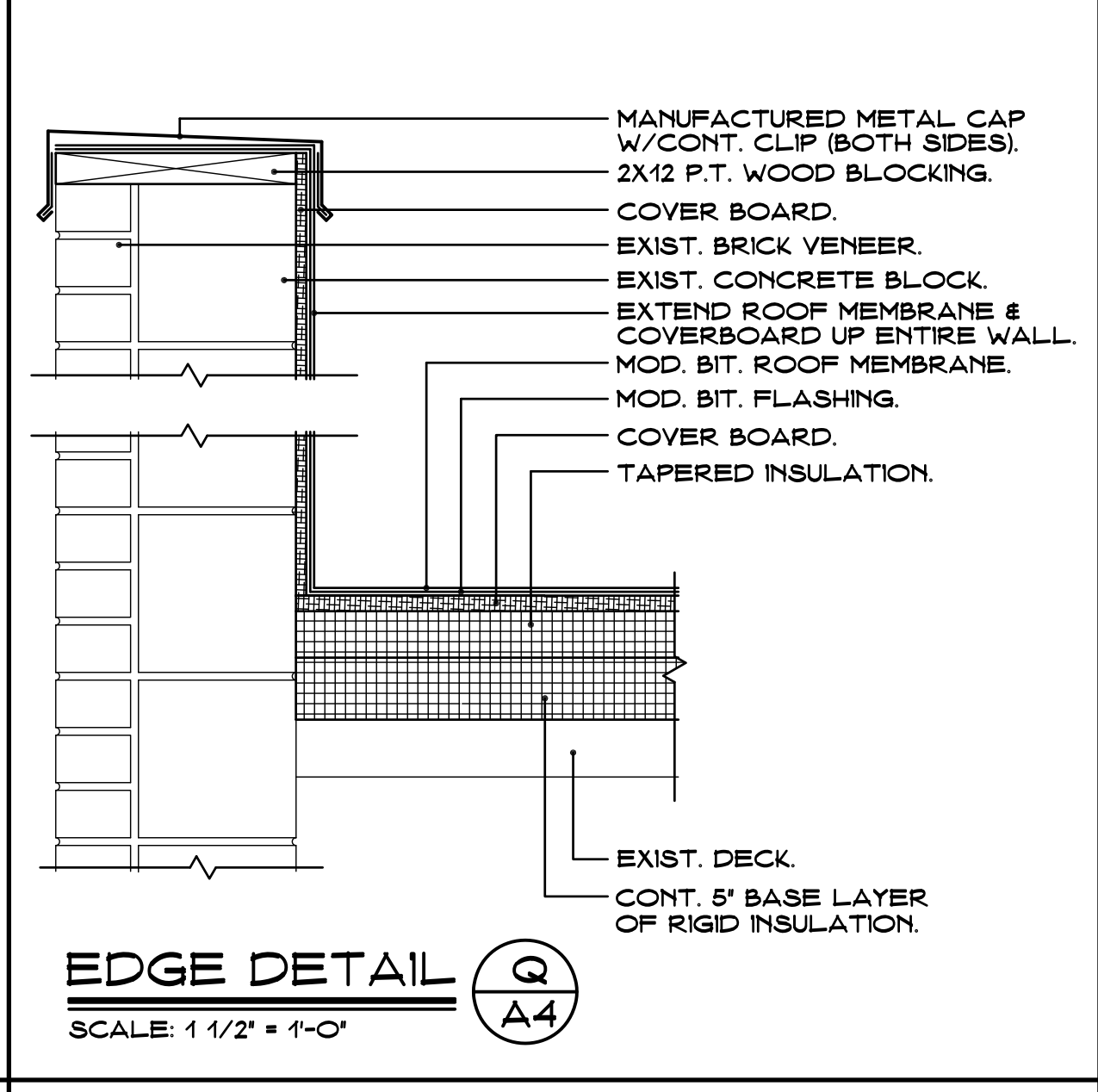
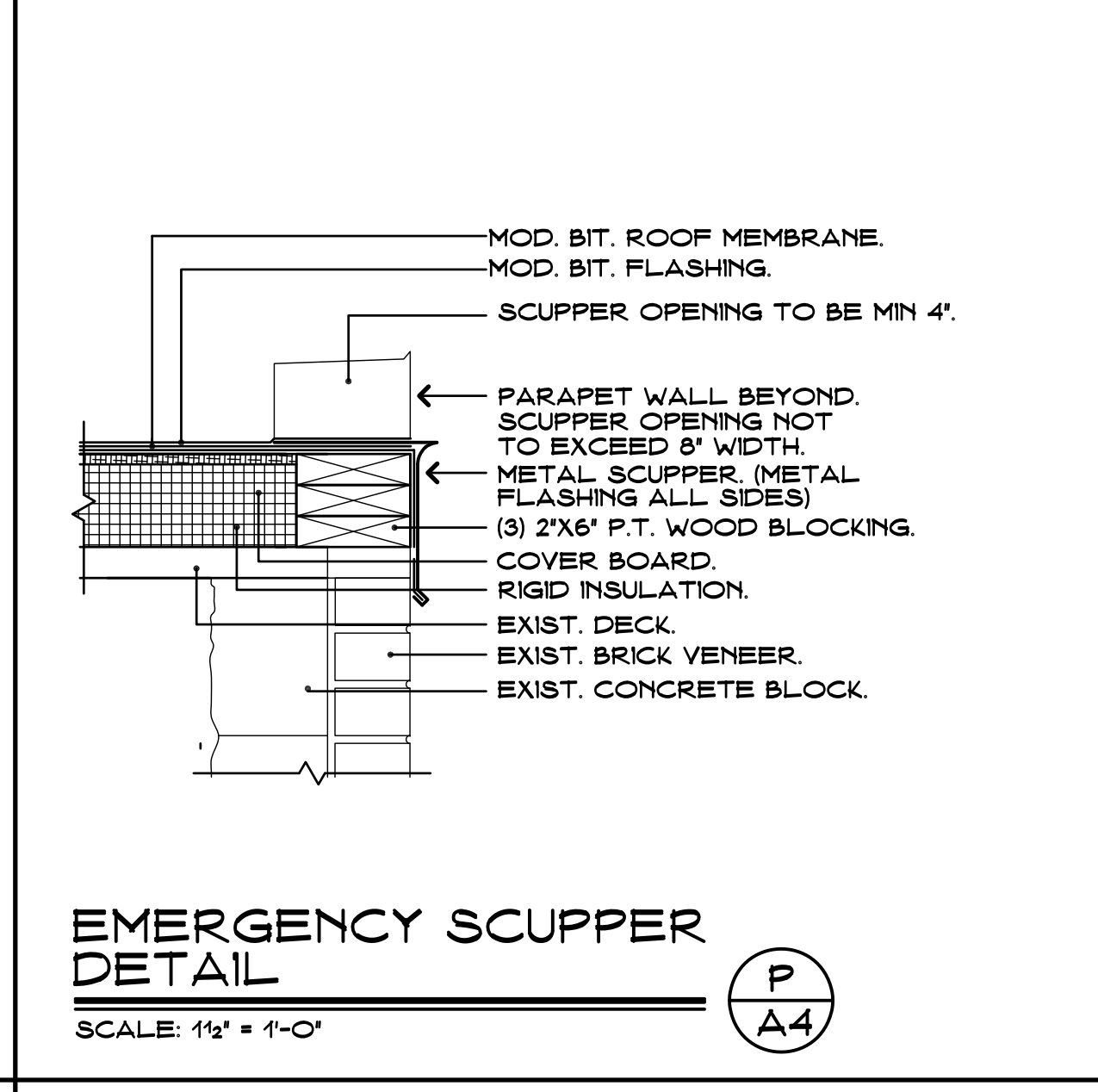
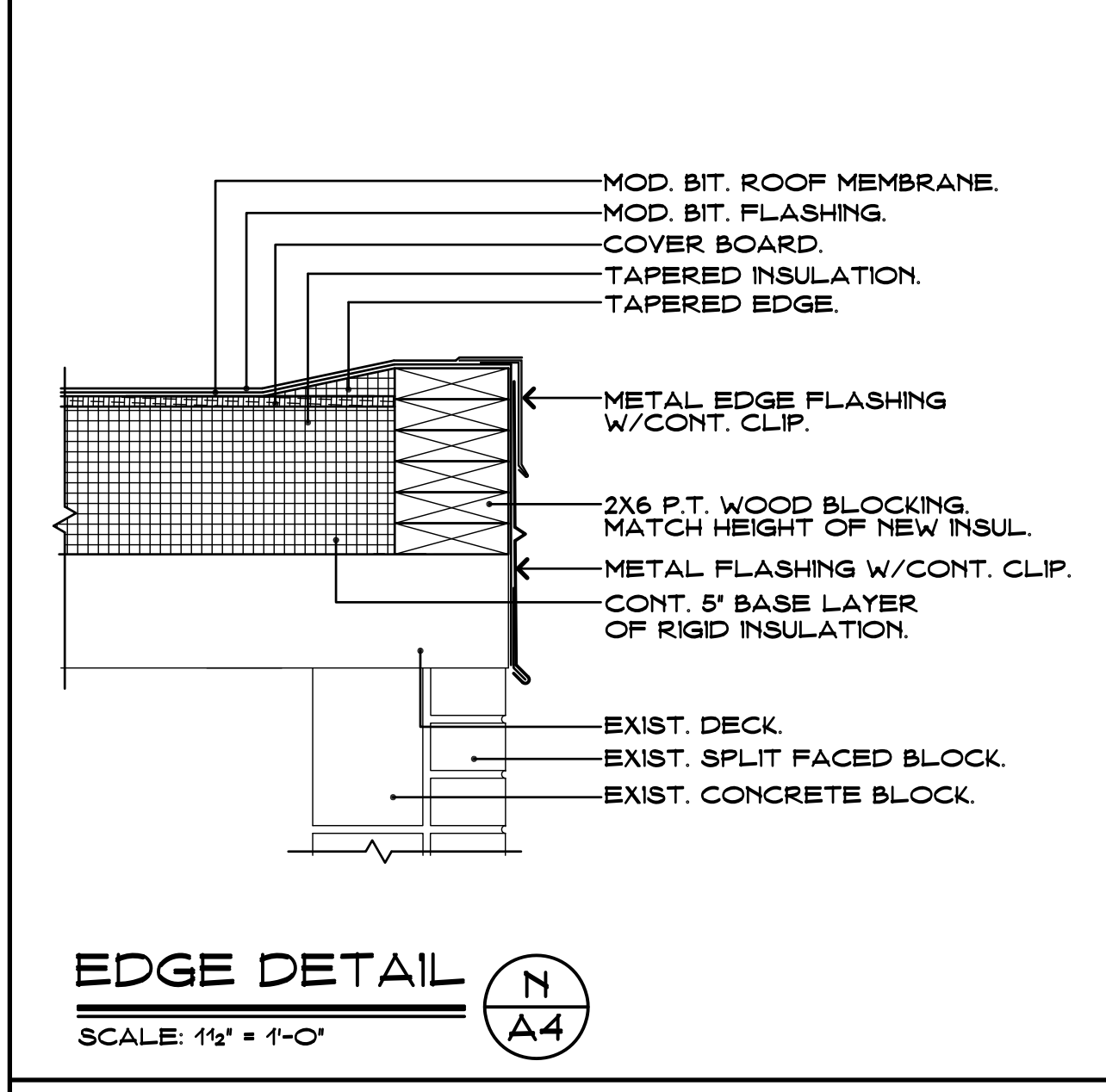
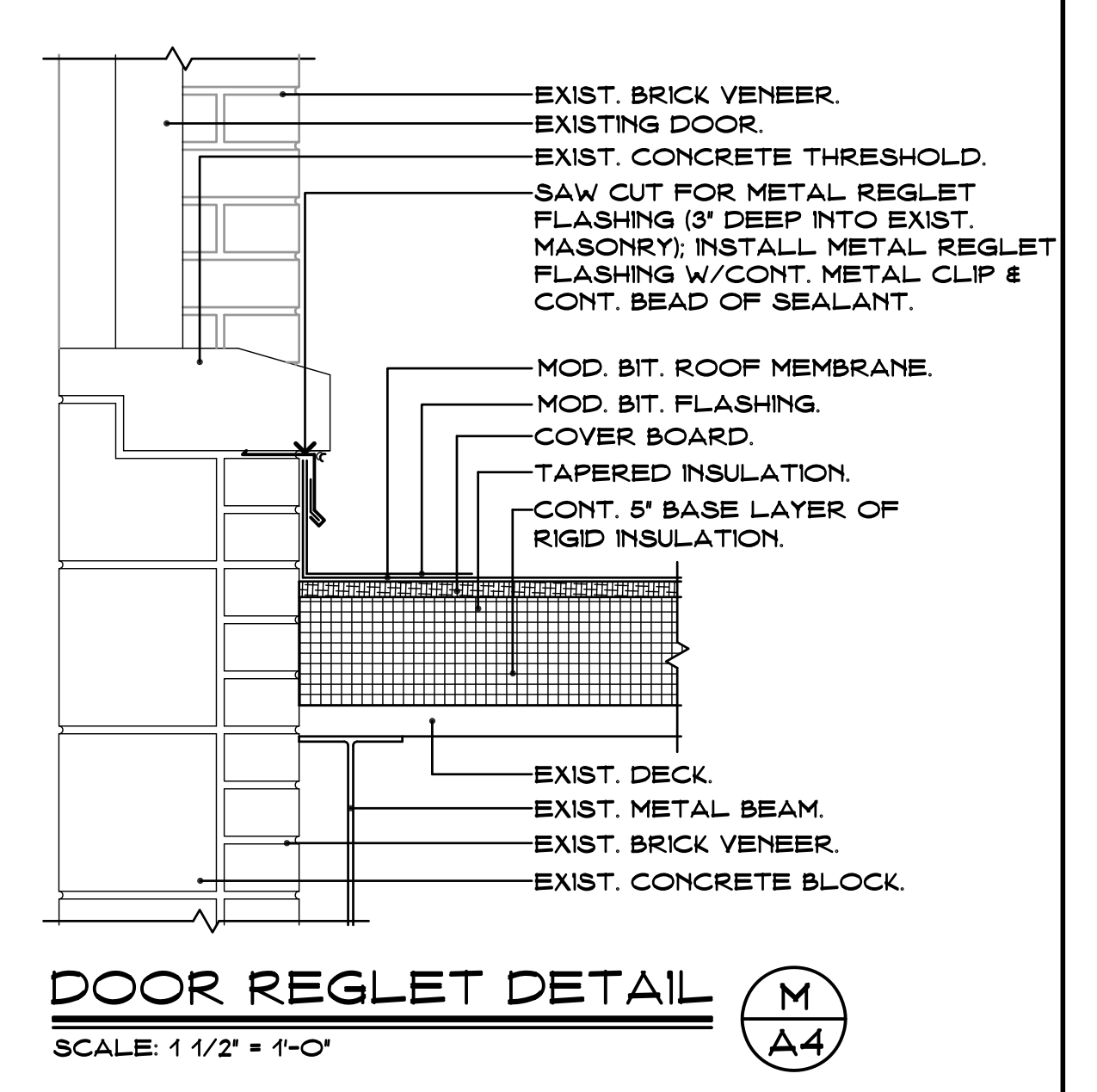
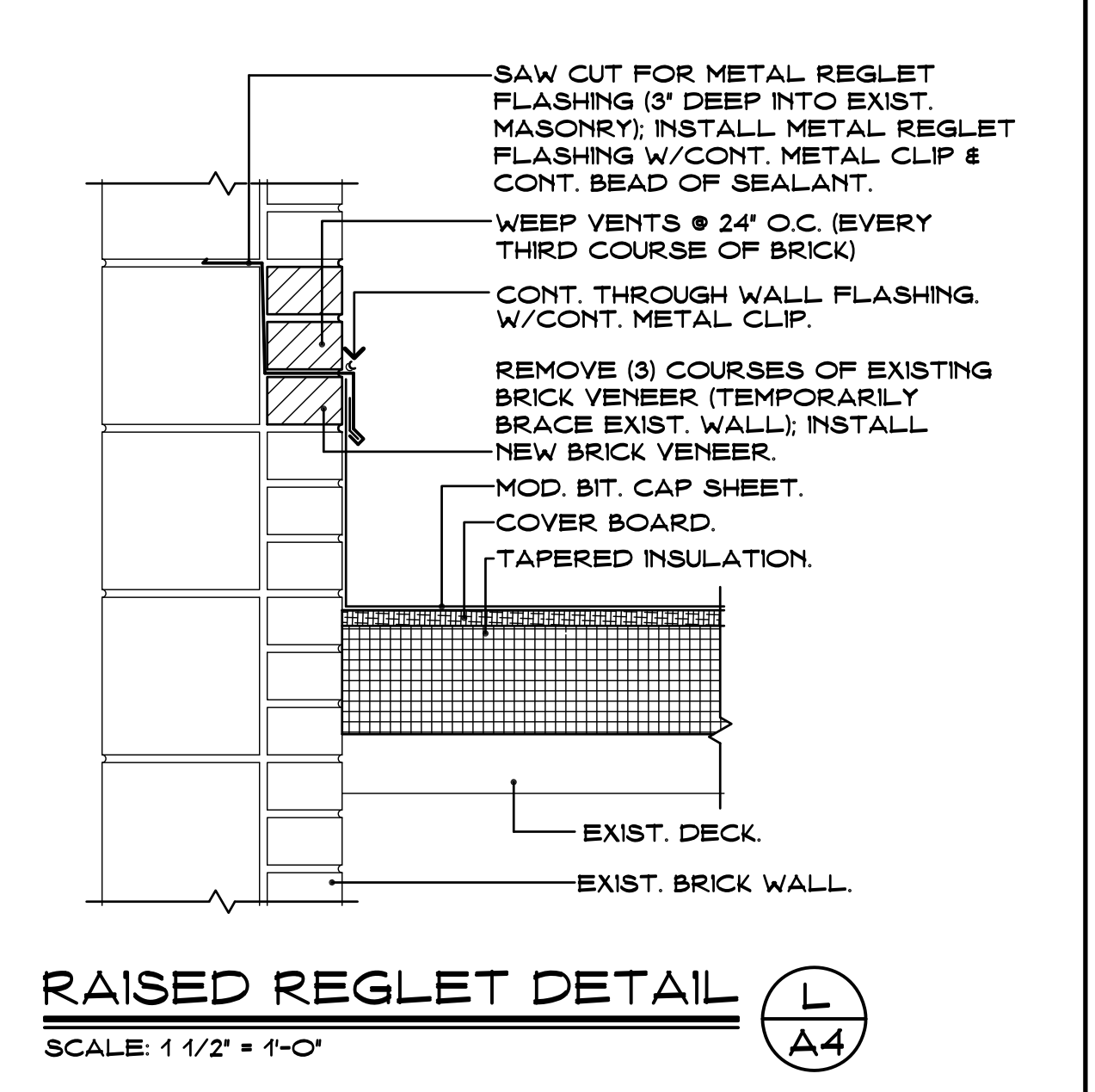
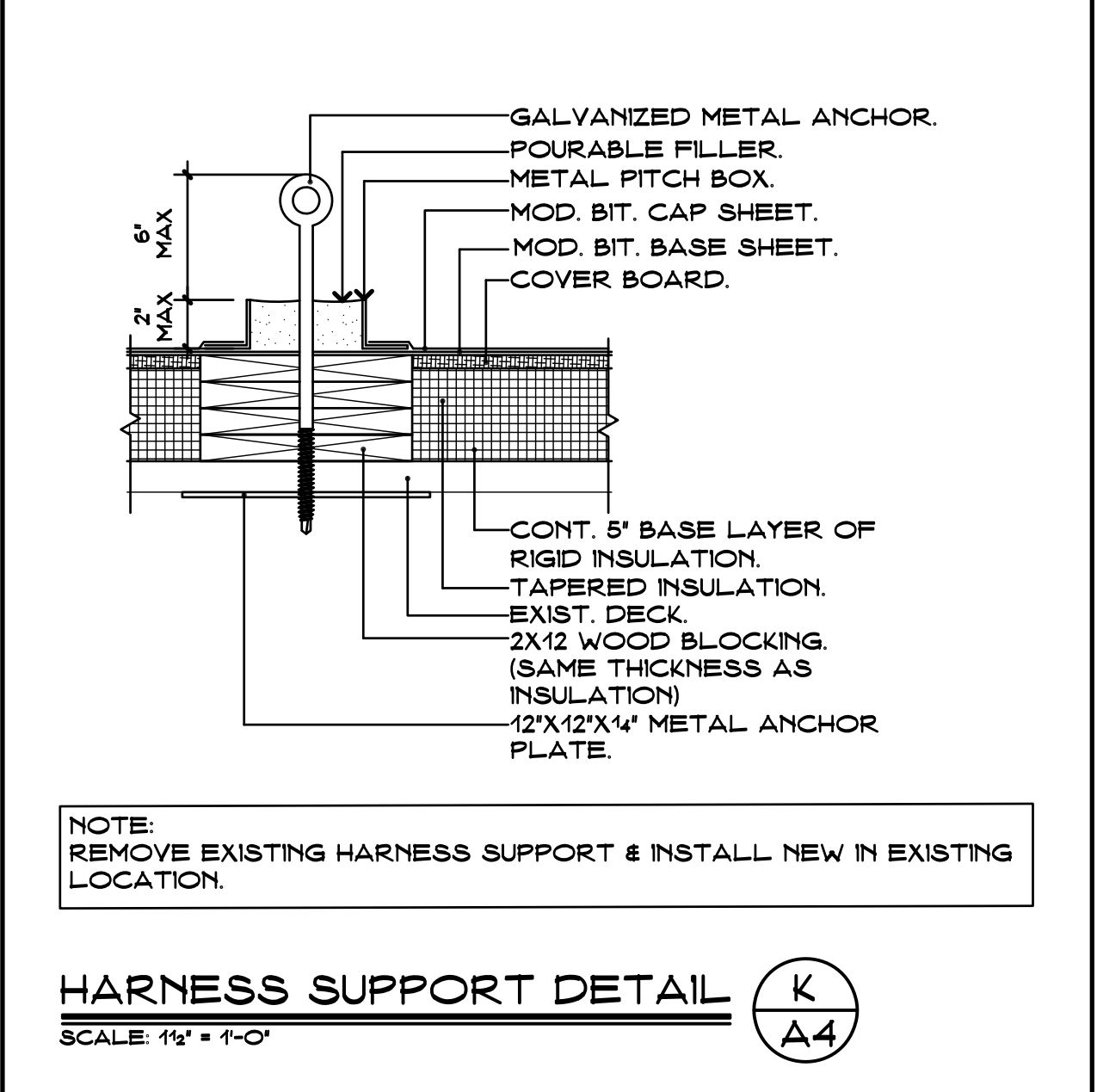
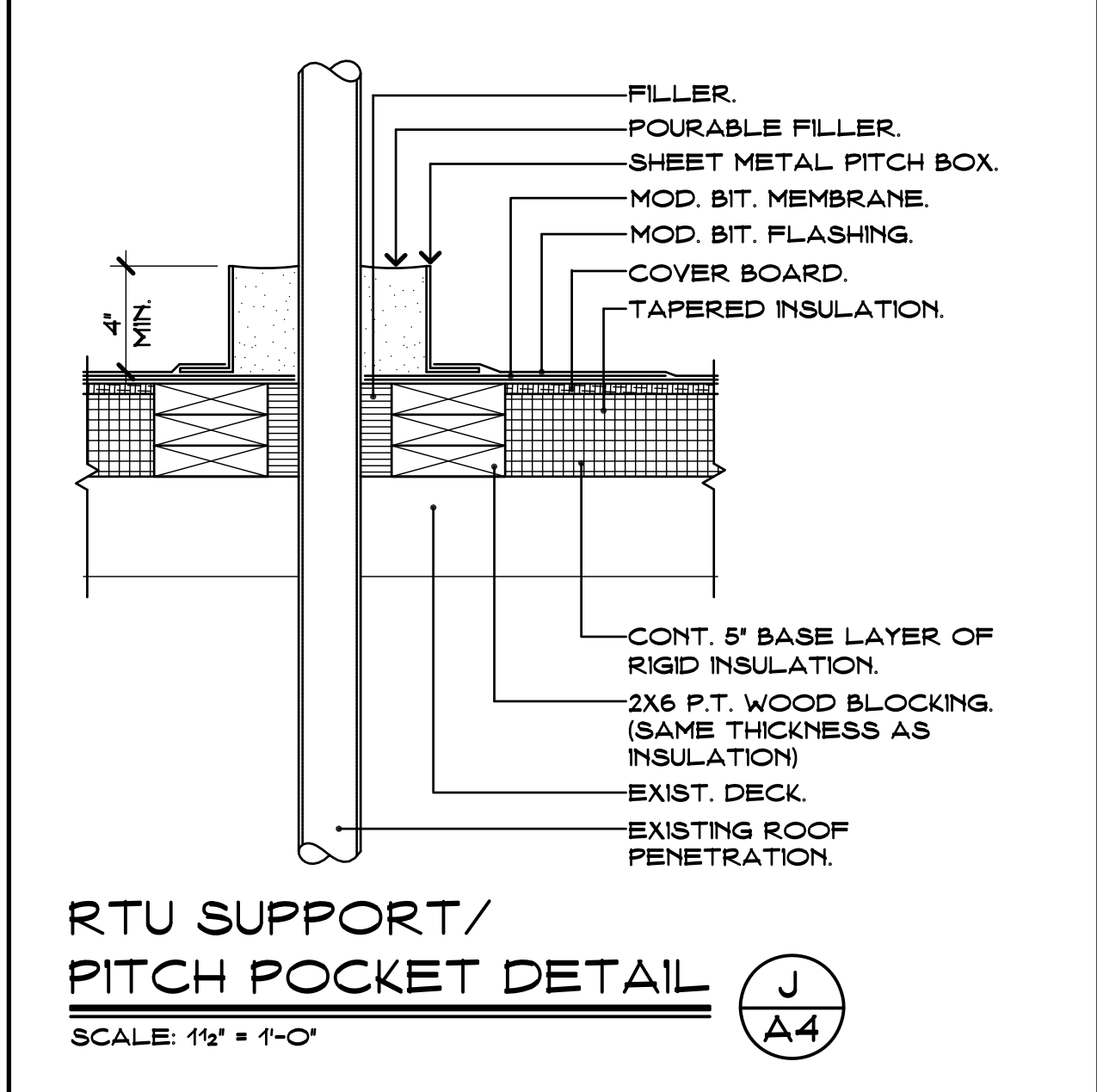
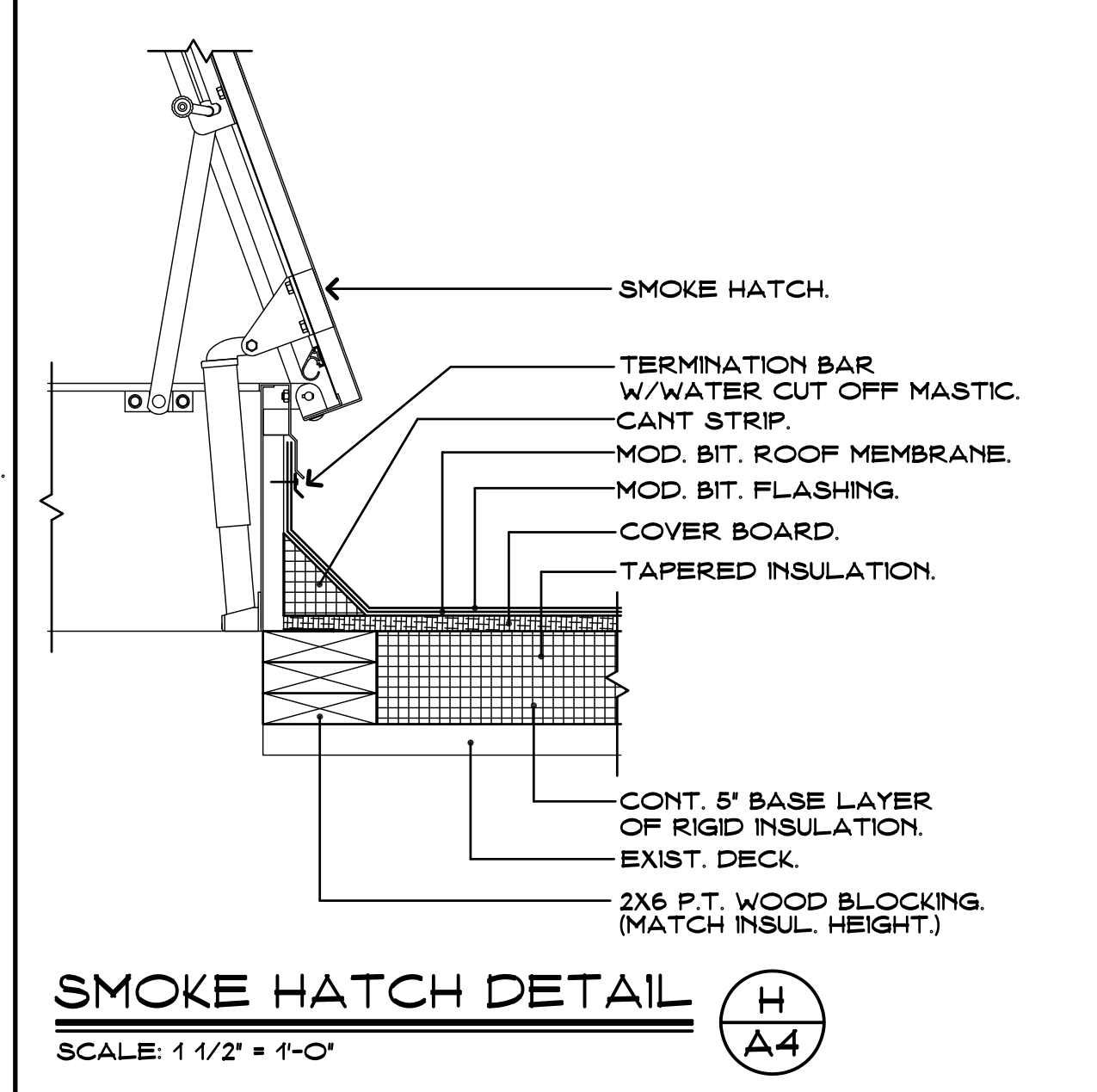
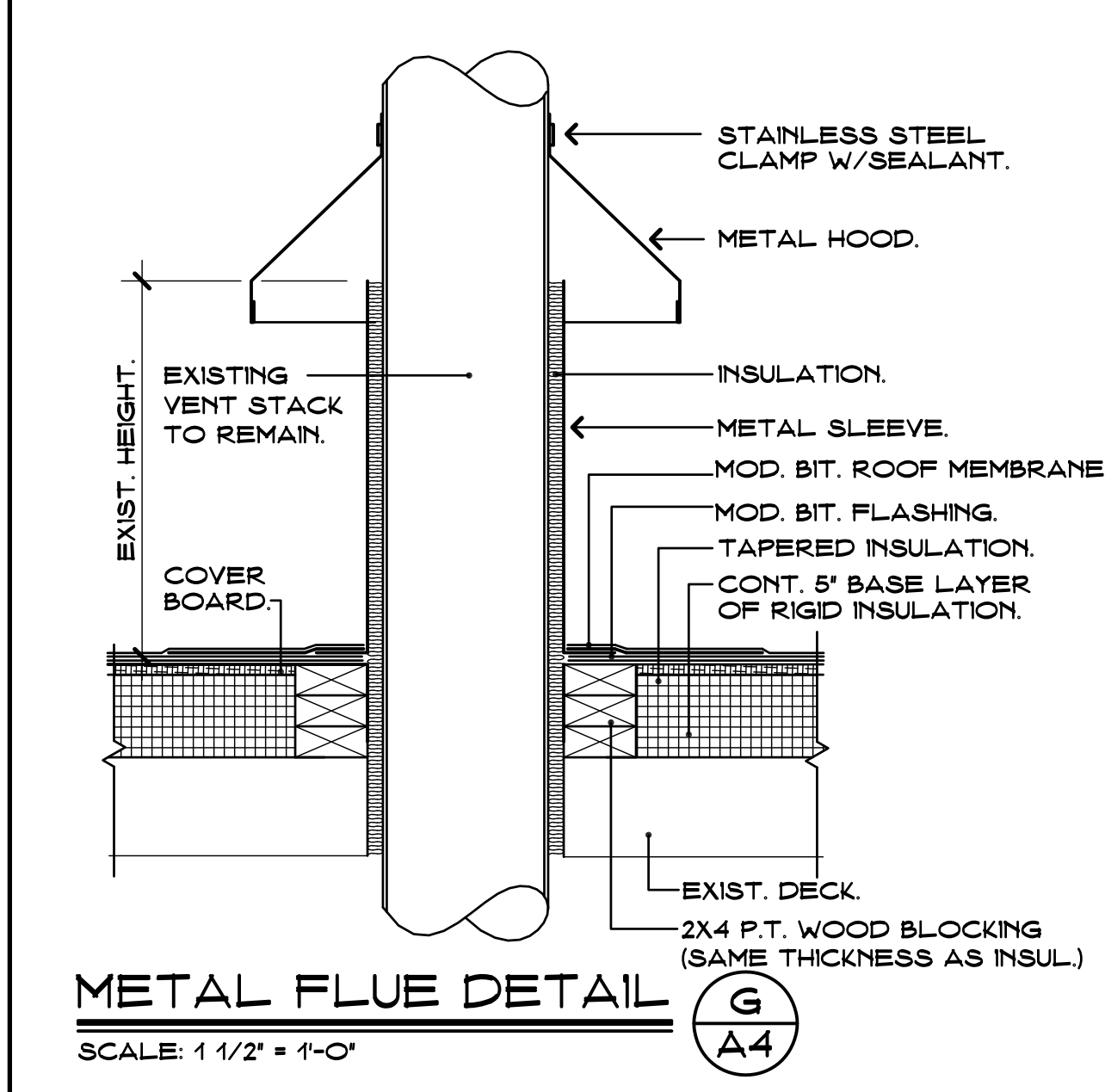
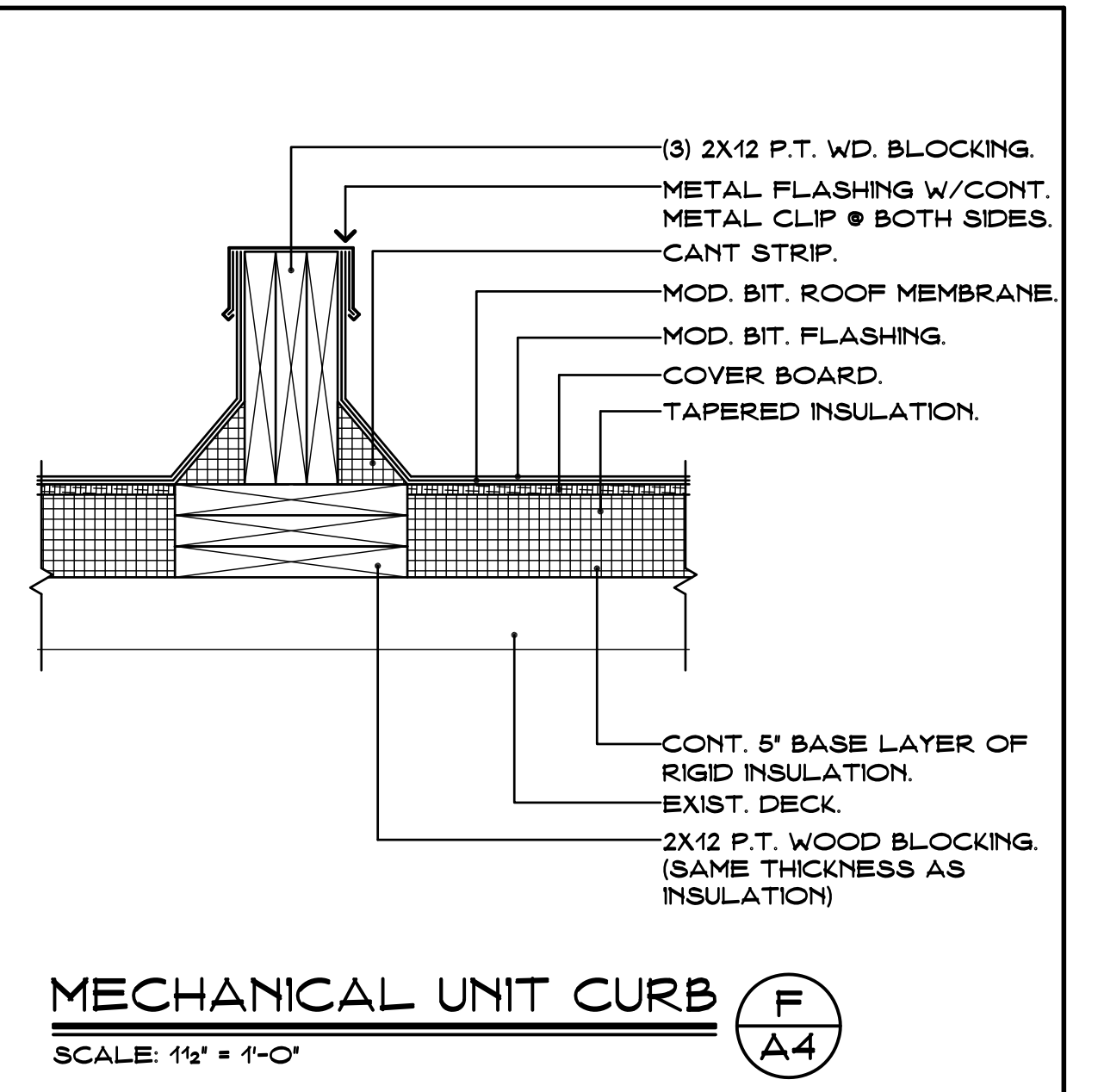
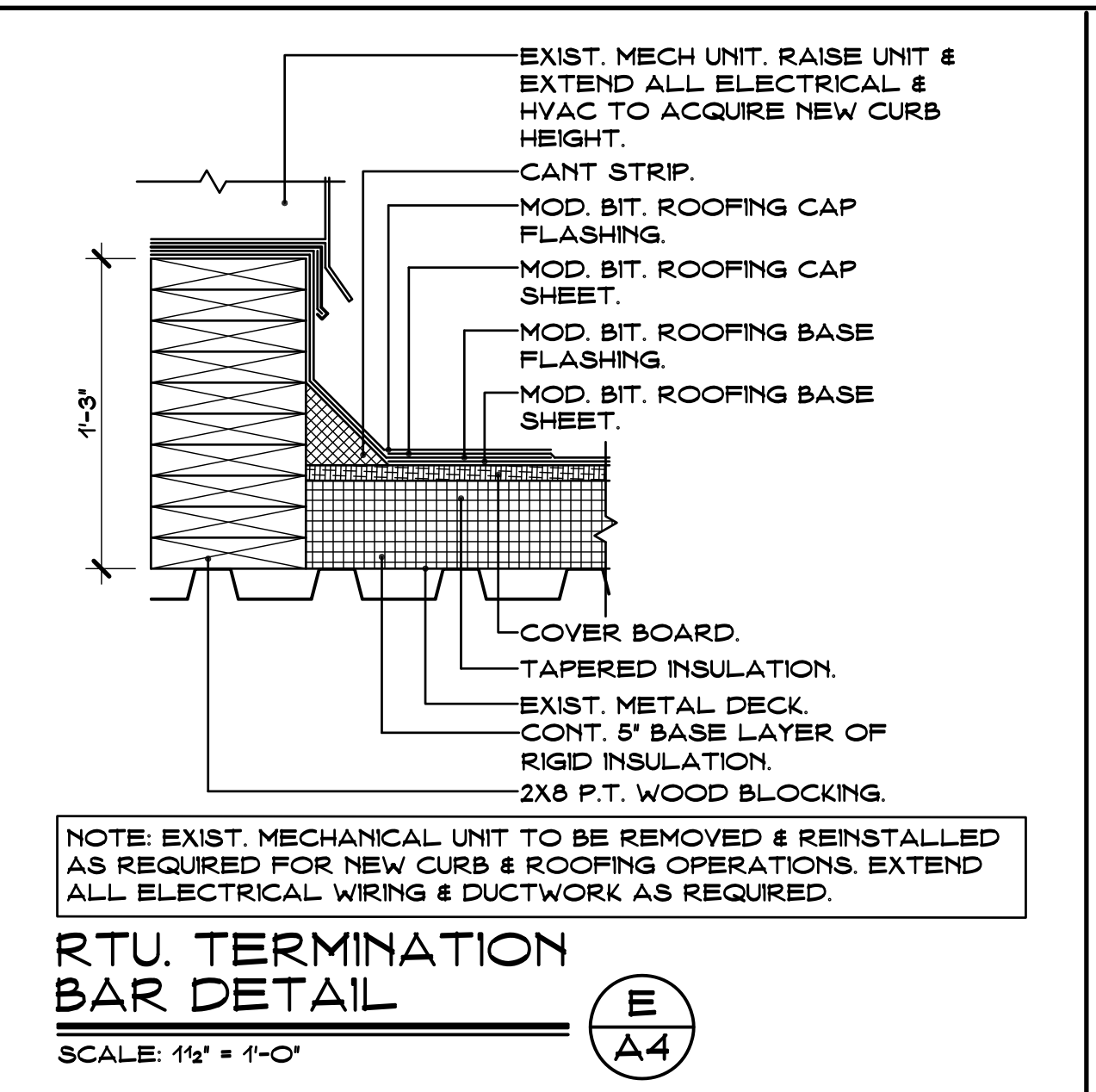
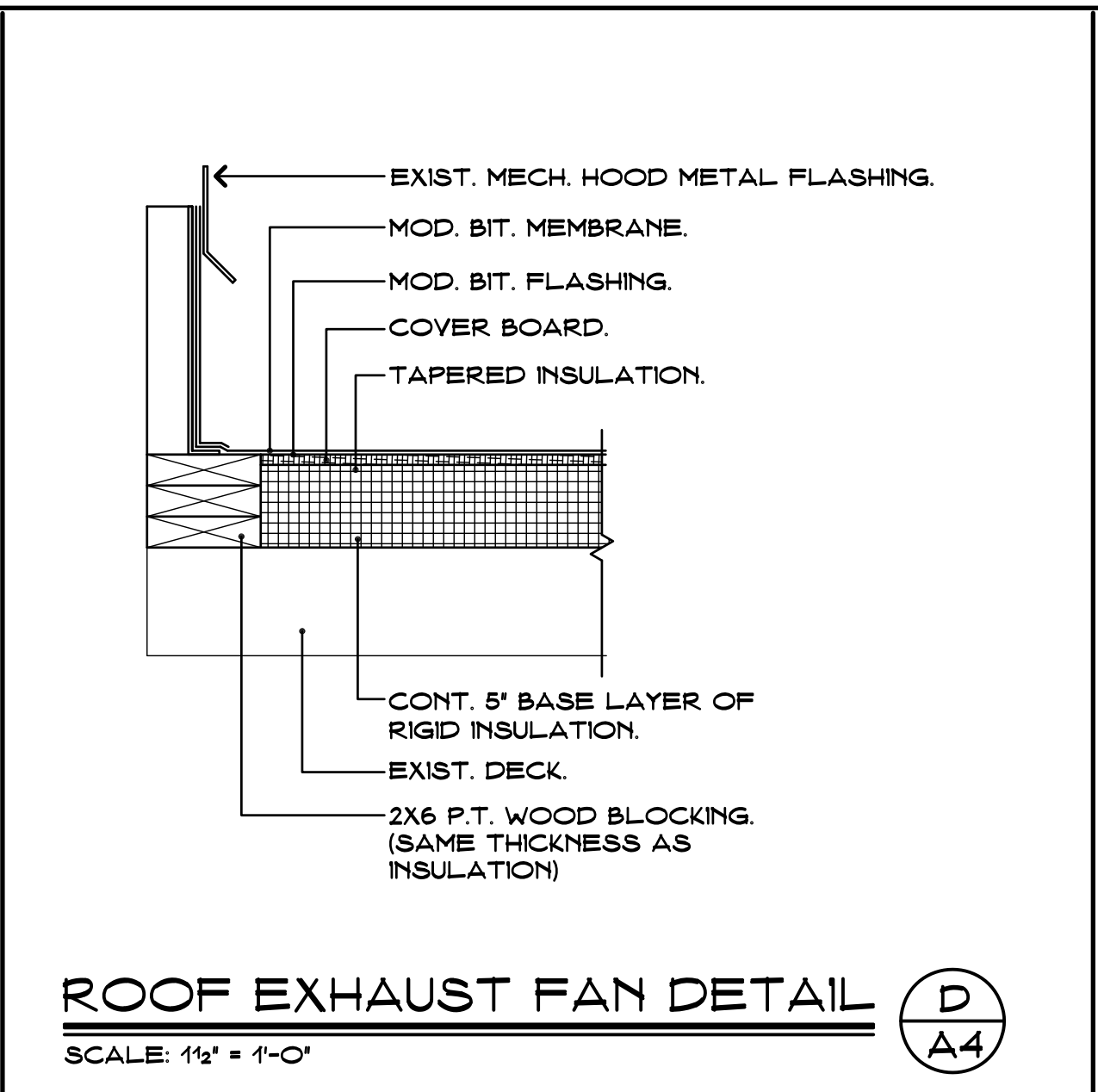
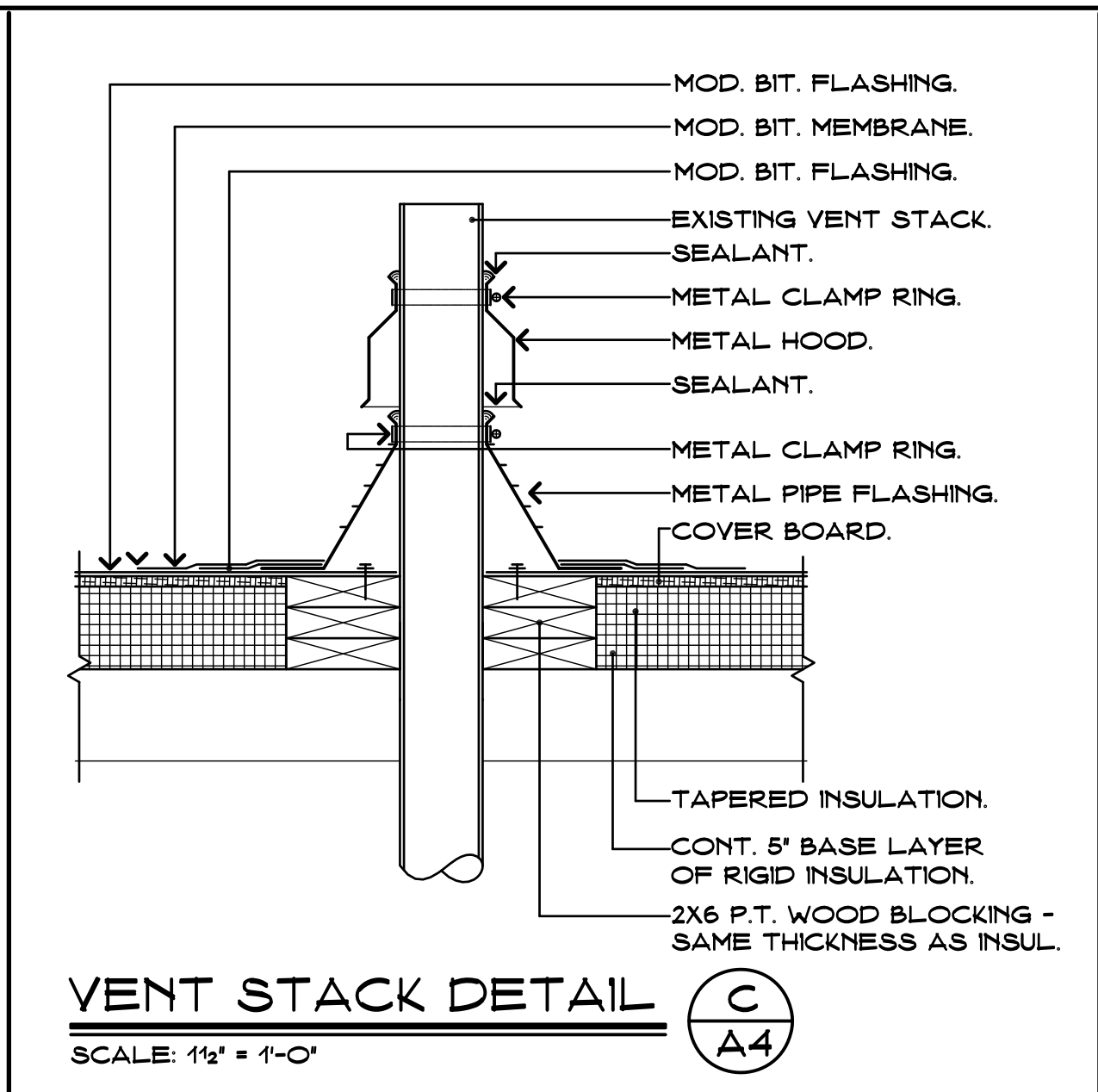
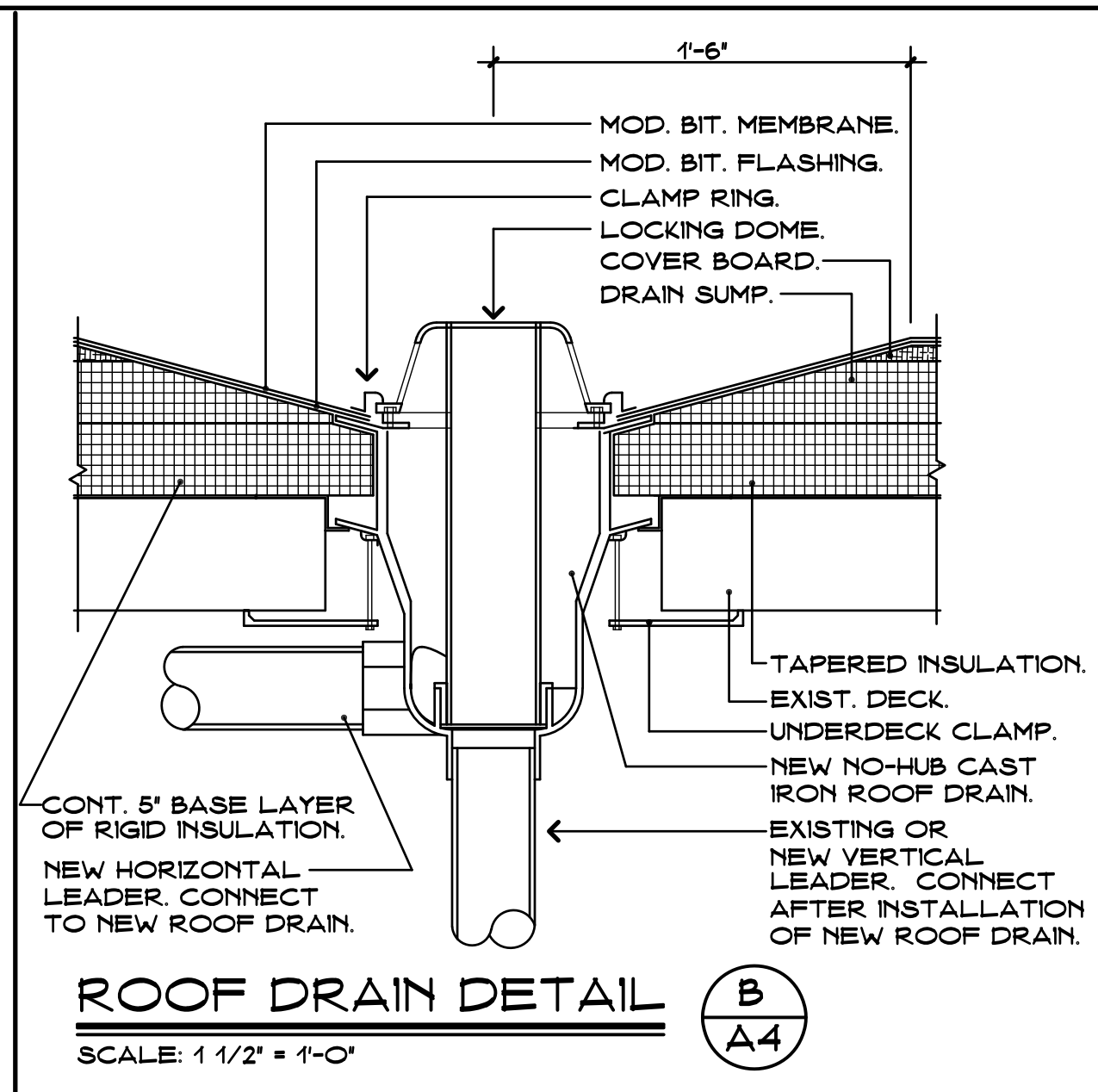
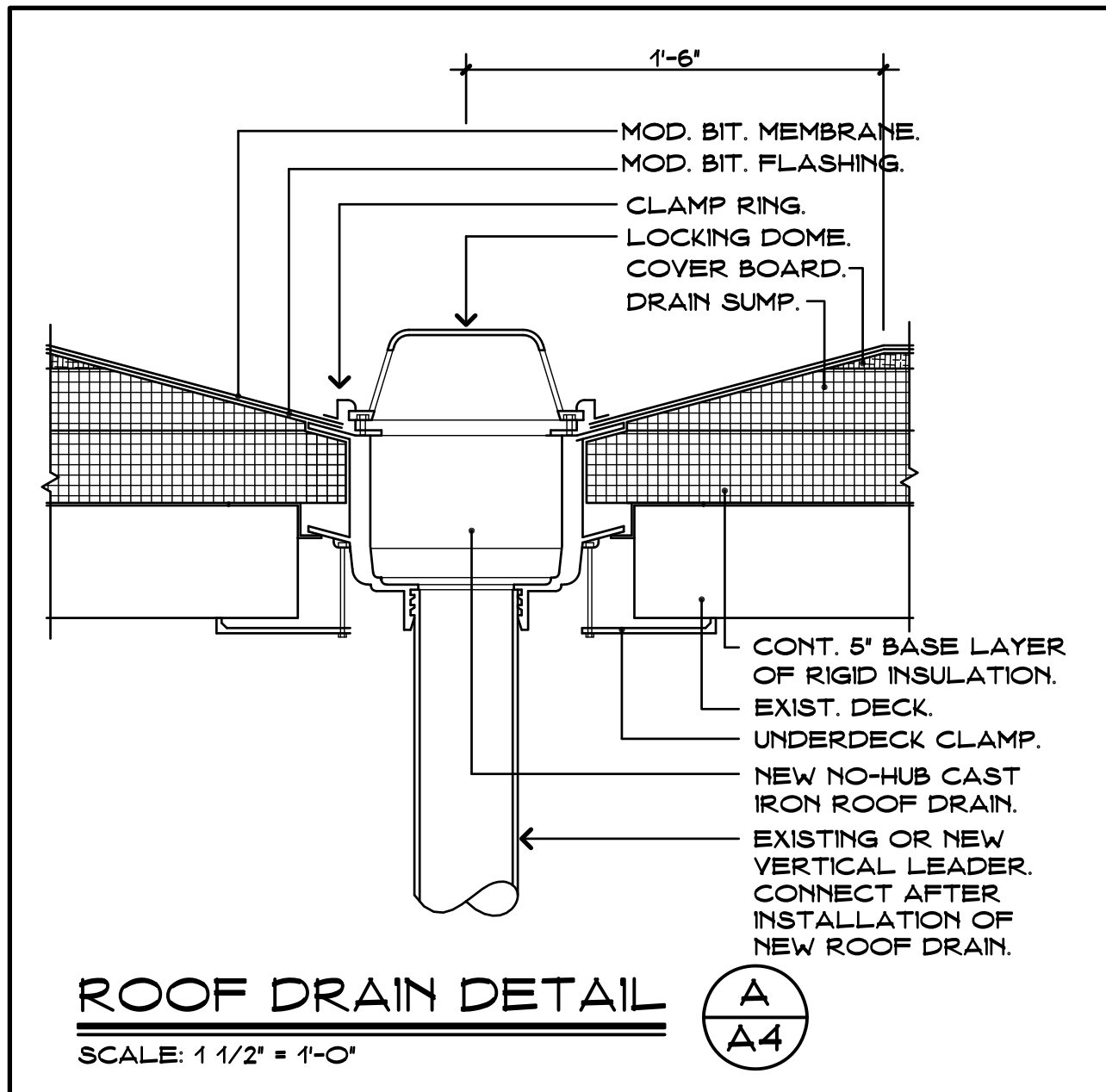
Drawing Number

Drawing Number

A

11









## Town of Fairfield

Sullivan Independence Hall  
725 Old Post Road

Fairfield, Connecticut 06824  
Purchasing Department

(203) 256-3060  
FAX (203) 256-3080

### Award Recommendation Resolution:

On Wednesday, 23 February, 2022 the Purchasing Authority recommended an award of bid number 2022-105 Request for Proposals for the Toilet Room Renovations at Fairfield Ludlowe High School to Silver Petrucelli + Associates, Hamden, CT, based on the firm's qualifications and attached fee proposal.

The intent for this Contract is to perform Phase 1- Preliminary Review and Evaluation of existing facilities (\$21,700), as well as Phase 1A- CCTV Inspection of all drainage lines (\$31,600). After preliminary investigations are performed and findings are considered, Fairfield Public Schools will proceed with the design phases accordingly.

Preliminary Review and Evaluation	\$21,700
CCTV Inspection of all drainage lines	\$31,600
Schematic Design:	\$18,200
Construction Design:	\$108,700
Bidding:	\$5,000
<u>Construction Admin:</u>	<u>\$34,100</u>
Not-to-Exceed Fee:	\$219,300

The award of this contract may be subject to the review and approval of the Board of Selectman.

  
Brenda L. Kupchick, First Selectwoman

  
Gerald J. Foley, Director of Purchasing





## **TOWN OF FAIRFIELD PURCHASING DEPARTMENT**

### **REQUEST FOR PROPOSAL**

To: Prequalified Architectural Consultants

From: The Town of Fairfield

Date: 12/17/2021

Re: Fairfield Public Schools – FLHS and FWHS Toilet Room Renovations

---

The Town of Fairfield is submitting this Request for Proposal (RFP) to shortlisted qualified architectural consulting firms that were prequalified through the Town of Fairfield's Purchasing Department procurement process in relation to Request for Qualification (RFQ) #2020-50.

The Town does not intend to hold a pre-proposal conference for this RFP. This solicitation is not open to the public. Additional information about these facilities can be requested via RFI, please see instructions at the bottom of this RFP.

The primary objectives of this RFP are to:

- Determine the condition of the Fairfield Public Schools existing facilities and detect any deficiencies found. Identify and develop new plans for renovations including all trade components such as; demolition, carpentry, plumbing, electrical, and finishes.
- Develop a strategic, coordinated, and fiscally responsible plan for each location listed, that includes timing, estimated cost, and prioritization of recommendations needed to repair, replace, renovate, and construct new toilet rooms as listed in the detailed scope of work.
- Develop plans and specifications for public bidding for all locations listed.

### **DETAILED SCOPE OF WORK**

The projects listed below involve plans and specifications to repair, replace, renovate, and/or construct existing and new areas as listed. The Town has identified some of the most critical criteria for the facilities already which include but are not limited to the following;

- Determine the condition of each high school's existing lavatory and custodial closet facilities and identify any deficiencies found (including the evaluation of all plumbing water supply lines and drainage lines for their full length).
- Develop a coordinated prioritization of which lavatory facilities would need concurrent renovations (ie. stacked and/or adjacent lavatory rooms). Develop detailed scope and cost estimates for each area.
- Develop plans and specifications for public bidding for renovations including all trade components such as: demolition, carpentry, plumbing, electrical, and finishes
- It's the Town's intent to can keep the design, (more importantly) and fixtures & equipment the same at both facilities.
- The Town may choose to use the selected firm for Contract Administration and Oversight during construction. This will be determined at a later date.

Need to account for:

- Costs for Demolition, removal and disposal
- Wall system and framing materials
- Electrical system labor and materials including lighting, vent fans and venting, Switches, GFI Receptacles and covers as per code.
- Plumbing fixtures- new Sinks, Faucets, Toilets, Urinals, Dividers and other privacy requirements
- Repair any plumbing found to be defective or unsubstantial upon demolition
- Tile floors and Walls
- Wall preparation, finishing and Painting
- Any needed mirrors or hardware
- Remount as needed any speakers or thermostats, alarm lights which are affected during construction.
- Construction cleanup
- Replace any windows required. Any needed trim inside and outside.
- Any needed contingencies
- Any needed job coordination
- Work with FPS to choose tile and colors
- **Hazardous Materials**- It shall be the selected firm's responsibility to perform hazardous testing and surveys. When applicable, and hazardous materials are present, hazmat designs shall be included in construction documents for bidding purposes. Pricing for testing and design shall be included in Phase 1- Preliminary review and evaluation.

## **COST PROPOSAL**

The proposal should include all of the necessary costs to complete the following minimum scope of work as presented above. Proposal should be submitted on company letterhead, or the attached Proposal form, with a detailed breakout (Price per Phase) of the costs shown below. **Pricing shall be per Location.** Fairfield Public Schools is requesting a breakdown fee proposal for Fairfield Ludlowe High School, as well as a Separate fee proposal for Fairfield Warde High School:

**Phase 1-** Preliminary review and evaluation of existing facilities, including code compliance and work safety improvements required (Shall include all work listed above and Hazardous Materials testing)

**Phase 2-** Preparation of Schematic Design (Shall include both locations - Maximum of three designs)

**Phase 3-** Construction Documents (Shall include both locations and Hazardous Design when applicable)

**Phase 4-** Bidding Phase

**Phase 5-** Construction Administration and Oversight (if applicable)

**Phase 6-** Hazardous Material Testing – Cost per location

## **DEADLINES**

All RFI's shall be submitted via email to Corinne Dyer; [cdyer@fairfieldct.org](mailto:cdyer@fairfieldct.org) by Noon on Wednesday December 29<sup>th</sup>.

The sites can be made available by appointment only.

RFPs shall be submitted electronically by 11am on January 4<sup>th</sup>, 2021 to [cdyer@fairfieldct.org](mailto:cdyer@fairfieldct.org)

## FEE PROPOSAL FORM

### Project No. 1: Fairfield Ludlowe High School

**Phase 1-** Preliminary review and evaluation of existing facilities,  
including code compliance and work safety improvements required  
(Shall include all work listed above and Hazardous Materials testing) \$ \_\_\_\_\_

**Phase 2-** Preparation of Schematic Design (Maximum of three designs) \$ \_\_\_\_\_

**Phase 3-** Construction Documents (Includes Hazardous Design when  
applicable) \$ \_\_\_\_\_

**Phase 4-** Bidding Phase \$ \_\_\_\_\_

**Phase 5-** Construction Administration and Oversight (if applicable) \$ \_\_\_\_\_

**Phase 6-** Hazardous Material Testing \$ \_\_\_\_\_

**Not-to-Exceed Fee for FLHS Project** \$ \_\_\_\_\_

### Project No. 2: Fairfield Warde High School

**Phase 1-** Preliminary review and evaluation of existing facilities,  
including code compliance and work safety improvements required  
(Shall include all work listed above and Hazardous Materials testing) \$ \_\_\_\_\_

**Phase 2-** Preparation of Schematic Design (Maximum of three designs) \$ \_\_\_\_\_

**Phase 3-** Construction Documents (Includes Hazardous Design when  
applicable) \$ \_\_\_\_\_

**Phase 4-** Bidding Phase \$ \_\_\_\_\_

**Phase 5-** Construction Administration and Oversight (if applicable) \$ \_\_\_\_\_

**Phase 6-** Hazardous Material Testing \$ \_\_\_\_\_

**Not-to-Exceed Fee for FWHS Project** \$ \_\_\_\_\_

\_\_\_\_\_  
Name and Title of Authorized Representative (Printed)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

District Name:	FAIRFIELD PUBLIC SCHOOLS
Building Name:	Fairfield Ludlowe High School
Address:	785 Unquowa Road Fairfield, CT 06824

SIDE C

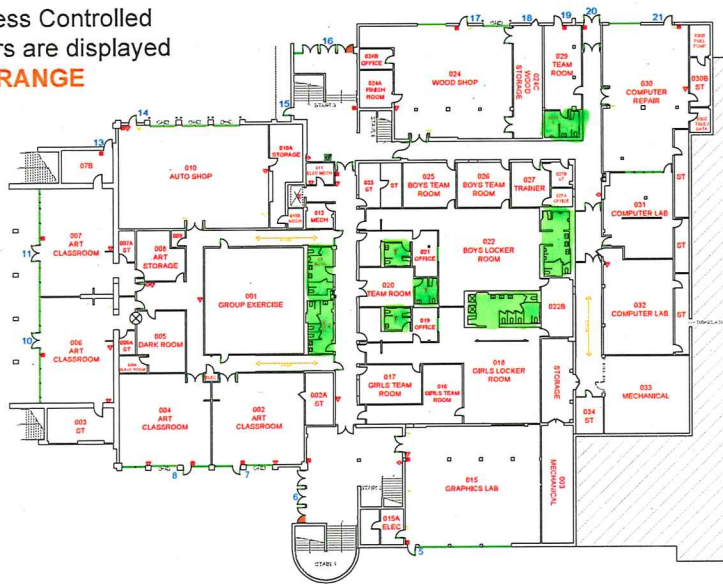
For Official Use Only

Lower Level

## Lower Level

Access Controlled  
Doors are displayed  
in **ORANGE**

SIDE B



SIDE D

### Legend

- |                                 |                          |
|---------------------------------|--------------------------|
| Chair Lift                      | Sprinkler Shutoff        |
| Bathrooms: Mens, Womens, Unisex | Electrical Shutoff       |
| Storage                         | Gas Shutoff              |
| Overhead Door                   | Ramp                     |
| Elevator                        | Emergency Generator      |
| Emergency Phone                 | Fire Alarm Control Panel |
| Knox Box                        | Fire Dept. Connection    |
| Water Shutoff                   | Fire Extinguisher        |

SIDE A

Lower Level

For Official Use Only

SIDE C

SIDE D

1st Floor

SIDE A

SIDE B

District Name:	FAIRFIELD PUBLIC SCHOOLS
Building Name:	Fairfield Ludlowe High School
Address:	785 Unquowa Road Fairfield, CT 06824

## 1st Floor

Access Controlled  
Doors are displayed  
in **ORANGE**



### Legend

- |  |                                 |  |                          |
|--|---------------------------------|--|--------------------------|
|  | Chair Lift                      |  | Sprinkler Shutoff        |
|  | Bathrooms: Mens, Womens, Unisex |  | Electrical Shutoff       |
|  | Storage                         |  | Gas Shutoff              |
|  | Overhead Door                   |  | Ramp                     |
|  | Elevator                        |  | Emergency Generator      |
|  | Emergency Phone                 |  | Fire Alarm Control Panel |
|  | Knox Box                        |  | Fire Dept. Connection    |
|  | Water Shutoff                   |  | Fire Extinguisher        |



SIDE D

For Official Use Only

SIDE C

2nd Floor

10

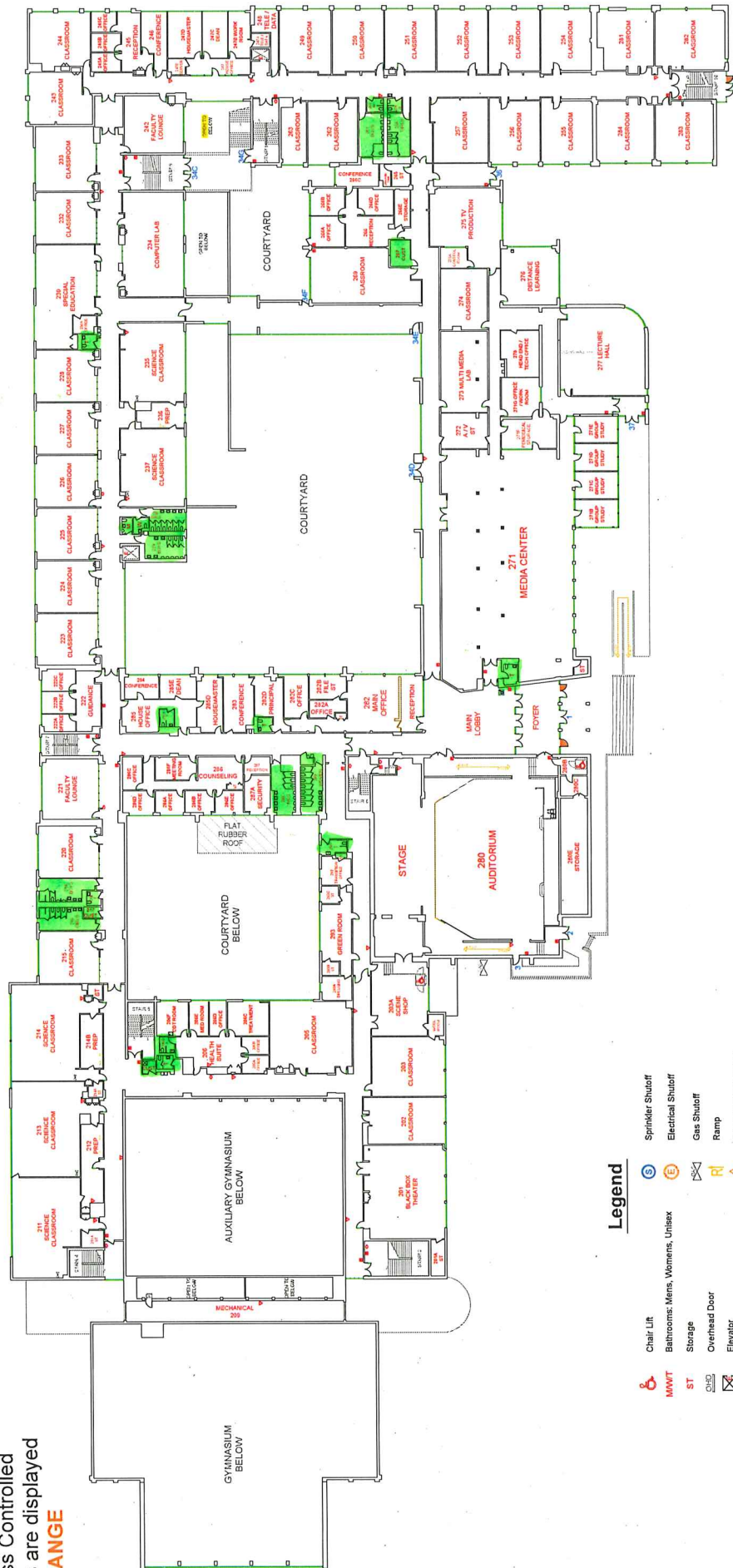
SIDE A

SIDE B

District Name:	FAIRFIELD PUBLIC SCHOOLS
Building Name:	Fairfield Ludlowe High School
Address:	785 Unquowa Road Fairfield, CT 06824

## 2nd Floor

Access Controlled  
Doors are displayed  
in **ORANGE**



### Legend

- Chair Lift
- Bathrooms: Mens, Womens, Unisex
- Storage
- Overhead Door
- Elevator
- Emergency Phone
- Knox Box
- Water Shutoff
- MWVT
- ST
- CHD
- Emergency Generator
- Fire Alarm Control Panel
- Fire Dept. Connection
- Fire Extinguisher
- Sprinkler Shutoff
- Electrical Shutoff
- Gas Shutoff
- Ramp
- Emergency Generator
- Fire Alarm Control Panel
- Fire Dept. Connection
- Fire Extinguisher



For Official Use Only

SIDE C

SIDE D

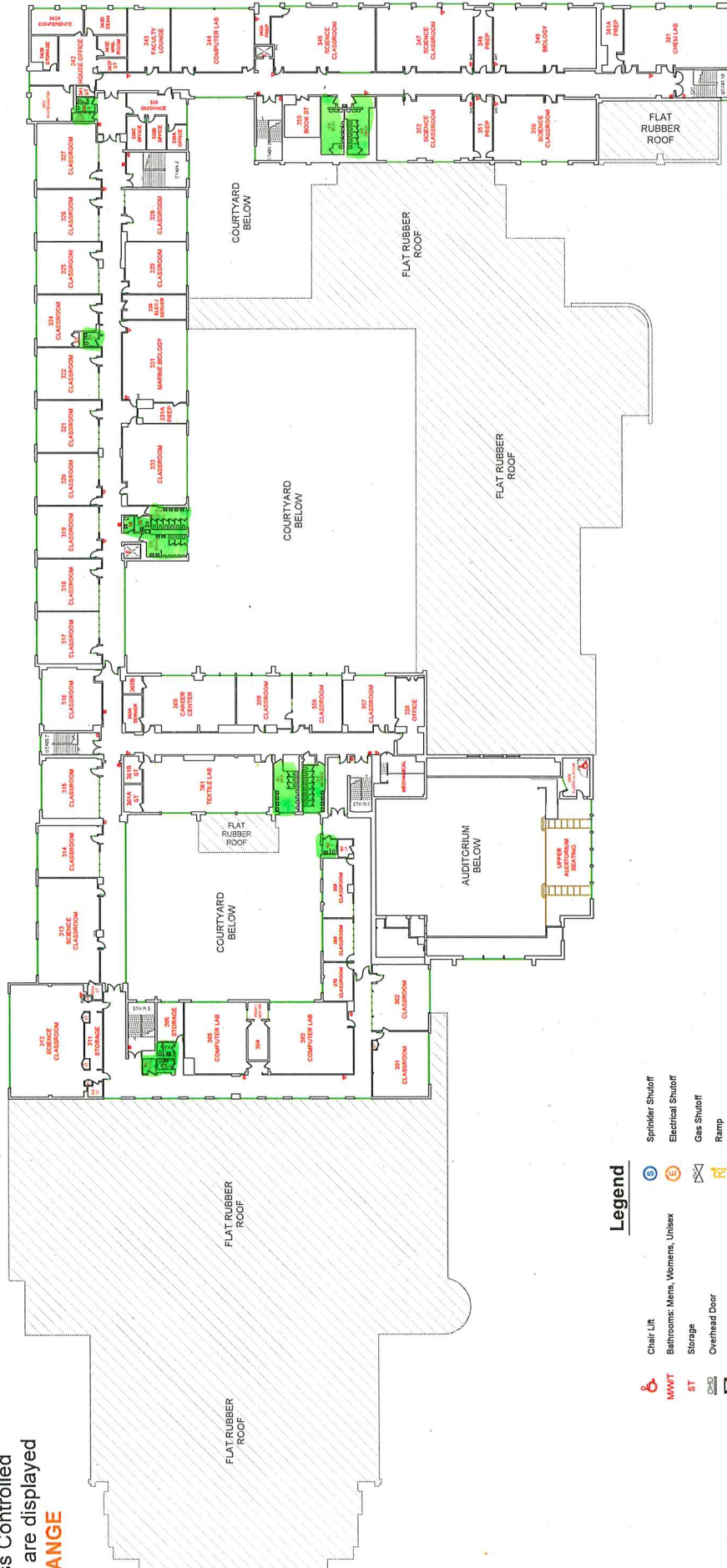
3rd Floor

SIDE A

## 3rd Floor

Access Controlled  
Doors are displayed  
in **ORANGE**

SIDE B



### Legend

- |  |                                 |  |                          |
|--|---------------------------------|--|--------------------------|
|  | Chair Lift                      |  | Sprinkler Shutoff        |
|  | Bathrooms: Mens, Womens, Unisex |  | Electrical Shutoff       |
|  | Storage                         |  | Gas Shutoff              |
|  | Overhead Door                   |  | Ramp                     |
|  | Elevator                        |  | Emergency Generator      |
|  | Emergency Phone                 |  | Fire Alarm Control Panel |
|  | Knox Box                        |  | Fire Dept. Connection    |
|  | Water Shutoff                   |  | Fire Extinguisher        |



SILVER/PETRUCELLI+ASSOCIATES

Architecture / Engineering / Interior Design



January 11, 2022

Ms. Corinne Dyer  
Senior Buyer  
Town of Fairfield  
725 Old Post Road  
Fairfield, CT 06824  
Via Email: [cdyer@fairfieldct.org](mailto:cdyer@fairfieldct.org); [gfoley@fairfieldct.org](mailto:gfoley@fairfieldct.org)

Re: Fairfield Public Schools – FLHS & FWHS Toilet Room Renovations  
S/P+A Project No. 22.007

Dear Ms. Dyer:

Thank you for the opportunity to submit our fee proposal for alterations at the two high Schools. Our fees for Phases 1-6 is based on the scope of work provided in the RFP and our history with similar projects.

TASK	FEE	
	FLHS	FWHS
Phase 1 – Preliminary review and evaluation of existing facilities, including code compliance and work safety improvements required	\$21,700.	\$20,000.
Phase 2 – Preparation of Schematic Design (shall include both locations - maximum of three designs)	\$18,200.	\$16,800.
Phase 3 – Construction Documents (shall include both locations)	\$108,700.	\$100,300.
Phase 4 – Bidding	\$5,000.	\$4,600.
Phase 5 – Construction Administration/Oversight (if applicable)	\$34,100.	\$31,500.
<b>Not to Exceed Fee:</b>	<b>\$187,700.</b>	<b>\$173,200.</b>

Printing Allowance: \$850 (if needed) for each school

Our fee includes 17 weeks of weekly site observation services during active construction.

Our proposal anticipates that Fairfield Public Schools will provide AutoCAD base data floor plans or 1st generation PDFs for our initial Phase 1 and Phase 2 work.

Proposal assumes all restrooms in each of the schools would be designed, CD's bid and construction administrated at once. A significant savings can be realized should fewer toilets be designed, bid and build in the first phase.

January 11, 2022

There would also be an efficiency of effort if both high school projects were to run concurrently. We are happy to discuss Fairfield's anticipated budgets and schedules related to this and how our fees can be adjusted accordingly.

Any additional services that you may require during the project can be compensated on an hourly cost-plus reimbursable basis, in accordance with the rates included in our on-call submission. If the scope is well defined, a mutually agreeable fixed fee can be negotiated.

Excluded services are listed below:

1. Civil & structural engineering services
2. Printing expenses (not identified but listed above as an add alternate).
3. Haz Mat testing design and CA services (excluded per Addendum #2)
4. Energy modeling, life cycle cost analysis, estimation of energy consumption, etc.
5. Production of Record Drawings ("As-Built" we will review GCs markups).
6. Commissioning of systems.
7. CCTV'ing of drainage lines (first bullet of detailed scope of work)

We look forward to continuing our work with the Town of Fairfield on this project. If you have any further questions, please contact me at 203-230-9007 x206 or email at [bsilver@silverpetrucelli.com](mailto:bsilver@silverpetrucelli.com). Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read 'W. R. Silver', with a long, sweeping horizontal line extending to the right.

William R. Silver, AIA  
President



SILVER/PETRUCELLI+ASSOCIATES

Architecture / Engineering / Interior Design



January 11, 2022 revised for CCTV/Jetting

Ms. Corinne Dyer  
Senior Buyer  
Town of Fairfield  
725 Old Post Road  
Fairfield, CT 06824  
Via Email: [cdyer@fairfieldct.org](mailto:cdyer@fairfieldct.org); [gfoley@fairfieldct.org](mailto:gfoley@fairfieldct.org)

Re: Fairfield Public Schools – FLHS & FWHS Toilet Room Renovations  
S/P+A Project No. 22.007

Dear Ms. Dyer:

Thank you for the opportunity to submit our fee proposal for alterations at the two high Schools. Our fees for Phases 1-6 is based on the scope of work provided in the RFP and our history with similar projects.

TASK	FEE	
	FLHS	FWHS
Phase 1 – Preliminary review and evaluation of existing facilities, including code compliance and work safety improvements required	\$53,300.	\$43,800.
Phase 2 – Preparation of Schematic Design (shall include both locations - maximum of three designs)	\$18,200.	\$16,800.
Phase 3 – Construction Documents (shall include both locations)	\$108,700.	\$100,300.
Phase 4 – Bidding	\$5,000.	\$4,600.
Phase 5 – Construction Administration/Oversight (if applicable)	\$34,100.	\$31,500.
<b>Not to Exceed Fee:</b>	<b>\$220,300.</b>	<b>\$197,000.</b>

The fees above include 8 days and 5 days of CCTV work at each of the schools respectively and assuming that the Town/FPS wanted to have the lines jetted prior to the interior inspections, these fees include up to 7 days and 5 days of jetting at the schools respectively. If the Town/FPS does not need the jetting should the waste lines not be congested as is common in kitchen waste lines, then our fees can be reduced accordingly.

Printing Allowance: \$850 (if needed) for each school

Our fee includes 17 weeks of weekly site observation services during active construction.

Our proposal anticipates that Fairfield Public Schools will provide AutoCAD base data floor plans or 1st generation PDFs for our initial Phase 1 and Phase 2 work.

Proposal assumes all restrooms in each of the schools would be designed, CD's bid and construction administrated at once. A significant savings can be realized should fewer toilets be designed, bid and build in the first phase.

There would also be an efficiency of effort if both high school projects were to run concurrently. We are happy to discuss Fairfield's anticipated budgets and schedules related to this and how our fees can be adjusted accordingly.

Any additional services that you may require during the project can be compensated on an hourly cost-plus reimbursable basis, in accordance with the rates included in our on-call submission. If the scope is well defined, a mutually agreeable fixed fee can be negotiated.

Excluded services are listed below:

1. Civil & structural engineering services
2. Printing expenses (not identified but listed above as an add alternate).
3. Haz Mat testing design and CA services (excluded per Addendum #2)
4. Energy modeling, life cycle cost analysis, estimation of energy consumption, etc.
5. Production of Record Drawings ("As-Built" we will review GCs markups).
6. Commissioning of systems.
7. Gaining initial access into each pipe is the responsibility of the Town/FPS, (clean-out cap loosening/removal, direct opening, etc.).as the age of the schools and the drainage fittings may reveal bound/rusted cleanouts that cannot be opened by the service company.

We look forward to continuing our work with the Town of Fairfield on this project. If you have any further questions, please contact me at 203-230-9007 x206 or email at [bsilver@silverpetrucelli.com](mailto:bsilver@silverpetrucelli.com). Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read 'W. R. Silver', with a long, sweeping horizontal line extending to the right.

William R. Silver, AIA  
President

## ADDENDUM #2

### File #2022-105: Fairfield Public Schools – FLHS & FWHS Toilet Room Renovations

7 January 2022 – It is intended that this Addendum incorporating the following corrections, revisions, additions, deletions and clarifications become part of the Contract Documents including pricing as submitted

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#### RESPONSES TO QUESTIONS

1. Question: On the bid forms, it is clear that the hazardous material testing is to be included in the Phase 1 fee proposal(s) for each school. However, on the same form, Phase 6 asks for the HAZARDOUS MATERIAL TESTING costs again. And this line item is slightly different than the COST PROPOSAL instructions on page 2 of the RFP that asks for “Phase 6: HAZARDOUS MATERIAL TESTING – COST PER LOCATION”. Which are we to list in Phase 6? The total cost for testing per school or are we to break down our testing cost per bathroom (COST PER LOCATION) per school? Your answer will help us understand what Fairfield specifically needs in these Phase 6 line items for both Warde and Ludlow.

*Response: Hazardous Materials investigation and testing for asbestos containing material, PCBs, lead and any other hazardous materials will be performed by others and are **not to be included** in your fee proposal for these services. However, the Town may opt to request an add service agreement from the successful architect to perform such hazardous materials investigations and testing services for this project.*

2. Question: Phase 3 asks for “HAZARDOUS MATERIAL DESIGN when applicable.” Since we don’t know If there are any hazardous materials present in any of the locations, why burden the town with the additional fee buried in our CD fee? .Is it ok if the Haz Mat Design Fees are listed as an add alternate for each of the schools? That way the Town knows the value of the itemized design services ahead of time and doesn’t automatically incur their hidden cost.

*Response: See response to question #1 of this addendum.*

## End of Addendum #2

Company: \_\_\_\_\_ Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_



# **Fairfield Board of Education Proposed Capital Project 2022-2023**



**Fairfield Warde High School Fitts House  
HVAC RTU Replacement**

**Approved by the Board of Education on February 3, 2022**





**Fairfield Public Schools  
2022-2023  
Capital Projects**

**Table of Contents**

<b><u>Location</u></b>	<b><u>Project</u></b>	<b><u>Estimated Cost</u></b>	<b><u>Page</u></b>
<b>Capital Project</b>			
Districtwide	Fitts House HVAC RTU Replacement (3) Project	\$ 1,094,485	1
<hr/>			
<b>Total</b>		<b>\$ 1,094,485</b>	



## Fairfield Warde High School

### Fitts House HVAC RTU Replacement (3) Project

**\$1,094,485**

Background: The existing Fitts House building houses four large HVAC Rooftop units that were installed around 1991. Two are 40-ton units, and two are 30-ton units. One of the 40-ton units and both of the 30-ton units are beginning to fail, and we are experiencing trouble keeping the units running for the occupants of the school building. As we continue to repair the units, the cost of keeping them up and running is escalating. We have reached a point where the existing units cannot meet the requirements to provide mechanical means of fresh air, heating, and cooling for a portion of the Fitts House building. This request is for funding the removal of the existing rooftop equipment and the installation of new Trane Voyager rooftop HVAC units. The decision was made to replace all existing units because of their condition, and by completing the replacement of all three at the same time, we will streamline the process and save funding

Purpose & Justification: The existing HVAC rooftop units are deteriorating and failing on a regular basis. We can no longer obtain parts and circuit boards for replacement. These HVAC rooftop units are essential for the mechanical means of providing fresh air, heating, and cooling for portions of the Fitts House building where the school students and staff are located. Without this unit, the space temperature would be uncontrollable, making this area of the building unusable.

Detailed Description: This expenditure would cover the total cost of the project. This would include all labor and material, a 300-ton crane, roof work, controls, and start-up and testing. These funds would also cover the administrative construction costs for a licensed professional engineer and a contingency for unforeseen conditions that might arise during the construction activities.

Estimated Cost: The cost of this funding request is \$1,094,485. This number is based on estimates provided by several professional licensed contractors and from a professional licensed engineering firm in CT.

Long Range Costs: These new HVAC rooftop units with more recent technology are expected to last 30 years. Long-range costs would only relate to general HVAC preventative maintenance.

Demand on Existing Facilities: This project would reduce maintenance costs with a new system performing better than the existing system, virtually no downtime, new equipment energy use techniques and efficiency, and the latest technology with up-to-date configurations.

Security, Safety, and Loss Control: This project would enhance safety and loss control by drastically reducing the risk of failure to the equipment and the overall use of the Fitts House building for all the students and staff. With the current pandemic, we realize the need for adequately running HVAC equipment to serve our students and staff.

Environmental Considerations: Not applicable.

Funding, Financing & SDE Reimbursement: This project would not proceed without funding approval. There are no State or Federal regulations that require this project to be undertaken. This project is not eligible for reimbursement through the State Department of Education, Bureau of School Facilities.

Schedule, Phasing & Timing: The schedule is to have all this work done in the summer of 2022 and completed for school to open for the new year in September of 2022.

Other Considerations: The work will be bid out by the Town Purchasing Department and will be performed by outside professional licensed contractors.

Alternates to the Request: The alternative to this request is to do nothing. This alternative will delay this needed replacement and further delay other similar projects scheduled in the BOE future planning. This could increase the risk of injury to students and staff that need this space for teaching and learning and may shut down the space for use.

**General Information**

Initiation Date: 7/1/21  
Project No: FWHS-003  
Project Name: Fitts House HVAC RTU#1,2&3 Replacement

**Non-Reoccurring Status**

Project Description: 1/20/21 increased amount

Status:

**Project Budget**

Design Budget:	\$82,500
Construction Budget:	\$825,000
Construction Escalation:	\$67,320
Total Construction Budget:	\$892,320
Estimated Construction Start:	7/1/2023
Miscellaneous Fees and Expenses:	
- State Permits (.0026%)	\$2,320
- Testing & Inspections	\$0
- Advertising	\$0
Construction Admin	\$8,923
Commissioning	\$8,923
Other	\$0
Subtotal Fees & Expenses:	\$20,166
Project Subtotal	\$994,986
Project Contingency 10%	\$99,499
Total Budget	\$1,094,485

OSCGR Eligible?

**OSCGR Reimbursement****Action Items**

1.00

**Project Priority Ranking**

- Security	0
- Severity of Condition	0
- Code/Statutory	0
- Programmatic Need	0
- Constructability/Sequencing	0



## Town of Fairfield

Sullivan Independence Hall  
725 Old Post Road

Fairfield, Connecticut 06824  
Purchasing Department

(203) 256-3060  
FAX (203) 256-3080

### Award Resolution Recommendation

On Thursday, 20<sup>th</sup> January, 2022, the Purchasing Authority recommended an award of bid number 2022-102 to Sav-Mor Cooling & Heating, LLC Southington, CT to provide all materials, labor and equipment necessary for the rooftop HVAC unit replacement at Fairfield Warde High School, 755 Melville Avenue, Fairfield, Connecticut as specified in the contract documents prepared by Landmark Facilities Group, Inc..

Base Bid: \$1,026,000.00

Add Alternate: \$ 14,400.00

**Total: \$1,040,400.00**

Sav-Mor Cooling & Heating, LLC is the lowest responsible bidder for this service.

The award of the contract to Sav-Mor Cooling & Heating, LLC, to provide all materials, labor and equipment necessary for the rooftop HVAC unit replacement at Fairfield Warde High School may be subject to the review and approval of the Board of Selectmen.

  
Brenda L. Kupchick, First Selectwoman

  
Gerald J. Foley, Director of Purchasing





# Town of Fairfield

Sullivan Independence Hall  
725 Old Post Road

Fairfield, Connecticut 06824  
Purchasing Department

(203) 256-3060  
FAX (203) 256-3080

## BID #2022-102



### ROOFTOP HV UNIT REPLACEMENT

### FAIRFIELD WARDE HIGH SCHOOL – CAFETERIA AREA (NEW) HVAC UNIT

TOWN OF FAIRFIELD  
PURCHASING AUTHORITY  
725 OLD POST ROAD  
INDEPENDENCE HALL  
FAIRFIELD, CT 06824.

Date Submitted January 5 ~~2021~~ 2022

SEALED BIDS are subject to the standard instructions set forth on the attached sheets. Any modifications must be specifically accepted by the Town of Fairfield, Purchasing Authority.

  
First Selectwoman  
  
Director of Purchasing  
02/09/2021  
Date

#### Bidder:

SAV-MOR Cooling and Heating

Doing Business As (Trade Name)

231 Captain Lewis Drive

Address

Southington, CT 06489

Town, State, Zip

Mr. Troy Karwowski, President

(Mr. / Ms.) Name and Title, Printed

  
Signature

860-621-9959

Telephone

860-621-9919

Fax

troy@savmorct.com

E-mail

Sealed bids will be received by the Purchasing Authority at the office of the Director of Purchasing, First Floor, Independence Hall, 725 Old Post Road, Fairfield, Connecticut 06824, up to:

**11:00 am, Tuesday, 28<sup>th</sup> December, 2021**

To provide labor, materials, equipment and all else necessary to complete the rooftop HVAC unit replacement project at the Fairfield Warde High School as detailed in the attached specifications.

#### NOTES:

1. Bidders are to complete all requested data in the upper right corner of this page and must return this page and the Proposal page with their submission.
2. No bid shall be accepted from, or contracts awarded to, any person/company/affiliate or entity under common control who is in arrears to the Town of Fairfield upon debt, or contract or who has been within the prior five (5) years, a defaulter as surety or otherwise upon obligations to the Town of Fairfield, and shall be determined by the Town.
3. Bids are to be submitted in a sealed envelope and clearly marked "BID #2022-102" on the outside of the envelope, including all outer packaging, such as, DHL, FedEx, UPS, etc.
4. It is the sole responsibility of the bidder to see that the bid is received by the Fairfield Purchasing Department prior to the time and date noted above. Bids are not to be submitted via email or fax.
5. Bids are not to be submitted with plastic binders or covers, nor may the bid contain any plastic inserts or pages.



# BID PROPOSAL FORM

PROPOSAL TO: Town of Fairfield, Purchasing Department  
First Floor, Sullivan Independence Hall  
725 Old Post Road, Fairfield, Connecticut 06824

I, Troy Karwowski have received the following contract documents,

1. BID Document #2022-102
2. Addenda 1 through 2 posted at [www.fairfieldct.org/purchasing](http://www.fairfieldct.org/purchasing)
3. Documents prepared by Landmark Facilities Group, Inc.

and have included their provisions in my proposal. I shall supply all labor, materials and equipment necessary in accordance with all of the contract documents as required for the rooftop HV unit replacement at Fairfield Warde High School, 755 Melville Avenue, Fairfield, Connecticut as specified.

## **BASE BID – TOTAL LUMP SUM**

(\$ 1,026,000.00 ) /LS One Million Twenty Six Thousand Dollars  
(Written Amount)

Lump Sum amount shall include the cost of all necessary labor, materials, equipment, disposal, delivery, mobilization, insurances, taxes (except taxes from which the Owner is exempt) and permits, including all overhead and profit, based on the total estimated hours to perform the work, per the specification documents prepared by Landmark Facilities Group, Inc.

## **ADD ALTERNATES:**

**ADD ALTERNATE #1** – Contractor shall furnish and install new steam fin tube radiation along north wall of cafeteria. Connect to existing steam supply at one end of unit ventilator row, and condensate return at other end. Provide new motorized steam control valve; refer to steam piping diagram for additional information. Fin tube radiation is based on model JA-14 by slant fin.

(\$ 14,400.00 ) /LS Fourteen Thousand Four Hundred Dollars  
(Written Amount)

**ADD ALTERNATE #2** – Furnish and install new 1.5 ton ceiling cassette fan coil unit for custodian office. Alternate shall include all equipment, piping, condensate pump, and controls. Alternate shall also include possible different piping layout and upsizing HP and BS unit.

(\$ N/A Per Addendum #2 ) /LS \_\_\_\_\_ Dollars  
(Written Amount)

## **DEDUCT ALTERNATES:**

**DEDUCT ALTERNATE #1** – Provide “deduct alternate” to delete materials and labor for the following work:

- furnish and install new 1” LP condensate riser and branch piping
- furnish and install new F&T traps at MUA-1, DDAS B-1, BOAS B-2.

(\$ 5,100.00 ) /LS Five Thousand One Hundred Dollars  
(Written Amount)

# BID PROPOSAL FORM

Page 2 of 2


## CHECKLIST

The following must be submitted with proposal:

- ☒ Cover page, completed and signed.
- ☒ Addenda acknowledged per Item 2 on Bid Proposal Form, or signed and submitted with modified pricing.
- ☒ Bid Bond or equal security for five (5) percent of the total estimated bid.
- ☒ List of references where projects performed within the past five years of comparable size and scope.
- ☒ Contractor and/or Subcontractor is a certified installer for all manufacturers stated in the bid document.
- ☒ List and details of all sub-contractors, identifying each trade, hourly rates and Tax ID numbers.
- ☒ Bid Proposal Form.

The Bidder hereby certifies that any and all defects, errors, inconsistencies or omissions of which he/she is aware, either directly or by notification from any sub-bidder or material supplier found in the Contract Documents are listed herewith in this Bid Form.

Troy Karwowski - President  
Name and Title

  
Signature

1/5/22  
Date

## REFERENCES

Provide reference details of most recent similar scope projects performed.

### REFERENCE #1:

Name of Company see attached Phone \_\_\_\_\_  
Contact Person \_\_\_\_\_ Cell \_\_\_\_\_  
Company Address \_\_\_\_\_ Email \_\_\_\_\_  
Project, Location, & Date Completed \_\_\_\_\_  
\_\_\_\_\_

### REFERENCE #2:

Name of Company \_\_\_\_\_ Phone \_\_\_\_\_  
Contact Person \_\_\_\_\_ Cell \_\_\_\_\_  
Company Address \_\_\_\_\_ Email \_\_\_\_\_  
Project, Location, & Date Completed \_\_\_\_\_  
\_\_\_\_\_

### REFERENCE #3:

Name of Company \_\_\_\_\_ Phone \_\_\_\_\_  
Contact Person \_\_\_\_\_ Cell \_\_\_\_\_  
Company Address \_\_\_\_\_ Email \_\_\_\_\_  
Project, Location, & Date Completed \_\_\_\_\_  
\_\_\_\_\_

### REFERENCE #4:

Name of Company \_\_\_\_\_ Phone \_\_\_\_\_  
Contact Person \_\_\_\_\_ Cell \_\_\_\_\_  
Company Address \_\_\_\_\_ Email \_\_\_\_\_  
Project, Location, & Date Completed \_\_\_\_\_  
\_\_\_\_\_

### REFERENCE #5:

Name of Company \_\_\_\_\_ Phone \_\_\_\_\_  
Contact Person \_\_\_\_\_ Cell \_\_\_\_\_  
Company Address \_\_\_\_\_ Email \_\_\_\_\_  
Project, Location, & Date Completed \_\_\_\_\_  
\_\_\_\_\_

# SAV-MOR Cooling & Heating Inc.

## Completed Major Projects Past 5 Years

NAME / Owner	JOB LOCATION	Completion Date	% of work performed by us	Contract Value	Representative	Phone Number	Email Address
INSTALLATIONS FOR 2017							
Norwalk City Hall	125 East Avenue, Norwalk, CT 06851	1/14/2017	75.00%	\$134,744.00	Dan Miller	(203) 854-7940	dmiller@nonwalkct.org
Hartford Regional Center	71 Mountain Road, Newington, CT 06111	1/21/2017	90.00%	\$202,902.00	John Massicotte	(860) 263-2486	John.Massicotte@ct.gob
Easter Seals	122 Avenue of Industries, Waterbury, CT 06708	2/10/2017	100.00%	\$67,100.00	Jeff Raboin	(203) 754-5141	Jraboin@reswct.com
Enfield Housing Authority	301 Pearl Street, Enfield, CT	1/14/2017	85.00%	\$698,476.57	Bill Dufour	(860) 745-7493	bdfour@enfieldha.org
Broad Brook Elementary School	14 Rye Street, Broad Brook, CT 06016	3/25/2017	85.00%	\$182,329.46	Joseph Sauerhoefer	(860) 292-7073	jsauerhoefer@eastwindsord.com
Hubbell Elementary School	90 West Washington Street, Bristol, CT 06010	3/11/2017	95.00%	\$162,853.25	Peter Fusco	(860) 584-7097	PeterFusco@ci.bristol.ct.us
Gemini Building	13 South Main Street, West Hartford, CT	4/8/2017	95.00%	\$154,890.00	Mike Longo	(860) 581-7520	Mike.Longo@WestHartfordCT.gov
Alcott Elementary School	1488 Woodlark Road, Wolcott, CT 06716	3/18/2017	95.00%	\$77,400.00	Wayne Natzel	(203) 879-8180	w.natzel@wolcoltps.org
Skinner Road School	90 Skinner Road, Vernon, CT 06066	6/14/2017	100.00%	\$63,000.00	William Peluso	(860) 870-6000	wpeluso@vernon-ct.gov
Branford High School	185 East Main Street, Branford, CT 06405	4/17/2017	100.00%	\$78,000.00	Joe Carbone	(203) 315-7803	jcarbone@branfordschools.org
Simsbury Schools	Tootin, Central, Squadron & Latimer, Simsbury CT	8/18/2017	90.00%	\$732,732.63	Steven Twitchell	(860) 408-5448	stwitchell@simsbury.k12.ct.us
Amity High School	25 Newton Road, Woodbridge, CT 06525	8/25/2017	75.00%	\$514,400.00	Jim Salsa	(203) 397-4818	jim.salsa@reg5.k12.ct.us
City of Middlebury/Shepardson	1172 Whittemore Rd., Middlebury, CT	10/24/2017	90.00%	\$77,500.00	Paul Vaccarelli	(203) 577-4170	pvaccarelli@middlebury-ct.org
Town of Bristol/Chippens Hill	551 Peacedale Street, Bristol, CT 06010	12/20/2017	90.00%	\$1,086,306.88	Peter Fusco	(860) 584-7097	PeterFusco@ci.bristol.ct.us
Town of Bolton	Various Addresses Bolton, CT 06043	10/27/2017	90.00%	\$63,700.00	John Butrynovich	(860) 846-8152	jbutrynovich@boltonct.org
INSTALLATIONS FOR 2018							
Town of Hebron	Various Addresses Hebron, CT 06248	3/14/2018	90.00%	\$555,004.04	Andrew Tierne	(860) 228-5971	altierne@hebronct.com
Dept. of Mental Health/Bridgeport MHC	1635 Central Ave. 1st Flt. Board Rm #120 Bridgeport, CT	3/9/2018	90.00%	\$97,830.35	Lane Coppola	(203) 988-0733	lance.coppola@ct.gov
Dept. of Energy & Environ Prot	Hammonasset Beach 1288 Boston Post Rd. Madison, CT	3/5/2018	90.00%	\$66,700.00	Mark Sulik	(860) 424-3949	mark.sulik@ct.gov
City of Bristol Hubbell School	90 W. Washington St. Bristol, CT 06010	3/15/2018	90.00%	\$117,107.53	Peter Fusco	(860) 584-7097	PeterFusco@ci.bristol.ct.us
Dept. of Energy & Environ Prot	Hammonasset Beach 1288 Boston Post Rd. Madison, CT	3/6/2018	90.00%	\$50,000.00	Mark Sulik	(860) 424-3949	mark.sulik@ct.gov
Reg. School Dist. 8/RHAM High Sch	85 Wall Street Hebron, CT 06033	3/9/2018	75.00%	\$106,000.00	Michael Schlehofer	(860) 922-2941	Michael.schlehofer@rhamschools.org
Town of Tolland / Recreation Center	Post Road Tolland, CT 06084	3/9/2018	90.00%	\$192,329.52	Scott Lappen	(860) 871-3690	slappen@tolland.org
Team Inc. Slocum Building	25 Rmford Street Waterbury, CT	10/19/2018	90.00%	\$429,780.00	Edward Leavy	(203) 929-0546	edwldv@sbcglobal.net
City of Norwalk/ City Hall IT Rooms	125 East Ave. Norwalk, CT 06851	8/22/2018	75.00%	\$158,514.63	Dan Miller	(203) 854-7940	dmiller@nonwalkct.org
Department of Developmental Ser.	71 Mountain Road Newington, CT 06111	2/1/2019	95.00%	\$53,900.00	David Elwell	(203) 805-7465	David.Elwell@ct.gov
INSTALLATIONS FOR 2019							
Town of Mansfield	4 South Eadleville Rd., Mansfield, CT 06268	1/24/2019	75.00%	\$51,700.00	Bill Trieth	(860) 234-1854	triethw@mansfieldct.org
Town of Woodbridge/Library	10 Newtown Road, Woodbridge, CT 06525	6/1/2019	75.00%	\$174,400.00	Anthony Genovese	(203) 389-3482	agenovese@woodbridgect.org
City of Norwalk/Norwalk Historical	141 East Avenue, Norwalk, CT 06851	5/1/2019	95.00%	\$47,489.00	Dan Miller	(203) 854-7940	dmiller@nonwalkct.org
Newtown BOE/Hawley School	11 Queen Street, Newtown, CT 06470	5/1/2019	95.00%	\$78,800.00	Rick Spreyer	(203) 270-6131	rick.spreyer@newtown-ct.gov
Town of Waterford	15 Rope Ferry & 200 Boston Post Rd. Waterford	5/31/2019	90.00%	\$1,882,578.12	Abby Piersall	(860) 444-5813	apiersall@waterfordct.org
Town of Windsor	JFK 530 Park Avenue	4/10/2019	80.00%	\$2,577,697.99	Whit Przech	(860) 285-1870	przech@townofwindsord.com
Town of Windsor	Poquonock Elementary School	10/18/2019	90.00%	\$1,523,217.47	Whit Przech	(860) 285-1870	przech@townofwindsord.com
Town of Stratford/Eli Whitney Elem. School	1130 Huntington Rd., Stratford, CT 06614	9/13/2019	80.00%	\$151,731.52	Brian Snyder	(203) 243-3346	brian@snyderarchitects.com
Town of Cheshire / Cheshire Fire Headquarters	250 Maple Avenue Cheshire, CT 06400	2/27/2020	80.00%	\$133,800.00	George Noewalne	(203) 271-6650	gnoewalne@cheshirect.org
PAC Group/Parker School Elderly Housing	104 Old Post Road, Tolland, CT 06084	7/29/2019	95.00%	\$746,000.00	Rome Santilli	(860) 485-9363	rsantilli@PACGROUPLLC.com
Town of Manchester/Manchester Fire House #2	75 Center Street, Manchester, CT 06040	12/9/2019	75.00%	\$167,800.00	Scott Shanley	(860) 674-3123	sshanley@manchesterct.gov
Town of Tolland/Tolland Rec Center	104 Old Post Road, Tolland, CT 06084	1/21/2020	80.00%	\$212,000.00	Scott Lappen	(860) 871-3694	slappen@tolland.org
Fischer Technologies	750 Marshall Phelps Road, Windsor, CT 06095	2/28/2020	95.00%	\$257,000.00	Yves Ouellette	(203) 537-7641	Y.Ouellette736@gmail.com
Town of Bristol-HA Cambridge Park	64 Davis Drive, Bristol, CT 06010	12/6/2020	80.00%	\$197,700.00	Carl R. Johnson	(860) 832-5540	cjohnson@bristolhousing.org
Klingberg Family Centers	370 Linwood Street, New Britain, CT 06052	4/30/2020	95.00%	\$110,000.00	Joseph M. Milke	(860) 832-5540	joem@klingberg.org
City of Norwalk/Norwalk Fire Dept. Station #4	180 Westport Avenue, Norwalk, CT 06851	11/22/2019	80.00%	\$83,200.00	James Hines	(203) 858-7198	jim@jmkconstructiongroup.com
City of Norwalk/Norwalk Fire Dept. Station #1	90 New Canaan Avenue, Norwalk, CT 06850	11/27/2019	80.00%	\$70,900.00	James Hines	(203) 858-7198	jim@jmkconstructiongroup.com
Team Inc. Derby	30 Elizabeth Street, Derby, CT 06418	2/26/2020	100.00%	\$48,000.00	Edward Leavy	(203) 736-5420	edwldv@sbcglobal.net
Town of Southington / Southington High School	720 Pleasant Street, Southington, CT 06489	8/28/2020	100.00%	\$153,126.00	Peter Romano	(860) 628-3200	promano@southingtonschools.org

NAME / Owner	JOB LOCATION	Completion Date	% of work performed by us	Contract Value	Representative	Phone Number	Email Address
Town of Guilford / Abraham Baldwin	68 Bullard Drive Guilford, CT 06437	6/23/2020	100.00%	\$1,665,503.50	Cliff Gurnham	(203)-458-0001	<a href="mailto:gurnhamc@quilfordschools.org">gurnhamc@quilfordschools.org</a>
Town of West Hartford/Hall High School	975 North Main Street, West Hartford, CT 06107 INSTALLATIONS FOR 2020	5/20/2020	100.00%	\$59,900.00	Mike Longo	860-538-7732	<a href="mailto:mike.longo@westhartfordct.gov">mike.longo@westhartfordct.gov</a>
CT State Colleges / Three Rivers	574 New London Turnpike Norwich, CT 06360	9/2/2020	100.00%	\$75,732.48	Yolanda Hacia	(860)-244-7732	<a href="mailto:yhacia@commnet.edu">yhacia@commnet.edu</a>
Town of Farmington / West Woods Elementary	50 Judson Lane Farmington, CT 06032	7/30/2020	100.00%	\$147,000.00	Tim Harris	(860)-673-8270x7050	<a href="mailto:harris@fscs.org">harris@fscs.org</a>
Town of Stratford / Lordship Fire Station	21 Prospect Dr. Stratford, CT	9/19/2020	100.00%	\$94,615.69	Phil Ryan	(203)-385-4044	<a href="mailto:pryan@townofstratford.com">pryan@townofstratford.com</a>
CT State Colleges /Norwalk Comm. College	188 Richards Ave. Norwalk, CT	8/31/2020	100.00%	\$638,988.68	Yolanda Hacia	(860)-244-7732	<a href="mailto:yhacia@commnet.edu">yhacia@commnet.edu</a>
New Britain Housing Authority	10 Grand Street, New Britain, CT 06051	10/13/2020	100.00%	\$69,350.00	Margaret Malinowski	860-826-3430	
New Britain Housing Authority/Arthur D'Amato Apts	40 Chestnut Street, New Britain, CT 06051	12/4/2020	100.00%	\$73,900.00	John Hamilton		
DAS / Franklin Square - New Britain	10 Franklin Square, New Britain, CT 06051 INSTALLATIONS FOR 2021		100.00%	\$98,000.00	Nick Garcia	860-713-5678	<a href="mailto:Nicholas.Garcia@ct.gov">Nicholas.Garcia@ct.gov</a>
Town of Guilford / Melissa Jones	31 Park Street, Guilford, CT 06437	8/20/2020	80.00%	\$1,414,147.46	Cliff Gurnham	203-458-0001	<a href="mailto:gurnhamc@quilfordschools.org">gurnhamc@quilfordschools.org</a>
DAS / Rocky Hill Library for the Blind	198 West Street, Rocky Hill, CT 06067	7/28/2020	80.00%	\$193,806.68	Steven Udeh	860-714-5730	
Town of Woodbridge / Amity Reg Sr High School	25 Newton Road, Woodbridge, CT 06525-1598	10/21/2020	75.00%	\$651,952.72	Steve Martoni	203-397-4818	
Town of Fairfield / Roger Sherman Elementary	4250 Fern Street, Fairfield, CT 06424	11/17/2020	80.00%	\$947,222.33	Lee Flaherty		<a href="mailto:lflaherty@fairfieldct.org">lflaherty@fairfieldct.org</a>
Town of Newington / Indian Hill Country Club	11 Golf Street, Newington, CT 06111	12/2/2020	80.00%	\$206,400.00	Keith Chapman	860-666-5447	
Town of Chester / Cherry Hill Apartments	218 Middlesex Turnpike, Chester, CT 06412	3/31/2021	100.00%	\$56,472.00	Doug Williams	860-526-9724	
City of Waterbury / Water Department	21 East Aurora Street, Waterbury, CT 06708	5/17/2021	80.00%	\$64,750.00	Kevin McCaffery	203-5746740	
Town of Guilford/Abraham Baldwin Middle School	68 Bullard Drive Guilford, CT 06437	11/23/2021	100.00%	\$1,483,000.00	Cliff Gurnham	203-458-0001	<a href="mailto:gurnhamc@quilfordschools.org">gurnhamc@quilfordschools.org</a>
WSCU Suite Mechanical Renovations	181 White Street, Danbury, CT 06810	8/20/2021	100.00%	\$298,000.00	Daniel Casinelli	203-837-8660	<a href="mailto:casinelli@wscu.edu">casinelli@wscu.edu</a>
Washington Village / Dimeo	Various Addresses, Norwalk, CT	12/3/2021	80.00%	\$1,013,500.00	Michael J Fuchs		
Stratford Housing Authority	75A Griffin Street, Stratford, CT 06615	10/25/2021	100.00%	\$564,000.00	Nile Scala	203-375-4483	<a href="mailto:nscala@idamelia.com">nscala@idamelia.com</a>
Williamantic Housing Authority	Marcella Eastman Terrace, Williamantic, CT 06226	12/7/2021	100.00%	\$590,859.66	Kim Haddad	860-466-1413	
New Horizons Village / CORE	37 Bliss Memorial Road, Unionville, CT 06085	10/31/2021	80.00%	\$350,000.00	Nicholas Matarazzo	860-678-0663	
Town of Coventry / Captain Nathan Hale School	1778 Main Street, Coventry, CT 06238	11/19/2021	100.00%	\$119,065.00	Joe Salomone	203-281-6895	
Sedgwick Middle School / Town of West Hartford	128 Sedgwick Road, West Hartford, CT 06107	11/22/2021	100.00%	\$344,800.00	Michael Longo	860-570-6500	
Town of Woodbridge / Amity Reg Sr High School	25 Newton Road, Woodbridge, CT 06525-1598	10/25/2021	100.00%	\$1,219,800.00	Lucian Dragulski	860-667-3233 x 113	
Town of Manchester/Manchester High School	134 East Middle Turnpike, Manchester, CT 06040	8/30/2021	100.00%	\$72,000.00	Karen Clancy	860-647-3444	
Carl E Allgrove Elementary School	33 Turkey Hills Road, East Granby, CT	10/12/2021	100.00%	\$86,400.00	Rav Carlson	860-653-2505	<a href="mailto:ravc@easttownhall.com">ravc@easttownhall.com</a>



# Document A310™ – 2010

Conforms with The American Institute of Architects AIA Document 310

## Bid Bond

### CONTRACTOR:

(Name, legal status and address)

Sav-Mor Cooling & Heating, Inc.  
231 Captain Lewis Drive  
Southington, CT 06489

### SURETY:

(Name, legal status and principal place of business)

North American Specialty Insurance Company  
1200 Main Street, Suite 800  
Kansas City, MO 64105  
Mailing Address for Notices

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

### OWNER:

(Name, legal status and address)

Town of Fairfield  
Sullivan Independence Hall, 725 Old Post Road  
Fairfield, CT 06824

**BOND AMOUNT:** 5%

Five Percent of Amount Bid

### PROJECT:

(Name, location or address, and Project number, if any)

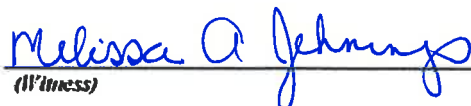
Fairfield Warde High School Cafeteria - Rooftop HV Unit Replacement - Bid #2022-102

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 5th day of January, 2022.

  
(Witness)

Sav-Mor Cooling & Heating, Inc.

(Principal)

(Seal)

By:

(Title) Troy Kerwin - Pres. USA

North American Specialty Insurance Company

(Surety)

(Seal)

By:

(Title) Craig H. Meeker, Attorney-in-Fact

  
(Witness) Ashley Alexis



SWISS RE CORPORATE SOLUTIONS

NORTH AMERICAN SPECIALTY INSURANCE COMPANY  
WASHINGTON INTERNATIONAL INSURANCE COMPANY

GENERAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, THAT North American Specialty Insurance Company, a corporation duly organized and existing under laws of the State of New Hampshire, and having its principal office in the City of Overland Park, Kansas, and Washington International Insurance Company, a corporation organized and existing under the laws of the State of New Hampshire and having its principal office in the City of Overland Park, Kansas, each does hereby make, constitute and appoint: Craig H. Meeker

Principal: Sav-Mor Cooling & Heating, Inc.

Bond Number: Bid Bond

Obligee: Town of Fairfield

Bond Amount: See Bond Form

Bond Description: Fairfield Warde High School Cafeteria - Rooftop HV Unit Replacement - Bid #2022-102

Its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its act and deed, bonds or other writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of:

FIFTY MILLION (\$50,000,000.00) DOLLARS

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both North American Specialty Insurance Company and Washington International Insurance Company at meetings duly called and held on the 9<sup>th</sup> of May, 2012:

"RESOLVED, that any two of the Presidents, any Managing Director, any Senior Vice President, any Vice President, any Assistant Vice President, the Secretary or any Assistant Secretary be, and each or any of them hereby is authorized to execute a Power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings and all contracts of surety, and that each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be binding upon the Company when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached."



By [Signature]  
Steven P. Anderson, Senior Vice President of Washington International Insurance Company  
& Senior Vice President of North American Specialty Insurance Company

By [Signature]  
Michael A. Ito, Senior Vice President of Washington International Insurance Company  
& Senior Vice President of North American Specialty Insurance Company



IN WITNESS WHEREOF, North American Specialty Insurance Company and Washington International Insurance Company have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 14th day of December, 2021.

North American Specialty Insurance Company  
Washington International Insurance Company

State of Illinois  
County of Cook

SS:

On this 14th day of December, 2021, before me, a Notary Public personally appeared Steven P. Anderson, Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and Michael A. Ito, Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.



[Signature]  
Yasmin A. Patel, Notary

I, Jeffrey Goldberg, the duly elected Assistant Secretary of North American Specialty Insurance Company and Washington International Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by said North American Specialty Insurance Company and Washington International Insurance Company, which is still in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 5th day of January, 2022.

[Signature]  
Jeffrey Goldberg, Vice President & Assistant Secretary of  
Washington International Insurance Company & North American Specialty Insurance Company

**SUBCONTRACTORS**

Provide subcontractor details if any are to be employed as part of this contract, including labor rates:

**SUBCONTRACTOR #1:**

Name of Company KMK Insulation Fed ID # 06-1289677  
Contact Person Mike Visnic Title Vice President  
Company Address 1907 Hartford Turnpike, North Haven, CT 06473 Phone 203-671-2553  
Trade Mechanical Insulation Email mvisnic@kmkinsulation.com  
Rates: Supervisor \$ 135.00 /hr Foreman \$ 116.75 /hr Journeyman \$ 108.25 /hr Apprentice \$ 108.25 /hr

**SUBCONTRACTOR #2:**

Name of Company Masotti Electric LLC Fed ID # 06-1404912  
Contact Person Jim Doucette Jr. Title Project Manager  
Company Address 120 Industrial Drive, Southington, CT 06489 Phone 860-276-0097  
Trade Electrical Email jim@masottielectric.net  
Rates: Supervisor \$ 110.00 /hr Foreman \$ 110.00 /hr Journeyman \$ 107.00 /hr Apprentice \$ 105.00 /hr

**SUBCONTRACTOR #3:**

Name of Company WWF LLC Fed ID # 83-2403734  
Contact Person Jeff Tracey Title Owner  
Company Address 424 Berlin Street, East Berlin, CT 06023 Phone 860-828-5496  
Trade Division 5 Email jeff@wwwelding andfab.com  
Rates: Supervisor \$ 135.00 /hr Foreman \$ 125.00 /hr Journeyman \$ 175.00 /hr Apprentice \$ 110.00 /hr

Inworker includes truck with engine drive

**SUBCONTRACTOR #4:**

Name of Company Automated Logic Corp. Fed ID # 82-0540614  
Contact Person Leo Perritano Title Sales Engineer  
Company Address 23 Village Lane, Wallingford, CT 06492 Phone 860-883-7867  
Trade Instrumentation and controls for HVAC Email leo.perritano@carrier.com  
Rates: Supervisor \$ N/A /hr Project Manager Foreman \$ 185.60 /hr Programmer Journeyman \$ 175.00 /hr Technician Apprentice \$ 161.00 /hr

**NOTE: All sub-Contractors are subject to approval by the Town of Fairfield and are required to provide Fed ID #.**



**SUBCONTRACTORS**

Provide subcontractor details if any are to be employed as part of this contract, including labor rates:

**SUBCONTRACTOR #1:**

Name of Company New England Masonry & Roofing Co. Fed ID # 06-081146  
Contact Person John Ciaralli Title Vice President  
Company Address 1146 Sheridan Drive, Naugatuck, CT 06770 Phone 203-729-2266  
Trade Roofing Email jc@nemasonry.com

Rates: Supervisor \$ 135.00 /hr Foreman \$ 125.00 /hr Journeyman \$ 115.00 /hr Apprentice \$ 105.00 /hr

**SUBCONTRACTOR #2:**

Name of Company \_\_\_\_\_ Fed ID # \_\_\_\_\_  
Contact Person \_\_\_\_\_ Title \_\_\_\_\_  
Company Address \_\_\_\_\_ Phone \_\_\_\_\_  
Trade \_\_\_\_\_ Email \_\_\_\_\_

Rates: Supervisor \$ \_\_\_\_\_ /hr Foreman \$ \_\_\_\_\_ /hr Journeyman \$ \_\_\_\_\_ /hr Apprentice \$ \_\_\_\_\_ /hr

**SUBCONTRACTOR #3:**

Name of Company \_\_\_\_\_ Fed ID # \_\_\_\_\_  
Contact Person \_\_\_\_\_ Title \_\_\_\_\_  
Company Address \_\_\_\_\_ Phone \_\_\_\_\_  
Trade \_\_\_\_\_ Email \_\_\_\_\_

Rates: Supervisor \$ \_\_\_\_\_ /hr Foreman \$ \_\_\_\_\_ /hr Journeyman \$ \_\_\_\_\_ /hr Apprentice \$ \_\_\_\_\_ /hr

**SUBCONTRACTOR #4:**

Name of Company \_\_\_\_\_ Fed ID # \_\_\_\_\_  
Contact Person \_\_\_\_\_ Title \_\_\_\_\_  
Company Address \_\_\_\_\_ Phone \_\_\_\_\_  
Trade \_\_\_\_\_ Email \_\_\_\_\_

Rates: Supervisor \$ \_\_\_\_\_ /hr Foreman \$ \_\_\_\_\_ /hr Journeyman \$ \_\_\_\_\_ /hr Apprentice \$ \_\_\_\_\_ /hr

**NOTE: All sub-Contractors are subject to approval by the Town of Fairfield and are required to provide Fed ID #.**



# 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 2022  
(In words, indicate day, month and year.)

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

Town of Fairfield  
725 Old Post Road  
Fairfield CT 06824

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

SAV-MOR Cooling and Heating, Inc.  
231 Captain Lewis Drive  
Southington, CT 06489

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

Fairfield Warde High School - Cafeteria Air Conditioning  
755 Melville Avenue, Fairfield CT 06825

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.

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

Landmark Facilities Group, Inc.  
252 East Avenue  
Norwalk CT 06855

The Owner and Contractor agree as follows.

## TABLE OF ARTICLES

1	THE CONTRACT DOCUMENTS
2	THE WORK OF THIS CONTRACT
3	DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
4	CONTRACT SUM
5	PAYMENTS
6	DISPUTE RESOLUTION
7	TERMINATION OR SUSPENSION
8	MISCELLANEOUS PROVISIONS
9	ENUMERATION OF CONTRACT DOCUMENTS

## EXHIBIT A INSURANCE AND BONDS

### ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form 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 parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

### ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

### 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.

☐

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

☒

Established as follows:

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

Fourteen (14) calendar days after receipt of Notice to Proceed or date of this contract, whichever comes first.

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  
the date of commencement of the Work.

( ) calendar days from

☒

By the following date: August 21, 2022

§ 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

(Table Deleted)

#### 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.

### 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 One Million Twenty Six Thousand Dollars (\$1,026,000 ), 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

Add Alternate #1 (New Steam Fin Tube Radiation)

##### Price

\$14,400.00

§ 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, if any:  
(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:  
(Insert terms and conditions for liquidated damages, if any.)

If the Contractor neglects, fails or refuses to achieve substantial completion by 11:59 pm by the date stipulated in the Contractor's bid form for each of the bid components requiring durations or deadlines, liquidated damages of One Thousand Dollars (\$1,000.00) per day or part thereof shall be due for each bid component to the Owner and subtracted from the unpaid contract amount or bond held by the Owner. "Substantial completion" is as defined in the General Conditions of the Contract for Construction, AIA Document A201 included in this project manual. "Substantial completion" is further defined as the date at which the local authorities with jurisdiction over this project grant a temporary or permanent certificate of occupancy (if required for occupancy) for each project area.

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

**ARTICLE 5 PAYMENTS**

**§ 5.1 Progress Payments**

**§ 5.1.1** Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall 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, or as follows:

**§ 5.1.3** Provided that an Application for Payment is received by the Architect not later than the 25th day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the last day of the following month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than forty five (45) days after the Architect receives the Application for Payment.  
(Federal, state or local laws may require payment within a certain period of time.)

**§ 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. 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.

**§ 5.1.6** In accordance with AIA Document A201®–2017, General Conditions of the Contract for Construction, 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;
- .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; and
- .5 Retainage withheld pursuant to Section 5.1.7.

#### **§ 5.1.7 Retainage**

**§ 5.1.7.1** For each progress payment made prior to Substantial Completion of the Work, 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.)*

Retainage of five (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.)*

None

**§ 5.1.7.2** Reduction or limitation of retainage, if any, shall be as follows:

*(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 modifications.)*

None.

**§ 5.1.7.3** Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

*(Insert any other conditions for release of retainage upon Substantial Completion.)*

If not agreed to by the Owner (Town).

**§ 5.1.8** If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with 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.

## **§ 5.2 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 Contract 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; and
- .2 a final Certificate for Payment has been issued by the Architect.

**§ 5.2.2** The Owner’s final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect’s final Certificate for Payment, or as follows:

## **§ 5.3 Interest**

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

*(Insert rate of interest agreed upon, if any.)*

0 %

## **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.)*

none

## § 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
- ☒ Litigation in a court of competent jurisdiction
- ☐ Other (Specify)

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

## 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 a termination fee as follows:

(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner’s convenience.)

None

§ 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)

Gerald Foley, Director of Purchasing

Town of Fairfield

725 Old Post Road

Fairfield CT 06824



**§ 8.3** The Contractor's representative:  
(Name, address, email address, and other information)

Troy Karkowski, President  
SAV-MOR Cooling and Heating, Inc.  
231 Captain Lewis Drive  
Southington CT 06489  
860-621-9959  
troy@savmorct.com

**§ 8.4** Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

**§ 8.5 Insurance and Bonds**

**§ 8.5.1** The Contractor shall purchase and maintain insurance as set forth in the Town's invitation to bid documents.

**§ 8.5.2** The Contractor shall provide a performance and payment bond as set forth in the Town's invitation to bid documents.

**§ 8.6** This section intentionally omitted.

**§ 8.7** Other provisions:

None

**ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS**

**§ 9.1** This Agreement is comprised of the following documents:

- .1 AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A201™-2017, General Conditions of the Contract for Construction

**.3 Drawings**

Number	Title	Date
	Exhibit "B" drawings attached to this Agreement	
	Town of Fairfield Invitation to Bid Document	
	Landmark Facilities Group Drawings and Project Manual Prevailing	
	Wage Rate Information	
	Bid Addenda Documents	

**.4 Specifications**

Section	Title	Date	Pages
	Exhibit "C" specifications attached to this Agreement		

**.5 Addenda, if any:**

Number	Date	Pages
#1	12/17/2021	1
#2	12/23/2021	3

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.

**.6 Other Exhibits:**

*(Check all boxes that apply and include appropriate information identifying the exhibit where required.)*

☐

AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:  
*(Insert the date of the E204-2017 incorporated into this Agreement.)*

☐

The Sustainability Plan:

Title	Date	Pages
-------	------	-------



Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
----------	-------	------	-------

- .7 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.)*

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

\_\_\_\_\_  
**OWNER** *(Signature)*

\_\_\_\_\_  
*(Printed name and title)*

\_\_\_\_\_  
**CONTRACTOR** *(Signature)*

\_\_\_\_\_  
*(Printed name and title)*

Init.

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**AIA**<sup>®</sup>

# Document A101<sup>®</sup> – 2017 Exhibit A

## Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the 24<sup>th</sup> day of January in the year 2022  
(In words, indicate day, month and year.)

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

Fairfield Warde High School - Cafeteria Air Conditioning  
755 Melville Avenue, Fairfield CT 06825

**THE OWNER:**  
(Name, legal status and address)

Town of Fairfield  
725 Old Post Road  
Fairfield CT 06824

**THE CONTRACTOR:**  
(Name, legal status and address)

SAV-MOR Cooling and Heating, Inc.  
231 Captain Lewis Drive  
Southington, CT 06489

### TABLE OF ARTICLES

- A.1 GENERAL**
- A.2 OWNER'S INSURANCE**
- A.3 CONTRACTOR'S INSURANCE AND BONDS**
- A.4 SPECIAL TERMS AND CONDITIONS**

### ARTICLE A.1 GENERAL

The Owner and Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201<sup>®</sup>–2017, General Conditions of the Contract for Construction.

### ARTICLE A.2 OWNER'S INSURANCE

#### § A.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article A.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by Section A.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

#### § A.2.2 Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner's usual general liability insurance.

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

This document is intended to be used in conjunction with AIA Document A201<sup>®</sup>–2017, General Conditions of the Contract for Construction. Article 11 of A201–2017 contains additional insurance provisions.

### § A.2.3 Required Property Insurance

**§ A.2.3.1** Unless this obligation is placed on the Contractor pursuant to Section A.3.3.2.1, the Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section A.2.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

**§ A.2.3.1.1 Causes of Loss.** The insurance required by this Section A.2.3.1 shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials. Sub-limits, if any, are as follows:

*(Indicate below the cause of loss and any applicable sub-limit.)*

Cause of Loss

Sub-Limit

**§ A.2.3.1.2 Specific Required Coverages.** The insurance required by this Section A.2.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses. Sub-limits, if any, are as follows:

*(Indicate below type of coverage and any applicable sub-limit for specific required coverages.)*

Coverage

Sub-Limit

**§ A.2.3.1.3** Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section A.2.3.1 or, if necessary, replace the insurance policy required under Section A.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.

**§ A.2.3.1.4 Deductibles and Self-Insured Retentions.** If the insurance required by this Section A.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

**§ A.2.3.2 Occupancy or Use Prior to Substantial Completion.** The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.2.3.1 have consented in writing to the continuance of coverage. The

Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.

### § A.2.3.3 Insurance for Existing Structures

If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, “all-risks” property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in Section A.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

### § A.2.4 Optional Extended Property Insurance.

The Owner shall purchase and maintain the insurance selected and described below.

*(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)*

☐

**§ A.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance**, to reimburse the Owner for loss of use of the Owner’s property, or the inability to conduct normal operations due to a covered cause of loss.

☐

**§ A.2.4.2 Ordinance or Law Insurance**, for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.

☐

**§ A.2.4.3 Expediting Cost Insurance**, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.

☐

**§ A.2.4.4 Extra Expense Insurance**, to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.

☐

**§ A.2.4.5 Civil Authority Insurance**, for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.

☐

**§ A.2.4.6 Ingress/Egress Insurance**, for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.

☐

**§ A.2.4.7 Soft Costs Insurance**, to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

### § A.2.5 Other Optional Insurance.

The Owner shall purchase and maintain the insurance selected below.

*(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)*

☐

**§ A.2.5.1 Cyber Security Insurance** for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information.  
*(Indicate applicable limits of coverage or other conditions in the fill point below.)*

☐

### § A.2.5.2 Other Insurance

*(List below any other insurance coverage to be provided by the Owner and any applicable limits.)*

Coverage

Limits

## ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

### § A.3.1 General

**§ A.3.1.1 Certificates of Insurance.** The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 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 A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.

**§ A.3.1.2 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.



**§ A.3.1.3 Additional Insured Obligations.** To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, 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) the Owner as an additional insured 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 of the Owner's general liability insurance policies 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.

### **§ A.3.2 Contractor's Required Insurance Coverage**

**§ A.3.2.1** 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 jurisdiction where the Project is located. 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 General Conditions, unless a different duration is stated below:  
*(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)*

### **§ A.3.2.2 Commercial General Liability**

**§ A.3.2.2.1** Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than (\$ ) each occurrence, (\$ ) general aggregate, and (\$ ) 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; and
- .5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

**§ A.3.2.2.2** The Contractor's Commercial General Liability policy under this Section A.3.2.2 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 General Conditions 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 residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
- .8 Claims related to roofing, if the Work involves roofing.
- .9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
- .10 Claims related to earth subsidence or movement, where the Work involves such hazards.
- .11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

**§ A.3.2.3** Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than (\$ ) 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.



**§ A.3.2.4** The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, 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.

**§ A.3.2.5** Workers' Compensation at statutory limits.

**§ A.3.2.6** Employers' Liability with policy limits not less than (\$ ) each accident, (\$ ) each employee, and (\$ ) policy limit.

**§ A.3.2.7** Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

**§ A.3.2.8** If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than (\$ ) per claim and (\$ ) in the aggregate.

**§ A.3.2.9** If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than (\$ ) per claim and (\$ ) in the aggregate.

**§ A.3.2.10** Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than (\$ ) per claim and (\$ ) in the aggregate.

**§ A.3.2.11** Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than (\$ ) per claim and (\$ ) in the aggregate.

**§ A.3.2.12** Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than (\$ ) per claim and (\$ ) in the aggregate.

### **§ A.3.3 Contractor's Other Insurance Coverage**

**§ A.3.3.1** Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. 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 General Conditions, unless a different duration is stated below:

*(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)*

**§ A.3.3.2** The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.

*(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)*

☐

**§ A.3.3.2.1** Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible,

and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below:  
(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

- ☐
- § A.3.3.2.2 Railroad Protective Liability Insurance**, with policy limits of not less than (\$ ) per claim and (\$ ) in the aggregate, for Work within fifty (50) feet of railroad property.
- ☐
- § A.3.3.2.3 Asbestos Abatement Liability Insurance**, with policy limits of not less than (\$ ) per claim and (\$ ) in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.
- ☐
- § A.3.3.2.4 Insurance for physical damage to property while it is in storage and in transit to the construction site on an “all-risks” completed value form.**
- ☐
- § A.3.3.2.5 Property insurance on an “all-risks” completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.**
- ☐
- § A.3.3.2.6 Other Insurance**  
(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage

Limits

§ A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:  
(Specify type and penal sum of bonds.)

Type

Penal Sum (\$0.00)

Payment Bond

Performance Bond

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

#### ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:



# FAIRFIELD WARDE HIGH SCHOOL CAFETERIA AIR-CONDITIONING

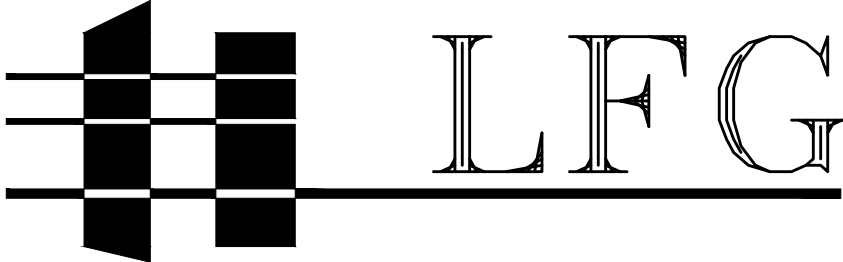
ISSUE: FOR BID

DATE: NOVEMBER 12, 2021



DOCUMENTS PREPARED BY:

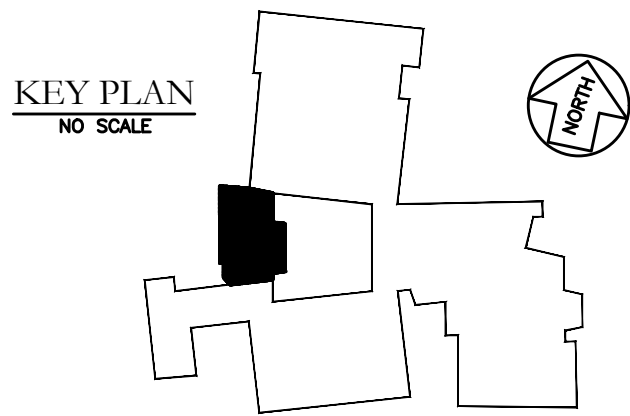
252 East Avenue  
Norwalk, CT 06855  
(203) 866-4626 Tel  
(203) 866-8019 Fax




LANDMARK  
FACILITIES  
GROUP, INC.

## DRAWING INDEX

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M-100	MECHANICAL PLANS - FIRST FLOOR	FP-001	SPRINKLER DETAILS AND LEGEND
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E-101	ELECTRICAL PLAN - ROOF		
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WARDE FAIRFIELD HIGH SCHOOL  
FAIRFIELD, CT

SCALE: AS NOTED	APPROVED BY:	DRAWN BY: AD
DATE: 7/16/21	CHECKED BY: RS	

PROJECT TITLE SHEET

FILE NAME: LFG-10000	JOB NUMBER: .	DRAWING NUMBER: T-001
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GENERAL DEMOLITION NOTES

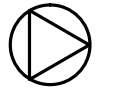
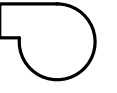


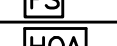
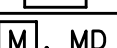








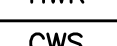


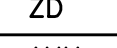
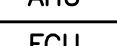


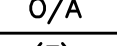
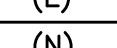
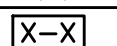

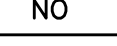
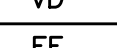




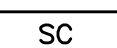

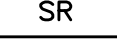
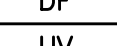
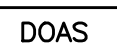

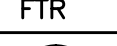
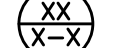









1. ALL DEMOLITION WORK TO BE COORDINATED WITH BUILDING MANAGER TO AVOID DISTURBANCES TO OTHER OCCUPANTS. ALL DEMOLITION WORK TO BE DONE DURING THE HOURS DESIGNATED.
2. MAINTAIN STABLE AND SAFE CONDITIONS AT ALL TIMES, TAKING CAUTION TO PROTECT THE EXISTING AND ADJACENT BUILDINGS, THEIR OCCUPANTS, STREET FRONT AND THE PUBLIC.
3. DEMOLISHED MATERIAL, NOT IDENTIFIED FOR SALVAGE BY THE OWNER, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE COMPLETELY REMOVED FROM THE JOB SITE.
4. PROVIDE PROTECTION TO ALL EXISTING ELECTRICAL, MECHANICAL, PLUMBING, AND SPRINKLER EQUIPMENT TO REMAIN.
5. COORDINATE WITH GENERAL CONTRACTOR TO REMOVE ALL ABANDONED ELECTRICAL CABLES FROM EXISTING LOCATIONS, TRACE BACK TO THEIR SOURCE AND TAG.
6. ALL LIFE SAFETY EQUIPMENT AND ASSOCIATED CONDUIT AND WIRING SHALL BE PROTECTED FROM ANY PHYSICAL DAMAGE DURING DEMOLITION AND/OR CONSTRUCTION.
7. THE SCOPE OF THE DEMOLITION WORK HAS GENERALLY BEEN INDICATED ON THE DRAWING FOR CONTRACTORS INFORMATION. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE FULL SCOPE, EXTENT, NATURE AND MANNER OF DEMOLITION REQUIRED.
8. ONLY WORKMEN SKILLED AND KNOWLEDGEABLE IN THEIR RESPECTIVE TRADES SHALL BE ENGAGED IN THE DEMOLITION OF ANY WORK.
9. CONTRACTORS SHALL TAKE SPECIAL CARE TO DEMOLISH ONLY THAT WORK WHICH IS REQUIRED TO BE DEMOLISHED AND NOT TO DISTURB ANY WORK WHICH IS TO REMAIN. IF IN THE COURSE OF DEMOLITION, CONTRACTOR DESTROYS OR DISTURBS ANY WORK WHICH IS TO REMAIN, THEN HE SHALL AT HIS OWN EXPENSE, REPAIR OR REPLACE SUCH WORK AS NECESSARY.
10. REMOVE AND DISCARD ALL DEMOLISHED ITEMS IN A MANNER FULLY APPROVED BY THE CITY OF NEW YORK AND ANY OTHER GOVERNMENT AGENCY.
11. DO NOT SCALE DRAWINGS.
12. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND JOB CONDITIONS PRIOR TO SUBMITTING BIDS AND SHALL REPORT TO THE OWNER'S REPRESENTATIVE ANY DISCREPANCIES OR OMISSIONS WHICH WOULD INTERFERE WITH SATISFACTORY COMPLETION OF WORK. ALL BUILDING DEPARTMENT PERMITS SHALL BE OBTAINED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION WORK.

PROJECT DESCRIPTION

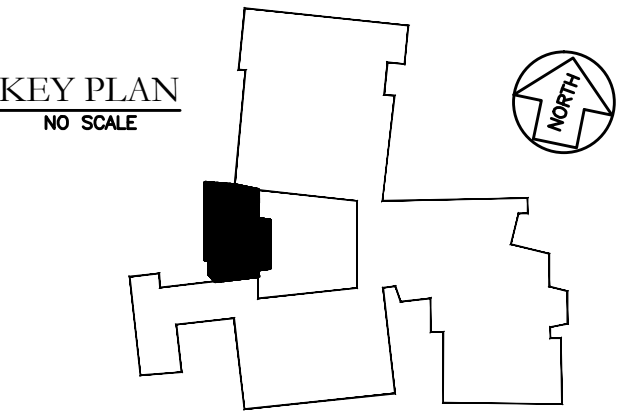
1. THE PRIMARY INTENT OF THIS PROJECT IS TO REPLACE EXISTING HEATING-VENTILATION EQUIPMENT WITH NEW SYSTEMS CAPABLE OF HEATING, VENTILATING AND AIR-CONDITIONING. A NEW VRF SYTSEM WILL BE INSTALLED TO HANDLE SPACE AND ENVELOPE LOADS IN THE CAFETERIA AND SENIOR COMMONS.
2. BIDDERS SHALL RECOGNIZE THAT THE EXISTING BUILDING AUTOMATION SYSTEM (BAS) IS COMPRISED OF AUTOMATED LOGIC (ALC) HARDWARE WITH SOME LEGACY JOHNSON CONTROLS (JCI) HARDWARE STILL IN PLACE. FOR ALL EQUIPMENT REPLACED AS PART OF THIS PROJECT, CONTRACTOR SHALL MIGRATE ALL POINTS MONITORED BY JCI TO NEW OPEN-LICENSE FIELD CONTROLLERS AS MANUFACTURED BY HONEYWELL, JCI FX, VYKON OR DISTECH. DO NOT OVERLAY ALC ON TOP OF EXISTING JCI CONTROLLERS.
3. ALL WORK SHALL TAKE PLACE DURING SUMMER 2022 BREAK, WHICH RUNS FROM LATE JUNE TO LATE AUGUST 2022. NEW SYSTEMS SHALL BE STARTED, TESTED AND BALANCED PRIOR TO 8/25/22. IF PREMIUM LABOR IS REQUIRED TO ACHIEVE THIS DEADLINE, CONTRACTOR SHALL FIGURE THIS IN HIS BASE BID.
4. CONTRACTOR IS ENCOURAGED TO PREPARE SUBMITTALS FOR LONG LEAD ITEMS AND ISSUE TO DESIGN ENGINEER IMMEDIATELY FOLLOWING AWARD OF CONTRACT.
5. AN EXISTING WARRANTY IS IN PLACE FOR THE ROOF OF THE BUILDING. ALL ROOF WORK SHALL BE PERFORMED BY AN AUTHORIZED INSTALLER OF 'SIPLAST' PRODUCT IN ORDER TO MAINTAIN ROOF WARRANTY.

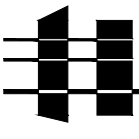
PROJECT NOTES:

1. ALL BIDDERS SHALL VISIT PROJECT SITE TO THOROUGHLY FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS. CLAIMS FOR EXTRA PAYMENTS FOR WORK, WHICH COULD HAVE BEEN IDENTIFIED VIA CAREFUL SITE INSPECTION, WILL NOT BE ACKNOWLEDGED.
2. ANY REQUIRED CUTTING AND PATCHING OF WALLS AND CEILINGS SHALL BE DONE BY MECHANICAL CONTRACTOR OR HIS SUBS. BIDDERS SHALL IDENTIFY AND COORDINATE ANY REQUIRED CUTTING/PATCHING PRIOR TO CONSTRUCTION AND COORDINATE WITH OWNER PRIOR TO EXECUTION.
3. CONTRACTOR SHALL PROVIDE A 'TURNKEY' INSTALLATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
- DEMOLITION AND DISPOSAL OF EXISTING HVAC EQUIPMENT
  - ELECTRICAL LINE AND LOW-VOLTAGE WIRING AND CONDUITS.
  - INSTALLATION OF ALL NEW HVAC EQUIPMENT, DUCTWORK, PIPING AND CONTROLS.
  - INSTALLATION OF NEW MAKEUP AIR UNIT FOR KITCHEN
  - INSTALLATION OF NEW VFD ONTO EXISTING KITCHEN GREASE FAN
  - INSTALLATION OF NEW VARIABLE VOLUME CONTROLS AND HEAT SENSORS AT EXISTING KITCHEN GREASE HOOD.
  - ALL REQUIRED CUTTING/PATCHING/PAINTING AND REMOVAL, REINSTALLATION OF HUNG CEILINGS.
  - INTEGRATION OF EQUIPMENT INTO EXISTING BUILDING BAS BY ATC CONTRACTOR.
  - ROOF CUTTING, PATCHING AND FLASHING BY BUILDING ROOFING CONTRACTOR.
  - SYSTEM TESTING AND BALANCING (AIR AND WATER) BY PROFESSIONAL, LICENSED ATB CONTRACTOR.
  - LABELING OF DUCTWORK AND PIPING.
  - OWNER TRAINING ON EQUIPMENT AND CONTROLS (MINIMUM 2HRS EACH).
  - CLOSEOUT DOCUMENTS INCLUDING AS-BUILT DRAWINGS, O&M MANUALS, TEST REPORTS, WARRANTY CARDS, ETC.
4. CONTRACTOR SHALL FURNISH NEW VARIABLE SPEED HOOD CONTROLS FOR EXISTING KITCHEN EXHAUST HOOD. REFER TO WRITTEN (BOOK) SPECS FOR ADDITIONAL INFORMATION. HOOD CONTROLS ARE BASED ON GREENHECK MODEL GKC-DCV AND SHALL INCLUDE CONTROLLER, WIRING, AND ALL END DEVICES REQUIRED FOR A FUNCTIONAL SYSTEMS.

LEGEND	
	FAN OR PUMP
	FAN OR PUMP
	TEMPERATURE TRANSMITTER
	HUMIDITY TRANSMITTER
	FLOW SWITCH
	HAND OFF AUTO
	MOTORIZED OPERATOR
	SMOKE DETECTOR
	VARIABLE FREQUENCY DRIVE
	DIFFERENTIAL PRESSURE SWITCH
	LOW LIMIT SWITCH (FREEZESTAT)
	CARBON DIOXIDE LEVEL SENSOR
	CONTROL VALVE (MODULATING)
	RUN INDICATOR
	START/STOP
	HOT WATER SUPPLY
	HOT WATER RETURN
	CONDENSER WATER SUPPLY
	CONDENSER WATER RETURN
	PRESSURE TRANSDUCER
	ZONE DAMPER
	AIR HANDLING UNIT
	FAN COIL UNIT
	RETURN AIR
	SUPPLY AIR
	OUTSIDE AIR
	EXISTING
	NEW
	ZONE DESIGNATION
	NORMALLY CLOSED
	NORMALLY OPEN
	VOLUME DAMPER
	EXHAUST FAN
	ISOLATION VALVE
	FIRE DAMPER
	THERMOSTAT
	HUMIDISTAT
	FACTORY CONTROL PANEL
	SPEED CONTROL
	SMOKE DETECTOR (DUCT MOUNTED)
	SPEED REFERENCE
	DRIVE FAULT
	UNIT VENTILATOR
	DEDICATED OUTDOOR AIR SYSTEM
	LOW PRESSURE STEAM
	FIN TUBE RADIATION
	BAS INTERFACE POINT (NEW UNLESS OTHERWISE NOTED)
	POINT OF CONNECTION, NEW WORK TO EXISTING

-	11-12-21	ISSUED FOR BID
REV	DATE	DESCRIPTION



**LFG**

252 East Avenue  
Norwalk, CT 06855  
(203) 866-4626 Tel  
(203) 866-8019 Fax

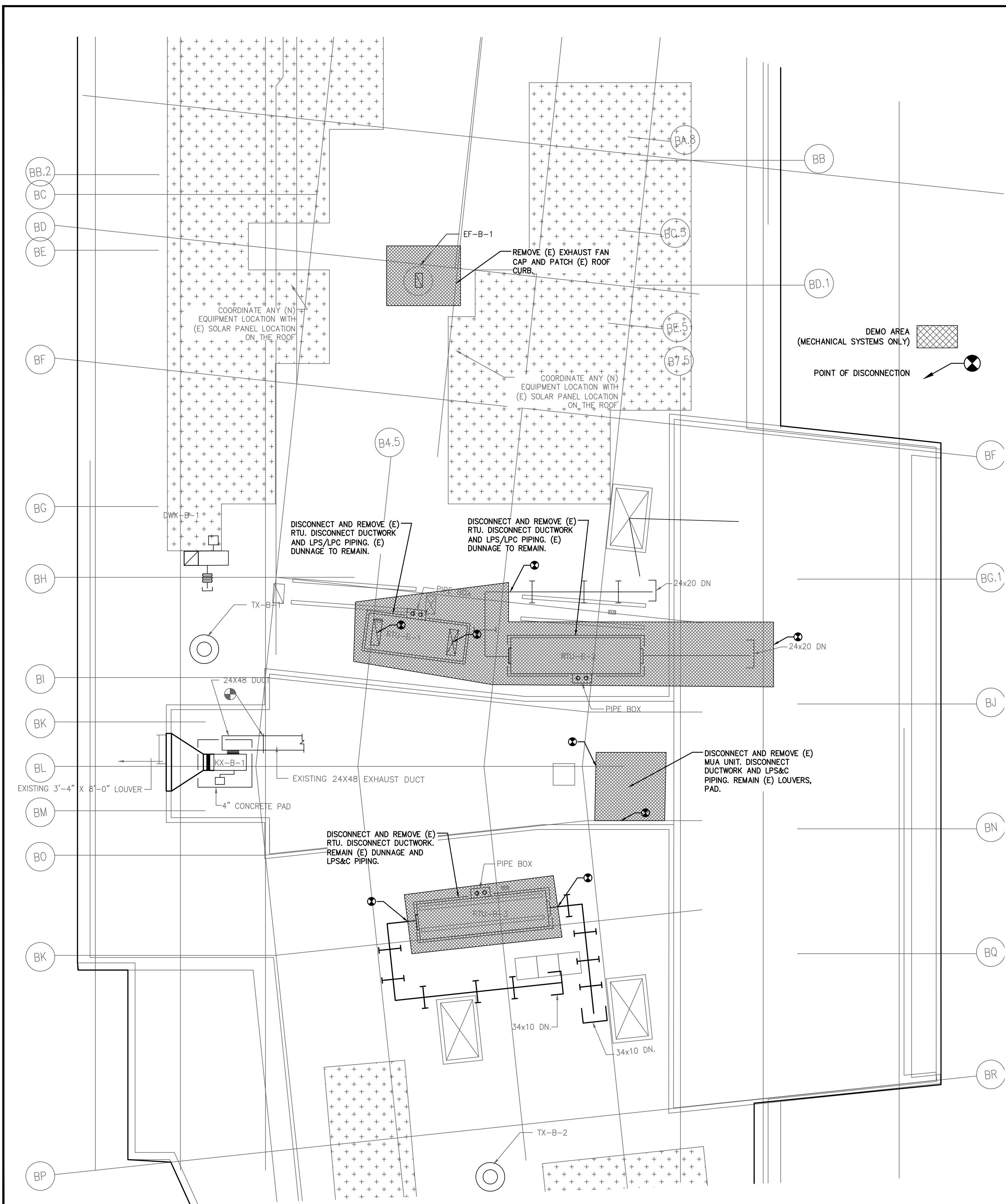
LANDMARK  
FACILITIES  
GROUP, INC.

WARDE FAIRFIELD HIGH SCHOOL  
FAIRFIELD, CT

SCALE: AS NOTED	APPROVED BY:	DRAWN BY: AD
DATE: 7/16/21		CHECKED BY: RS

VRF EQUIPMENT DIAGRAM

FILE NAME: LDH-LDWG	JOB NUMBER: -	DRAWING NUMBER: M-002
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**01** DEMOLITION HVAC ROOF PLAN  
1/8" = 1'-0"



**02** DEMOLITION HVAC FIRST FLOOR PLAN  
1/8" = 1'-0"

REV	DATE	ISSUED FOR BID	DESCRIPTION
-	11-12-21	ISSUED FOR BID	

**KEY PLAN**  
NO SCALE

**LFG**  
LANDMARK FACILITIES GROUP, INC.  
252 East Avenue  
Norwalk, CT 06855  
(203) 866-4626 Td  
(203) 866-8019 Fax

**WARDE FAIRFIELD HIGH SCHOOL**  
FAIRFIELD, CT

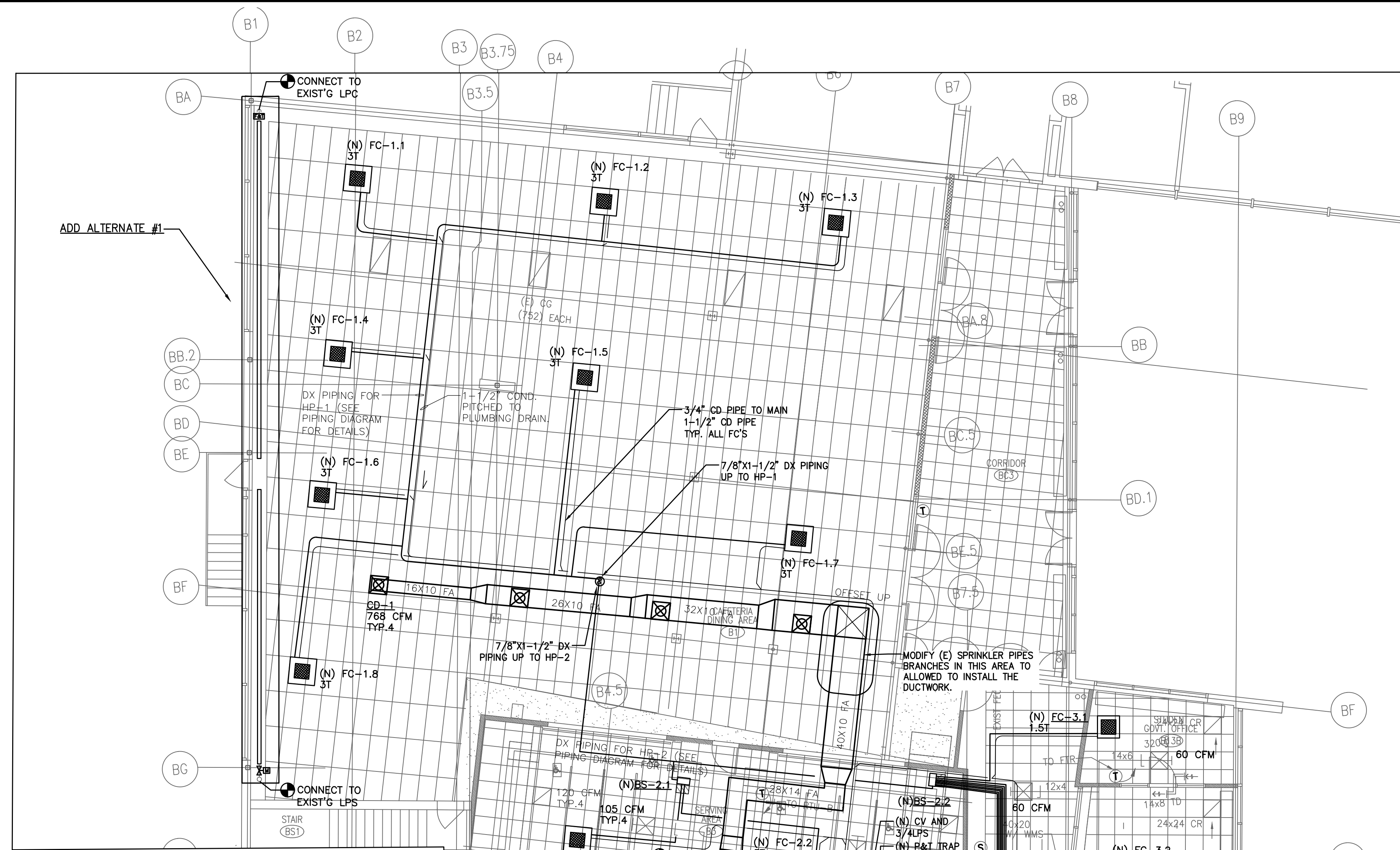
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DATE: 7/16/21

APPROVED BY: [Signature]  
DRAWN BY: AD  
CHECKED BY: RS

**MECHANICAL DEMO PLAN**  
ROOF, FIRST FLOOR

FILE NAME: LDR100WG  
JOB NUMBER: -  
DRAWING NUMBER: MD-100





# NOTES:

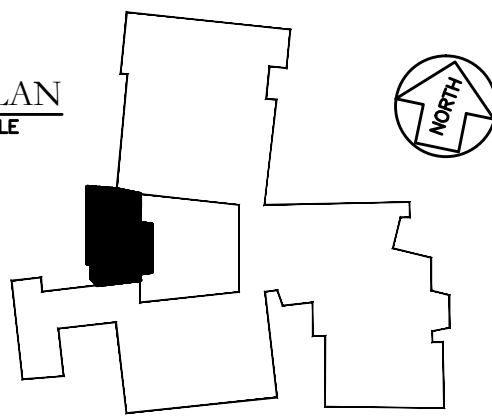
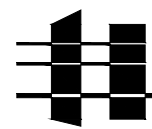
1. CONTRACTOR SHALL MODIFY EXISTING CEILING GRID AS REQUIRED TO INSTALL NEW FAN COIL UNITS. CONTRACTOR SHALL INCLUDE ALL REQUIRE REMOVAL/REINSTALLATION OF GRID, LIGHTS AND OTHER OBJECTS AS NECESSARY TO PERFORM INSTALLATION OF EQUIPMENT, PIPING AND DUCTWORK SHOWN ON PLANS.
2. CONTRACTOR SHALL PERFORM A CAREFUL FIELD SURVEY TO AVOID CONFLICTS WITH EXISTING LIGHTS AND SPRINKLER HEADS/PIPING.
3. ALL FAN COILS SERVING A COMMON SPACE SHALL BE SLAVED TO A SINGLE THERMOSTAT FOR CONTROL.
4. DOAS SYSTEM SHALL RUN DURING OCCUPIED PERIODS AND REMAIN OFF DURING UNOCCUPIED PERIODS. CONTROL SYSTEM SHALL MONITOR SPACE TEMPERATURES AND DYNAMICALLY RESET DOAS DISCHARGE AIR TEMPERATURE FROM 65 TO 75 DEG F.
5. CONTRACTOR SHALL ENGAGE LICENSED AIR BALANCE CONTRACTOR TO TEST AND INSPECT EXISTING DISHWASHER HOOD. RUN FAN AT MAX SPEED AND MEASURE FLOW AT ALL EXHAUST AIR INLETS. COMPARE RESULTS TO TRAVERSE READING TAKEN ON ROOF AT FAN INLET. IF MEASUREMENTS DO NOT AGREE, CHECK DUCTWORK FOR OBSTRUCTIONS SUCH AS CLOSED DAMPERS OR FOREIGN OBJECTS. GENERATE REPORT AND SUBMIT TO DESIGN ENGINEER FOR REVIEW.
6. CONTRACTOR SHALL FURNISH AND INSTALL VARIABLE SPEED KITCHEN HOOD CONTROLS. CONTROLS SHALL USE HEAT SENSORS TO VARY THE EXHAUST AND MAKEUP AIR FLOW. REFER TO WRITTEN (BOOK) SPECS FOR ADDITIONAL INFORMATION.

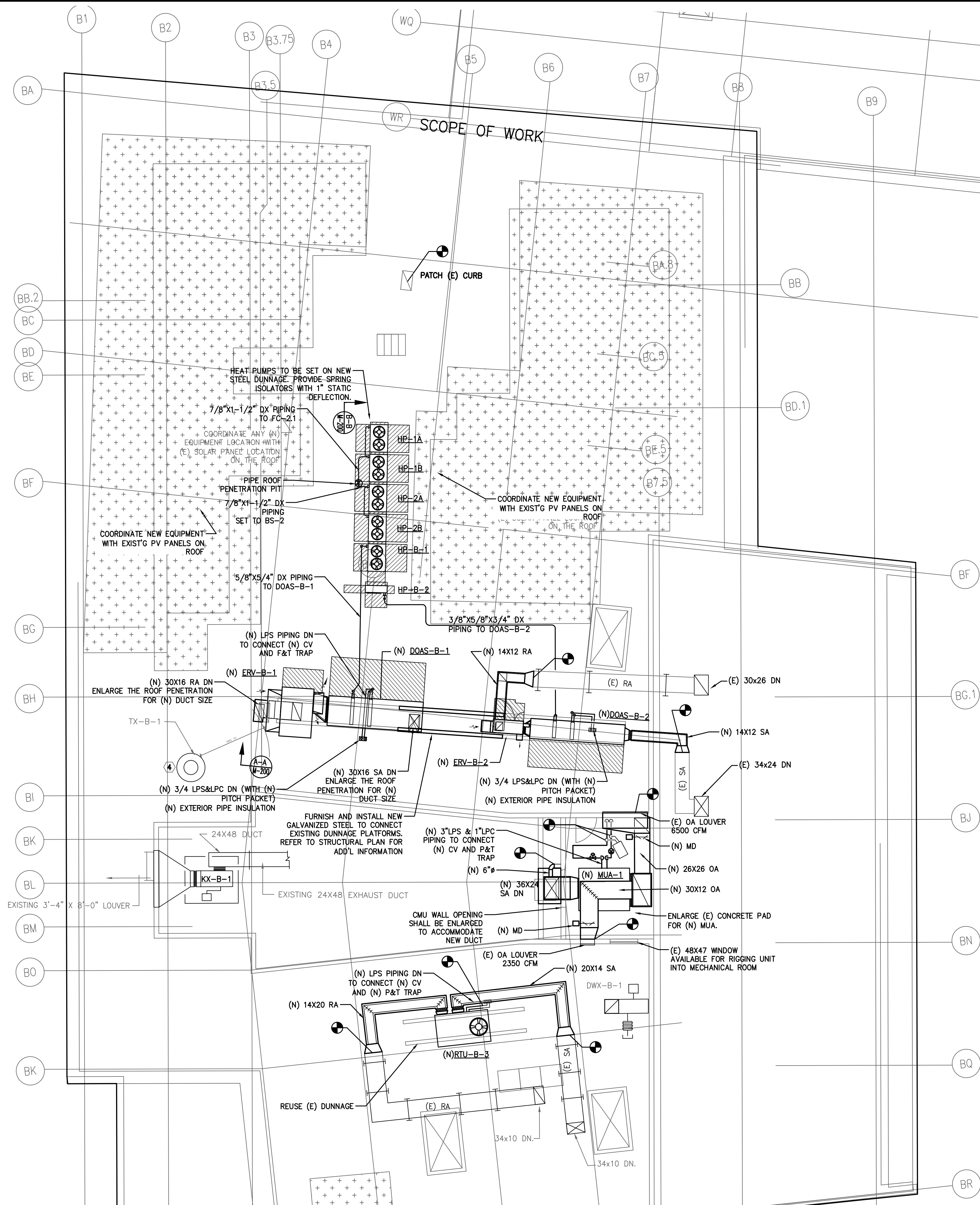
**ADD ALTERNATE #1:** CONTRACTOR SHALL FURNISH AND INSTALL NEW STEAM FIN TUBE RADIATION ALONG NORTH WALL OF CAFETERIA. CONNECT TO EXISTING STEAM SUPPLY AT ONE END OF UNIT VENTILATOR ROW, AND CONDENSATE RETURN AT OTHER END. PROVIDE NEW MOTORIZED STEAM CONTROL VALVE. REFER TO STEAM PIPING DIAGRAM FOR ADDITIONAL INFORMATION. FIN TUBE RADIATION IS BASED ON MODEL JA-14 BY SLANT FIN.

**ADD ALTERNATE #2:** FURNISH AND INSTALL NEW 1.5 TON CEILING CASSETTE FAN COIL UNIT FOR CUSTODIAN OFFICE. ALTERNATE SHALL INCLUDE ALL EQUIPMENT, PIPING, CONDENSATE PUMP, AND CONTROLS. ALTERNATE SHALL ALSO INCLUDE POSSIBLE DIFFERENT PIPING LAYOUT AND UPSIZING HP AND BS UNIT.



02 PROPOSED CUSTODIAN OFFICE PLAN  
1/8" = 1'-0"

-	11-12-21	ISSUED FOR BID	
REV	DATE	DESCRIPTION	
<div><div>KEY PLAN</div><div>NO SCALE</div><div></div></div>			
252 East Avenue Norwalk, CT 06855 (203) 866-4626 Tel (203) 866-8019 Fax		<div><div></div><div>LFG</div><div>LANDMARK FACILITIES GROUP, INC.</div></div>	
WARDE FAIRFIELD HIGH SCHOOL			
, FAIRFIELD, CT			
SCALE: AS NOTED		APPROVED BY:	
DATE: 7/16/21		DRAWN BY: AD	
		CHECKED BY: RS	
MECHANICAL PLAN			
FIRST FLOOR			
FILE NAME:		JOB NUMBER:	
DIR\LDWG		-	
		DRAWING NUMBER:	
		M-100	



- NOTES:**
1. CONTRACTOR SHALL EXTEND EXIST'G STEEL DUNNAGE AS REQUIRED TO ACCOMMODATE NEW EQUIPMENT.
  2. REFER TO STRUCTURAL PLANS FOR SUPPORT OF NEW ROOFTOP EQUIPMENT.
  3. REFER TO ELECTRICAL PLANS FOR LIGHTING PROTECTION REQUIREMENTS.
  4. ALL EXTERIOR DUCTWORK SHALL BE COVERED WITH SELF ADHESIVE WEATHERPROOF MEMBRANE FOLLOWING AIR SEALING AND APPLICATION OF RIGID BOARD INSULATION. OVERLAP ALL SEAMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
  5. ROOFTOP EQUIPMENT SHALL BE INSTALLED SO AS TO MAINTAIN MANUFACTURER'S RECOMMEND SERVICE CLEARANCES ON ALL SIDES.
  6. ALL ROOF PENETRATIONS AND FLASHING SHALL BE DONE BY CONTRACTOR HOLDING EXISTING ROOF WARRANTY. OWNER TO PROVIDE ROOF CONTRACTOR'S CONTACT INFORMATION.
  7. REFER TO ELECTRICAL PLANS FOR INSTRUCTIONS ON GROUNDING/BONDING OF ALL ROOFTOP EQUIPMENT AND DUCTWORK.
  8. CONTRACTOR SHALL HIRE AIR BALANCE CONTRACTOR TO 'PRE BALANCE' GREASE AND DISHWASHER FAN AT START OF PROJECT. TAKE AIR FLOW TRAVERSE READINGS TO ESTABLISH EXISTING CFM AT BOTH FANS AND REPORT DATA TO DESIGN ENGINEER.
  9. CONTRACTOR SHALL FURNISH AND INSTALL FIELD CONTROLLERS, END DEVICES AND WIRING FOR ALL NEW EQUIPMENT. BUILD DYNAMIC GRAPHICS AT EXISTING 'WEB CTRL' USER INTERFACE. FIELD CONTROLLERS SHALL BE INTEGRATED INTO EXISTING 'WEB CTRL' USER INTERFACE BY AUTOMATED LOGIC CORP.

01 PROPOSED HVAC ROOF PLAN  
1/8" = 1'-0"

REV	DATE	ISSUED FOR BID	DESCRIPTION
-	11-12-21	ISSUED FOR BID	

KEY PLAN  
NO SCALE

**LFG**  
252 East Avenue  
Norwalk, CT 06855  
(203) 866-4626 Td  
(203) 866-8019 Fax

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GROUP, INC.

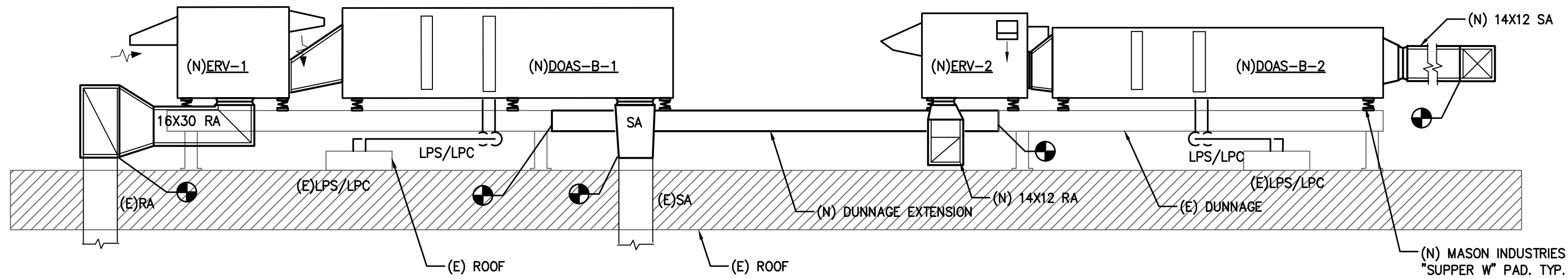
WARDE FAIRFIELD HIGH SCHOOL  
, FAIRFIELD, CT

SCALE: AS NOTED	APPROVED BY: AD	DRAWN BY: AD
DATE: 7/16/21	CHECKED BY: RS	

MECHANICAL PLAN  
ROOF

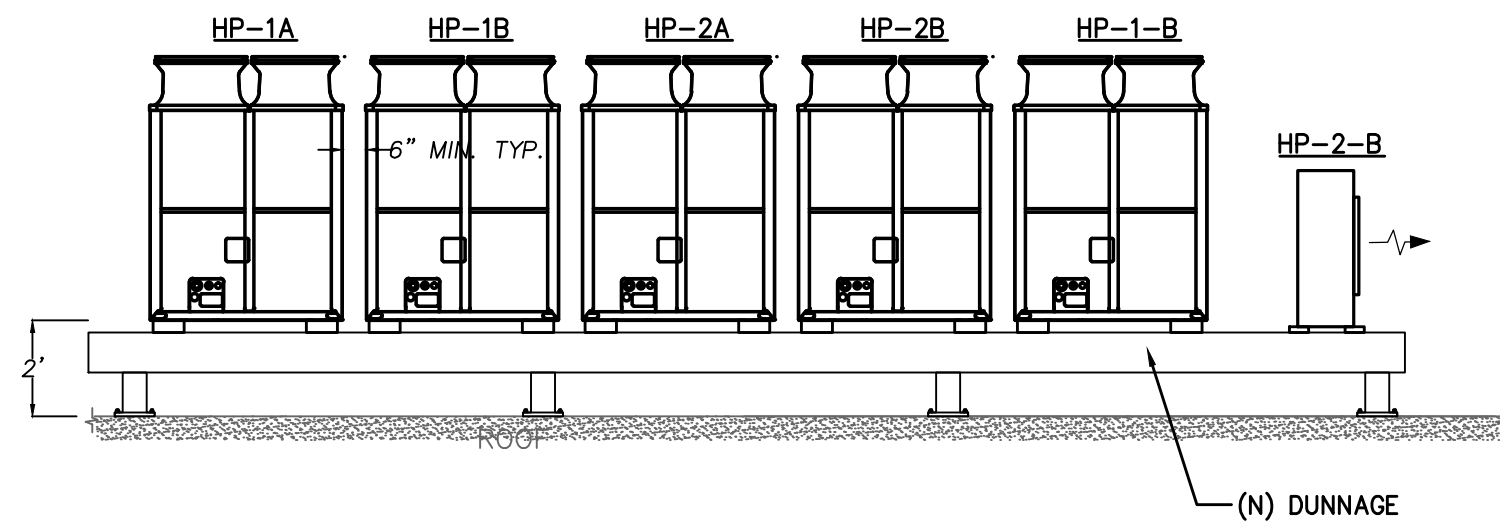
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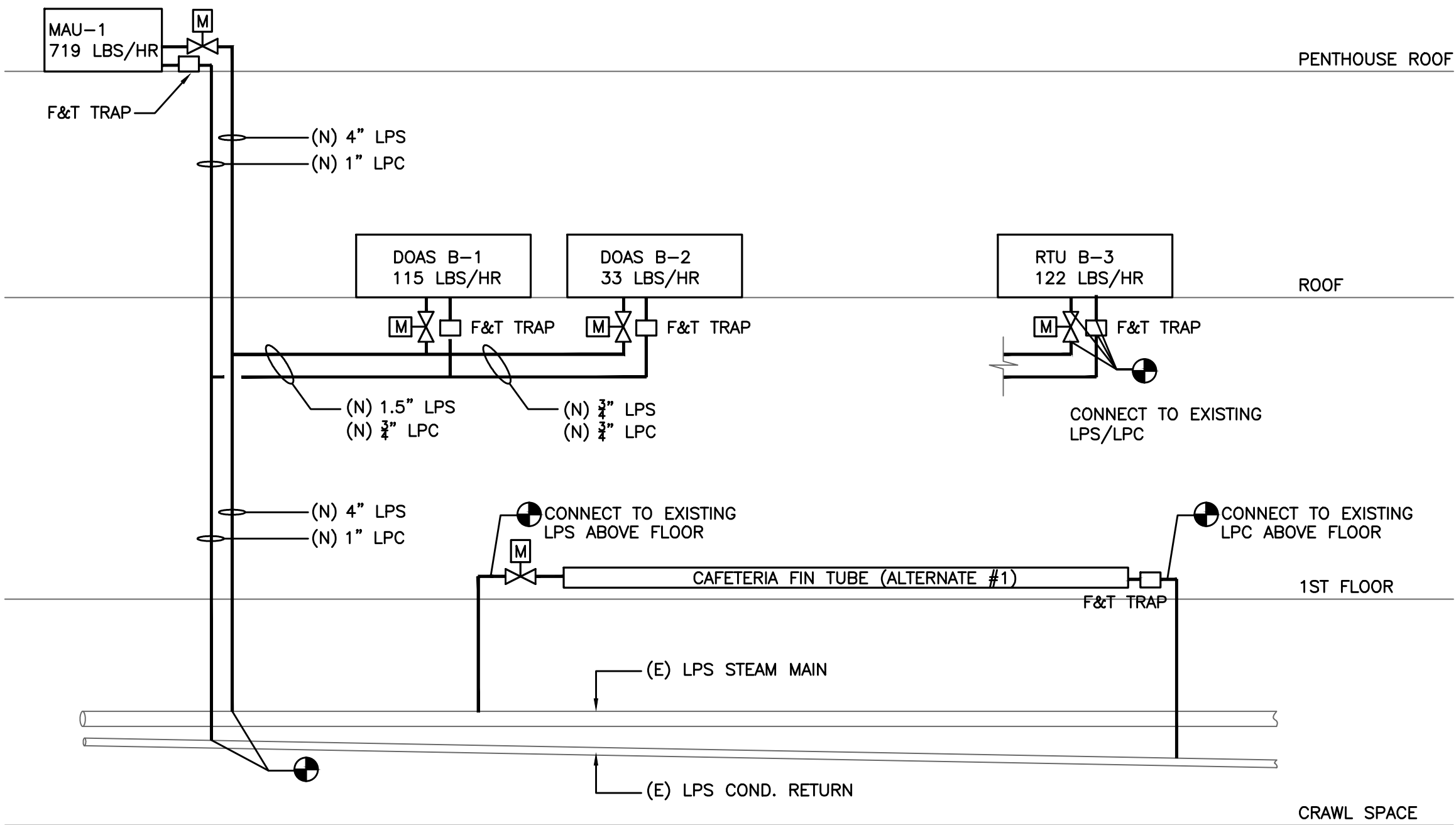
- NOTES:
1. PROVIDE FLEXIBLE CANVAS CONNECTORS AT ALL DUCT CONNECTIONS TO EQUIPMENT.
  2. UNITS SHALL BE SET ON DUNNAGE USING SPRING ISOLATORS WITH MIN. 1" STATIC DEFLECTION. PROVIDE ISOLATOR SUBMITTAL TO DESIGN ENGINEER FOR REVIEW.
  3. ALL EXTERIOR DUCTWORK SHALL BE COVERED WITH 1.5" THICK RIGID INSULATION BOARD. COVER INSULATION WITH SELF-ADHESIVE WEATHERPROOF MEMBRANE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.

01 SECTION A-A  
1/4" = 1'-0"



02 SECTION B-B  
1/4" = 1'-0"

STEAM CONTROL VALVE SCHEDULE									
TAG	UNIT SERVED	MFG	MODEL	FLOW RATE LBS/HR	TYPE	DESIGN Cv	VALVE Cv	BODY SIZE	ACTUATOR
SCV-1	DOAS B-1	BELIMO	G250B-N	115	GLOBE	30.24	40	2.0	LVKX24-SR
SCV-2	AHU 2.1 (ECONOMIZER)	BELIMO	165SQN17D	4,000	1.0	1.0	1.0	1.0	
SCV-3	AHU 1.2 (ECONOMIZER)	BELIMO	180SQN17D	5,000	0.65	0.65	0.65	0.65	
SCV-4	MAU-1	BELIMO	G250B-N	719	GLOBE	30.24	40	2.0	LVKX24-SR
NOTES:									
1. PROVIDE VIBRATIONS ISOLATORS AND SUPPORTS.									
2. PROVIDE UNIT WITH ECM MOTOR.									



STEAM PIPING DIAGRAM  
NO SCALE

BASE CONTRACT WORK  
CONTRACTOR SHALL REPLACE EXISTING 3" LP STEAM RISER WITH NEW 4" PIPE. REPLACE EXISTING 1" LP CONDENSATE WITH NEW. INSULATE NEW PIPING PER SPECIFICATIONS. PROVIDE NEW STEAM CONTROL VALVES AT MUA-1, DOAS B-1, DOAS B-2, AND RTU B-3.

ALTERNATE #3  
PROVIDE 'DEDUCT ALTERNATE' TO DELETE MATERIALS AND LABOR FOR THE FOLLOWING WORK:  
- FURNISH AND INSTALL NEW 1" LP CONDENSATE RISER AND BRANCH PIPING  
- FURNISH AND INSTALL NEW F&T TRAPS AT MUA-1, DOAS B-1, DOAS B-2.

REV	DATE	ISSUED FOR BID	DESCRIPTION
-	11-12-21	ISSUED FOR BID	

KEY PLAN  
NO SCALE

252 East Avenue  
Norwalk, CT 06855  
(203) 866-4626 Tel  
(203) 866-8019 Fax

LANDMARK  
FACILITIES  
GROUP, INC.

WARDE FAIRFIELD HIGH SCHOOL  
, FAIRFIELD, CT

SCALE:	AS NOTED	APPROVED BY:	DRAWN BY:
DATE:	7/16/21	CHECKED BY:	RS

MECHANICAL SECTIONS

FILE NAME:	JOB NUMBER:	DRAWING NUMBER:
LDH:LDWG		M-200

VARIABLE REFRIGERANT VOLUME - INDOOR UNIT SCHEDULE																				VARIABLE REFRIGERANT VOLUME - ZONE HEAT RECOVERY DEVICE SCHEDULE													
TAG	ROOM	BASIS OF DESIGN (DAIKIN)	NOMINAL TONNAGE	TYPE	CONNECTED TO:		SUPPLY FAN	COOLING CAPACITY			HEATING CAPACITY		ELECTRICAL			DIMENSIONS		WEIGHT	NOTES	Options and Accessories	TAG: ROOM	BASIS OF DESIGN (DAIKIN)	CONDENSING UNIT SERVED	VOLTAGE- PHASE	MIN CIRCUIT AMPS (MCA)	MAX OVERCURRENT PROTECTION (MOP)	MAX CAPACITY (per Port)	DIMENSIONS (WxHxD inch)	WEIGHT (lbs)	ZONE SERVED	Options and Accessories		
					CONDENSING UNIT	ZONE CHANGEOVER DEVICE		AIR FLOW RATE cfm	TOTAL BTU/h	SENSIBLE BTU/h	ENTERING AIR		TOTAL BTU/h	ENTERING AIR °Fdb	POWER SUPPLY	Min Circuit Amps	Max Overcurrent Protection															WxHxD	Net
											°F DB	°F WB																					
FC-1.7	Cafeteria	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-1	No	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BRC1E73 (1), BYCQ125B-W1 (1)	BS-2.1	BSQ96TVJ	HP-2	208-230V 1ph	0.1	15.0	96,000	15.3 x 8.1 x 12.8	33.1	Servery	-			
FC-1.5	Cafeteria	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-1	No	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BYCQ125B-W1 (1)	BS-2.2	BS12Q54TVJ	HP-2	208-230V 1ph	1.2	15.0	54,000	32.3 x 11.7 x 18.9	105.8	Student Area	KHPF26A100C (4)			
FC-1.8	Cafeteria	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-1	No	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BYCQ125B-W1 (1)	<b>Schedule Notes:</b> Provide ball valves to isolate individual branches. No drain piping needed. Standard Limited Warranty: 10-year warranty on all parts.													
FC-1.6	Cafeteria	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-1	No	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BYCQ125B-W1 (1)														
FC-1.4	Cafeteria	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-1	No	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BYCQ125B-W1 (1)														
FC-1.1	Cafeteria	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-1	No	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BYCQ125B-W1 (1)														
FC-1.2	Cafeteria	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-1	No	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BYCQ125B-W1 (1)														
FC-1.3	Cafeteria	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-1	No	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BYCQ125B-W1 (1)														
FC-2.1	Servery	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-2	Yes	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BRC1E73 (1), BYCQ125B-W1 (1)														
FC-2.2	Servery	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-2	Yes	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BYCQ125B-W1 (1)														
FC-3.1	Student Gov. Office	FXFQ18TVJU	1.5	Round Flow Sensing Cassette	HP-2	Yes	742	15,149	13,988	75.0	62.5	19,999	70.0	208-230V 1ph	0.6	15.0	33.1 x 9.7 x 33.1	50.7	BRC1E73 (1), BYCQ125B-W1 (1)														
FC-3.2	Student Activity Center	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-2	Yes	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BRC1E73 (1), BYCQ125B-W1 (1)														
FC-3.3	Student Concourse	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-2	Yes	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BRC1E73 (1), BYCQ125B-W1 (1)														
FC-3.4	Student Activity Center	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-2	Yes	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BYCQ125B-W1 (1)														
FC-3.5	Student Concourse	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-2	Yes	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BYCQ125B-W1 (1)														
FC-3.6	Student Activity Center	FXFQ36TVJU	3.0	Round Flow Sensing Cassette	HP-2	Yes	1,165	30,316	24,428	75.0	62.5	39,989	70.0	208-230V 1ph	1.5	15.0	33.1 x 11.3 x 33.1	57.3	BYCQ125B-W1 (1)														
FC-3.7	Student Gov. Office	FXFQ18TVJU	1.5	Round Flow Sensing Cassette	HP-2	Yes	742	15,149	13,988	75.0	62.5	19,999	70.0	208-230V 1ph	0.6	15.0	33.1 x 9.7 x 33.1	50.7	BRC1E73 (1), BYCQ125B-W1 (1)														
FC-3.8	Student Pub. Office	FXFQ24TVJU	2.0	Round Flow Sensing Cassette	HP-2	Yes	777	20,233	17,273	75.0	62.5	26,989	70.0	208-230V 1ph	0.7	15.0	33.1 x 9.7 x 33.1	50.7	BRC1E73 (1), BYCQ125B-W1 (1)														
DOAS-B-1 box 1	Roof	EKEKV200-US	6.0	AHU INTEGRATION VALVE KIT	HP-B-1	No	-	83,939	-	-	-	94,516	-	12 1ph	-	-	8.5 x 15.8 x 3.1	6.4	BRC1E73 (1)														
DOAS-B-1 box 2	Roof	EKEKV200-US	6.0	AHU INTEGRATION VALVE KIT	HP-B-1	No	-	83,939	-	-	-	94,516	-	12 1ph	-	-	8.5 x 15.8 x 3.1	6.4	BRC1E73 (1)														
DOAS-B-2 box 1	Roof	EKEKV100-US	3.0	AHU INTEGRATION VALVE KIT	HP-B-2	No	-	41,969	-	-	-	47,088	-	12 1ph	-	-	8.5 x 15.8 x 3.1	6.4	BRC1E73 (1)														

**Schedule Notes:**

FCU thermostats must provide +/- 1 degree dead-band set-point and control capability.  
Manufacturers submittal must include refrigerant piping diagram with pipe diameters, lengths, and refrigerant volume.  
Contractor to verify piping dimensions prior to installing any pipe. Additional refrigerant charge shall be updated based on the final piping layout. Substitute manufacturer shall be responsible for additional piping and refrigerant.

Contractor to furnish and install insulation on refrigerant piping per the manufacturers recommendation.  
Refer to specifications for additional details and information.  
Standard Limited Warranty: 10-year warranty on all parts.

VARIABLE REFRIGERANT VOLUME - AIR-COOLED CONDENSING UNIT SCHEDULE																																	
TAG: ROOM	BASIS OF DESIGN (DAIKIN)	NOMINAL TONNAGE	DESCRIPTION	COOLING CAPACITY		HEATING CAPACITY		REFRIGERANT CHARGE		CONNECTION RATIO (%)	ELECTRICAL									DIMENSIONS			EFFICIENCY (Non-Ducted)								NOTES	Options and Accessories	
				BTU/h	AMBIENT DESIGN ("F DB)	BTU/h	AMBIENT DESIGN ("F DB / WB)	Factory Charge (lbs)	Add'l Refrigerant (lbs)		VOLTAGE-PHASE	MIN CIRCUIT AMPS (MCA)			MAX OVERCURRENT PROTECTION (MOP)			RUNNING CURRENT(RLA)															
												mod #1	mod #2	total	mod #1	mod #2	total	mod #1	mod #2	total	(WxHxD) (inch)	WEIGHT (lbs)	EER	IEER	COP47	COP17	SCHE	SEER	HSPF				
HP-1	RXYQ288XAYDA	24	Air cooled heat pump (2)	216,857	91.0	174,895	2.2 / 0.0	36.2	37.1	100.0	460V 3ph	25.9	25.9	51.8	35.0	35.0	70.0	15.2	15.2	30.4	48.9 x 66.7 x 30.2 / 48.9 x 66.7 x 30.2	709.9 / 709.9	10.5 / 10.1	20.1 / 19.6	3.25 / 3.3	2.07 / 2.13	-	-	-	-	Dual Module - 144,144	BHFP22P100U (1)	
HP-2	REYQ288XAYDA	24	Air cooled heat recovery (2)	247,398	91.0	196,662	2.2 / 0.0	51.6	57.8	108.3	460V 3ph	27.9	27.9	55.8	40.0	40.0	80.0	19.3	19.3	38.6	48.9 x 66.7 x 30.2 / 48.9 x 66.7 x 30.2	793.0 / 793.0	11 / 10.3	21 / 17.9	3.51 / 3.2	2.2 / 2.06	23.3 / 19.9	-	-	-	-	Dual Module - 144,144	BHFP26P100U (1)
HP-B-1	RXYQ144XAYDA	12	Air cooled heat pump (1)	142,736	91.0	91,099	2.2 / 0.0	18.1	12.2	94.2	460V 3ph	25.9	-	25.9	35.0	-	35.0	15.2	-	15.2	48.9 x 66.7 x 30.2	709.9	12.3 / 11.5	24.8 / 22.6	3.67 / 3.34	2.33 / 2.2	-	-	-	-	-	EKEQFCBAV3-US (2)	
HP-B-2	RXTQ36TAV9A	3	Air cooled heat pump (1)	36,266	91.0	28,443	2.2 / 0.0	6.4	1.0	94.9	208-230V 1ph	16.5	-	16.5	20.0	-	20.0	15.3	-	15.3	37.0 x 39.0 x 12.6	172.0	-	-	-	-	-	-	-	-	-	EKEQFCBAV3-US (1)	

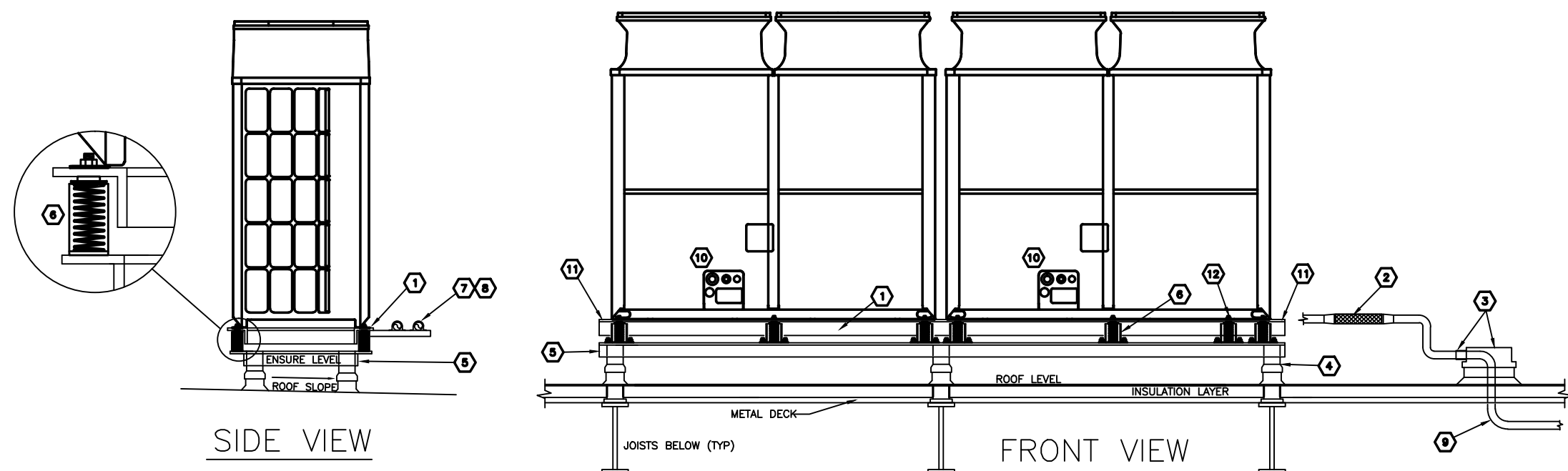
**Schedule Notes:**

3-phase Air cooled condensing units must have published performance data with 200% indoor connected capacity.  
Submitted performance data must be fully de-rated for all components and accessories, including but not limited to, line length, vertical separation, connection ratio, design conditions, condenser coil coating.  
System rating data based on design ambient conditions for cooling and for heating.  
Condensing units must have fully modulating INVERTER compressors.  
Condensing units must have auto changover functions  
Condensing units must be furnished with protective coil coating to withstand ASTM B117 salt spray test for a minimum of 1000 hours.Performance of system must be de-rated for coil coating.  
Demand limiting relay contact must be provided.  
EEV actuators must be removable from valve body without disturbing the refrigerant system.  
System shall be provided with i-Touch Manager controller with WEB based software for displaying up to 8 DIII-Net systems with 128 indoor units per system.PC by others. Controller shall be capable of integration into the BMS.

Manufacturer must be certified, listed, and labeled per AHRI 1230.  
Manufacturer must certify and submit system performance at extreme conditions of 122 degrees FDB ambient in cooling mode and -4 degrees FWB in heating mode.  
Manufacturers Representative must have local stock of parts and factory certified technician on staff.  
Manufacturers Representative shall provide proof of ongoing installation training at their local facility for at least the past 5 years.  
Installing contractor must have successfully completed manufacturers certified installation class within past 36 months.  
Manufacturers Representative shall provide proof of continuous sales and support of their products for at least 15 years.  
Mechanical contractor shall be responsible for all direct costs and operating costs increases for 20 years associated with any deviations resulting from changes in design.  
Manufacturer must provide 10 years parts warranty on all FCUs, Condensing Units, and Mode Changeover Devices. Warranty conditions must be clarified during submittal phase.

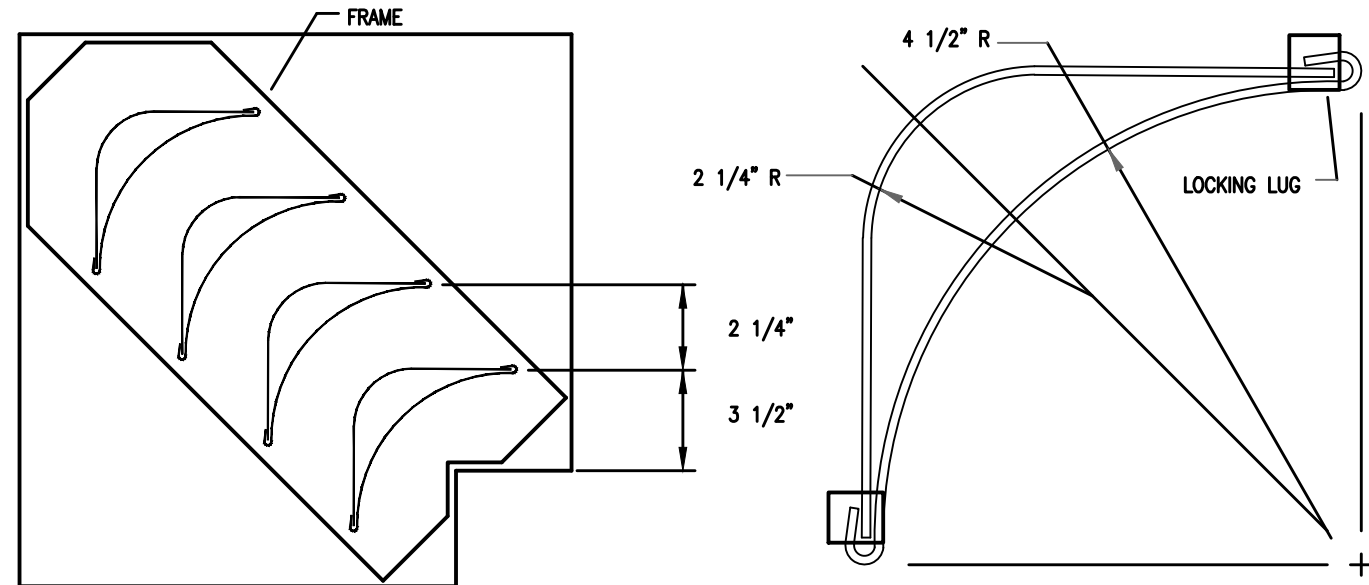
### Rooftop Airhandlers DOAS Unit SCHEDULES

Project Name:		Fairfield Warde High School																											
		Evaporator Fan				Cooling (Lev Kit- VRF)								Heating (LPS 5 PSI)					Filter		Unit Electrical								
Tag #	Qty	CFM	HP	ESP	RPM	Temperature (°F)				Total Cap. MBH¹	Sens. Cap. MBH¹	EER/ SEER	Temp (°F)		MBH	KW			Voltage	MCA	Max Fuse	Weight²	Model Number	Brand		Remarks			
		FA		(IWG)		Ent. Air	Lvg. Ar	OT	Amb																				
						DB	WB	DB					WB																
DOAS-B-1	1	3500	3	1.00	2193	79.1	67.0	55.0	53.9	91.8	92.6	140.7	-	51.0	80.0	110.1	-	2" Merv-13	460-360	6	15	2140	CSAA008	Trane	1,2				
DOAS-B-2	1	900	1	1.00	2862	78.2	67.1	55.0	53.8	91.8	36.8	22.9	-	55.3	88.2	32.1	-	2" Merv-13	460-360	2.6	15	1508	CSAA003	Trane	1,2				
Notes																													



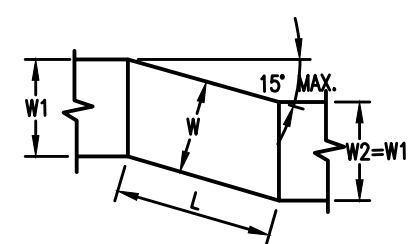
**CODED NOTES:**

1. PROVIDE STRUCTURAL INTERSTITIAL ANGLE IRON MOUNTING MEMBER OR SIMILAR ATTACHED DIRECTLY TO BOTTOM OF UNIT MOUNTING FLANGE AND PROVIDE CROSS BRACING FOR RIGIDITY. ENSURE IT CARRIES FULL MOUNTING FOOT WIDTH ON UNIT. FINAL SPECIFICATION OF MEMBER BY STRUCTURAL ENGINEER OF RECORD.
2. PROVIDE BRAIDED COPPER FLEXIBLE CONNECTOR, R410A RATED, 650PSI MAX WORKING PRESSURE, PACKLESS INDUSTRIES OR EQUAL ON ALL MAIN PIPING DOWNSTREAM OF TWINNING KITS/CONVERGING FITTINGS PRIOR TO PENETRATION THROUGH ROOF.
3. PIPE ROOF CURB, FLASHED AND SEALED WATER TIGHT, PROVIDE FLEXIBLE WATER TIGHT COLLAR TO ALLOW FOR MOVEMENT WHERE PIPE ENTERS CURB. DO NOT ENTER PIPE CURB FROM VERTICAL DIRECTION.
4. TYPICAL BASE SUPPORT POSTS, SECURELY ANCHORED TO BUILDING STRUCTURE BELOW, QUANTITY, SIZE, AND CARRYING CAPACITY DETERMINED BY STRUCTURAL ENGINEER OF RECORD.
5. STRUCTURAL ANGLE IRON BASE MOUNTING FRAME WITH CROSS MEMBERS FOR RIGIDITY – FINAL SIZING BY STRUCTURAL ENGINEER OF RECORD.
6. VIBRATION SPRING SLR TYPE ISOLATORS (MASON INDUSTRIES OR EQUIV.) WITH RUBBER BASE PADS, SECURELY FASTENED TO STRUCTURAL BASE AND TO VRF UNIT INTERSTITIAL SUPPORT STEEL. SPRING ISOLATOR TO PROVIDE MINIMUM 1" DEFLECTION OR 10 TIMES THE STATIC DEFLECTION OF THE ROOF DECK FROM EQUIPMENT WEIGHT – DETERMINED BY STRUCTURAL ENGINEER OF RECORD. AT A MINIMUM, PROVIDE SPRING ISOLATORS AT EACH EQUIPMENT BASE MOUNTING HOLE LOCATION.
7. IF REQUIRED, ONLY SUPPORT LATERAL PIPE EMANATING FROM VRF UNIT CONNECTIONS BY CROSS MEMBER SUPPORT THAT IS ATTACHED DIRECTLY TO VRF UNIT MOUNTING ANGLE IRON FRAME ABOVE SPRING ISOLATORS. DO NOT ATTACH ANY PIPING TO LOWER FIXED SUPPORT BASE.
8. USE NEOPRENE ISOLATION COLLARS ON PIPE CLAMS WHEN FASTENING PIPING TO SUPPORTS.
9. USE LONG RADIUS SWEEPING COPPER ACR TUBE PIPE BENDS WHERE PIPE ENTERS BUILDING AT FIRST ELBOW INTO CEILING SPACE TO MINIMIZE REFRIGERANT FLOW NOISE AND VIBRATION.
10. ALL ELECTRICAL CONNECTIONS TO UNITS TO BE VIA FLEXIBLE CONDUIT, PROVIDE SUFFICIENT SLACK TO ALLOW FOR UNIT MOVEMENT ON SPRING ISOLATORS.
11. ENSURE CROSS MEMBERS OF INTERSTITIAL FRAME AND BOTTOM SUPPORT FRAME ARE NOT DIRECTLY BELOW ENDS OF MODULES IN ALL LOCATIONS AND DO NOT BLOCK DRAINAGE. WEEP HOLES IN BOTTOM OF UNIT CASING; FAILURE TO DO THIS MAY RESULT IN ICE DAMMING/BUILDUP BENEATH UNIT AND SUBSEQUENT BUILDUP OF ICE IN BOTTOM OF UNIT CASING BELOW COIL AND POTENTIAL DAMAGE TO BOTTOM OF COIL.
12. WHEN SELECTING SPRING ISOLATORS ALWAYS CONSIDER WEIGHT DISTRIBUTION BY REFERENCING EQUIPMENT WEIGHT AND CENTER OF GRAVITY. NEAR RIGHT ENDS OF UNITS (VIEWED FROM FRONT PANEL) SPRING WEIGHT CAPACITY MAY BE LARGER. IF HIGHER SPRING WEIGHT CAPACITY IS REQUIRED VS OTHER SPRING LOCATIONS, CONSIDER AN ADDITIONAL SPRING OF EQUAL "K" VALUE (lbs/in) NEAR RIGHT END OF LAST MODULE. IN GENERAL IT IS RECOMMENDED TO SELECT ALL MOUNTING SPRINGS OF EQUIVALENT "K" VALUE (lbs/in).

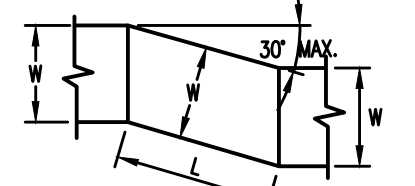


**VANED ELBOW**  
**DOUBLE THICKNESS TURNING VANES**

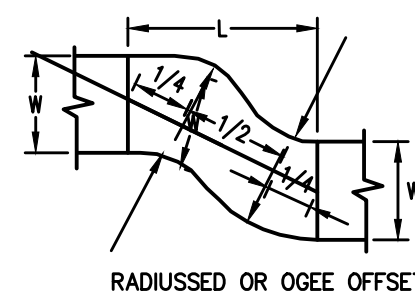
**FOR SQUARE ELBOW**  
NO SCALE



**ANGLED OFFSET**



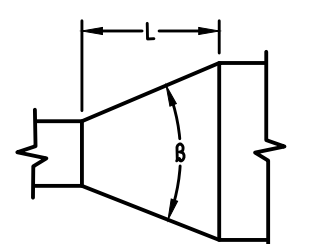
**MITERED OFFSET**



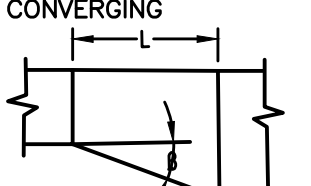
**RADIUSSED OR OGEE OFFSET**

- NOTE:**
1. OFFSET 2 AND 3 MAY HAVE EQUAL OR UNEQUAL INLET AND OUTLET AREAS.
  2. OFFSETS SHALL BE USED. DOUBLE ELBOWS ARE NOT ALLOWED.

**OFFSET DETAILS**  
NOT TO SCALE

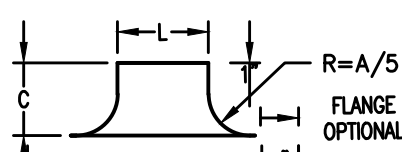


**CONCENTRIC TRANSITION**



**ECCENTRIC TRANSITION**

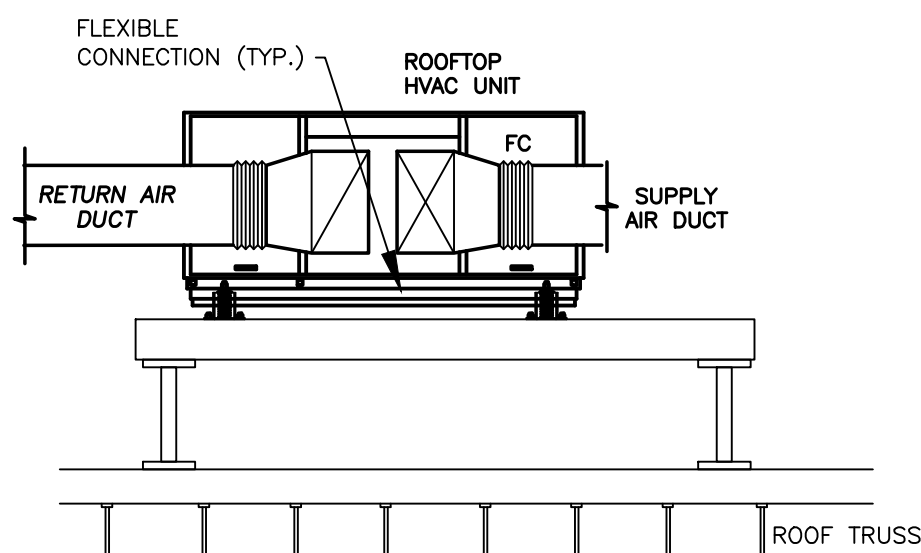
8 MAX.: 30" (EXCEPT 45" IS PERMITTED AT ROUND TO FLAT OVAL)



**STANDARD BELLMOUTH**  
(ON SHORT PATTERN BELL C=3", B=A+4")

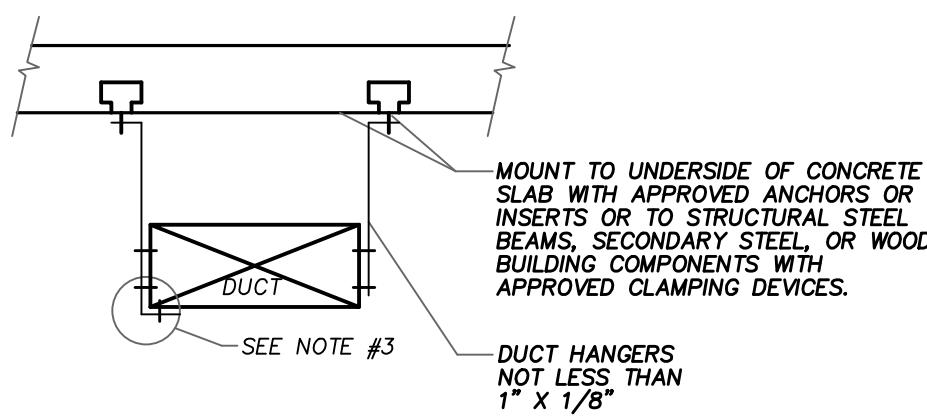
- NOTE:**
1. TRANSITION MAY HAVE EQUAL OR UNEQUAL INLET AND OUTLET AREAS. TRANSITIONS MAY CONVERT DUCT PROFILES TO ANY COMBINATION FOR RECTANGULAR, ROUND OR FLAT OVAL SHAPES.

**TRANSITION DETAILS**  
NOT TO SCALE



- NOTES:**
1. PROVIDE OPENING THROUGH ROOF AND ROOF DECK INSULATION NO LARGER THAN REQUIRED TO ALLOW DUCTS TO PASS THROUGH.
  2. INSTALL ROOFTOP UNIT LEVEL TO ASSURE PROPER CONDENSATE DRAINAGE. FLASH AND SEAL ROOF PENETRATIONS, ETC. TO ASSURE WEATHER TIGHT INSTALLATION.

**ROOFTOP UNIT ELEVATION DETAIL**  
NO SCALE

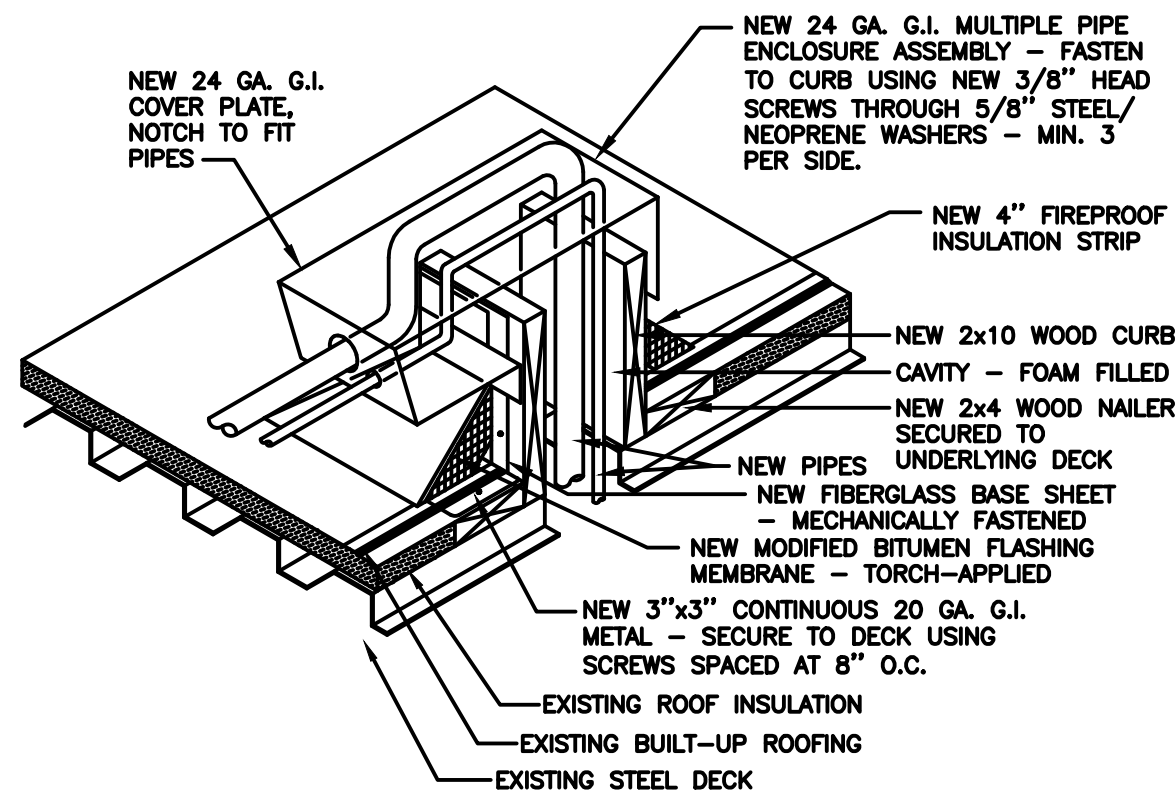


LONGEST DIMENSION OF DUCT	ROUND HANGERS	MAXIMUM SPACING SEE NOTE	STRAP #HANGERS	TRAPEZE SHELF ANGLES
UP TO 18"	BGA, WIRE 8"0"	1" X 1/8"	1" X 1/8"	1" X 1" X 1/8"
19" TO 30"	1/4" ROD 8"0"	1" X 1/8"	1" X 1/8"	1" X 1" X 1/8"
31" TO 42"	1/4" ROD 8"0"	1" X 1/8"	1" X 1/8"	1" X 1" X 1/8"
43" TO 60"	3/8" ROD 4"0"	1" X 1/8"	1" X 1/8"	1" X 1" X 1/8"
61" TO 84"	3/8" ROD 4"0"	1" X 1/8"	1" X 1/8"	1" X 1" X 1/8"
85" TO 96"	3/8" ROD 4"0"	1" X 1/8"	1" X 1/8"	1" X 1" X 1/8"
OVER 97"	3/8" ROD 4"0"	1" X 1/8"	1" X 1/8"	1" X 1" X 1/8"

SPECIAL HANGERS SHALL BE PROVIDED FOR #10 GAUGE BLACK STEEL DUCTS. (BOILER BREACHING AND KITCHEN EXHAUST.) AND FOR SECTION OF DUCT CONTAINING COILS OF FANS.

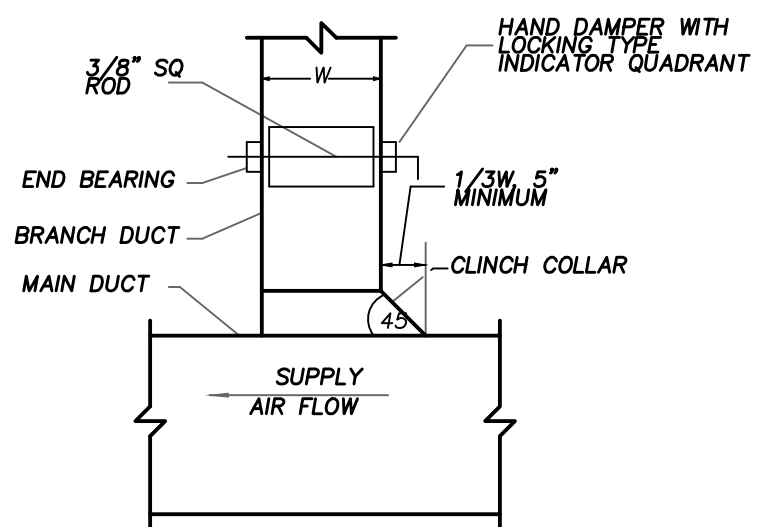
**DUCT SUPPORT DETAIL**  
NO SCALE

- NOTES:**
1. ALL DUCTWORK TO BE HUNG FROM BUILDING CONSTRUCTION NOT TO BE SUPPORTED FROM HUNG CEILING.
  2. WHEN DUCT AREA EXCEEDS 850 SQ. FT. ANGLE STIFFENERS REQUIRED AROUND CIRCUMFERENCE EVERY 4'0".
  3. FOR DUCTS OVER 48" WIDE HANGERS SHALL TURN UNDER DUCT AT LEAST 2" AND SHALL BE FASTENED TO THE BOTTOM AS WELL AS TO THE SIDES OF THE DUCT.
  4. FOR DUCTS WITH A CROSS SECTIONAL AREA OF 4' OR LESS, HANGERS SHALL BE NO MORE THAN 8 FT. APART. FOR DUCTS WITH A CROSS SECTIONAL AREA OF MORE THAN 4 SQ. FT. BUT NOT OVER 8 SQ. FT. HANGERS SHALL BE NOT MORE THAN 6 FT. APART. AND FOR DUCTS WITH A CROSS SECTIONAL AREA OF MORE THAN 8 SQ. FT. HANGERS SHALL BE NOT MORE THAN 4 FT. APART. THE DISTANCES BETWEEN SHALL BE MEASURED LINEARLY ALONG THE DUCT.
  5. VERTICAL DUCTS SHALL BE SECURELY SUPPORTED AT EACH FLOOR LEVEL BY CONTINUOUS LENGTHS OF STRUCTURAL ANGLES OF A SIZE AT LEAST EQUIVALENT TO THAT FOR STIFFENING. THE ANGLES SHALL BE FASTENED TO THE OPPOSITE SIDES OF THE DUCT AND SHALL EXTEND ACROSS THE OPENING AND BEAR UPON THE STRUCTURE OF SLAB ON BOTH SIDES OF THE OPENING.
  6. PROVIDE SEISMIC SUPPORT FOR HVAC DUCTS IN ACCORDANCE WITH APPLICABLE CODES.



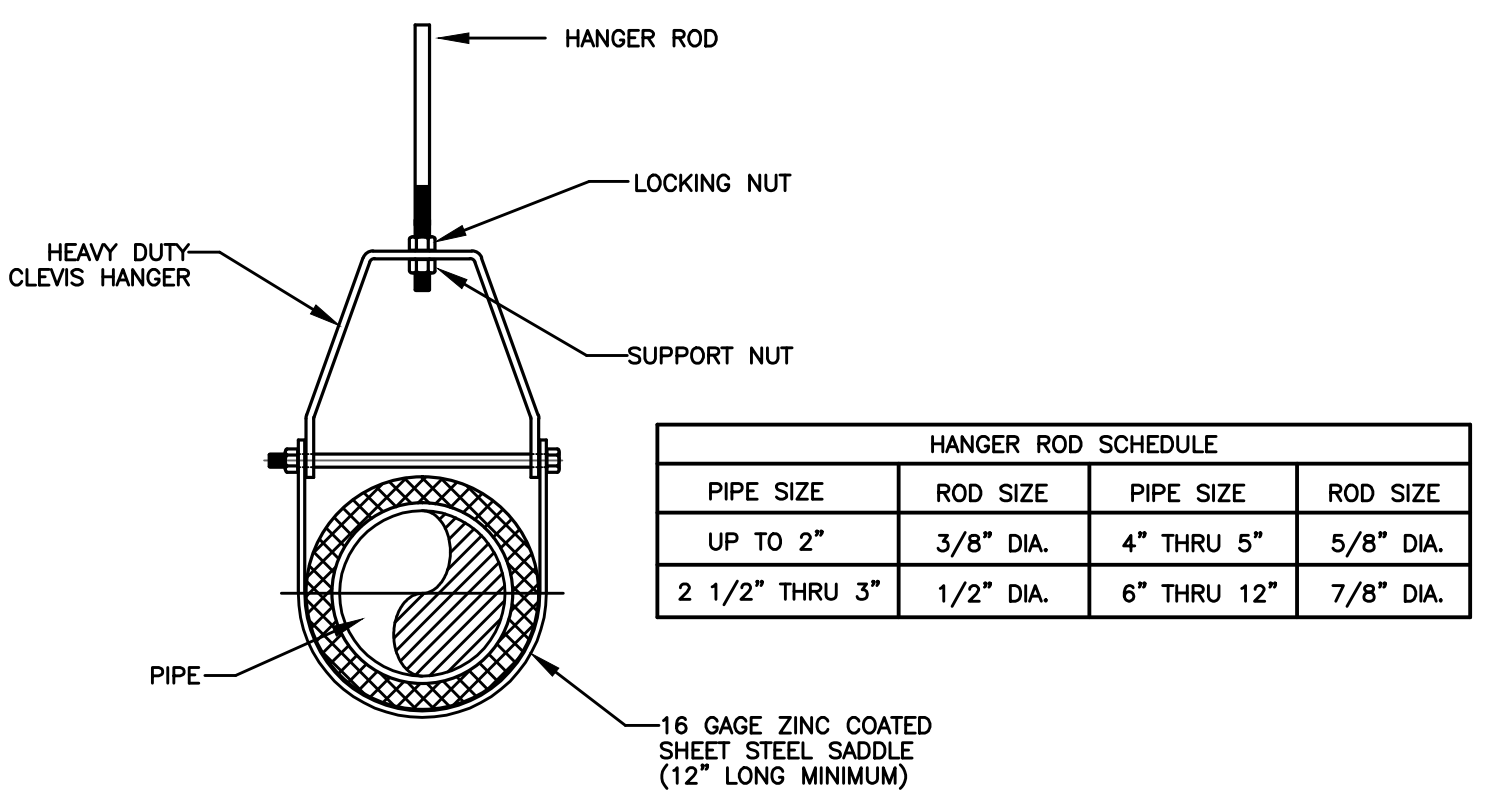
**NOTE:** ALL PIPES ENTERING THE PIPE ENCLOSURE ASSEMBLY SHALL BE SLOPED UPWARD AS THEY ENTER THE FLASHING SO THAT WATER WILL NOT BE ABLE TO RUN INTO THE BUILDING.

**PIPE THROUGH ROOF DETAIL**  
NO SCALE



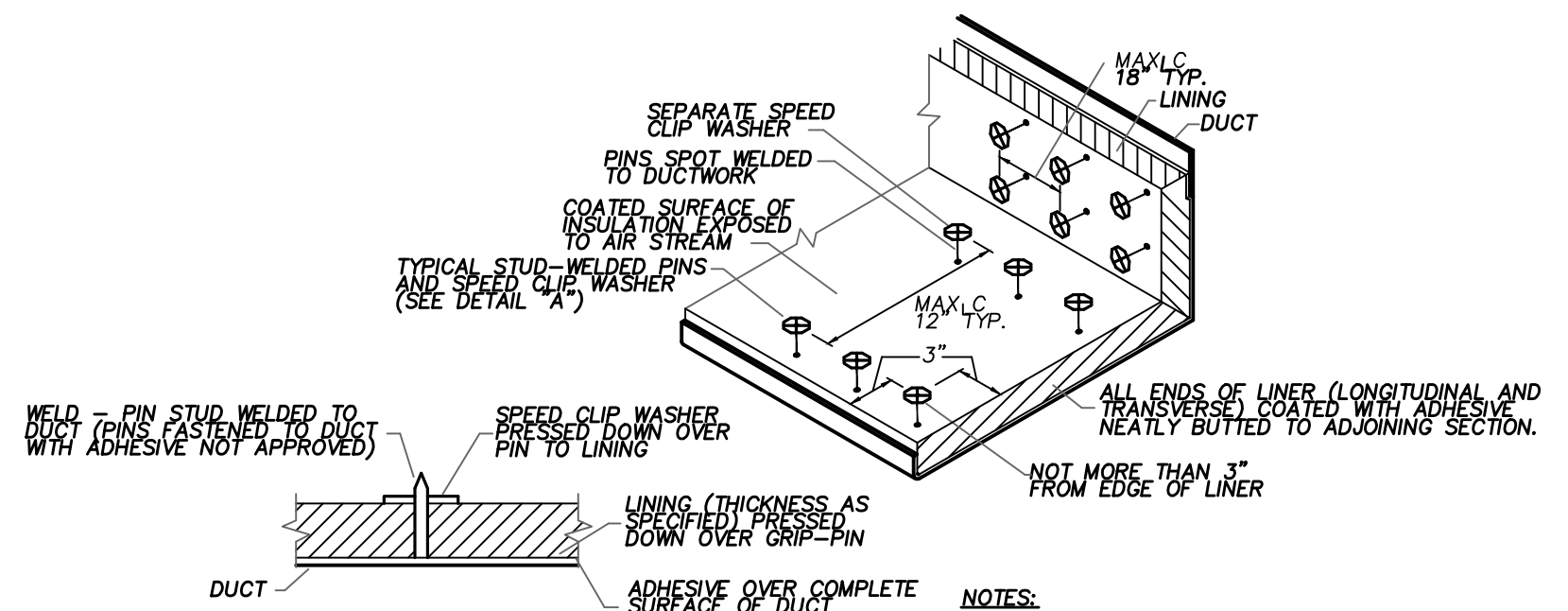
**NOTE:** WHEN THIS TYPE CONNECTION IS USED, THE DUCTWORK SHALL BE INDICATED AS PRESSURE LOSS OF ONE AND MEDIUM PRESSURE LOSS OF TWO BRANCHES WITH LESS THAN 1000 CFM.

**RECTANGULAR DUCT TAP WITH VOLUME DAMPER**  
NO SCALE



HANGER ROD SCHEDULE			
PIPE SIZE	ROD SIZE	PIPE SIZE	ROD SIZE
UP TO 2"	3/8" DIA.	4" THRU 5"	5/8" DIA.
2 1/2" THRU 3"	1/2" DIA.	6" THRU 12"	7/8" DIA.

**CLEVIS HANGER HORIZONTAL RUNS**  
NO SCALE

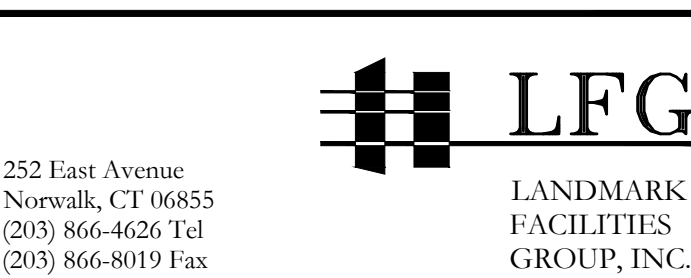


- NOTES:**
1. ALL DUCTS SHOWN TO BE ACOUSTICALLY LINED SHALL BE 1" THICK 3 LB. DENSITY INSULATION.

**SOUND LINING INSTALLATION DETAIL**  
NO SCALE

-	11-12-21	ISSUED FOR BID
REV	DATE	DESCRIPTION

**KEY PLAN**  
NO SCALE



**LFG**  
252 East Avenue  
Norwalk, CT 06855  
(203) 866-4626 T-1  
(203) 866-8019 Fax

**LANDMARK FACILITIES GROUP, INC.**

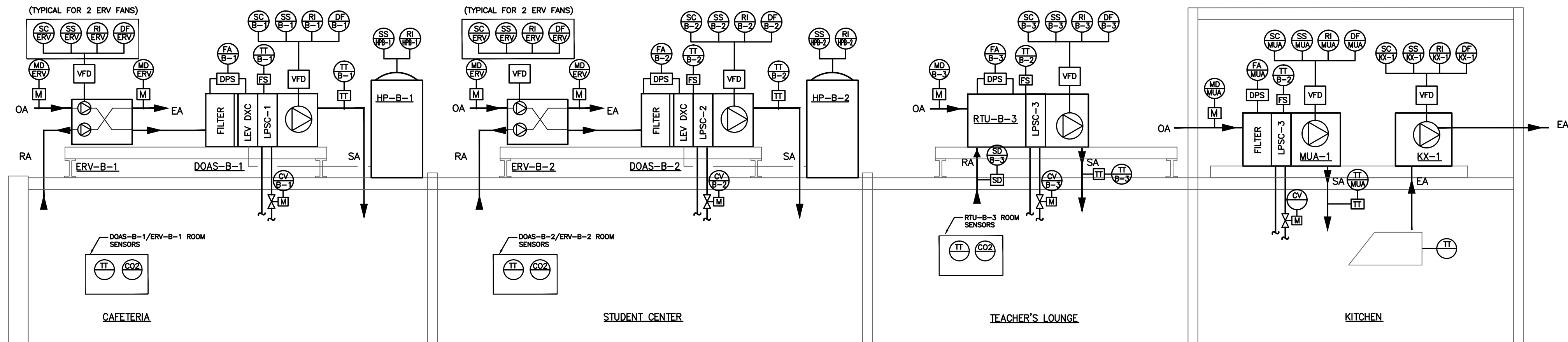
**WARDE FAIRFIELD HIGH SCHOOL**  
**, FAIRFIELD, CT**

SCALE: AS NOTED	APPROVED BY:	DRAWN BY: AD
DATE: 7/16/21	CHECKED BY: RS	

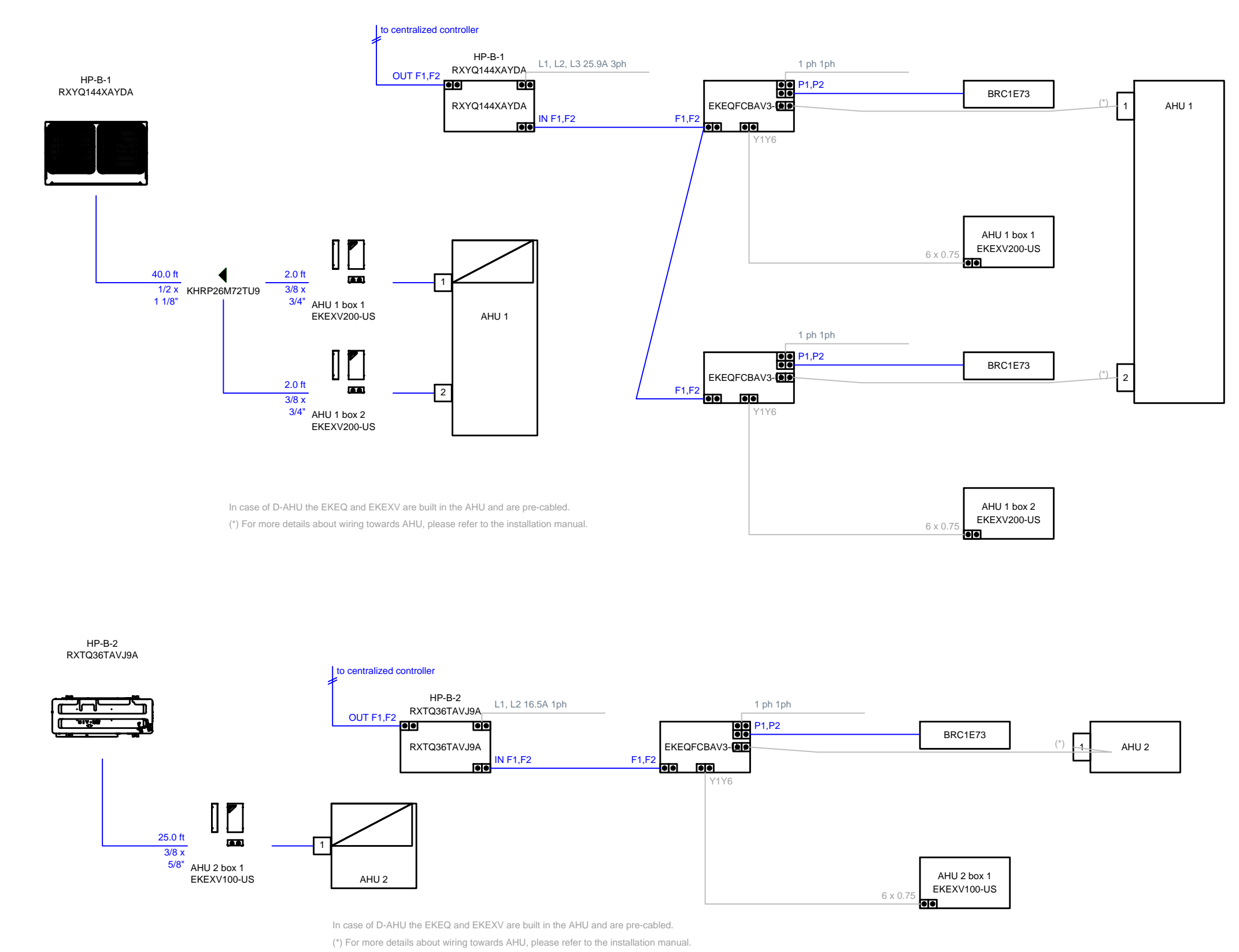
**MECHANICAL DETAILS**

FILE NAME: LDR104WG	JOB NUMBER:	DRAWING NUMBER: M-400
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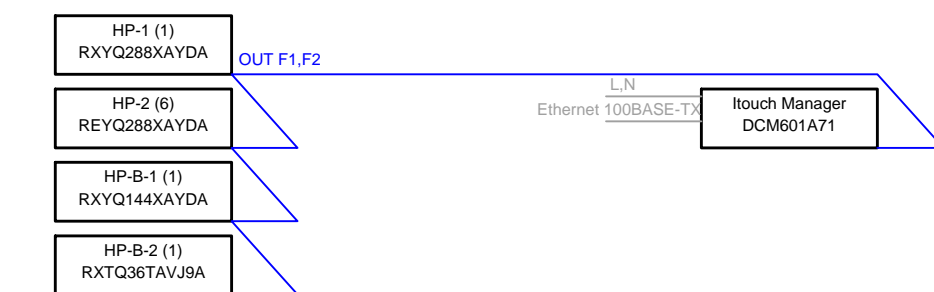




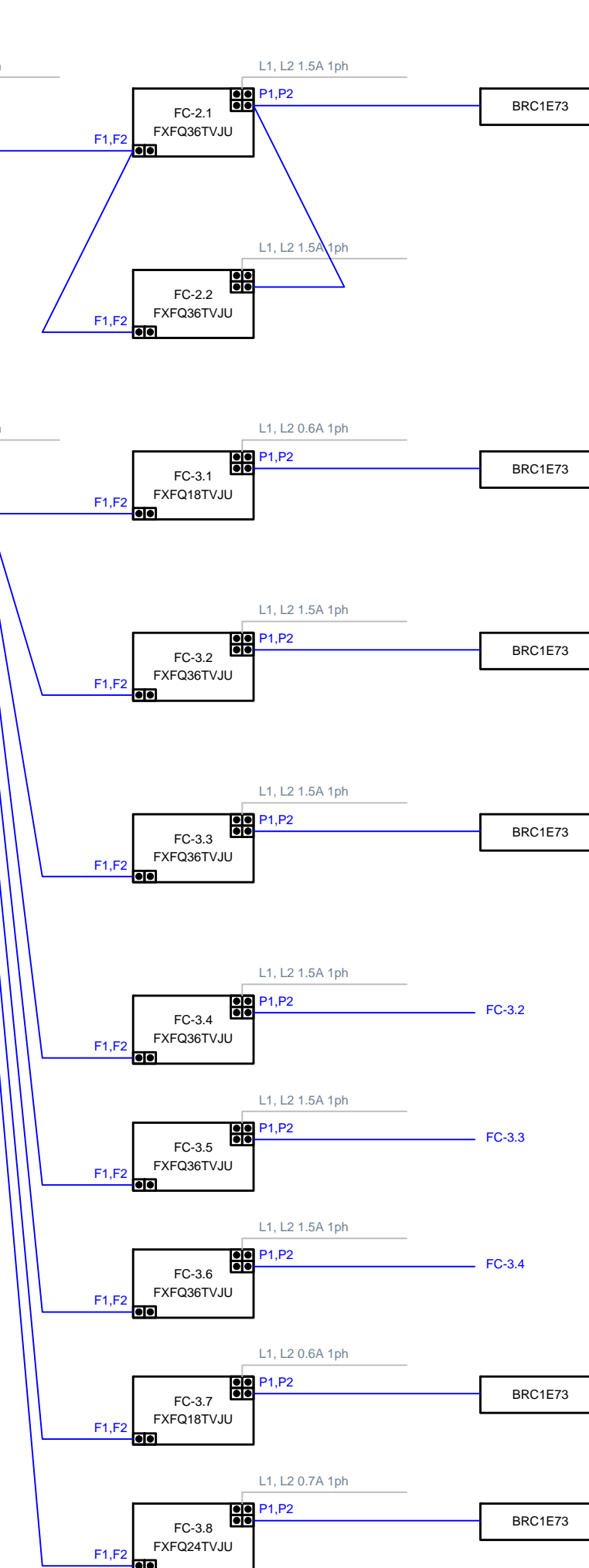
### 03 WIRING AND PIPING DIAGRAM - SYSTEM 3: DOAS-B-1 LEV KIT



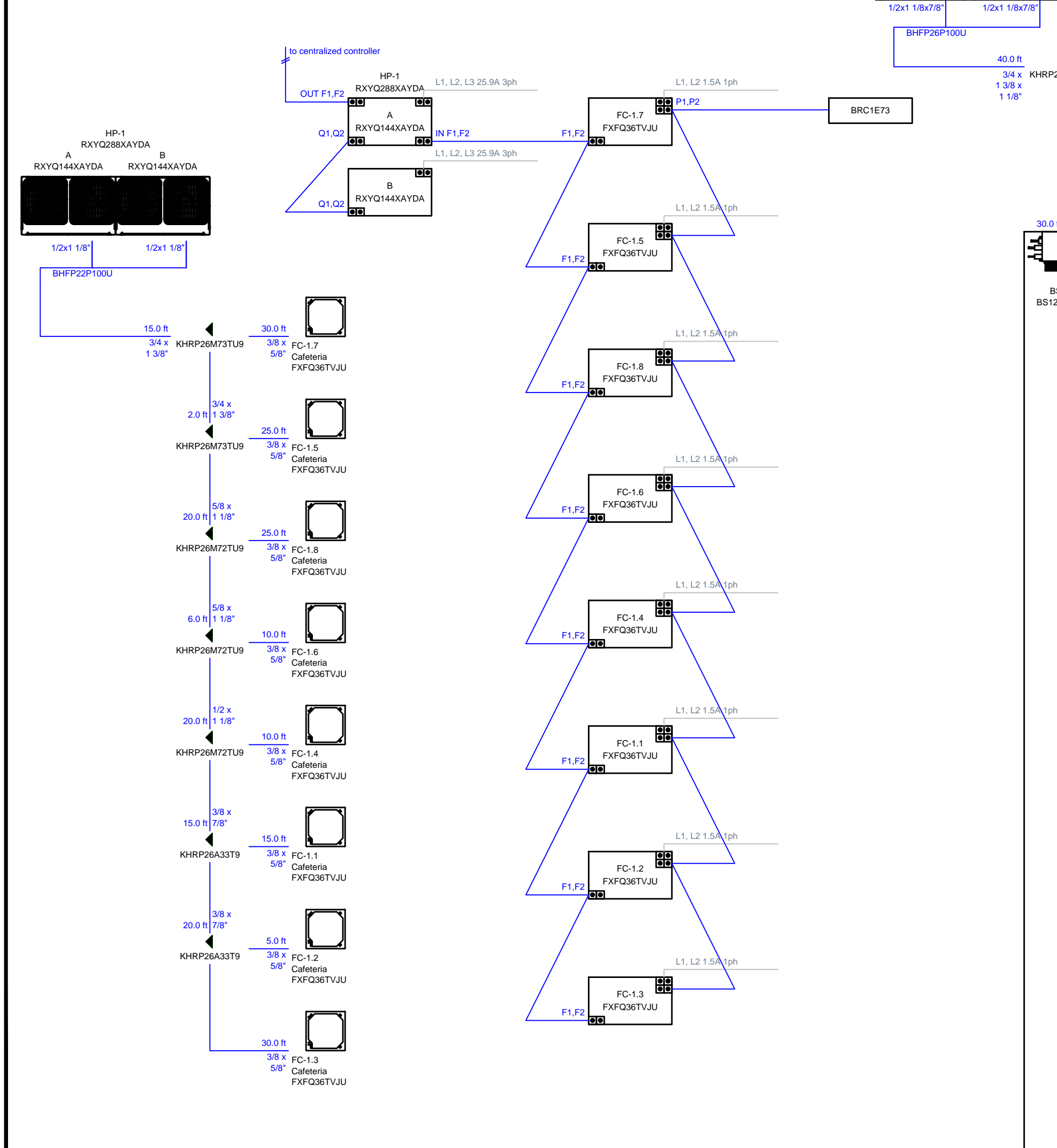
### 04 WIRING AND PIPING DIAGRAM - SYSTEM 4: DOAS-B-2 LEV KIT



### 05 WIRING DIAGRAM - MASTER CONTROL



### 01 Mechanical Control Diagram and Sequence of Operation



### 02 Mechanical Piping and Wiring Diagrams for System 1 and 2

REV	DATE	ISSUED FOR BID	DESCRIPTION
-	11-12-21	ISSUED FOR BID	

**KEY PLAN**  
NO SCALE

**LFG**  
252 East Avenue  
Norwalk, CT 06855  
(203) 866-4626 Tcd  
(203) 866-8019 Fax

**LANDMARK FACILITIES GROUP, INC.**

**WARDE FAIRFIELD HIGH SCHOOL**  
FAIRFIELD, CT

SCALE: AS NOTED	APPROVED BY: AD	DRAWN BY: AD
DATE: 7/16/21	CHECKED BY: RS	

**MECHANICAL CONTROL DIAGRAM**

FILE NAME: LDRHWG	JOB NUMBER: -	DRAWING NUMBER: M-500
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HEATING, VENTILATING, AND AIR-CONDITIONING SPECIFICATIONS

SECTION 1.01 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL CONDITIONS, ANY SUPPLEMENTAL CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, GOVERN THE WORK OF THIS SECTION

SECTION 1.02 GENERAL PROVISIONS

A. THE DRAWINGS SHOW THE HEATING, DUCTWORK, EQUIPMENT AND PIPING SYSTEM SCHEMATICALLY. NO ADDED COMPLEMENTS WILL BE PERMITTED FOR VARIATIONS DUE TO FIELD CONDITIONS. IT IS NOT THE INTENT FOR THE DRAWINGS TO SHOW, OR THE COMPONENT OF THE SYSTEMS, FURNISH AND INSTALL ALL WORK ACCORDING WITH STANDARDS OF GOOD PRACTICE AND PROVIDE ALL REQUIRED APPURTENANCES AND ACCESSORIES FOR COMPLETE AND OPERATIONAL SYSTEMS.

B. INSTALL ALL WORK IN FULL ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL CODE REQUIREMENTS.

C. CALL EQUIPMENT AND MATERIALS SHALL BE NEW.

D. BEFORE THE SITE AND MATERIALS ARE ADJUDGING WORK AND CONDITION ON WHICH THIS WORK IS IN ANY WAY DEPENDENT, INCLUDING BUT NOT LIMITED TO, MEANS OF MATERIAL EGRESS AND INGRESS, SPACE LIMITATIONS AND PARKING FACILITIES, REPORT ANY DISCREPANCIES TO THE OWNER.

SECTION 1.03 SCOPE OF WORK

1. PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT REQUIRED TO PERFORM THE WORK OF THIS SECTION AS SHOWN ON THE CONTRACT DRAWINGS, AND AS SPECIFIED HEREIN, TO INCLUDE:

A. INSTALLATION OF NEW EQUIPMENT ACCORDINGLY WITH SCHEDULES AND MECHANICAL DRAWING.

B. INSTALLATION OF NEW DUCTWORK ACCORDINGLY WITH MECHANICAL DRAWING.

C. MISCELLANEOUS STEEL DUNNAGE, PADS OR OTHER SUPPORTS AND HANGERS AS SHOWN AND AS REQUIRED.

D. ALL AUTOMATIC TEMPERATURE CONTROL WORK AND PARTS TO MAKE THE SYSTEM(S) FULLY FUNCTIONAL, INCLUDING DUCT SMOKE DETECTORS, RELAYS, SENSORS, CONTROLS ETC.

SECTION 1.04 RELATED WORK INCLUDED UNDER OTHER SECTIONS

1. ELECTRICAL SECTION

2. PLUMBING SECTION

3. FIRE PROTECTION SECTION

SECTION 1.05 CODES, TESTS, STANDARDS, PERMITS AND GUARANTEES

A. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL CODES AND ANY OTHER AUTHORITIES HAVING JURISDICTION.

B. PAY ALL FEES AND FILE ALL FORMS REQUIRED BY ALL MUNICIPAL AGENCIES OR GOVERNING BODIES HAVING JURISDICTION FOR ALL WORK INSTALLED UNDER THE CONTRACT. FURNISH ALL CONTRACT DOCUMENTS TO THE ENGINEER PRIOR TO COMPLETION OF THE WORK.

C. SUBMIT A GUARANTEE TO THE OWNER OR ENGINEER STATING THAT ALL PORTIONS OF THE WORK ARE IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS. GUARANTEE ALL WORK AGAINST FACTORY AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER, EXCEPT THAT WHERE GUARANTEES OR WARRANTIES FOR LONGER TERMS ARE SPECIFIED ELSEWHERE IN THE CONTRACT DOCUMENTS, SUCH LONGER TERMS SHALL APPLY. AT NO ADDITIONAL COST TO THE OWNER WITHIN 24 HOURS AFTER NOTIFICATION, CORRECT ANY DEFICIENCIES WHICH OCCUR DURING THE GUARANTEE PERIOD, ALL TO THE SATISFACTION OF THE OWNER. THE CONTRACTOR SHALL REQUIRE SIMILAR GUARANTEES FROM HIS SUBCONTRACTORS.

D. THE OWNER, OR HIS REPRESENTATIVE, SHALL BE THE SOLE JUDGE OF THE ACCEPTABILITY OF THE TESTS. THE ENGINEER MAY DIRECT THE PERFORMANCE OF ANY SUCH ADDITIONAL TESTS AS NECESSARY TO DETERMINE THE ACCEPTABILITY OF THE SYSTEMS, EQUIPMENT MATERIAL AND WORKMANSHIP. NO ALLOWANCE WILL BE MADE FOR ANY TEST REQUIRED BY THE ENGINEER.

E. ALL SAFETY DEVICES SHALL BE ACTUATED IN A MANNER THAT CLEARLY DEMONSTRATES THEIR OPERATION.

F. CONTRACTOR SHALL PERFORM ANY AND ALL OTHERS TESTS THAT MAY BE REQUIRED BY THE LOCAL MUNICIPALITY OR OTHER GOVERNING BODY, BOARD OR AGENCY HAVING JURISDICTION.

SECTION 1.06 EXAMINATION OF SITE

CONTRACTOR SHALL VISIT SITE AND VERIFY ALL EXISTING CONDITIONS BEFORE SUBMITTING PROPOSAL. TO FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS INCLUDING ELEVATIONS, EXISTING FACILITIES, ELEVATOR LIMITATIONS, HOURS PERMITTED BY THE BUILDING FOR TRANSPORTATION OF EQUIPMENT AND MATERIALS, AND SATISFY HIMSELF AS TO THE NATURE AND SCOPE OF THE WORK AND DIFFICULTIES THAT ATTEND EXECUTION. THE CONTRACTOR SHALL EXAMINE ALL EXISTING STRUCTURAL CONDITIONS, TAKE ALL NECESSARY MEASUREMENTS AND NOTE EXISTING CONDITIONS BEFORE MOVING NEW EQUIPMENT INTO THE BUILDING. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS FOR LABOR EQUIPMENT OR MATERIALS REQUIRED OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAM BEEN MADE WILL NOT BE RECOGNIZED.

SECTION 1.07 DRAWINGS

A. THE DRAWINGS ARE GENERAL DIAGRAMMATIC AND INDICATE ARRANGEMENT OF EQUIPMENT, DUCTS, PIPING. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL CONTRACT DRAWINGS AND DRAWINGS OF OTHER TRADES TO VERIFY SPACES IN WHICH WORK WILL BE INSTALLED. MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY NECESSARY MODIFICATIONS IN THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND STRUCTURAL BEAMS, OR FOR PROPER EXECUTION OF THE WORK.

SECTION 1.08 SUBMITTALS

PROVIDE SUBMITTALS OF MANUFACTURER'S PRODUCT DATA ON PROPOSED EQUIPMENT FOR REVIEW AND APPROVAL OF ENGINEER, PRIOR TO PURCHASE AND INSTALLATION. SUBMITTALS SHALL INCLUDE:

1. VRF HEAT PUMPS AND INDOOR UNITS INCLUDING ALL REQUIRED ACCESSORIES
2. ROOFTOP HEATING/COOLING AND DEDICATED OUTDOOR AIR UNITS
3. ENERGY RECOVERY VENTILATORS
4. DEDICATED OUTDOOR AIR DX COIL
5. MAKE-UP AIR UNITS
6. SHEET METAL DUCTWORK MATERIAL AND STANDARDS
7. SUPPLY AND RETURN GRILLS AND DIFFUSERS
8. LOUVER
9. CONDENSATE PUMPS
10. ROOF CURBS, DUNNAGE
11. PIPE, FITTINGS AND VALVES
12. HANGERS AND SUPPORTS
13. INSULATION
14. FIRE STOPPING
15. FULL CONTROL SHOP DRAWINGS INCLUDING SEQUENCE OF OPERATION AND ALL USED CONTROLLERS SUBMITTALS
16. SHEET METAL, EQUIPMENT AND PIPING SHOP DRAWINGS
17. OPERATIONS AND MAINTENANCE MANUAL INCLUDING CONTROL WIRING DIAGRAM

SECTION 1.09 OPERATING AND MAINTENANCE INSTRUCTIONS

A. AT THE COMPLETION OF CONSTRUCTION THE CONTRACTOR SHALL PREPARE AND DELIVER TO THE OWNER REP. THREE SETS OF OPERATING AND MAINTENANCE INSTRUCTION MANUALS COVERING ALL EQUIPMENT INCLUDED IN THIS CONTRACT.

B. MANUALS SHALL INCLUDE ALL APPROVED SHOP DRAWINGS, WIRING DIAGRAMS, OPERATING AND MAINTENANCE INSTRUCTIONS, VALVE CHARTS, AS-BUILT DRAWINGS AND SHALL BE BOUND IN A LOOSELEAF BINDER WITH TABS SEPARATING SECTIONS.

SECTION 1.10 RIGGING

MECHANICAL CONTRACTOR SHALL RIG ALL EQUIPMENT TO APPROPRIATE LOCATIONS. CONTRACTOR SHALL EXAMINE ALL DIFFICULTIES PRIOR TO BIDDING AND SHALL COOPERATE WITH BUILDING MANAGEMENT.

SECTION 1.11 CUTTING AND PATCHING

1. THE CONTRACTOR SHALL CUTTING, DRILLING AND PATCHING WHICH MAY BE REQUIRED FOR THE INSTALLATION OF THE WORK UNDER THIS SPECIFICATION.

2. PATCHING SHALL BE OF THE SAME WORKMANSHIP, MATERIAL AND FINISH, AND SHALL MATCH ADJACENT ALL SURROUNDING CONSTRUCTION IN A MANNER SATISFACTORY TO THE ARCHITECT/ENGINEER.

3. NO CUTTING OF THE STRUCTURE SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL OF THE ENGINEER.

4. EXISTING DUCTS, PIPES, UTILITIES, ETC. THAT ARE DAMAGED DURING CONSTRUCTION PERIOD, WHETHER OR NOT DUE TO THE CONTRACTOR'S NEGLIGENCE, SHALL BE REPAIRED OR REPLACED TO ORIGINAL CONDITION. CONTRACTOR SHALL PROVIDE A SERVICEABLE TRAP OF ADEQUATE DEPTH OF ADEQUATE JOINTS AND JOINTS.

5. THE SPACE AROUND PIPES, DUCTS, ETC. PENETRATING REAR WALLS, SHALL NOT EXCEED 1/2" AND SHALL BE PACKED SOLD WITH MINERAL WOOL OR EQUIVALENT. PERIMETER SHALL BE CLOSED OFF BY TIGHT FITTING METAL ESCUTCHEONS ON BOTH SIDES OF THIS CONSTRUCTION AS REQUIRED BY APPLICABLE CODES.

SECTION 1.12 ELECTRICAL

1. ALL POWER WIRING SHALL BE BY ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR TO PROVIDE ALL NECESSARY CONTROL AND INTERLOCK WIRING AND WIRING DIAGRAMS.

2. CONTRACTOR SHALL PROVIDE ALL STARTERS AND MOTORS FOR ALL MECHANICAL EQUIPMENT, WITH LOW VOLTAGE PROTECTION AND BUILT-IN THERMAL OVERLOAD PROTECTION.

3. CONTRACTOR SHALL VERIFY THE ELECTRICAL CHARACTERISTICS REQUIRED OF ALL EQUIPMENT WITH THE ELECTRICAL DRAWINGS, ELECTRICAL CONTRACTOR, AND FIELD CONDITIONS PRIOR TO ORDERING THE EQUIPMENT.

SECTION 1.13 SHEET METAL DUCTWORK

1. ALL DUCTWORK SHALL BE GALVANIZED SHEET STEEL OF GAUGES CALLED FOR AS STANDARD IN ASHRAE GUIDE AND COMPLETE INSTALLATION SHALL COMPLY WITH LATEST SMACNA STANDARDS. ALL DUCTWORK SHALL BE SEALED NOT TO EXCEED 5% AIR LEAKAGE. SEAL ALL DUCTS IN ACCORDANCE WITH SEAL CLASS "B" 2 "W" STATIC AIR PER SMACNA STANDARDS.

2. ALL DUCTWORK CONNECTED TO ROTATING PARTS SHALL BE MADE OF FLEXIBLE CONNECTIONS WHICH SHALL BE HEAVY GLASS FABRIC COATED WITH NEOPRENE AND NON-COMBUSTIBLE, AND SHALL COMPLY WITH ALL APPLICABLE CODES.

3. DUCTMASTIC CONNECTIONS MAY BE USED WHEREVER POSSIBLE. DUCTWORK HAVING OTHER TYPE OF JOINTS SHALL BE SEALED WITH DUCT SEALANT OF A NON-HARDENING TYPE MASTIC OR LIQUID ELASTIC SEALANT, SUCH AS "DURA DYN" TYPE S-2 OR EQUIVALENT APPROVED. NO DUCT TAPE SHALL BE ALLOWED.

4. PROVIDE 1-1/2 HOUR UL LISTED FUSIBLE LINK, OUT OF AIRSTREAM TYPE, FIRE DAMPERS AND ACCESS DOORS FOR EACH WHERE SHOWN ON DRAWINGS AND AS REQUIRED BY APPLICABLE CODE.

SECTION 1.14 DUCTWORK INSULATION

1. ALL RECTANGULAR SUPPLY AND RETURN DUCTS ACCEPTABLE AS INDICATED ON DRAWINGS SHALL BE INTERNALLY LINED WITH MANVILLE "LUNA-COUSTIC" 1" THICK, 1-1/2" R DENSITY. OTHERWISE INDICATE ON THE DRAWING NOTES. FIBERGLASS SIZES SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS. INCREASE DUCT SIZES ACCORDINGLY.

2. ALL DUCTWORK EXPOSED TO WEATHER SHALL HAVE TWO INCHES FIBERGLASS INSULATION, CHICKEN WIRE COVERING, 45# ROOFING FELT, AND TWO COATS OF BUTASTIC.

3. ALL ROUND SUPPLY DUCTWORK THAT RUNS EXPOSED SHALL BE UNINSULATED.

4. OTHER NOT-EXPOSED SUPPLY AND RETURN DUCTWORK NOT INTERNALLY LINED (AND NOT ROUND EXPOSED DUCTWORK, AS IN #3 ABOVE) SHALL BE INSULATED WITH FLEXIBLE BLANKET DUCT INSULATION WITH FOLK/RAFT VAPOR BARRIER FACING 1-1/2" THICK MIN. R-8 OWENS CORNING FIBER TYPE 75 OR EQUAL.

SECTION 1.15 DUCTWORK AIR DEVICES AND ACCESSORIES

1. DUCTWORK AND AIR DEVICE INSTALLATION SHALL COMPLY WITH NFPA STANDARD 90A "INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS", UNLESS OTHERWISE NOTED.

2. UNLESS OTHERWISE NOTED, ALL NEW DUCTWORK SHALL BE GALVANIZED STEEL IN ACCORDANCE WITH SMACNA STANDARDS FOR MINIMUM 2-INCHES WATER GAGE PRESSURE CLASSIFICATION.

3. DUCTWORK SEALANT SHALL BE AIR SEAL HEAVY-DUTY MASTIC TYPE WITH EMBEDDED FIBERGLASS REINFORCEMENT TAPE, AS MANUFACTURED BY POLYMER ADHESIVE SEALANT SYSTEM OR AERIAL AIR SEALANT, OR APPROVAL EQUIVALENT.

4. ALL SEALANT SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS, AS TESTED BY PROCEDURE ASTM E-84, NFPA 225 AND UL 723, NOT EXCEEDING A "FLAME SPREAD" OF 25 AND "SMOKE DEVELOPED" OF 50.

5. LINEAR DIFFUSERS

A. LINEAR DIFFUSERS SHALL BE TITUS OR APPROVED EQUIVALENT AS MANUFACTURED BY CARNES OR NALOR WITH SIZES AS INDICATED ON THE DRAWINGS. NUMBER OF SLOTS AND STYLE TO MATCH EXISTING AS NEARLY AS POSSIBLE.

B. LINEAR DIFFUSERS SHALL BE HEAVY WALLED EXTRUDED ALUMINUM. MODEL, COLOR AND FRAME TYPE SHALL BE AS DIRECTED BY THE ENGINEER.

C. CEILING OR SIDEWALL SUPPLY REGISTERS GRILLE SHALL BE TITUS (300R) OR APPROVED EQUIVALENT AS MANUFACTURED BY CARNES OR NALOR WITH SIZES AS INDICATED ON THE DRAWINGS.

6. RETURN GRILLES

A. RETURN GRILLE SHALL BE TITUS OR APPROVED EQUIVALENT AS MANUFACTURED BY CARNES OR NALOR WITH SIZES AS INDICATED ON THE DRAWINGS.

B. RETURN GRILLE SHALL BE GALVANIZED STEEL FRAME WITH ALUMINUM GRID CORE.

C. RETURN GRILLE SHALL BE EQUIPPED WITH ADJUSTABLE OPPOSED BLADE GALVANIZED STEEL DAMPERS, WHICH SHALL BE ACCESSED THROUGH THE FACE OF THE GRILLE.

D. MODEL, COLOR AND FRAME TYPE SHALL BE DIRECTED BY THE ENGINEER.

7. CEILING DIFFUSERS - STAMPED SQUARE.

A. CEILING DIFFUSERS SHALL BE TITUS OR APPROVAL EQUIVALENT AS MANUFACTURED BY CARNES OR NALOR WITH SIZES AS INDICATED ON THE DRAWINGS.

B. CEILING DIFFUSERS SHALL BE STEEL WITH BAKED ENAMEL FINISH.

C. CEILING DIFFUSERS SHALL BE EQUIPPED WITH AN ADJUSTABLE OPPOSED BLADE DAMPER.

D. MODEL, COLOR AND FRAME TYPE SHALL BE DIRECTED BY THE ENGINEER.

8. ALL DUCTWORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH NFPA AND SMACNA STANDARDS, EXCEPT AS INDICATED OTHERWISE HEREIN.

9. ALL NEW SUPPLY, RETURN, AIR INTAKE DUCTWORK SHALL BE SEALED IN ITS ENTIRETY (ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS AND DUCT WALL PENETRATIONS SHALL BE SEALED). SEALANT MASTIC SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.

10. PROVIDE SINGLE THICKNESS TURNING VANES FOR ALL SQUARE ELBOWS.

11. DUCT SIZES INDICATED ON THE DRAWINGS ARE CLEAR INSIDE DIMENSIONS. WHERE ACOUSTICAL LINING IS PROVIDED, INCREASE STEEL METAL DUCT SIZE AS REQUIRED TO MAINTAIN CLEAR INSIDE DUCT DIMENSIONS.

12. PROVIDE SHEET METAL WINGS AT ALL EXPOSED EDGES OF ACOUSTICAL LINING.

13. PROVIDE FLEXIBLE CONNECTIONS AT ALL CONNECTIONS TO ROTATING EQUIPMENT.

14. PROVIDE FIRE STOPS AT ALL PENETRATIONS THROUGH FIRE RATED WALLS AND PARTITIONS.

15. SLEEVES FOR PIPES PASSING THROUGH MASONRY FLOORS, WALLS AND PARTITIONS SHALL BE SCHEDULE 40 BLACK STEEL PIPE. SLEEVES FOR PIPES PASSING THROUGH NON-MASONRY FLOORS, WALLS AND PARTITIONS SHALL BE 22 GAGE GALVANIZED STEEL.

16. WHERE DUCTS PASS THROUGH MASONRY FIRE RATED INTERIORS INSTALL APPROPRIATELY RATED SLEEVE AND PRESTOPPING SEALANT.

17. SAFE OFF ALL OPENINGS AROUND DUCT PENETRATIONS THROUGH WALLS.

SECTION 1.16 PIPING AND INSULATION

1. REFRIGERANT PIPING AND INSULATION

A. REFRIGERANT PIPING SHALL BE TYPE "K" HARD DRAWN COPPER TUBING WITH BRACING JOINTS. REFRIGERANT SUCTION LINES SHALL BE INSULATED WITH AMORFLEX 5/8" THICK WALL CLOSED CELL PIPE INSULATION. ALL SEAMS AND JOINTS SHALL BE GLED TIGHT.

2. CONDENSATE DRAIN PIPING SHALL BE 1-INCH MINIMUM TYPE "L" DRAWN COPPER TUBE WITH 95/5 SOLDERED JOINTS. INSTALL PIPING WITH PITCH AWAY FROM DRAIN PANS AT A MINIMUM SLOPE OF 1/8 INCH PER FOOT. PIPING SHALL INCORPORATE A SERVICEABLE TRAP OF ADEQUATE DEPTH OF ADEQUATE JOINTS AND JOINTS.

3. L.P. STEAM PIPING, NPS 2 AND SMALLER: SCHEDULE 40, TYPE S, GRADE B, STEEL PIPE, CLASS 125 CAST-IRON FITTINGS AND THREADED JOINTS. L.P. STEAM PIPING, NPS 2-1/2 THROUGH NPS 12: SCHEDULE 40, TYPE S, GRADE B, STEEL PIPE, CLASS 150.

4. MIDWIST-STEEL FITTINGS, FLANGES, AND FLANGE FITTINGS, AND WELDED AND FLANGED JOINTS.

5. INSULATION: CALGUM SILICATE: 3 INCHES THICK OR MINERAL-FIBER, PREFORMED PIPE, TYPE I OR II: 3 INCHES THICK.

6. L.P. CONDENSATE RETURN PIPING ABOVE BOILER, NPS 2 AND SMALLER, SHALL BE SCHEDULE 40, TYPE S, GRADE B, STEEL PIPE, CLASS 125 CAST-IRON FITTINGS AND THREADED JOINTS. NPS 2 AND SMALLER: SCHEDULE 40, TYPE S, GRADE B, STEEL PIPE, CLASS 125 CAST-IRON FITTINGS AND THREADED JOINTS. L.P. STEAM PIPING, NPS 2-1/2 THROUGH NPS 12: SCHEDULE 40, TYPE S, GRADE B, STEEL PIPE, CLASS 150.

SECTION 1.17 VIBRATION ISOLATION AND HANGERS

1. PROVIDE HANGERS AND SUPPORTS FOR ALL PIPING, DUCTWORK AND EQUIPMENT. PIPING SUPPORTS SHALL COMPLY WITH MSS SP-69 STANDARDS.

2. DUCT HANGERS SHALL BE OF THE TYPE AND SIZE AND BE SPACED AS INDICATED IN DUCT SUPPORT DETAIL ON DRAWINGS.

3. PIPING WITHIN 25' OF ALL EQUIPMENT THAT IS SUPPORTED BY VIBRATION ISOLATORS SHALL BE SUPPORTED WITH STEEL SPRING AND RUBBER IN SHEAR TYPE VIBRATION ISOLATORS, WITH A MINIMUM OF 1" STATIC DEFLECTION.

4. ALL HANGERS SHALL BE ATTACHMENT OF RODS TO STRUCTURAL BEAMS.

5. ALL PIPING HANGERS SHALL BE AT LEAST 3/8" ROD AND MAX. SPACING IF FOR PIPES SIZE 1" AND LESS.

6. ALL PIPING HANGERS SHALL BE AT LEAST 3/8" ROD AND MAX. SPACING IF FOR PIPES SIZE 1 1/4" - 2".

7. ISOLATION OF DUCTWORK FROM EQUIPMENT VIBRATIONS SHALL BE MADE BY USE OF FLEXIBLE CONNECTIONS CONSTRUCTED OF HEAVY GLASS FABRIC COATED WITH NEOPRENE AND NON-COMBUSTIBLE IN COMPLIANCE WITH ALL APPLICABLE CODES.

SECTION 1.18 HVAC EQUIPMENT

1. REFER TO EQUIPMENT SCHEDULES ON DRAWINGS M-001-00.

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING DAKIN, MITSUBISHI OR EQUIVALENT VARIABLE REFRIGERATION SPLIT SYSTEM (VRF), TWO (2) DEDICATED OUTSIDE AIR ROOFTOP UNITS, ONE (1) PACKAGE ROOFTOP UNIT, TWO (2) RENOV AIR ENERGY RECOVERY VENTILATORS, ONE (1) MAKE UP AIR UNIT AND ALL ASSOCIATED CONTROLS. THE CONTRACTOR SHALL INSTALL NEW DUCT SYSTEM AND PUT INTO OPERATION AND SERVICE THE NEW HVAC UNIT AS REQUIRED FOR A COMPLETE FULL OPERATING SYSTEM.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECT AND REMOVE EXISTING HVAC EQUIPMENT AND ALL RELATED DUCTWORK AND PIPING IN AREA INDICATED ON M-100 DRAWING.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR UTILIZING EXISTING DUCT, PIPING AS LOWERS AS PER N-E-SERIES DRAWING.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECT AND REMOVE EXISTING HVAC EQUIPMENT AND ALL RELATED DUCTWORK AND PIPING IN AREA INDICATED ON M-100 DRAWING.

E. THE EQUIPMENT TYPE AND MODEL SPECIFIED IN THE EQUIPMENT SCHEDULES M-001-00.

F. ALL ITEMS OF THE HVAC EQUIPMENT INCLUDING FANS, FILTERS, COILS AND ACCESSORIES SHALL BE TESTED, CLEANED, OILED, AND ADJUSTED AS REQUIRED FOR OPTIMUM OPERATION.

3. AUTOMATIC TEMPERATURE CONTROLS AND DEVICES SUCH AS SPACE THERMOSTATS, VALVES, SENSORS, DAMPERS, ETC. SHALL BE TESTED, ADJUSTED AND/OR REPLACED BY THE ATC CONTRACTOR AS NECESSARY FOR A FULLY FUNCTIONAL SYSTEM.

4. ALL AIR HANDLING EQUIPMENT INCLUDING BELTS, PULLEYS AND MOTORS SHALL BE ADJUSTED AS REQUIRED TO PROVIDE AIR QUANTITIES INDICATED ON THE DRAWINGS.

5. FILTERS

A. PRIOR TO STARTING OF THE HVAC EQUIPMENT, CONTRACTOR SHALL INSTALL BRAND NEW SET OF FILTERS. AFTER TESTING AND BALANCING IS COMPLETE, A NEW SET OF FILTERS SHALL BE INSTALLED AS A FINAL CHANGE BEFORE THE STORE STOCKING PERIOD. ALSO PROVIDE ONE SPARE SET OF FILTERS AND BELTS AT THE COMPLETION OF THE CONTRACT.

SECTION 1.19 AUTOMATIC TEMPERATURE CONTROL SYSTEM

1. THE AUTOMATIC TEMPERATURE CONTROL SYSTEM SHALL PROVIDE ALL REQUIRED AUTOMATIC TEMPERATURE CONTROLS FOR BMS SYSTEM TO ACCOMPLISH THE FOLLOWING SEQUENCES OF OPERATION AND TO PROVIDE FOR COMPLETE AND OPERATIONAL CONTROL SYSTEMS, ITEMS PROVIDED SHALL INCLUDE, BUT NOT BE LIMITED TO SYSTEM ENGINEERING, LABOR, CONTROL WIRING, PNEUMATIC TUBING, CONTROLLERS, SENSORS, RELAYS, PNEUMATIC-ELECTRIC SWITCHES, ELECTRIC-PNEUMATIC SWITCHES, MOTOR STARTERS, CONTROL ENCLOSURES, DAMPERS, ACTUATORS, CONTROL VALVES ETC.

2. THE AUTOMATIC TEMPERATURE CONTROLS SUBCONTRACTOR SHALL PROVIDE ALL REQUIRED CONTROL WIRING AND ALL WIRING REQUIRED FOR INTERLOCKING AND INTERFACING CONTROLS WITH THE EQUIPMENT TO BE CONTROLLED WHETHER LOW VOLTAGE OR LINE VOLTAGE.

3. THE AUTOMATIC TEMPERATURE CONTROLS CONTRACTOR SHALL INSTALL DUCT MOUNTED SMOKE DETECTORS, WHICH WILL BE FURNISHED AND WIRED BY THE ELECTRICAL SUBCONTRACTOR.

4. AUTOMATIC CONTROL EQUIPMENT SHALL BE DIKIN, MITSUBISHI, JOHNSON CONTROLS, HONEYWELL, SIEMENS OR APPROVED EQUIVALENT.

5. SEQUENCE OF OPERATION REFER TO M-500.

6. PROVIDE COMPLETE CONTROL WIRING DIAGRAM INCLUDING ALL CONTROL COMPONENTS AND SEQUENCE OF OPERATION.

SECTION 1.20 TESTING AND BALANCING

1. BALANCING OF THE HVAC SYSTEM WILL BE PERFORMED BY AN INDEPENDENT TEST AND BALANCING AGENCY. THE MECHANICAL CONTRACTOR SHALL COOPERATE WITH THE SELECTED TEST AND BALANCE AGENCY IN THE FOLLOWING MANNER:

A. PROVIDE SUFFICIENT TIME BEFORE START OF TEST AND BALANCING CAN BE ACCOMPLISHED.

B. PROVIDE IMMEDIATE LABOR AND TOOLS TO MAKE CORRECTIONS WHEN REQUIRED WITHOUT UNDUE DELAY. INSTALL BALANCING DAMPERS AS REQUIRED BY TEST AND BALANCE AGENCY.

C. THE CONTRACTOR SHALL PUT ALL HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS AND EQUIPMENT INTO FULL OPERATION AND SHALL CONTINUE THE OPERATION OF SAME DURING EACH WORKING DAY OF TESTING AND BALANCING.

D. TESTING AND BALANCING AGENCY SHALL BE KEPT INFORMED OF ANY MAJOR CHANGES MADE TO SYSTEM DURING CONSTRUCTION AND SHALL BE PROVIDED WITH COMPLETE AS-BUILT DRAWINGS.

E. THE MECHANICAL CONTRACTOR SHALL INCLUDE THE COSTS OF DAMPERS, PULLEY, AND BELT CHANGES IN HIS CONTRACT.

F. TESTING AND BALANCING REPORTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

SECTION 1.21 CLEANING, TESTING AND ADJUSTMENT

A. PROPERLY CAP ALL DUCTWORK DURING CONSTRUCTION TO PREVENT THE ENTRANCE OF FOREIGN MATERIAL.

B. ALL MOTORS SHALL BE PROPERLY OILED AND WAXED. PIPING SHALL BE PROPERLY OILED AND WAXED.

C. DEMONSTRATE THAT ALL EQUIPMENT AND APPARATUS FULFILL THE REQUIREMENT OF THE SPECIFICATIONS. ALL EQUIPMENT AND SAFETIES SHALL BE OPERATED AND TESTED FOR RATED CAPACITIES AND SPECIFIED CHARACTERISTICS, VOLTAGE AND AMPERAGE READINGS SHALL BE TAKEN ON ALL ELECTRIC MOTORS.

SECTION 1.22 INSTRUCTION OF OWNER'S PERSONNEL

A. AFTER COMPLETION OF WORK AND ALL TESTS AND ADJUSTMENTS AT SUCH TIME AS DESIGNATED BY THE ARCHITECT, PROVIDE THE NECESSARY SKILLED PERSONNEL TO DEMONSTRATE THE ENTIRE INSTALLATION TO THE OWNER'S PERSONNEL FOR A PERIOD OF 2 HOURS.

B. DURING THE OPERATING PERIOD, FULLY INSTRUCT THE OWNER'S REPRESENTATIVE IN THE COMPLETE OPERATION, ADJUSTMENT AND MAINTENANCE OF THE ENTIRE INSTALLATION.

GENERAL

1. SYSTEM DESCRIPTION

- a. THE VARIABLE CAPACITY, HEAT PUMP/HEAT RECOVERY AIR CONDITIONING SYSTEM SHALL BE A DAKIN VARIABLE REFRIGERANT VOLUME (VRF) SYSTEM.
- b. THE SYSTEM SHALL CONSIST OF OUTDOOR UNITS, BS (BRANCH) SELECTOR BOXES, REFINET JOINTS AND INDOOR UNITS WITH DDC (DIRECT DIGITAL CONTROLS). EACH INDOOR UNIT OR GROUP OF INDOOR UNITS SHALL BE INDEPENDENTLY CONTROLLED.
- c. THE VRF SYSTEM SELECTED SHALL BE OF THE "HEAT PUMP" TYPE TO PROVIDE NON-SIMULTANEOUS HEATING OR COOLING VIA A 2-PIPE REFRIGERATION PIPE DESIGN TO THE INDOOR UNITS.
- d. THE VRF SYSTEM SELECTED SHALL BE OF THE "HEAT RECOVERY" TYPE TO PROVIDE SIMULTANEOUS HEATING AND COOLING VIA A 3-PIPE REFRIGERATION PIPE DESIGN TO BRANCH SELECTOR BOXES AND A 2-PIPE DESIGN TO THE INDOOR UNITS. A DEDICATED HOT GAS PIPE SHALL BE REQUIRED TO ENSURE OPTIMUM HEATING OPERATION DURING DEFOST OR SUPERHEAT RECOVERY SYSTEMS UTILIZING A LOW TEMPERATURE MIXED LIQUID/GAS REFRIGERANT TO PERFORM HEAT RECOVERY ARE NOT ACCEPTABLE DUE TO REDUCED HEATING CAPABILITIES.
- e. ALL REFRIGERANT LINES SHALL BE INSULATED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. PIPING SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR.
2. QUALITY ASSURANCE
- a. THE UNITS SHALL BE LISTED BY ELECTRICAL LABORATORIES (ETL) AND BEAR THE ETL LABEL.
- b. ALL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (N.E.C.).
- c. THE SYSTEM WILL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE STANDARDS SET BY THE INTERNATIONAL STANDARD ORGANIZATION (ISO). THE SYSTEM SHALL BE FACTORY TESTED FOR SAFETY AND FUNCTION.
- d. THE SYSTEM SHALL USE R-410A REFRIGERANT ONLY. A FULL CHARGE OF R-410A FOR THE CONDENSING UNIT ONLY SHALL BE PROVIDED IN THE CONDENSING UNIT. ALL EXTRA REFRIGERANT SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR.
3. DELIVERY, STORAGE AND HANDLING
- a. UNIT SHALL BE STORED AND HANDLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
4. INSTALLATION
- a. THE VRF SYSTEM SHALL BE INSTALLED BY A MANUFACTURER AUTHORIZED INSTALLER WITH TRAINING SPECIFIC TO THE EQUIPMENT BEING INSTALLED. THE MANUFACTURER CONTRACTOR SERVICE AND INSTALL TRAINING SHOULD BE PERFORMED BY THE MANUFACTURER OR THE LOCAL REPRESENTATIVE. UNTRAINED CONTRACTORS WHO WISH TO BID THIS PROJECT MAY CONTACT THE LOCAL DAKIN REPRESENTATIVE (SWAN ASSOCIATES - NEWINGTON, CT 860-666-6923) TO ARRANGE TRAINING PRIOR TO INSTALLATION.

5. STARTUP

- a. THE DAKIN VRF SYSTEM STARTUP WILL BE SUPPORTED LOCALLY BY CERTIFIED DAKIN VRF TECHNICIANS. ALL WIRING, PIPING, EVACUATION AND AN INITIAL CHARGE OF R-410A SHALL BE COMPLETED BY THE MECHANICAL CONTRACTOR PRIOR TO HAVING A DAKIN VRF CERTIFIED TECHNICIAN CALLED OUT TO MINNESS AND TEST THE SYSTEM WITH A VACUUM PUMP AND ASSIST WITH STARTUP, PRESSURE, TEMPERATURE, LEAK TESTING, EVALUATION AND REFRIGERANT CHARGING SHALL BE BY THE MECHANICAL CONTRACTOR. ADDITIONAL REFRIGERANT WILL BE REQUIRED AND SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR.
6. WARRANTY
- a. FURNISH TEN YEAR MANUFACTURER'S WARRANTY FOR ALL PARTS AND COMPRESSORS FOR VRF OUTDOOR CONDENSING UNITS, BS BOXES AND INDOOR UNITS. CONTROLS SHALL BE WARRANTED FOR A PERIOD OF ONE YEAR. ALSO FURNISH ONE YEAR LABOR WARRANTY. IF, DURING THIS PERIOD, ANY PART SHOULD FAIL TO PERFORM AS SPECIFIED IN WORKMANSHIP OR MATERIAL, IT SHALL BE REPLACED OR REPAIRED AT THE DISCRETION OF THE MANUFACTURER. OWNER/CONTRACTOR MUST RETAIN STRICT RECORD OF ALL MAINTENANCE AND FOLLOW THE FACTORY RECOMMENDED INSTRUCTIONS.

PRODUCTS

1. OUTDOOR AIR COOLED VRF CONDENSING UNIT:

- a. GENERAL: THE OUTDOOR UNIT SHALL BE USED WITH COMPATIBLE INDOOR COMPONENTS. THE OUTDOOR UNITS SHALL BE EQUIPPED WITH MULTIPLE CIRCUIT BOARDS THAT INTERFACES TO THE D-III NET CONTROLS SYSTEM AND SHALL PERFORM ALL FUNCTIONS NECESSARY FOR OPERATION. THE OUTDOOR UNIT SHALL HAVE A POWDER COATED FINISH. THE OUTDOOR UNIT SHALL BE COMPLETELY FACTORY ASSEMBLED, PIPED AND WIRED. EACH UNIT SHALL BE RUN TESTED AT THE FACTORY.
- 2) THE REFRIGERATION CIRCUIT OF THE CONDENSING UNIT SHALL CONSIST OF DAKIN INVERTER SCROLL COMPRESSORS, MOTORS, FANS, CONDENSER COIL, ELECTRONIC EXPANSION VALVES, SOLENOID VALVES, 4-WAY VALVE, DISTRIBUTION HEADERS, CAPILLARIES, FILTERS, SHUT OFF VALVES, LIQUID SEPARATORS, SERVICE VALVES, LIQUID RECOVERER AND SUCTION ACCUMULATOR.
- 3) TO ENSURE THE LIQUID REFRIGERANT DOES NOT FLASH WHEN SUPPLYING TO THE VARIOUS INDOOR UNITS, THE CIRCUIT SHALL BE PROVIDED WITH A SUB-COOLING FEATURE.
- 4) THE SUM OF CONNECTED CAPACITY OF ALL INDOOR AIR HANDLERS SHALL RANGE FROM 50% TO 200% OF OUTDOOR RATED CAPACITY.
- 5) THE CONDENSING UNIT SHALL BE FACTORY ASSEMBLED IN THE USA AND PRE-WIRED WITH ALL NECESSARY ELECTRONIC AND REFRIGERANT CONTROLS.
- 6) LOW SOUND LEVELS - EACH SYSTEM SHALL USE INDOOR AND CONDENSING UNITS WITH QUIET OPERATION AS LOW AS 27 DB(A). THE SOUND PRESSURE LEVEL STANDARD SHALL BE THAT VALUE AS LISTED IN THE DAKIN OPERATING MANUAL FOR THE SPECIFIED MODELS AT 3 FEET FROM THE FRONT OF THE UNIT. THE OUTDOOR UNIT SHALL BE CAPABLE OF OPERATING AUTOMATICALLY AT FURTHER REDUCED LEVELS DURING NIGHT TIME.
- 7) REFRIGERANT LINES SHALL BE INSULATED.
- 8) THE OUTDOOR UNIT SHALL HAVE AN ACCUMULATOR WITH REFRIGERANT LEVEL SENSORS AND CONTROLS.
- 9) THE OUTDOOR UNIT SHALL HAVE A HIGH PRESSURE SAFETY SWITCH, OVER-CURRENT PROTECTION AND DC BUS PROTECTION.
- 10) THE SYSTEM SHALL BE CAPABLE OF REFRIGERANT PIPING UP TO 540 ACTUAL FEET OR 620 EQUIVALENT FEET FROM THE OUTDOOR UNIT TO THE FURTHEST INDOOR UNIT. A TOTAL COMBINED LIQUID LINE LENGTH OF 3,280 FEET OF PIPING BETWEEN THE CONDENSING AND INDOOR UNITS WITH 295 FEET MAXIMUM VERTICAL DIFFERENCE, WITHOUT ANY LIQUID TRAPS. SYSTEMS SHALL BE CAPABLE OF UP TO 295FT (90M) FROM THE FIRST REFINET / BRANCH POINT.
- 11) REFINET PIPING JOINTS AND HEADERS SHALL BE USED TO ENSURE PROPER REFRIGERANT BALANCE AND FLOW FOR OPTIMUM SYSTEM CAPACITY AND PERFORMANCE. T-SHIELD JOINTS SHALL NOT BE ACCEPTABLE.
- 12) THE CONDENSING UNIT SHALL BE CAPABLE OF HEATING OPERATION AT NEGATIVE 13°F (-25°C) WET BULB AMBIENT TEMPERATURE WITHOUT ADDITIONAL LOW AMBIENT CONTROLS OR AN AUXILIARY HEAT SOURCE.
- 13) LOW AMBIENT COOLING - VRF SHALL BE CAPABLE OF LOW AMBIENT COOLING OPERATION TO -4°FDB (-20°CDB) WITH CONTINUED OPERATION OF SIMULTANEOUS HEATING AND COOLING.
- 14) THE OUTDOOR UNIT SHALL HAVE A HIGH EFFICIENCY COIL SEPARATOR PLUS ADDITIONAL LOGIC CONTROLS TO ENSURE ADEQUATE AIR VOLUME IN THE COMPRESSOR IS MAINTAINED.
- 15) DEFOST HEATING - MULTIPLE CONDENSER VRF SYSTEMS SHALL MAINTAIN CONTINUOUS HEATING DURING DEFOST OPERATION. REVERSE CYCLE (COOLING MODE) DEFOST OPERATION SHALL NOT BE PERMITTED DUE TO THE POTENTIAL REDUCTION IN SPACE TEMPERATURE. IT IS IMPORTANT TO THE COMFORT OF THE DESIGN THAT THE SYSTEM SHALL CONTINUE TO PROVIDE HEAT TO THE INDOOR UNITS IN HEATING OPERATION WHILE IN DEFOST MODE.
- 16) AIR RETURN HEATING - VRF SYSTEMS SHALL MAINTAIN CONTINUOUS HEATING DURING LIQUID RETURN OPERATION. REVERSE CYCLE (COOLING MODE) LIQUID RETURN DURING HEATING OPERATION SHALL NOT BE PERMITTED DUE TO THE POTENTIAL REDUCTION IN SPACE TEMPERATURE.
- 17) STABLE OPERATION - SYSTEM SHALL PROVIDE STABLE OPERATION IN VARIOUS AMBIENT CONDITIONS.
- 18) NO DRAIN PAN HEATER - SYSTEM SHALL BE CAPABLE OF HEATING OPERATION WITHOUT THE NEED FOR A DRAIN PAN HEATER.
- 19) IF ALTERNATE MANUFACTURER IS CHOSEN, AN ADDITIONAL DRAIN PAN HEATER SHALL BE PROVIDED BY THE MANUFACTURER AND ANY COST INCREASES DUE TO ELECTRICAL SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
- 20) ADVANCED ZONING - A SINGLE SYSTEM SHALL PROVIDE FOR UP TO 64 ZONES.
- 21) VRF INVERTER CONTROL AND VARIABLE REFRIGERANT TEMPERATURE - EACH CONDENSING UNIT SHALL USE HIGH EFFICIENCY, VARIABLE SPEED ALL INVERTER BASED FLASH VAPOR INJECTION COMPRESSORS) COUPLED WITH INVERTER FAN MOTORS TO OPTIMIZE PART LOAD PERFORMANCE. THE SYSTEM CAPACITY AND REFRIGERANT TEMPERATURES SHALL BE MODULATED AUTOMATICALLY TO SET SUCION AND CONDENSING PRESSURES WHILE VARYING THE REFRIGERANT VOLUME FOR THE NEEDS OF THE COOLING OR HEATING LOADS. THE CONTROL WILL BE AUTOMATIC AND CUSTOMIZABLE DEPENDING ON LOAD AND WEATHER CONDITIONS.
- a) INDOOR SHALL USE PID TO CONTROL SUPERHEAT TO DELIVER A COMFORTABLE ROOM TEMPERATURE CONDITION AND OPTIMIZE EFFICIENCY.
- 22) THE FOLLOWING SAFETY DEVICES SHALL BE INCLUDED ON THE CONDENSING UNIT: HIGH PRESSURE SENSOR AND SWITCH, LOW PRESSURE SENSOR, CONTROL CIRCUIT FUSES, DRINKAGE INVERTER BASED FUSIBLE PLUS OVER CURRENT PROTECTOR, THERMAL PROTECTORS FOR COMPRESSOR AND FAN MOTORS, OVER CURRENT PROTECTION FOR THE INVERTER AND ANTI-RECYCLING TURNS.
- 23) SCHEDULED HEATING AND COOLING CAPACITIES SHALL BE MET AT A MINIMUM AND RESIZING MAY BE NEEDED BY OTHER MANUFACTURERS TO MEET THIS REQUIREMENT.
- 24) SPACE SAVING - EACH SYSTEM SHALL HAVE A CONDENSING UNIT MODULE FOOTPRINT NO LARGER THAN 66-1/16" X 48-7/8" X 30-3/16" (1694MM X 1242MM X 767MM).
- 25) EACH CONDENSING UNIT SHALL INCLUDE A MULTI-FUNCTIONAL DIGITAL DISPLAY THAT CAN PROVIDE SYSTEM OPERATION STATUS SUCH AS: OPERATING REFRIGERANT, REVERSE CYCLE, PART LOAD PERFORMANCE, REVERSE CYCLE, PART LOAD PERFORMANCE, REVERSE CYCLE, PART LOAD PERFORMANCE, REVERSE CYCLE, PART LOAD PERFORMANCE.
- 26) EACH CONDENSING UNIT SHALL INCLUDE A SERVICE WINDOW THAT CAN PROVIDE EASY ACCESS TO SYSTEM FIELD SETTINGS AND OPERATION STATUS WITHOUT COMPLETELY REMOVING THE CONDENSING UNIT PANEL.
- 27) ADVANCED DIAGNOSTICS - SYSTEMS SHALL INCLUDE A SELF-DIAGNOSTIC, AUTO-CHECK FUNCTION TO DETECT A MALFUNCTION AND DISPLAY THE TYPE AND LOCATION.
- 28) THE SYSTEM WILL AUTOMATICALLY RESTART OPERATION AFTER A POWER FAILURE AND WILL NOT CAUSE ANY SETTINGS TO BE LOST, thus ELIMINATING THE NEED FOR REPROGRAMMING.
- 29) EACH SYSTEM SHALL BE ABLE TO ENLARGE FROM SINGLE TO DUAL MODULE OR DUAL TO TRIPLE MODULE WITHOUT THE NEED FOR INSTALLED MAIN PIPE SIZE CHANGES. THE MANUFACTURER SHALL PROVIDE PREDEFINED PIPE SIZES AND DESIGN RULES ENSURING RELIABLE SYSTEM OPERATION AND OFFERING DESIGN FLEXIBILITY IN PHASED INSTALLATION APPLICATIONS.
- b. INDOOR CABINET
- 1) THE OUTDOOR UNIT SHALL BE COMPLETELY WEATHERPROOF AND CORROSION RESISTANT. THE UNIT SHALL BE CONSTRUCTED FROM STEEL-PROOFED MILD STEEL PANELS COATED WITH A BAKED ENAMEL FINISH.
- 2) THE UNIT SHALL BE ELEVATED ON RAILS OR STANDS ACCORDING TO THE MANUFACTURER'S RECOMMENDATION. FAILURE TO DO SO SHALL VOID THE MANUFACTURER'S WARRANTIES. RAILS/STANDS ARE NOT PROVIDED BY THE MANUFACTURER.

c. FAN:

- 1) THE UNIT SHALL BE FURNISHED WITH ONE OR MORE DIRECT DRIVE FAN MOTOR(S) THAT HAVE MULTIPLE SPEED OPERATION VIA A DC (DIGITALLY COMMUTATING) INVERTER.
- 2) THE FAN MOTOR SHALL HAVE INHERENT PROTECTION, HAVE PERMANENTLY LUBRICATED BEARINGS, AND BE COMPLETELY VARIABLE SPEED.
- 3) THE FAN MOTOR SHALL BE MOUNTED FOR QUIET OPERATION.
- 4) THE FAN SHALL BE PROVIDED WITH A RAISED CURB TO PREVENT CONTACT WITH MOVING PARTS.
- 5) THE OUTDOOR UNIT SHALL HAVE VERTICAL DISCHARGE AIRFLOW.
- 6) THE FAN MOTOR SHALL BE FACTORY SET AS STANDARD AT 0.12 IN. WG, BUT CONTAIN A FIELD SETTING SWITCH TO A MAXIMUM 0.32 IN. WG PRESSURE.
- 7) NIGHT STOCK CONTROL OF THE FAN MOTOR FOR LOW NOISE OPERATION BY WAY OF AUTOMATICALLY LIMITING THE MAXIMUM SPEED SHALL BE AN OPTION.
- 8) NIGHT STOCK FEATURE: OPERATION SOUND LEVEL SHALL BE SELECTABLE FROM 3 STEPS
- 9) THE CONDENSING UNIT SHALL HAVE CONFIGURABLE SETTINGS FOR INTERMITTENT FAN OPERATION TO HELP MINIMIZE SNOW ACCUMULATION ON FAN BLADES WHEN THE SYSTEM IS OFF.

d. COIL:

- 1) THE CONDENSER COIL SHALL BE MANUFACTURED FROM COPPER TUBES EXPANDED INTO ALUMINUM FINIS TO FORM A MECHANICAL BOND.
- 2) THE HEAT EXCHANGER COIL SHALL BE OF A WAFFLE LOUVER FIN AND RIFLED BORE TUBE DESIGN TO ENSURE HIGH EFFICIENCY PERFORMANCE.
- 3) THE HEAT EXCHANGER ON THE CONDENSING UNITS SHALL BE MANUFACTURED FROM IN-HX SEAMLESS COPPER TUBE WITH IN-HX SHAPE INTERNAL PROOVES MECHANICALLY BONDED ON TO ALUMINUM FINIS TO AN E-PASS DESIGN.
- 4) THE OUTDOOR COIL SHALL HAVE THREE-CIRCUIT HEAT EXCHANGER DESIGN ELIMINATING THE NEED FOR A DRAIN PAN HEATER THE LOWER PART OF THE COIL SHALL BE USED FOR INVERTER COOLING OR ON OR OFF DURING HEATING OPERATION ENHANCING THE DEFOST OPERATION.
- 5) THE FINS SHALL BE COATED WITH AN ANTI-CORROSION HYDROPHILIC BLUE COATING AS STANDARD FROM FACTORY WITH A SALT SPRAY TEST ENDURING OF 1000H PER ASTM TEST STANDARDS.
- 6) THE CONDENSING UNIT SHALL BE FACTORY EQUIPPED WITH CONDENSER COIL GUARDS ON ALL SIDES.

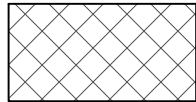
e. COMPRESSOR:

- 1) THE DAKIN INVERTER FLASH VAPOR INJECTION SCROLL COMPRESSORS SHALL BE VARIABLE SPEED (P/M INVERTER) CONTROLLED WHICH IS CAPABLE OF CHANGING THE SPEED TO FOLLOW LOAD VARIATIONS IN TOTAL COOLING AND HEATING LOAD AS DETERMINED BY THE SUCTION GAS PRESSURE AS MEASURED IN THE CONDENSING UNIT.
- a) IN ADDITION, SAMPLINGS OF EVAPORATOR AND CONDENSER TEMPERATURES SHALL BE MADE SO THAT THE HIGH/LOW PRESSURES DETECTED BEHIND EVERY 20 SECONDS AND CALCULATED WITH EACH READING, THE COMPRESSOR CAPACITY (IN VOLUME) SHALL BE CONTROLLED TO ELIMINATE DEVIATION



2.03 OUTDOOR UNIT FEATURES (DOAS UNITS ONLY)	2.08 FILTERS	2.09 CONDENSER SECTION
A. OUTDOOR CASING DETAILS – IN ADDITION TO ALL OTHER DETAILS SPECIFIED WITHIN FOR AIR HANDLING UNITS, UNITS THAT ARE INSTALLED OUTDOORS SHALL ALSO COMPLY WITH THE FOLLOWING –	A. PROVIDE FACTORY-FABRICATED FILTER SECTION OF THE SAME CONSTRUCTION AND FINISH AS UNIT CASINGS. FILTER SECTION SHALL HAVE SIDE ACCESS FILTER GUIDES AND ACCESS DOOR(S) EXTENDING THE FULL HEIGHT OF THE CASING TO FACILITATE FILTER REMOVAL. CONSTRUCT DOORS IN ACCORDANCE WITH SECTION 2.04. PROVIDE FIXED FILTER BLOCKOFFS AS REQUIRED TO PREVENT AIR BYPASS AROUND FILTERS. BLOCKOFFS SHALL NOT NEED TO BE REMOVED DURING FILTER REPLACEMENT. FILTERS TO BE OF SIZE, AND QUANTITY NEEDED TO MAXIMIZE FILTER FACE AREA OF EACH PARTICULAR UNIT SIZE.	A. PROVIDE VERTICAL DISCHARGE, DIRECT DRIVE FANS WITH ALUMINUM BLADES. FANS SHALL BE STATICALLY BALANCED. MOTORS SHALL BE PERMANENTLY LUBRICATED, WITH INTEGRAL THERMAL OVERLOAD PROTECTION IN A WEATHER TIGHT CASING.
1. OUTDOOR AIR HANDLING UNITS SHALL HAVE ONLY SINGLE DOOR HANDLES FOR EACH DOOR LINKING MULTIPLE LATCHING POINTS NECESSARY TO MAINTAIN THE SPECIFIED AIR LEAKAGE INTEGRITY OF THE UNIT AND EASE OF MAINTENANCE.	B. FILTER TYPE, MERV RATINGS, AND ARRANGEMENT SHALL BE PROVIDED AS DEFINED IN PROJECT PLANS AND SCHEDULE.	B. CONDENSER COIL SHALL BE ALL ALUMINUM MICROCHANNEL.
2. UNIT PAINT – EXTERNAL SURFACES OF ALL OUTDOOR UNIT CASINGS SHALL BE PREPARED AND PAINTED WITH A MINIMUM 1.5 MIL THICK WATER BASED POLYURETHANE FINISH OR EQUAL. PAINT SHALL BE ABLE TO WITHSTAND A SALT SPRAY TEST IN ACCORDANCE WITH ASTM B117 FOR A MINIMUM OF 500 CONSECUTIVE HOURS. PAINT SHALL BE SLATE GREY UNLESS OTHERWISE INDICATED IN THE SCHEDULE AND DRAWINGS.	2.09 DAMPERS	C. PROVIDE TOOL-LESS FACTORY INSTALLED CORROSION RESISTANT LOUVERED HAIL/VANDALISM GUARDS TO PROTECT CONDENSER COILS FROM HAIL OR PHYSICAL DAMAGE.
3. UNIT BASE – OUTDOOR UNITS SHALL HAVE A WELDED BASE AND STEEL CROSS MEMBERS FOR STRUCTURAL RIGIDITY AND SUPPORTS THE FULL PERIMETER OF THE AIR HANDLING UNIT. FCU PANELS MUST OVERHANG THE PRIMARY UNIT BASE SUCH THAT NO LEDGE EXISTS FOR WATER TO POOL. THE ENTIRE FCU PERIMETER SHALL BE SEALED FOR ADDITIONAL WATER MANAGEMENT PROTECTION. A DRAIN PAN UNDER THE ENTIRE UNIT OR SECTIONS SHALL NOT BE AN ACCEPTABLE ALTERNATIVE TO PREVENT WATER FROM ENTERING THE BUILDING SPACE. UNIT BASE SHALL BE DESIGNED TO ALLOW THE UNIT TO BE CURB MOUNTED WHEN FIELD-INSTALLED AS INDICATED ON THE SCHEDULE AND DRAWINGS.	A. ALL DAMPERS, WITH THE EXCEPTION OF EXTERNAL BYPASS AND MULTIZONES (IF SCHEDULED), SHALL BE INTERNALLY MOUNTED. DAMPERS SHALL BE PREMIUM ULTRA LOW LEAK AND LOCATED AS INDICATED ON THE SCHEDULE AND PLANS. BLADE ARRANGEMENT (PARALLEL OR OPPOSED) SHALL BE PROVIDED AS INDICATED ON THE SCHEDULE AND DRAWINGS. DAMPERS SHALL BE RUSKIN CDOO DOUBLE-SKIN AIRFOIL DESIGN OR EQUIVALENT FOR MINIMAL AIR LEAKAGE AND PRESSURE DROP. LEAKAGE RATE SHALL NOT EXCEED 3 CFM/SQUARE FOOT AT ONE INCH WATER GAUGE COMPLYING WITH ASHRAE 90.1 MAXIMUM DAMPER LEAKAGE AND SHALL BE AMCA LICENSED FOR CLASS 1A. ALL LEAKAGE TESTING AND PRESSURE RATINGS SHALL BE BASED ON AMCA STANDARD 500-D. MANUFACTURER SHALL SUBMIT BRAND AND MODEL OF DAMPER(S) BEING FURNISHED, IF NOT RUSKIN CDOO.	2.09 REFRIGERATION SYSTEM
4. UNIT ROOF – OUTDOOR UNIT ROOFS SHALL INCORPORATE A STANDING SEAM ON THE EXTERIOR TO ENSURE A RIGID ROOF CONSTRUCTION AND PREVENT WATER INFILTRATION. ROOF ASSEMBLY SHALL OVERHANG ALL WALLS BY 1.5-INCH MINIMUM TO PREVENT SHEETING FROM ROOF TO SIDE PANELS. RAIN GUTTERS SHALL ALSO BE PROVIDED OVER ALL DOORS TO DIRECT RAIN AWAY FROM THE DOOR ASSEMBLY. OUTDOOR ROOFS SHALL BE SLOPED, NOT LESS THAN 0.125 INCHES PER FOOT, FOR WATER DRAINAGE. WHERE OUTDOOR UNITS ARE SHIPPED IN MULTIPLE SECTIONS, PROVIDE STANDING-SEAM JOINERS AT EACH SPLIT WITH ADHESIVE, HARDWARE, AND COVER STRIPS FOR FIELD JOINING BY THE INSTALLING CONTRACTOR.	2.10 ACCESS SECTIONS	A. ALL UNITS SHALL HAVE DIRECT DRIVE HERMETIC, SCROLL TYPE COMPRESSORS WITH CENTRIFUGAL TYPE OIL PUMPS. MOTOR SHALL BE SUCTION GAS COOLED AND SHALL HAVE A VOLTAGE UTILIZATION RANGE OF PLUS OR MINUS TO PERCENT OF UNIT NAMEPLATE.
5. FACTORY SUPPLIED ROOFCURB – ROOF CURBS SHALL BE PROVIDED WHERE INDICATED ON THE PLANS AND SHALL BE GALVANIZED STEEL. ROOF CURB SHALL SUPPORT THE FULL PERIMETER OF THE AIR HANDLING UNIT, INCLUDING PIPE CHASES. A 2" X 4" NOMINAL WOOD NAILING STRIP SHALL BE SUPPLIED ATTACHED TO THE ROOF CURB. WOOD NAILING STRIP SHALL BE OF #4 SPRUCE OR #4 YELLOW PINE. ROOF CURB SHALL INCLUDE FRAME WORK NECESSARY TO SUPPORT SUPPLY AND RETURN DUCT INSTALLATION PRIOR TO UNIT PLACEMENT. ROOF CURB SHALL BE SHIPPED LOOSE FOR FIELD INSTALLATION PRIOR TO UNIT PLACEMENT.	A. ACCESS SECTIONS SHALL BE PROVIDED WHERE INDICATED IN THE SCHEDULE AND PLANS TO ALLOW ADDITIONAL ACCESS FOR INSPECTION, CLEANING, AND MAINTENANCE OF UNIT COMPONENTS. THE UNIT SHALL BE INSTALLED FOR PROPER ACCESS. PROCEDURE FOR PROPER ACCESS, INSPECTION AND CLEANING OF THE UNIT SHALL BE PROVIDED IN THE FCU MANUFACTURER'S MAINTENANCE MANUAL.	B. PROVIDE HIGH EFFICIENCY UNIT WITH 3 STAGES OF COOLING.
2.04 ACCESS DOORS	2.11 VARIABLE FREQUENCY DRIVES (VFDs)	2.10 OUTDOOR AIR SECTION
A. ACCESS DOORS SHALL BE 2-INCH DOUBLE-WALL CONSTRUCTION. INTERIOR AND EXTERIOR SHALL BE OF THE SAME CONSTRUCTION AS THE INTERIOR AND EXTERIOR WALL PANELS.	A. VARIABLE FREQUENCY DRIVES SHALL BE PROVIDED, MOUNTED AND WIRED BY THE FCU MANUFACTURER AS INDICATED ON THE SCHEDULE AND DRAWINGS. ALL STANDARD AND OPTIONAL FEATURES SHALL BE INCLUDED WITHIN THE VFD ENCLOSURE, UNLESS OTHERWISE SPECIFIED. THE VFDs SHALL BE UL LISTED. THE LISTING SHALL ALLOW MOUNTING IN PLENUM OR OTHER AIR HANDLING COMPARTMENTS.	F. PROVIDE ECONOMIZER WITH COMPARATIVE ENTHALPY CONTROL.
B. ALL DOORS SHALL BE PROVIDED WITH A THERMAL BREAK CONSTRUCTION OF DOOR PANEL AND DOOR FRAME.	3.01 EXECUTION	G. PROVIDE ADJUSTABLE MINIMUM POSITION CONTROL LOCATED IN THE ECONOMIZER SECTION OF THE UNIT.
C. GASKETING SHALL BE PROVIDED AROUND THE FULL PERIMETER OF THE DOORS TO PREVENT AIR LEAKAGE.	3.01 INSTALLATION	H. PROVIDE SPRING RETURN MOTOR FOR OUTSIDE AIR DAMPER CLOSURE DURING UNIT SHUT DOWN OR POWER INTERRUPTION.
D. DOOR HARDWARE SHALL BE SURFACE-MOUNTED TO PREVENT THROUGH-CABINET PENETRATIONS THAT COULD LIKELY WEAKEN THE CASING LEAKAGE AND THERMAL PERFORMANCE.	A. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL OF HIS INSTALLATION REQUIREMENTS WITH THE OWNER AND THE OWNER'S SELECTED MECHANICAL CONTRACTOR TO ENSURE THAT A COMPLETE INSTALLATION FOR EACH UNIT IS BEING PROVIDED. COORDINATION EFFORTS SHALL INCLUDE SUCH ITEMS AS UNLOADING AND HOISTING REQUIREMENTS, FIELD WIRING REQUIREMENTS, FIELD PIPING REQUIREMENTS, FIELD DUCTWORK REQUIREMENTS, REQUIREMENTS FOR ASSEMBLY OF FIELD-BOLTED OR WELDED JOINTS, AND ALL OTHER INSTALLATION AND ASSEMBLY REQUIREMENTS.	I. PROVIDE REMOTE POTENTIOMETER FOR MINIMUM POSITION SETTING OF THE ECONOMIZER
E. HANDLE HARDWARE SHALL BE DESIGNED TO PREVENT UNINTENDED CLOSURE.	B. THE FCU MANUFACTURER SHALL PROVIDE ALL SCREWS AND GASKETS FOR JOINING OF SECTIONS IN THE FIELD.	2.11 OPERATING CONTROLS
F. ACCESS DOORS SHALL BE HINGED AND REMOVABLE WITHOUT THE USE OF SPECIALIZED TOOLS.	C. THE MECHANICAL CONTRACTOR SHALL VERIFY THAT THE FOLLOWING ITEMS HAVE BEEN COMPLETED PRIOR TO SCHEDULING THE FCU MANUFACTURER'S FINAL INSPECTION AND START UP:	A. GENERAL: MICROPROCESSOR CONTROLS SHALL BE PROVIDED FOR ALL 24 VOLT CONTROL FUNCTIONS. THE RESIDENT CONTROL ALGORITHMS SHALL MAKE ALL HEATING, COOLING AND VENTILATION DECISIONS IN RESPONSE TO ELECTRONIC SIGNALS FROM SENSORS MEASURING INDOOR AND OUTDOOR TEMPERATURES. THE CONTROL ALGORITHM MAINTAINS ACCURATE TEMPERATURE CONTROL, MINIMIZES DRIFT FROM SETPOINT AND PROVIDES BETTER BUILDING COMFORT. A CENTRALIZED MICROPROCESSOR SHALL PROVIDE ANTI-SHORT CYCLE TIMING AND TIME DELAY BETWEEN COMPRESSORS TO PROVIDE A HIGHER LEVEL OF MACHINE PROTECTION.
G. HINGES SHALL BE INTERCHANGEABLE WITH THE DOOR HANDLE HARDWARE TO ALLOW FOR ALTERNATING DOOR SWING IN THE FIELD TO MINIMIZE ACCESS INTERFERENCE DUE TO UNFORESEEN JOB SITE OBSTRUCTIONS.	1. ALL SPRING-ISOLATED COMPONENTS HAVE HAD THEIR SHIPPING RESTRAINTS REMOVED AND THE COMPONENTS HAVE BEEN LEVELED.	B. CONSTANT VOLUME CONTROLS PROVIDE ALL NECESSARY CONTROLS TO OPERATE ROOFTOP FROM A ZONE BASED TEMPERATURE SENSOR, INCLUDING MICROPROCESSOR UNIT CONTROL AND ECONOMIZER CONTROL.
H. DOOR HANDLE HARDWARE SHALL BE ADJUSTABLE AND VISUALLY INDICATE LOCKING POSITION OF DOOR LATCH EXTERNAL TO THE SECTION.	2. ON ALL FIELD-JOINED UNITS, THAT ALL INTERCONNECTIONS HAVE BEEN COMPLETED, I.E., ELECTRICAL AND CONTROL WIRING, PIPING, CASING JOINTS, BOLTING, WELDING, ETC.	PART 3 EXECUTION
I. ALL DOORS SHALL BE A 60-INCH HIGH WHEN SUFFICIENT UNIT HEIGHT IS AVAILABLE, OR THE MAXIMUM HEIGHT ALLOWED BY THE UNIT HEIGHT.	3. ALL WATER AND STEAM PIPING CONNECTIONS HAVE BEEN COMPLETED AND HYDROSTATICALLY TESTED AND ALL WATER FLOW RATES HAVE BEEN SET IN ACCORDANCE WITH THE CAPACITIES SCHEDULED ON THE DRAWINGS.	3.01 INSTALLATION
J. A SINGLE DOOR HANDLE SHALL BE PROVIDED FOR EACH DOOR LINKING MULTIPLE LATCHING POINTS NECESSARY TO MAINTAIN THE SPECIFIED AIR LEAKAGE INTEGRITY OF THE UNIT.	4. ALL DUCTWORK CONNECTIONS HAVE BEEN COMPLETED AND ALL DUCTWORK HAS BEEN PRESSURE TESTED FOR ITS INTENDED SERVICE.	A. CONTRACTOR SHALL INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
K. AN OPTIONAL SHATTERPROOF WINDOW SHALL BE PROVIDED IN ACCESS DOORS WHERE INDICATED ON THE PLANS. WINDOW SHALL EITHER BE SINGLE PANE, OR THERMAL DUAL PANE, AS DEFINED ON SCHEDULE. WINDOW SHALL BE CAPABLE OF WITHSTANDING UNIT OPERATING PRESSURES AND SHALL BE SAFE FOR VIEWING UV-C LAMPS.	5. ALL POWER WIRING, INCLUDING MOTOR STARTERS AND DISCONNECTS, SERVING THE UNIT HAS BEEN COMPLETED.	B. MOUNT UNITS ON FACTORY BUILT ROOF MOUNTING FRAME PROVIDING WEATERTIGHT ENCLOSURE TO PROTECT DUCTWORK AND UTILITY SERVICES. INSTALL ROOF MOUNTING CURB LEVEL.
2.05 PRIMARY DRAIN PANS (DOAS UNITS ONLY)	6. ALL AUTOMATIC TEMPERATURE AND SAFETY CONTROLS HAVE BEEN COMPLETED.	PACKAGED ROOFTOP ENERGY RECOVERY VENTILATORS
A. ALL COOLING COIL SECTIONS SHALL BE PROVIDED WITH AN INSULATED, DOUBLE-WALL, GALVANIZED DRAIN PAN.	7. ALL DAMPERS ARE FULLY OPERATIONAL.	PART I – GENERAL
B. THE DRAIN PAN SHALL BE DESIGNED IN ACCORDANCE WITH ASHRAE 62.1 BEING OF SUFFICIENT SIZE TO COLLECT ALL CONDENSATION PRODUCED FROM THE COIL AND SLOPED IN TWO PLANES, PITCHED TOWARD DRAIN CONNECTIONS, PROMOTING POSITIVE DRAINAGE TO ELIMINATE STAGNANT WATER CONDITIONS WHEN UNIT IS INSTALLED LEVEL AND TRAPPED PER MANUFACTURER'S REQUIREMENTS.	8. ALL SHIPPING MATERIALS HAVE BEEN REMOVED.	A. PRODUCT SPECIFICATION
C. THE OUTLET SHALL BE LOCATED AT THE LOWEST POINT OF THE PAN AND SHALL BE SUFFICIENT DIAMETER TO PRECLUDE DRAIN PAN OVERFLOW UNDER ANY NORMALLY EXPECTED OPERATING CONDITION.	9. ALL (CLEAN) FILTER MEDIA HAS BEEN INSTALLED IN THE UNITS.	1. ENERGY RECOVERY VENTILATOR (ERV) SHALL BE A PACKAGED UNIT AS MANUFACTURED BY RENWARE AND SHALL TRANSFER BOTH HEAT AND HUMIDITY USING STATIC PLATE CORE TECHNOLOGY. APPROVED MANUFACTURERS: RENWARE AS BASE OF DESIGN, OXYGEN B.
D. ALL DRAIN PAN THREADED CONNECTIONS SHALL BE VISIBLE EXTERNAL TO THE UNIT. THREADED CONNECTIONS UNDER THE UNIT FLOOR SHALL NOT BE ACCEPTED.	3.02 FINAL INSPECTION AND START UP SERVICE	B. QUALITY ASSURANCE
E. DRAIN CONNECTIONS SHALL BE OF THE SAME MATERIAL AS THE PRIMARY DRAIN PAN AND SHALL EXTEND A MINIMUM 2-1/2-INCH BEYOND THE BASE TO ENSURE ADEQUATE ROOM FOR FIELD PIPING OF CONDENSATE TRAPS.	A. AFTER THE MECHANICAL CONTRACTOR HAS PROVIDED ALL WATER AND STEAM PIPING CONNECTIONS, DUCTWORK CONNECTIONS, AND FIELD CONTROL WIRING, AND ELECTRICAL CONTRACTOR HAS PROVIDED ALL THE FIELD POWER WIRING, THE MECHANICAL CONTRACTOR SHALL INSPECT THE INSTALLATION. THE MECHANICAL CONTRACTOR SHALL THEN PERFORM STARTUP OF THE EQUIPMENT.	1. THE ERV CORE SHALL BE WARRANTED TO BE FREE OF MANUFACTURING DEFECTS AND TO RETAIN ITS FUNCTIONAL CHARACTERISTICS, UNDER CIRCUMSTANCES OF NORMAL USE, FOR A PERIOD OF TEN YEARS FROM THE DATE OF PURCHASE. THE BALANCE-OF-UNIT SHALL BE WARRANTED TO BE FREE OF MANUFACTURING DEFECTS AND TO RETAIN ITS FUNCTIONAL CHARACTERISTICS, UNDER CIRCUMSTANCES OF NORMAL USE, FOR A PERIOD OF TWO YEARS FROM THE DATE OF PURCHASE.
F. THE INSTALLING CONTRACTOR IS RESPONSIBLE TO ENSURE THE UNIT IS INSTALLED LEVEL, TRAPPED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS, AND VISUALLY INSPECTED TO ENSURE PROPER DRAINAGE OF CONDENSATE.	B. THE AUTOMATIC TEMPERATURE CONTROL (BUILDING DIRECT DIGITAL CONTROL) CONTRACTOR SHALL BE SCHEDULED TO BE AT THE JOB SITE AT THE TIME OF THE EQUIPMENT START UP.	PART II – PERFORMANCE
G. COIL SUPPORT MEMBERS INSIDE THE DRAIN PAN SHALL BE OF THE SAME MATERIAL AS THE DRAIN PAN AND COIL CASING.	C. THE MECHANICAL CONTRACTOR, SHALL PERFORM THE FOLLOWING TESTS AND SERVICES AND SUBMIT A REPORT OUTLINING THE RESULTS:	A. ENERGY TRANSFER
H. IF DRAIN PANS ARE REQUIRED FOR HEATING COILS, ACCESS SECTIONS, OR MIXING SECTIONS THEY WILL BE INDICATED IN THE PLANS.	1. RECORD DATE, TIME, AND PERSON(S) PERFORMING SERVICE.	THE ERV SHALL BE CAPABLE OF TRANSFERRING BOTH SENSIBLE AND LATENT ENERGY BETWEEN AIRSTREAMS. LATENT ENERGY TRANSFER SHALL BE ACCOMPLISHED BY DIRECT WATER VAPOR TRANSFER FROM ONE AIR STREAM TO THE OTHER, WITHOUT EXPOSING TRANSFER MEDIA IN SUCCEEDING CYCLES DIRECTLY TO THE EXHAUST AIR AND THEN TO THE FRESH AIR.
2.06 FANS	2. LUBRICATE ALL MOVING PARTS.	B. PASSIVE FROST CONTROL
A. FAN SECTIONS SHALL HAVE A MINIMUM OF ONE HINGED AND LATCHED ACCESS DOOR LOCATED ON THE DRIVE SIDE OF THE UNIT TO ALLOW INSPECTION AND MAINTENANCE OF THE FAN, MOTOR, AND DRIVE COMPONENTS.	3. CHECK ALL MOTOR AND STARTER POWER LUSS AND TIGHTEN AS REQUIRED.	THE ERV CORE SHALL PERFORM WITHOUT CONDENSING OR FROSTING UNDER NORMAL OPERATING CONDITIONS (DEFINED AS OUTSIDE TEMPERATURES ABOVE -10°F AND INSIDE RELATIVE HUMIDITY BELOW 40%). OCCASIONAL MORE EXTREME CONDITIONS SHALL NOT AFFECT THE USUAL FUNCTION, PERFORMANCE OR DURABILITY OF THE CORE. NO CONDENSATE DRAINS WILL BE ALLOWED.
B. PROVIDE FANS OF TYPE AND CLASS AS SPECIFIED ON THE SCHEDULE. ALL FANS SHALL BE STATICALLY AND DYNAMICALLY TESTED BY THE MANUFACTURER FOR VIBRATION AND ALIGNMENT AS AN ASSEMBLY AT THE OPERATING RPM TO MEET DESIGN SPECIFICATIONS. FANS THAT ARE SELECTED WITH INVERTER BALANCING SHALL FIRST BE DYNAMICALLY BALANCED AT DESIGN RPM. THE FANS THEN WILL BE CHECKED IN THE FACTORY FROM 25% TO 100% OF DESIGN RPM TO INSURE THEY ARE OPERATING WITHIN VIBRATION TOLERANCE SPECIFICATIONS, AND THAT THERE ARE NO RESONANT FREQUENCY ISSUES THROUGHOUT THIS OPERATING RANGE. INVERTER BALANCING THAT REQUIRES LOCKOUT FREQUENCIES INPUTTED INTO A VARIABLE FREQUENCY DRIVE IN ORDER TO BYPASS RESONANT FREQUENCIES SHALL NOT BE ACCEPTABLE. IF SUPPLIED IN THIS MANNER BY THE UNIT MANUFACTURER, THE CONTRACTOR WILL BE RESPONSIBLE FOR REBALANCING IN THE FIELD AFTER UNIT INSTALLATION. FANS SELECTED WITH INVERTER BALANCING SHALL HAVE A MAINTENANCE FREE GROUNDING ASSEMBLY INSTALLED ON THE FAN MOTOR TO DISCHARGE BOTH STATIC AND INDUCED SHAFT CURRENTS TO GROUND.	4. VERIFY ALL ELECTRICAL POWER CONNECTIONS.	C. CONTINUOUS VENTILATION
C. DIRECT DRIVE PLENUM FANS WITH INTEGRAL FRAME MOTORS, SHALL BE MOUNTED ON ISOLATION BASES. FAN SHALL BE DYNAMICALLY BALANCED THROUGHOUT THE OPERATING RANGE TO A BV-3 (0.20 IN/S) PER AMCA 204 TEST STANDARD. FAN AND MOTOR SHALL BE INTERNALLY ISOLATED WITH SPRING ISOLATORS. A FLEXIBLE CONNECTION SHALL BE INSTALLED BETWEEN FAN AND UNIT CASING TO ENSURE COMPLETE ISOLATION. FLEXIBLE CONNECTION SHALL COMPLY WITH NFPA 90A AND UL 181 REQUIREMENTS. IF FANS AND MOTORS ARE NOT INTERNALLY ISOLATED, THEN THE ENTIRE UNIT SHALL BE EXTERNALLY ISOLATED FROM THE BUILDING, INCLUDING SUPPLY AND RETURN DUCT WORK, PIPING, AND ELECTRICAL CONNECTIONS. EXTERNAL ISOLATION SHALL BE FURNISHED BY THE INSTALLING CONTRACTOR IN ORDER TO AVOID TRANSMISSION OF NOISE AND VIBRATION THROUGH THE DUCTWORK AND BUILDING STRUCTURE.	5. CONDUCT A START UP INSPECTION PER THE FCU MANUFACTURER'S RECOMMENDATIONS.	UNIT SHALL HAVE THE CAPACITY TO OPERATE CONTINUOUSLY WITHOUT THE NEED FOR BYPASS, RECIRCULATION, PRE-HEATERS, OR DEFROST CYCLES UNDER NORMAL OPERATING CONDITIONS.
D. MOTORS AND DRIVES	6. RECORD FAN MOTOR VOLTAGE AND AMPERAGE READINGS.	D. POSITIVE AIRSTREAM SEPARATION
1. MOTORS SHALL MEET OR EXCEED ALL NEMA STANDARDS PUBLICATION MG 1 – 2006 REQUIREMENTS AND COMPLY WITH NEMA PREMIUM EFFICIENCY LEVELS WHEN APPLICABLE. MOTORS SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF NEC AND SHALL BE UL LISTED.	7. CHECK FAN ROTATION AND SPIN WHEEL TO VERIFY THAT ROTATION IS FREE AND DOES NOT RUB OR BIND.	WATER VAPOR TRANSFER SHALL BE THROUGH MOLECULAR TRANSPORT BY HYDROSCOPIC RESIN AND SHALL NOT BE ACCOMPLISHED BY POROUS PLATE MECHANISMS. EXHAUST AND FRESH AIRSTREAMS SHALL TRAVEL AT ALL TIMES IN SEPARATE PASSAGES, AND AIRSTREAMS SHALL NOT MIX.
2. FAN MOTORS SHALL BE HEAVY DUTY, OPEN DRIP-PROOF OPERABLE AT SCHEDULED VOLTAGE, IF APPLICABLE, MOTOR EFFICIENCY SHALL MEET OR EXCEED NEMA PREMIUM EFFICIENCIES.	8. CHECK FAN FOR EXCESSIVE VIBRATION.	E. LAMINAR FLOW
3. DIRECT DRIVEN FANS UTILIZING INTEGRAL FRAME MOTORS SHALL USE 2-POLE (3600 RPM), 4-POLE (1800 RPM) OR 6-POLE (1200 RPM) MOTORS, NEMA DESIGN B, WITH CLASS B INSULATION CAPABLE TO OPERATE CONTINUOUSLY AT 104 DEG F (40 DEG C) WITHOUT TRIPPING OVERLOADS.	9. REMOVE ALL FOREIGN LOOSE MATERIAL IN DUCTWORK LEADING TO AND FROM THE FAN AND IN THE FAN ITSELF.	AIRFLOW THROUGH THE ERV CORE SHALL BE LAMINAR OVER THE PRODUCTS ENTIRE OPERATING AIRFLOW RANGE, AVOIDING DEPOSITION OF PARTICULATES ON THE INTERIOR OF THE ENERGY EXCHANGE PLATE MATERIAL.
4. MOTORS SHALL HAVE A +/- 10 PERCENT VOLTAGE UTILIZATION RANGE TO PROTECT AGAINST VOLTAGE VARIATION.	10.DISENGAGE ALL SHIPPING FASTENERS ON VIBRATION ISOLATION EQUIPMENT.	PART III – PRODUCT
2.07 COILS	11.CHECK SAFETY GUARDS TO INSURE THEY ARE PROPERLY SECURED.	A. CONSTRUCTION
A. COILS SECTION HEADER END PANEL SHALL BE REMOVABLE TO ALLOW FOR REMOVAL AND REPLACEMENT OF COILS WITHOUT IMPACTING THE STRUCTURAL INTEGRITY OF THE UNIT.	12.SECURE ALL ACCESS DOORS TO THE FAN, THE UNIT AND THE DUCTWORK.	1. THE ENERGY RECOVERY COMPONENT SHALL BE OF FIXED-PLATE CROSS-FLOW CONSTRUCTION, WITH NO MOVING PARTS.
B. INSTALL COILS SUCH THAT HEADERS AND RETURN BENDS ARE ENCLOSED BY UNIT CASING TO ENSURE THAT IF CONDENSATE FORMS ON THE HEADER OR RETURN BENDS, IT IS CAPTURED BY THE DRAIN PAN UNDER THE COIL.	13.SWITCH ELECTRICAL SUPPLY "ON" AND ALLOW FAN TO REACH FULL SPEED.	2. NO CONDENSATE DRAIN PANS OR DRAINS SHALL BE ALLOWED AND UNIT SHALL BE CAPABLE OF OPERATING IN BOTH WINTER AND SUMMER CONDITIONS WITHOUT GENERATING CONDENSATE.
C. COILS SHALL BE MANUFACTURED WITH PLATE FINS TO MINIMIZE WATER CARRYOVER AND MAXIMIZE AIRSIDE THERMAL EFFICIENCY. FIN TUBE HOLES SHALL HAVE DRAWN AND BELLED COLLARS TO MAINTAIN CONSISTENT FIN SPACING TO ENSURE PERFORMANCE AND AIR PRESSURE DROP ACROSS THE COIL AS SCHEDULED. TUBES SHALL BE MECHANICALLY EXPANDED AND BONDED TO FIN COLLARS FOR MAXIMUM THERMAL CONDUCTIVITY. USE OF SOLDERING OR TINNING DURING THE FIN-TO-TUBE BONDING PROCESS IS NOT ACCEPTABLE DUE TO THE INHERENT THERMAL STRESS AND POSSIBLE LOSS OF BONDING AT THAT JOINT.	14.PHYSICALLY CHECK EACH FAN AT START UP AND SHUT DOWN TO INSURE NO ABNORMAL OR PROBLEM CONDITIONS EXIST.	3. THE UNIT CASE SHALL BE CONSTRUCTED OF G90 GALVANIZED, 20-GAUGE STEEL, WITH LAPPED CORNERS AND ZINC PLATED SCREW FASTENERS. THE UNIT ROOF SHALL BE ONE PIECE OR HAVE WEATERTIGHT STANDING SEAM JOINTS AND SHALL OVERLAP WALL PANELS AND DOORS IN ORDER TO POSITIVELY SHED WATER.
D. CONSTRUCT COIL CASINGS OF GALVANIZED STEEL. END SUPPORTS AND TUBE SHEETS SHALL HAVE BELLED TUBE HOLES TO MINIMIZE WEAR OF THE TUBE WALL DURING THERMAL EXPANSION AND CONTRACTION OF THE TUBE.	15.CHECK ENTERING AND LEAVING AIR TEMPERATURES (DRY BULB AND WET BULB) AND SIMULTANEOUSLY RECORD ENTERING AND LEAVING CHILLED WATER TEMPERATURES AND FLOW, STEAM PRESSURES AND FLOW, AND OUTSIDE AIR TEMPERATURE.	4. ACCESS DOORS SHALL PROVIDE EASY ACCESS TO BLOWERS, ERV CORES, AND FILTERS. DOORS SHALL HAVE AN AIRTIGHT COMPRESSION SEAL USING CLOSED CELL FOAM GASKETS RATED FOR OUTDOOR EXPOSURE. PRESSURE TAPS, WITH CAPTIVE PLUGS, SHALL BE PROVIDED ALLOWING CROSS-CORE PRESSURE MEASUREMENT ALLOWING FOR ACCURATE AIRFLOW MEASUREMENT.
E. ALL COILS SHALL BE COMPLETELY CLEANED PRIOR TO INSTALLATION INTO THE AIR HANDLING UNIT. COMPLETE FIN BUNDLE IN DIRECTION OF AIRFLOW SHALL BE DEGREASED AND STEAM CLEANED TO REMOVE ANY LUBRICANTS USED IN THE MANUFACTURING OF THE FINS, OR DIRT THAT MAY HAVE ACCUMULATED, IN ORDER TO MINIMIZE THE CHANCE FOR WATER CARRYOVER.	16.CHECK ALL CONTROL SEQUENCES.	5. WEATHERHOODS SHALL BE SCREENED TO EXCLUDE BIRDS AND ANIMALS. INLET WEATHERHOODS SHALL BE SIZED TO MAINTAIN INLET VELOCITIES BELOW 500 FPM, AND EQUIPPED WITH RAIN EXCLUDER BAFFLES.
F. STEAM HEATING COILS	PACKAGED ROOFTOP AIR CONDITIONING UNITS	6. CASE WALLS AND DOORS SHALL BE INSULATED WITH 1 INCH, 4 POUND DENSITY, FOL/SCRM FACED, HIGH-DENSITY FIBERGLASS BOARD INSULATION, PROVIDING A CLEANABLE SURFACE AND ELIMINATING THE POSSIBILITY OF EXPOSING THE FRESH AIR TO GLASS FIBERS, AND WITH MINIMUM R-VALUE OF 4.3 (HRF12F/BTU).
1. STEAM SUPPLY, CONDENSATE RETURN, AND VACUUM BREAKER CONNECTIONS SHALL BE CLEARLY LABELED ON UNIT EXTERIOR.	PART 1 GENERAL PACKAGED ROOFTOP AIR CONDITIONING UNITS	7. THE ERV CORES SHALL BE PROTECTED BY A MERV-8 RATED, 2" NOMINAL, PLEATED, DISPOSABLE FILTER IN BOTH AIRSTREAMS.
2. COILS SHALL BE NON-FREEZE, STEAM DISTRIBUTING TYPE. COILS SHALL BE PITCHED IN UNITS FOR PROPER DRAINAGE OF STEAM CONDENSATE FROM COILS.	1.01 SUBMITTALS	8. UNIT SHALL HAVE SINGLE-POINT POWER CONNECTION AND A SINGLE-POINT 24 VAC CONTACTOR CONTROL CONNECTION.
3. COILS SHALL BE PROOF TESTED TO 300 PSIG AND LEAK TESTED TO 200 PSIG AIR PRESSURE UNDER WATER.	A. SUBMIT UNIT PERFORMANCE DATA INCLUDING: CAPACITY, NOMINAL AND OPERATING PERFORMANCE, ACCESSORIES DESCRIBING CONSTRUCTION, COMPONENTS AND OPTIONS, ELECTRICAL REQUIREMENTS AND CONNECTION POINTS.	9. BLOWER MOTORS SHALL BE PREMIUM EFFICIENCY, IEISA COMPLIANT FOR ENERGY EFFICIENCY. THE BLOWER MOTORS SHALL BE TOTALLY ENCLOSED (TEFC) AND BE SHALL BE SUPPLIED WITH FACTORY INSTALLED MOTOR STARTERS (HEXZ AND HEXB 208-230/460V MODELS ARE OPEN DRIP-PROOF), DIRECT DRIVE MODELS (EV450 AND HEXX MODELS) SHALL BE IEISA-COMPLIANT FOR ENERGY EFFICIENCY WITH OPEN DRIP PROOF DESIGN AND INTEGRAL THERMAL PROTECTION.
4. HEADERS SHALL BE CONSTRUCTED OF CAST IRON.	B. SUBMIT SHOP DRAWINGS INDICATING OVERALL DIMENSIONS AS WELL AS INSTALLATION, OPERATION AND SERVICES CLEARANCES. INDICATE LEFT POINTS AND RECOMMENDATIONS AND CENTER OF GRAVITY. INDICATE UNIT SHIPPING, INSTALLATION AND OPERATING WEIGHTS INCLUDING DIMENSIONS. SHOP DRAWINGS SUBMITTED FOR APPROVAL SHALL BE ACCOMPANIED BY A COPY OF THE PURCHASE AGREEMENT BETWEEN THE CONTRACTOR AND AN AUTHORIZED SERVICE REPRESENTATIVE OF THE MANUFACTURER FOR CHECK, TEST AND START UP AND FIRST YEAR SERVICE.	10. BLOWERS SHALL BE QUIET RUNNING, FORWARD CURVE TYPE AND BE EITHER DIRECT DRIVE (EV450 AND HEXX ONLY) OR BELT DRIVE. HEX1.5X SHALL BE BACKWARD INCLINE, MOTORIZED IMPELLER TYPE PACKAGES. HEXZ AND HEXX UNITS USE BACKWARD INCLINE, BELT DRIVE BLOWER PACKAGES. BELT DRIVE MOTORS SHALL BE PROVIDED WITH ADJUSTABLE PULLEYS AND MOTOR MOUNTS ALLOWING FOR BLOWER SPEED ADJUSTMENT, PROPER MOTOR SHAFT ORIENTATION AND PROPER BELT TENSIONING.
5. TUBES SHALL CONSIST OF 11/16 INCH O.D., MINIMUM 0.031 INCH THICK, COPPER INNER TUBES AND 1 INCH O.D., MINIMUM .031 COPPER OUTER TUBES. FINS SHALL BE OF ALUMINUM MATERIAL.	PART 2 PRODUCTS	11. THE UNIT ELECTRICAL BOX SHALL INCLUDE A FACTORY INSTALLED, NON-FUSED DISCONNECT SWITCH AND A 24 VAC, CLASS II TRANSFORMER/RELAY PACKAGE.
6. INNER TUBES SHALL HAVE ORIFICES THAT ENSURE EVEN STEAM DISTRIBUTION THROUGHOUT THE LENGTH OF THE OUTER TUBE. ORIFICES SHALL DIRECT STEAM TOWARD RETURN CONNECTIONS TO ENSURE STEAM CONDENSATE IS PROPERLY DRAINED FROM COILS TO PREVENT FLASHING OF CONDENSATE.	2.01 SUMMARY	12. THE ERV SHALL BE PROVIDED INVERTER-READY ALLOWING FOR APPLICATIONS OF INVERTERS SUPPLIED AND INSTALLED BY OTHERS.
G. REFRIGERANT COOLING COILS (DOAS UNITS ONLY)	A. THE CONTRACTOR SHALL FURNISH AND INSTALL PACKAGE ROOFTOP UNIT(S) AS SHOWN AND SCHEDULED ON THE CONTRACT DOCUMENTS. THE UNIT(S) SHALL BE INSTALLED IN ACCORDANCE WITH THIS SPECIFICATION AND PERFORM AT THE SPECIFIED CONDITIONS AS SCHEDULED. APPROVED MANUFACTURERS' TRANE AS BASE OF DESIGN, DAIKIN.	B. OPTIONS (SELECT OPTIONS BASED ON APPLICATION REQUIREMENTS)
1. COILS SHALL BE PROOF TESTED TO 450 PSIG AND LEAK TESTED TO 300 PSIG AIR PRESSURE UNDER WATER. AFTER TESTING, INSIDES OF TUBES SHALL BE AIR DRIED, CHARGED WITH DRY NITROGEN OR DRY AIR, AND SEALED TO PREVENT CONTAMINATION.	2.02 GENERAL UNIT DESCRIPTION	1. PROVIDE UNIT AND DUCT CONNECTION ORIENTATION PER PROJECT SCHEDULE.
2. REFRIGERANT SUCTION AND LIQUID HEADERS SHALL BE CONSTRUCTED OF COPPER TUBING. SUCTION AND LIQUID CONNECTIONS SHALL PENETRATE UNIT CASINGS TO ALLOW FOR SWEAT CONNECTIONS TO REFRIGERANT LINES.	A. UNIT(S) FURNISHED AND INSTALLED SHALL BE PACKAGED ROOFTOP(S) AS SCHEDULED ON CONTRACT DOCUMENTS AND THESE SPECIFICATIONS. UNIT(S) SHALL CONSIST OF INSULATED WEATHER-TIGHT CASING WITH COMPRESSOR(S), AIR-COOLED CONDENSER COIL, CONDENSER FANS, EVAPORATOR COIL, RETURN-AIR FILTERS, SUPPLY MOTORS AND UNIT CONTROLS.	2. PROVIDE DOUBLE WALL CONSTRUCTION WITH 24-GAUGE GALVANIZED STEEL LINER.
3. TUBES SHALL BE 3/8-INCH .012 COPPER, WITH ALUMINUM FINS.	B. UNIT(S) SHALL BE 100% FACTORY RUN TESTED AND FULLY CHARGED WITH R-410A.	3. UNITS ARE AVAILABLE SINGLE OR THREE PHASE AT A FULL RANGE OF OPERATING VOLTAGES. SEE PROJECT SCHEDULE.
4. COILS SHALL HAVE EQUALIZING TYPE VERTICAL DISTRIBUTORS SIZED IN CONJUNCTION WITH CAPACITIES OF COILS.	C. UNIT(S) SHALL HAVE LABELS, DECALS, AND/OR TAGS TO AID IN THE SERVICE OF THE UNIT AND INDICATE CAUTION AREAS.	4. PROVIDE MOTOR HORSEPOWER AS SPECIFIED IN PROJECT SCHEDULE.
5. COOLING COIL WILL BE PROVIDED WITH LEV KIT TO OPERATE WITH A VRF-STYLE CONDENSING UNIT.	D. UNITS SHALL BE CONVERTIBLE AIRFLOW DESIGN AS MANUFACTURED.	5. PROVIDE FACTORY INSTALLED DISCONNECT FUSES.
2.08 DAMPERS	E. WIRING INTERNAL TO THE UNIT SHALL BE COLORED AND NUMBERED FOR IDENTIFICATION.	6. PROVIDE FACTORY INSTALLED VARIABLE FREQUENCY DRIVES (AVAILABLE FOR HEXX (3 PHASE) AND ALL MODELS HEXZ AND LARGER) ALLOWING EITHER PRESET OR VARIABLE SPEED OPERATION WITH APPROPRIATE 0-10 VOLT DC OR DDC CONTROL SIGNAL.
A. ALL DAMPERS, WITH THE EXCEPTION OF EXTERNAL BYPASS AND MULTIZONES (IF SCHEDULED), SHALL BE INTERNALLY MOUNTED. DAMPERS SHALL BE PREMIUM ULTRA LOW LEAK AND LOCATED AS INDICATED ON THE SCHEDULE AND PLANS. BLADE ARRANGEMENT (PARALLEL OR OPPOSED) SHALL BE PROVIDED AS INDICATED ON THE SCHEDULE AND DRAWINGS. DAMPERS SHALL BE RUSKIN CDOO DOUBLE-SKIN AIRFOIL DESIGN OR EQUIVALENT FOR MINIMAL AIR LEAKAGE AND PRESSURE DROP. LEAKAGE RATE SHALL NOT EXCEED 3 CFM/SQUARE FOOT AT ONE INCH WATER GAUGE COMPLYING WITH ASHRAE 90.1 MAXIMUM DAMPER LEAKAGE AND SHALL BE AMCA LICENSED FOR CLASS 1A. ALL LEAKAGE TESTING AND PRESSURE RATINGS SHALL BE BASED ON AMCA STANDARD 500-D. MANUFACTURER SHALL SUBMIT BRAND AND MODEL OF DAMPER(S) BEING FURNISHED, IF NOT RUSKIN CDOO.	2.03 UNIT CASING	7. PROVIDE EOM CONTROLLED MOTORS (AVAILABLE FOR EV450, HEXX AND HEX1.5X MODELS) ALLOWING EITHER TWO PRESET SPEEDS OR VARIABLE SPEED OPERATION WITH A 0-10 VOLT DC CONTROL SIGNAL.
2.10 ACCESS SECTIONS	A. CABINET: GALVANIZED STEEL WITH BAKED ENAMEL FINISH. STRUCTURAL MEMBERS WITH ACCESS DOORS AND REMOVABLE PANELS SHALL BE A MINIMUM 22 GAUGE.	8. PROVIDE FACTORY INSTALLED ISOLATION DAMPERS FOR EITHER OR BOTH AIR STREAMS (AVAILABLE FOR ALL MODELS EXCEPT EV450RT, AND RTC MODELS). THE INSULATED DAMPERS SHALL BE OF A LOW LEAKAGE DESIGN AND SHALL NOT RESTRICT THE AIRSTREAM, REDUCING AIRFLOW, IN ANY WAY. THE DAMPERS SHALL BE OPENED WITH A MOTOR ACTUATOR POWERED BY THE STANDARD UNIT TRANSFORMER PACKAGE AND HAVE A SPRING RETURN FOR LOW OFF-POSITION POWER CONSUMPTION.
A. ACCESS SECTIONS SHALL BE PROVIDED WHERE INDICATED IN THE SCHEDULE AND PLANS TO ALLOW ADDITIONAL ACCESS FOR INSPECTION, CLEANING, AND MAINTENANCE OF UNIT COMPONENTS. THE UNIT SHALL BE INSTALLED FOR PROPER ACCESS. PROCEDURE FOR PROPER ACCESS, INSPECTION AND CLEANING OF THE UNIT SHALL BE PROVIDED IN THE FCU MANUFACTURER'S MAINTENANCE MANUAL.	B. UNITS CABINET SURFACE SHALL BE TESTED 672 HOURS IN SALT SPRAY TEST IN COMPLIANCE WITH ASTM B117.	9. PROVIDE FACTORY INSTALLED FILTER MONITORS FOR EACH AIRSTREAM.
2.11 VARIABLE FREQUENCY DRIVES (VFDs)	C. CABINET CONSTRUCTION SHALL ALLOW FOR ALL SERVICE/ MAINTENANCE FROM ONE SIDE OF THE UNIT.	10. PROVIDE MERV-13 FILTERS FOR FINAL INSTALLATION AFTER CONSTRUCTION PHASE.
A. VARIABLE FREQUENCY DRIVES SHALL BE PROVIDED, MOUNTED AND WIRED BY THE FCU MANUFACTURER AS INDICATED ON THE SCHEDULE AND DRAWINGS. ALL STANDARD AND OPTIONAL FEATURES SHALL BE INCLUDED WITHIN THE VFD ENCLOSURE, UNLESS OTHERWISE SPECIFIED. THE VFDs SHALL BE UL LISTED. THE LISTING SHALL ALLOW MOUNTING IN PLENUM OR OTHER AIR HANDLING COMPARTMENTS.	D. CABINET TOP COVER SHALL BE ONE PIECE CONSTRUCTION OR WHERE SEAMS EXIST, IT SHALL BE DOUBLE-HEMMED AND GASKET-SEALED.	11. PROVIDE 14 INCH HIGH, NON-PITCHED ROOF CURBS AS AVAILABLE FROM THE FACTORY. PITCHED CURBS, VIBRATION CURBS, SEISMIC CURBS AND OTHER CUSTOM CURBS ARE AVAILABLE DIRECTLY FROM CURB MANUFACTURER.
PART 3 – EXECUTION	E. ACCESS PANELS: WATER- AND AIR-TIGHT PANELS WITH HANDLES SHALL PROVIDE ACCESS TO FILTERS, HEATING SECTION, RETURN AIR FAN SECTION, SUPPLY AIR FAN SECTION, EVAPORATOR COIL SECTION, AND UNIT CONTROL SECTION.	12. RTC (ROOFTOP CONNECTION) UNITS SHALL HAVE RETURN AIR AND FRESH AIR DUCTS CONFIGURED TO PERMIT DIRECT REC-IN TO ROOFTOP AIR HANDLERS USING FACTORY OFFERED TRANSITION PIECE. (SEE SEPARATE SPECIFICATION FOR FACTORY TRANSITION AVAILABILITY.)
3.01 INSTALLATION	F. UNITS BASE PAN SHALL HAVE A RAISED 1 1/8 INCH HIGH LIP AROUND THE SUPPLY AND RETURN OPENINGS FOR WATER INTEGRITY.	PART IV – INSTALLATION
A. CONTRACTOR SHALL INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.	G. PROVIDE 3/8 INCH FOL FACED, FIRE RETARDANT PERMANENT, ODORLESS GLASS FIBER MATERIAL. ALL EDGES MUST BE CAPTURED SO THAT THERE IS NO INSULATION EXPOSED IN THE AIR STREAM.	A. UNIT LOCATION AND PLACEMENT
B. MOUNT UNITS ON FACTORY BUILT ROOF MOUNTING FRAME PROVIDING WEATERTIGHT ENCLOSURE TO PROTECT DUCTWORK AND UTILITY SERVICES. INSTALL ROOF MOUNTING CURB LEVEL.	H. THE BASE PAN SHALL HAVE NO PENETRATIONS WITHIN THE PERIMETER OF THE CURB OTHER THAT THE RAISED 1 1/8 INCH HIGH DOWN FLOW SUPPLY/RETURN OPENINGS TO PROVIDE AND AVOID WATER INTEGRITY PRECAUTION.	1. LOCATE AND ORIENT UNIT TO PROVIDE THE SHORTEST AND MOST STRAIGHT DUCT CONNECTIONS.PROVIDE SERVICE CLEARANCES AS INDICATED ON THE PLANS. LOCATE UNITS DISTANT FROM SOUND CRITICAL OCCUPANCIES.
PACKAGED ROOFTOP ENERGY RECOVERY VENTILATORS	I. PROVIDE OPENINGS EITHER ON SIDE OF UNIT OR THROUGH THE BASE FOR POWER, CONTROL, CONDENSATE, AND GAS CONNECTIONS.	2. INSTALL A STRUCTURALLY SOUND, WEATERTIGHT, LEVEL AND PROPERLY INSULATED ROOF CURB WITH NAILERS, CURB GASKET AND TIE-DOWNS TO MEET LOCAL WIND LOAD REQUIREMENTS.
PART I – GENERAL	J. THE BASE OF THE UNIT SHALL HAVE 3 SIDES FOR FORKLIFT PROVISIONS. THE BASE OF THE UNITS SHALL HAVE RIGGING/LIFTING HOLES FOR CRANE MANEUVERING.	
A. PRODUCT SPECIFICATION	2.04 AIR FILTERS	
1. ENERGY RECOVERY VENTILATOR (ERV) SHALL BE A PACKAGED UNIT AS MANUFACTURED BY RENWARE AND SHALL TRANSFER BOTH HEAT AND HUMIDITY USING STATIC PLATE CORE TECHNOLOGY. APPROVED MANUFACTURERS: RENWARE AS BASE OF DESIGN, OXYGEN B.	A. AIR FILTERS: FACTORY INSTALLED FILTERS SHALL MOUNT INTEGRAL WITHIN THE UNIT AND SHALL BE ACCESSIBLE THROUGH ACCESS PANELS. TWO-INCH THICK GLASS FIBER DISPOSABLE MEDIA FILTERS SHALL BE PROVIDED.	
B. QUALITY ASSURANCE	2.05 FANS AND MOTORS	
1. THE ERV CORE SHALL BE WARRANTED TO BE FREE OF MANUFACTURING DEFECTS AND TO RETAIN ITS FUNCTIONAL CHARACTERISTICS, UNDER CIRCUMSTANCES OF NORMAL USE, FOR A PERIOD OF TEN YEARS FROM THE DATE OF PURCHASE. THE BALANCE-OF-UNIT SHALL BE WARRANTED TO BE FREE OF MANUFACTURING DEFECTS AND TO RETAIN ITS FUNCTIONAL CHARACTERISTICS, UNDER CIRCUMSTANCES OF NORMAL USE, FOR A PERIOD OF TWO YEARS FROM THE DATE OF PURCHASE.	A. PROVIDE EVAPORATOR FAN SECTION WITH FORWARD CURVED, DOUBLE WIDTH, DOUBLE INLET, CENTRIFUGAL TYPE FAN.	
PART II – PERFORMANCE	B. PROVIDE SELF-ALIGNING, GREASE LUBRICATED, BALL OR SLEEVE BEARINGS WITH PERMANENT LUBRICATION FITTINGS.	
A. ENERGY TRANSFER	C. OUTDOOR AND INDOOR FAN SHALL BE PERMANENTLY LUBRICATED AND HAVE INTERNAL THERMAL OVERLOAD PROTECTION.	
THE ERV SHALL BE CAPABLE OF TRANSFERRING BOTH SENSIBLE AND LATENT ENERGY BETWEEN AIRSTREAMS. LATENT ENERGY TRANSFER SHALL BE ACCOMPLISHED BY DIRECT WATER VAPOR TRANSFER FROM ONE AIR STREAM TO THE OTHER, WITHOUT EXPOSING TRANSFER MEDIA IN SUCCEEDING CYCLES DIRECTLY TO THE EXHAUST AIR AND THEN TO THE FRESH AIR.	D. OUTDOOR FANS SHALL BE DIRECT DRIVE, STATICALLY AND DYNAMICALLY BALANCED,	

(E) PANEL SCHEDULE "LH-B (SECTION #1)"																
PANEL	"LH-B"					BUS	400	AMP	MAIN CIRCUIT BREAKER			VOLTAGE	277/480V, 3PH, 4 WIRE			
LOAD	-					POLES	90					FED FROM:	MDP (CKT#1 400A C/B)			
MOUNTING	SURFACE					SPEC	-					AIC SYMM	-			
DESCRIPTION	WIRE	GRD.	COND.	TRIP	CKT.	A PHASE	VA B PHASE	VA C PHASE	CKT.	TRIP	COND.	GRD.	WIRE	DESCRIPTION		
LIGHTING	12	12	3/4"	20A	1	2700 3100			2	20A	3/4"	12	12	LIGHTING		
LIGHTING	12	12	3/4"	20A	3		2700 2300		4	20A	3/4"	12	12	LIGHTING		
LIGHTING	12	12	3/4"	20A	5			1500 2000	6	20A	3/4"	12	12	LIGHTING		
LIGHTING	12	12	3/4"	20A	7	2200 2000			8	20A	3/4"	12	12	LIGHTING		
LIGHTING CORRIDOR/ACTIVITIES	12	12	3/4"	20A	9		1600 2000		10	20A	3/4"	12	12	LIGHTING		
LIGHTING CORRIDOR/ACTIVITIES	12	12	3/4"	20A	11			1200 2700	12	20A	3/4"	12	12	LTGS CAFE FACULTY/LOCKERS		
LIGHTING CAFETERIA DINING	12	12	3/4"	20A	13	2700 1300			14	20A	3/4"	12	12	LTGS CAFE FACULTY/GALLERY		
LIGHTING CAFETERIA DINING	12	12	3/4"	20A	15		2400 1800		16	20A	3/4"	12	12	LTGS SERVING AREA/STORAGE		
LIGHTING CAFETERIA DINING	12	12	3/4"	20A	17			2400 1000	18	20A	3/4"	12	12	LIGHTING SERVING AREA		
RTU-A-1	10	10	3/4"	25A	19	3100 6900			20	50A	1"	8	6	RTU-A-2		
					21		3100 6900		22							
					23			3100 6900	24							
RTU-B-1	12	12	3/4"	15A	25	2400 3900			26	35A	3/4"	10	8	RTU-A-4		
					27		2400 3900		28							
					29			2400 3900	30							
EF-A-2	12	12	3/4"	20A	31	900 5400			32	45A	1"	8	6	RTU-B-2		
					33		900 5400		34							
					35			900 5400	36							
SPARE				175A	37	-	-		38	225A				SPARE		
					39		-	-	40							
					41		-	-	42							
SUBTOTAL						-	-	-								
TOTAL CONNECTED LOAD						-	va	-	amps	(XXX KVA / 480V * 73) = AMPERES						
TOTAL DESIGN LOAD						-	va	-	amps							
125% TOTAL LOAD						-	kva	-	amps							

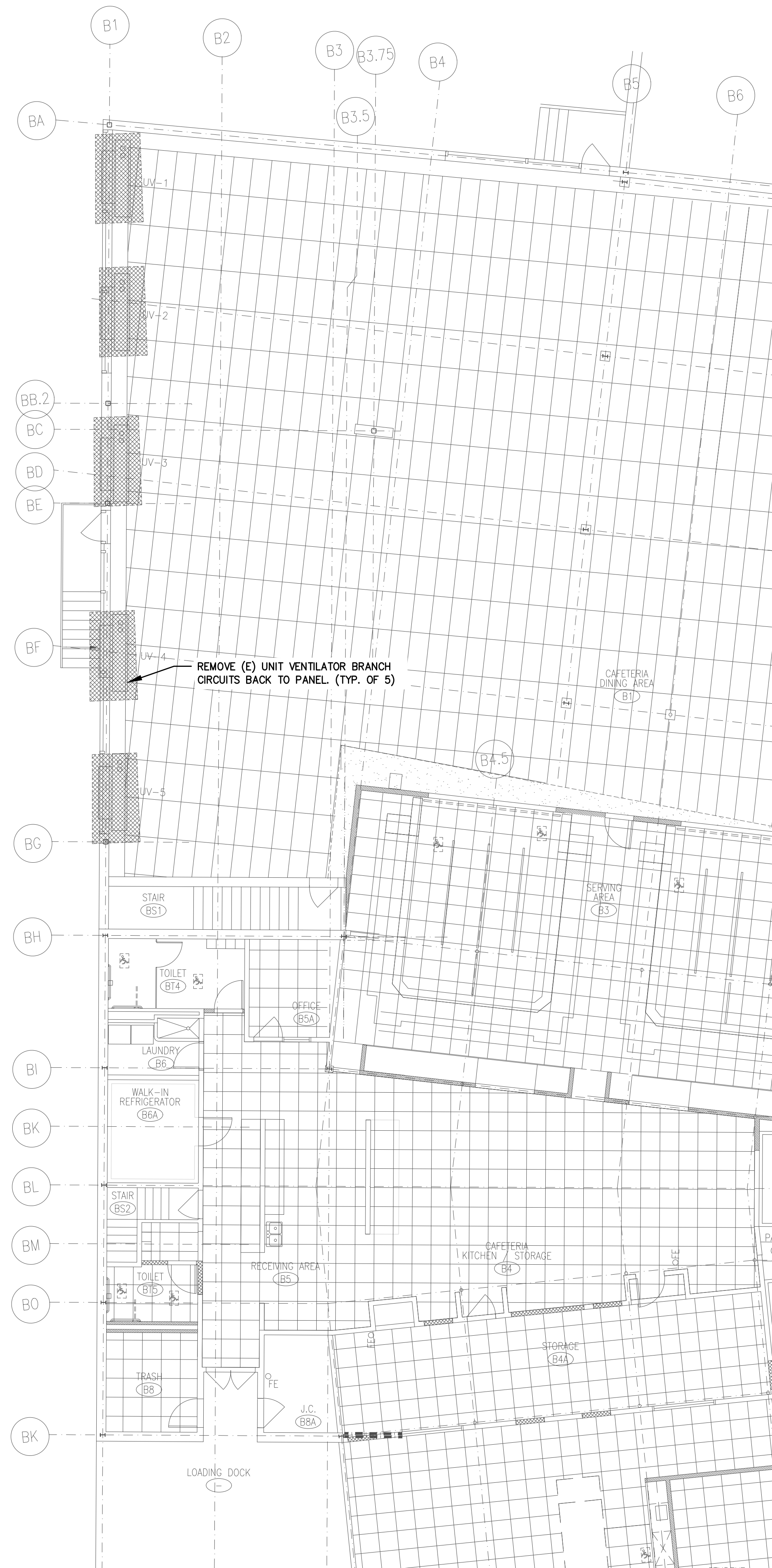


DEMOLISH HATCHED AREA

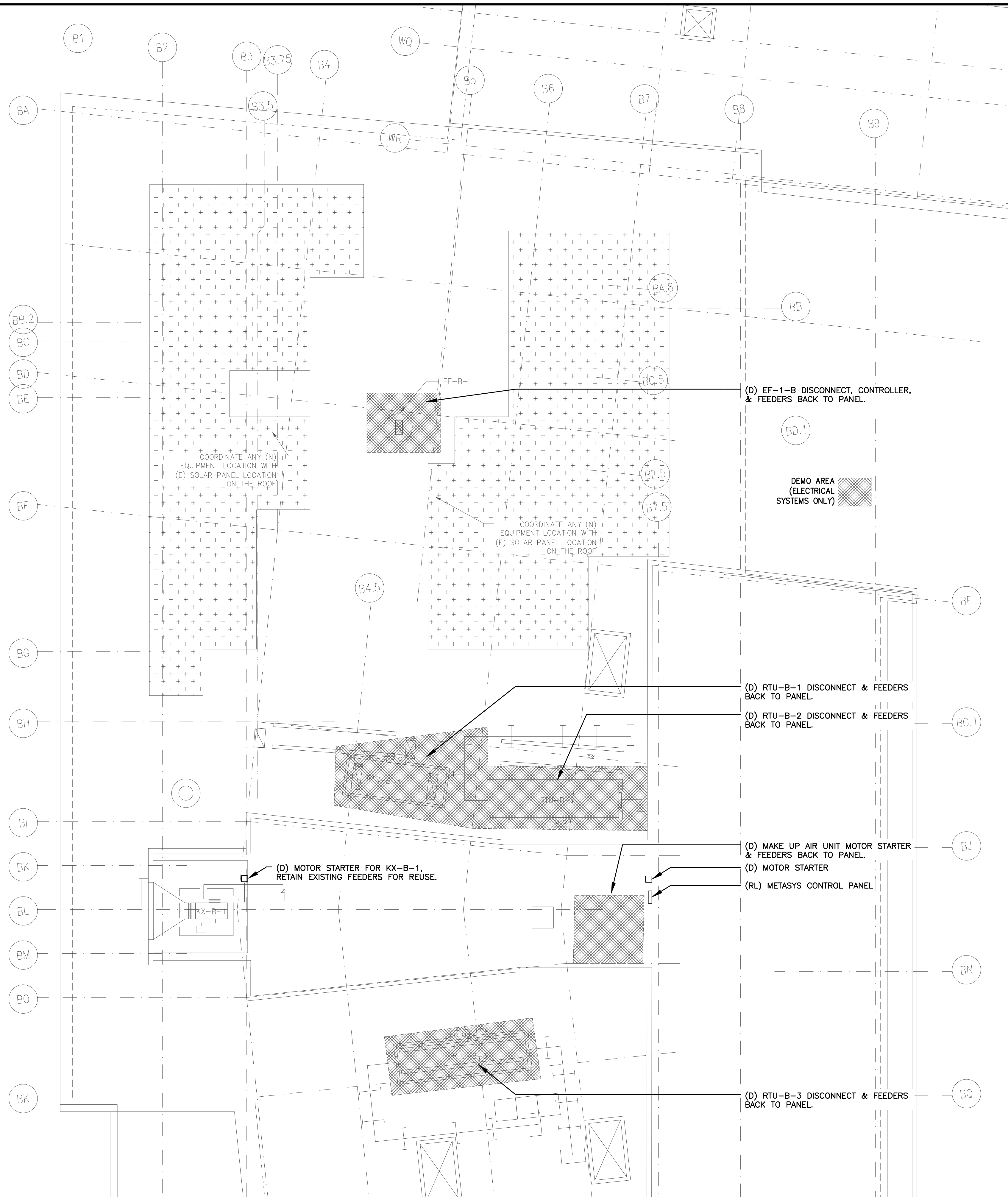
(E) PANEL SCHEDULE "LH-B (SECTION #2)"																
PANEL "LH-B"		BUS 400 AMP MAIN CIRCUIT BREAKER						VOLTAGE 277/480V, 3PH, 4 WIRE								
LOAD -		POLES 90						FED FROM: MDP (CKT#1 400A C/B)								
MOUNTING SURFACE		SPEC -						AIC SYMM -								
DESCRIPTION	WIRE	GRD.	COND.	TRIP	CKT.	A PHASE	B PHASE	C PHASE	CKT.	TRIP	COND.	GRD.	WIRE	DESCRIPTION		
RTU-B-3	12	12	3/4"	20A	43	2600 1300			44	20A	3/4"	12	12	KX-B-1		
					45		2600 1300	46								
					47		2600 1300	48								
EF-B-1	12	12	3/4"	20A	49	1300 300			50	20A	3/4"	12	12	DWX-B-1		
					51		1300 300	52								
					53			54								
DUST COLLECTOR	8	10	3/4"	70A	55	9900 5500			56	20A	3/4"	12	12	RTU-A-3		
					57		9900 5500	58								
					59		9900 5500	60								
AHU-B-1				15A	61	-	-		62	20A				SPARE		
					63			-	-		64	20A			SPARE	
					65			-	-		66	20A			SPARE	
GRAPHIC ARTS LIGHTS				20A	67	-	-		68	20A				SPARE		
					69			-	-		70	20A			SPARE	
					71			-	-		72	20A			SPARE	
SOCCER FIELD IRRIGATION PUMP				20A	73	-	-		74	20A				SPARE		
					75			-	-		76	20A			SPARE	
					77			-	-		78	20A			SPARE	
SPARE				20A	79	-	-		80	20A				SPARE		
					81			-	-		82	20A			SPARE	
					83			-	-		84	20A			SPARE	
SPARE				175A	85	-	-		86	225A	2-1/2"	4	4/0	150 KVA TRANSFORMER (TX-B)		
					87			-	-		88					
					89			-	-		90					
SUBTOTAL						-	-	-								
TOTAL CONNECTED LOAD						-	va	-	amps	(XXX KVA / 480V * 73) = AMPERES						
TOTAL DESIGN LOAD						-	va	-	amps							
125% TOTAL LOAD						-	kva	-	amps							

-	11-12-21	ISSUED FOR BID
REV	DATE	DESCRIPTION
<div></div>		
<div>KEY PLAN NO SCALE</div> <div></div>		
<div><div></div><div>252 East Avenue Norwalk, CT 06855 (203) 866-4626 Tel (203) 866-8019 Fax</div><div>LANDMARK FACILITIES GROUP, INC.</div></div>		
WARDE FAIRFIELD HIGH SCHOOL FAIRFIELD, CT		
SCALE: AS NOTED	APPROVED BY:	DRAWN BY: LC
DATE: 7/16/21		CHECKED BY: RS
ELECTRICAL PANEL SCHEDULE DEMOLITION		
FILE NAME: \DIR\DWG	JOB NUMBER:	DRAWING NUMBER: ED-001



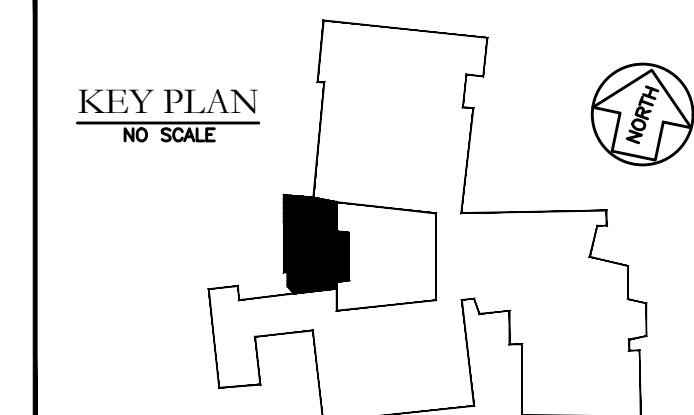


**01** DEMOLITION ELECTRICAL FIRST FLOOR PLAN  
1/8" = 1'-0"



**01** DEMOLITION ELECTRICAL ROOF PLAN  
1/8" = 1'-0"

REV	DATE	ISSUED FOR BID	DESCRIPTION
-	11-12-21	ISSUED FOR BID	



**LFG**  
LANDMARK FACILITIES GROUP, INC.  
252 East Avenue  
Norwalk, CT 06855  
(203) 866-4626 Tel  
(203) 866-8019 Fax

**WARDE FAIRFIELD HIGH SCHOOL**  
FAIRFIELD, CT













SCALE: AS NOTED	APPROVED BY:	DRAWN BY: L.C.
DATE: 7/16/21	CHECKED BY: RS	

ELECTRICAL DEMO PLAN

FILE NAME: UDR100WG	JOB NUMBER:	DRAWING NUMBER: ED-100
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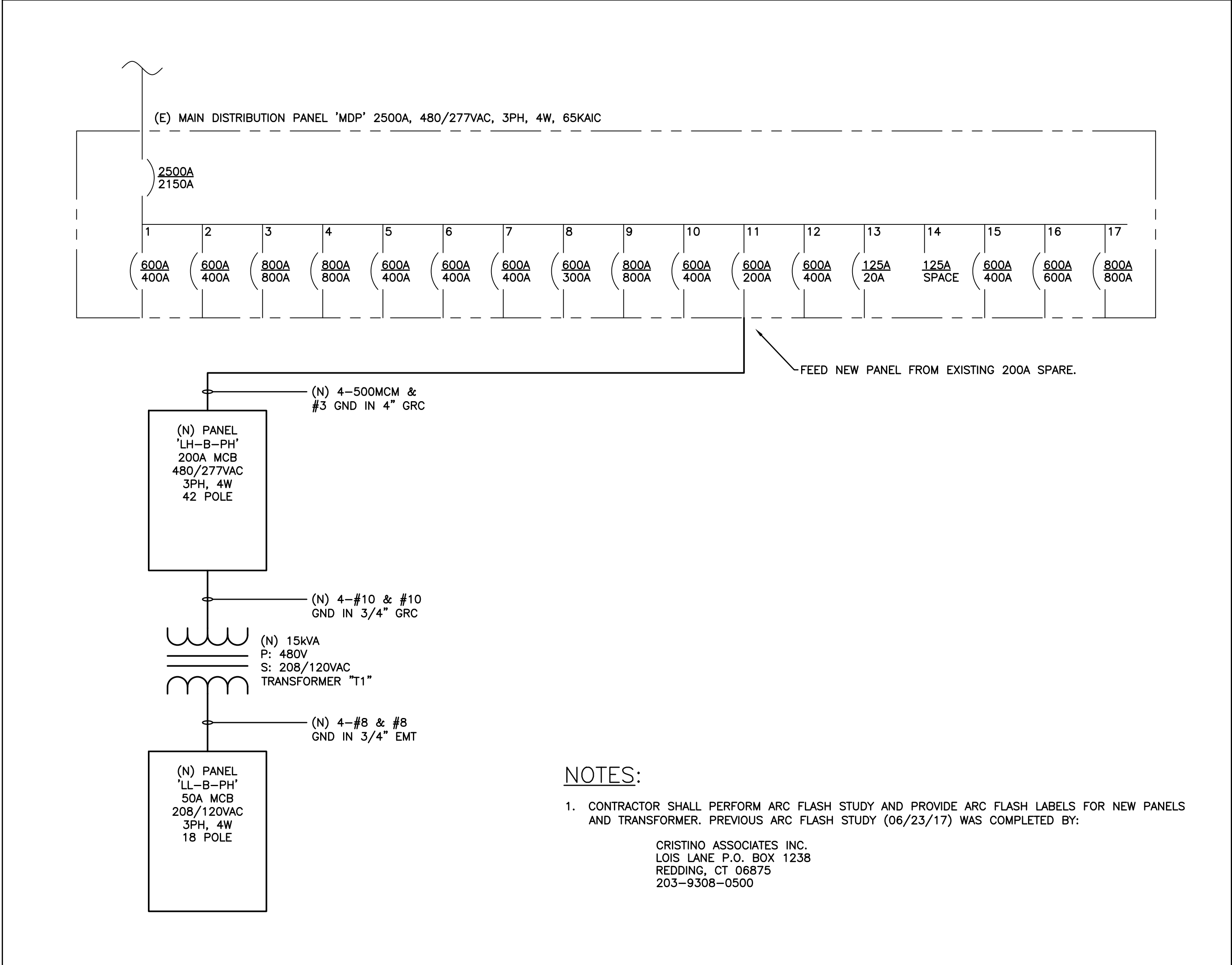
ELECTRICAL LEGEND

-  DUPLEX RECEPTACLE
-  DOUBLE-DUPLEX RECEPTACLE
-  DEDICATED RECEPTACLE
-  HOMERUN
-  JUNCTION BOX
-  LOCKABLE DISCONNECT SWITCH
-  PANEL
-  RECESSED PANEL
-  SWITCH
-  SWITCH, 2 POLE, 208V RATED, MOTOR RATED
-  CONDUIT UP
-  CONDUIT DOWN

ABBREVIATIONS:

- RMC RIGID METAL CONDUIT
- GRC GALVANIZED RIGID STEEL CONDUIT (NEC RMC)
- IMC INTERMEDIATE METAL CONDUIT
- EMT ELECTRICAL METAL TUBING
- PVC RIGID POLYVINYL CHLORIDE CONDUIT (SCHEDULE 40 U.N.O.)
- U.N.O. UNLESS NOTES OTHERWISE
- TYP. TYPICAL
- gfi GROUND FAULT CIRCUIT INTERRUPTER TYPE
- afi ARC FAULT CIRCUIT INTERRUPTER TYPE
- WP WEATHER-PROOF WHILE IN USE TYPE
- UP CONDUIT UP
- DN CONDUIT DN
- C CONDUIT
- GND GROUND
- LF LINEAR FEET
- ARCH. ARCHITECT
- COORD. COORDINATE
- SCC PROSPECTIVE SHORT CIRCUIT CURRENT
- MCA MINIMUM CIRCUIT AMPACITY
- FLA FULL LOAD AMPERES
- RLA RATED LOAD AMPERES
- LRA LOCKED ROTOR AMPERES
- MOCP MAXIMUM OVER CURRENT PROTECTION
- RFS RECOMMENDED FUSE SIZE
- (N) NEW
- (E) EXISTING TO REMAIN
- (RL) RELOCATE EXISTING
- (R) REPLACE EXISTING IN LOCATION
- (D) DEMOLISH EXISTING

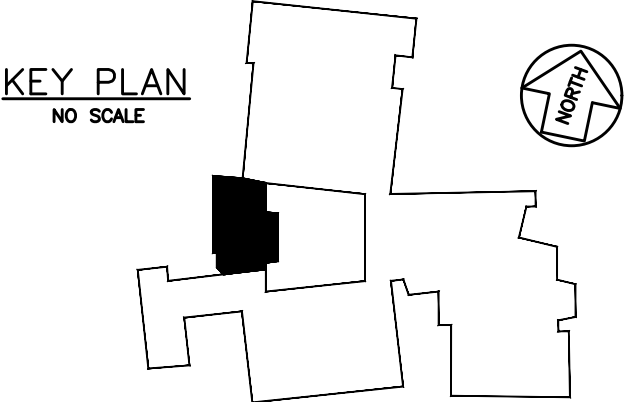
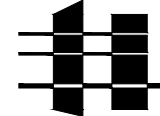
Part One Line Diagram



NOTES:

1. CONTRACTOR SHALL PERFORM ARC FLASH STUDY AND PROVIDE ARC FLASH LABELS FOR NEW PANELS AND TRANSFORMER. PREVIOUS ARC FLASH STUDY (06/23/17) WAS COMPLETED BY:

CRISTINO ASSOCIATES INC.  
LOIS LANE P.O. BOX 1238  
REDDING, CT 06875  
203-9308-0500

-	11-12-21	ISSUED FOR BID
REV	DATE	DESCRIPTION
<div>KEY PLAN NO SCALE</div> 		
<div><b>LFG</b> 252 East Avenue Norwalk, CT 06855 (203) 866-4626 Tel (203) 866-8019 Fax</div> <div>LANDMARK FACILITIES GROUP, INC.</div>		
WARDE FAIRFIELD HIGH SCHOOL FAIRFIELD, CT		
SCALE: AS NOTED	APPROVED BY:	DRAWN BY: LC
DATE: 7/16/21		CHECKED BY: RS
ELECTRICAL LEGEND AND ONE LINE DIAGRAM		
FILE NAME: \\DIR\DWG	JOB NUMBER: .	DRAWING NUMBER: E-001

(E) PANEL SCHEDULE "LH-B (SECTION #1)"																			
PANEL "LH-B"				BUS 400 AMP MAIN CIRCUIT BREAKER				VOLTAGE 277/480V, 3PH, 4 WIRE											
LOAD -				POLES 90				FED FROM: MDP (CKT#1 200A C/B)											
MOUNTING SURFACE				SPEC -				AIC SYMM -											
DESCRIPTION	WIRE	GRD.	COND.	TRIP	CKT.	A PHASE	VA	B PHASE	VA	C PHASE	VA	CKT.	TRIP	COND.	GRD.	WIRE	DESCRIPTION		
LIGHTING	12	12	3/4"	20A	1	2700	3100					2	20A	3/4"	12	12	LIGHTING		
LIGHTING	12	12	3/4"	20A	3			2700	2300			4	20A	3/4"	12	12	LIGHTING		
LIGHTING	12	12	3/4"	20A	5					1500	2000	6	20A	3/4"	12	12	LIGHTING		
LIGHTING	12	12	3/4"	20A	7	2200	2000					8	20A	3/4"	12	12	LIGHTING		
LIGHTING CORRIDOR/ACTIVITIES	12	12	3/4"	20A	9			1600	2000			10	20A	3/4"	12	12	LIGHTING		
LIGHTING CORRIDOR/ACTIVITIES	12	12	3/4"	20A	11					1200	2700	12	20A	3/4"	12	12	LTGS CAFE FACULTY/LOCKERS		
LIGHTING CAFETERIA DINING	12	12	3/4"	20A	13	2700	1300					14	20A	3/4"	12	12	LTGS CAFE FACULTY/GALLERY		
LIGHTING CAFETERIA DINING	12	12	3/4"	20A	15			2400	1800			16	20A	3/4"	12	12	LTGS SERVING AREA/STORAGE		
LIGHTING CAFETERIA DINING	12	12	3/4"	20A	17					2400	1000	18	20A	3/4"	12	12	LIGHTING SERVING AREA		
RTU-A-1	10	10	3/4"	25A	19	3100	6900					20	50A	1"	8	6	RTU-A-2		
					21			3100	6900			22							
					23					3100	6900	24							
SPARE				15A	25	-	3900					26	35A	3/4"	10	8	RTU-A-4		
					27			-	3900			28							
					29					-	3900	30							
EF-A-2	12	12	3/4"	20A	31	900	-					32	45A				SPARE		
					33			900	-			34							
					35					900	-	36							
SPARE				175A	37	-	-					38	225A				SPARE		
					39			-	-			40							
					41					-	-	42							
SUBTOTAL						-	-												
TOTAL CONNECTED LOAD						-	va												
TOTAL DESIGN LOAD						-	va												

$\left(\frac{XXX \text{ KVA}}{480V \times \sqrt{3}}\right) = \text{AMPERES}$

EXISTING PANEL SCHEDULE LEGEND:

LIGHT TEXT IS EXISTING

BOLD TEXT IS NEW

(E) MAIN DISTRIBUTION PANEL SCHEDULE									
SERVICE: 480/277V, 3PH, 4W					MAINS: 2500A/2150A M.C.B. 65,000 AIC				
CKT. NO.	NAMEPLATE INFORMATION		CIRCUIT BREAKER			FEEDERS			
			FRAME	TRIP	POLES				
1	PANEL "LH-B"		600	400	3	(2) SETS OF: 4-500 MCM & #1/0 GND IN 3-1/2"C			
2	PANEL "LH-ECC"		600	400	3	-			
3	EDP PANEL TRANSFER SWITCH		800	800	3	-			
4	?		800	800	3	-			
5	PANEL "LH-W"		600	400	3	-			
6	PANEL "LH-L"		600	400	3	-			
7	PANEL "LH-E"		600	400	3	-			
8	PANEL "LH-D"		600	300	3	-			
9	500KVA TRANSFORMER		800	800	3	-			
10	PANEL "LH-C"		600	400	3	-			
11	PANEL "LH-B-PH"		600	200	3	4-500 MCM & #3 GND IN 4"C			
12	225KVA PAD MTD		600	400	3	-			
13	JOCKEY PUMP		125	20	3	-			
14	SPARE		125	-	3	-			
15	PANEL "LH-F"		600	400	3	-			
16	PANEL "LH-SL"		600	600	3	-			
17	PHOTOVOLTAIC SYSTEM		800	800	3	-			

(N) PANEL SCHEDULE "LH-B-PH"																			
PANEL "LH-B-PH"				BUS 200 AMP MAIN CIRCUIT BREAKER				VOLTAGE 277/480V, 3PH, 4 WIRE											
LOAD 144 kVA				POLES 42				FED FROM: MDP (CKT#11 200A C/B)											
MOUNTING SURFACE				SPEC -				AIC SYMM 22,000											
DESCRIPTION	WIRE	GRD.	COND.	TRIP	CKT.	A PHASE	VA	B PHASE	VA	C PHASE	VA	CKT.	TRIP	COND.	GRD.	WIRE	DESCRIPTION		
DOAS-B-1	1	12	12	3/4"	15A	1	1662	720				2	15A	3/4"	12	12	DOAS-B-2	1	
					3			1662	720			4							
					5					1662	720	6							
ERV-B-1	1	12	12	3/4"	20A	7	4598	776				8	15A	3/4"	12	12	ERV-B-2	1	
					9			4598	776			10							
HP-1A	1	8	10	3/4"	35A	13	7174	7174				14	35A	3/4"	10	8	HP-1B	1	
					15			7174	7174			16							
					17					7174	7174	18							
HP-2A	1	8	10	3/4"	40A	19	7728	7728				20	40A	3/4"	10	8	HP-2B	1	
					21			7728	7728			22							
HP-B-1	1	8	10	3/4"	35A	25	7174	3675				26	25A	3/4"	10	10	PANEL "LL-B-PH"		
					27			7174	4206			28					15kVA TRANSFORMER		
					29					7174	2325	30							
SPACE					31	-	-					32					SPACE		
SPACE					33	-	-	-	-			34					SPACE		
SPACE					35	-	-			-	-	36					SPACE		
SPACE					37	-	-	-	-			38					SPACE		
SPACE					39	-	-	-	-	-	-	40					SPACE		
SPACE					41	-	-	-	-	-	-	42					SPACE		
SUBTOTAL						48406		48940											
TOTAL CONNECTED LOAD						144406	va			173	amps								
TOTAL DESIGN LOAD						144406	va			173	amps								

$\left(\frac{XXX \text{ KVA}}{480V \times \sqrt{3}}\right) = \text{AMPERES}$

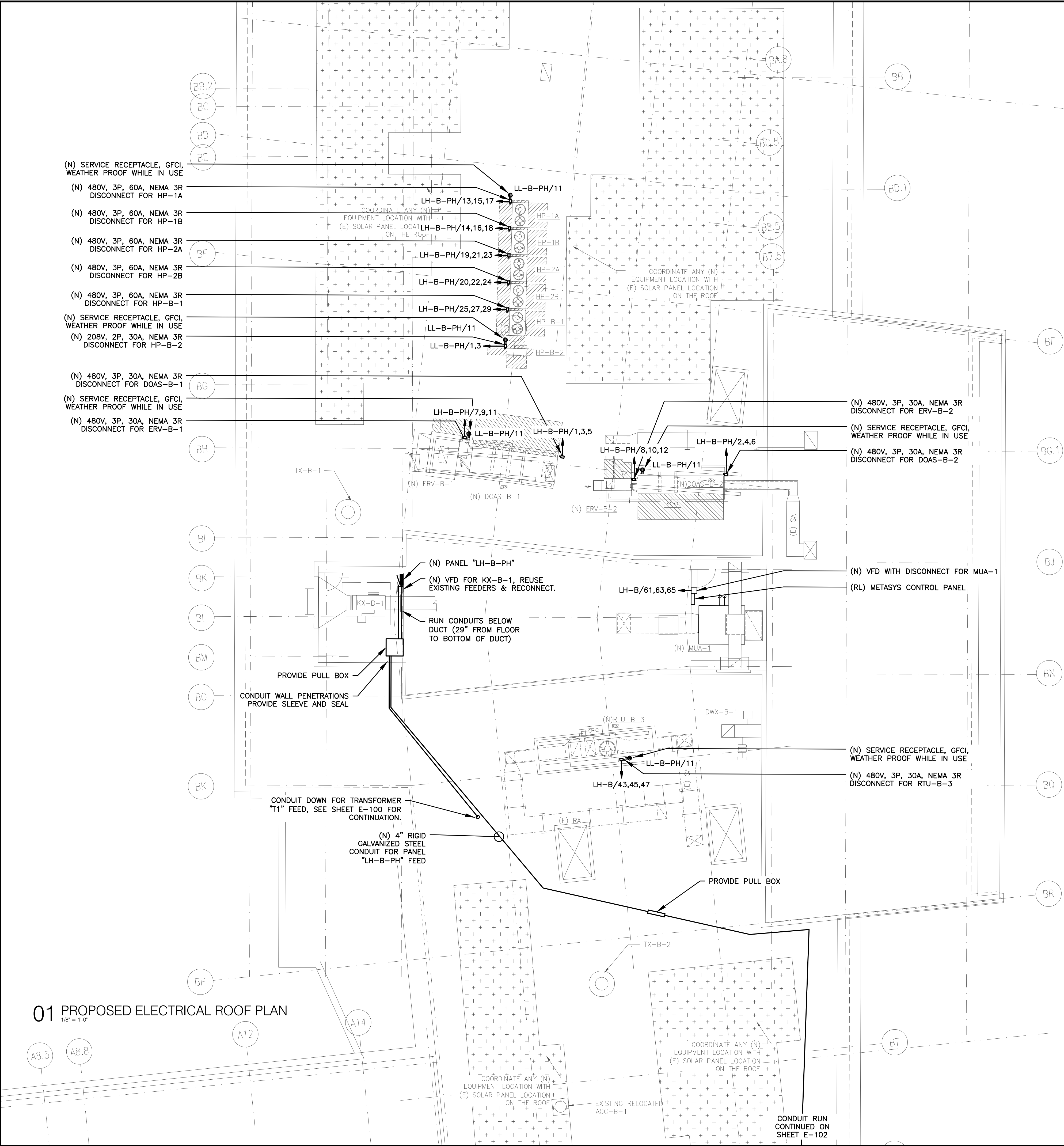
KEYED NOTES:

1. PROVIDE HACR TYPE CIRCUIT BREAKERS
2. PROVIDE LOCKING CLIPS
3. VERIFY POWER REQUIREMENTS FOR ACTUAL EQUIPMENT BEFORE INSTALLATION.
4. PROVIDE GFI CIRCUIT BREAKER.
5. CIRCUIT CONTROLLED VIA TIMECLOCK

(E) PANEL SCHEDULE "LH-B (SECTION #2)"																			
PANEL "LH-B"				BUS 400 AMP MAIN CIRCUIT BREAKER								VOLTAGE 277/480V, 3PH, 4 WIRE							
LOAD -				POLES 90								FED FROM: MDP (CKT#1 400A C/B)							
MOUNTING SURFACE				SPEC -								AIC SYMM -							
DESCRIPTION	WIRE	GRD.	COND.	TRIP	CKT.	A PHASE	VA	B PHASE	VA	C PHASE	VA	CKT.	TRIP	COND.	GRD.	WIRE	DESCRIPTION		
RTU-B-3	12	12	3/4"	20A	43	4986	1300		4986	1300		44	20A	3/4"	12	12	KX-B-1		
					45							46							
					47							48							
EF-B-1	12	12	3/4"	20A	49	1300	300		1300	300		50	20A	3/4"	12	12	DWX-B-1		
					51							52							
					53							54							
DUST COLLECTOR	8	10	3/4"	70A	55	9900	5500			1300	300	56	20A	3/4"	12	12	RTU-A-3		
					57				9900	5500		58							
					59							60							
MUA-1	1	10	10	3/4"	25A	61	4321	-				62	20A				SPARE		
					63			4321	-			64	20A				SPARE		
					65							66	20A				SPARE		
GRAPHIC ARTS LIGHTS				20A	67	-	-					68	20A				SPARE		
GRAPHIC ARTS LIGHTS				20A	69			-	-	-		70	20A				SPARE		
SPARE				20A	71					-	-	72	20A				SPARE		
SOCCER FIELD IRRIGATION PUMP				20A	73	-	-					74	20A				SPARE		
					75			-	-			76	20A				SPARE		
					77					-	-	78	20A				SPARE		
SPARE				20A	79	-	-					80	20A				SPARE		
SPARE				20A	81			-	-			82	20A				SPARE		
SPARE				20A	83					-	-	84	20A				SPARE		
SPARE				175A	85	-	-					86	225A	2-1/2"	4	4/0	150 KVA TRANSFORMER (TX-B)		
					87			-	-			88							
					89					-	-	90							
SUBTOTAL						-	-			-									
TOTAL CONNECTED LOAD						-	va			-	amps	(XXX KVA / 480V * √3) = AMPERES							
TOTAL DESIGN LOAD						-	va			-	amps								







01 PROPOSED ELECTRICAL ROOF PLAN  
1/8" = 1'-0"

GENERAL NOTES:

1. ALL CONDUIT/RACEWAYS ON ROOF SHALL BE IN GALVANIZED RIGID STEEL CONDUIT.
2. SUPPORT CONDUIT AND PULL BOXES WITH NON-PENETRATIVE ROOF SUPPORTS. EATON DURA-BLOK DB SERIES OR APPROVED EQUAL.
3. CONTRACTOR SHALL PROVIDE CONDUIT EXPANSION FITTINGS DESIGNED FOR USE WITH RIGID STEEL CONDUIT AND RATED FOR WET LOCATIONS.
4. ALL DISCONNECTS, MOTOR STARTERS, AND VFDS FOR MECHANICAL EQUIPMENT, FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.
5. ALL ROOF PENETRATIONS SHALL BE MADE BY ROOFING CONTRACTOR WHO HOLDS ROOF WARRANTY.
6. CONTRACTOR SHALL RUN ALL CIRCUITS FROM ROOF EQUIPMENT DOWN INTO FIRST FLOOR CEILING. REFER TO STRUCTURAL DRAWINGS FOR ROOF PENETRATION DETAIL.

REV	DATE	ISSUED FOR BID	DESCRIPTION
-	11-12-21	ISSUED FOR BID	

KEY PLAN  
NO SCALE

**LFG**  
252 East Avenue  
Norwalk, CT 06855  
(203) 866-4626 Tel  
(203) 866-8019 Fax

**LANDMARK FACILITIES GROUP, INC.**

WARDE FAIRFIELD HIGH SCHOOL  
, FAIRFIELD, CT

SCALE: AS NOTED	APPROVED BY:	DRAWN BY: LC
DATE: 7/16/21		CHECKED BY: RS

ELECTRICAL PLAN  
ROOF

FILE NAME: \DIR\DWG	JOB NUMBER:	DRAWING NUMBER: E-101
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01 PROPOSED ELECTRICAL ROOF PLAN  
1/16" = 1'-0"

- GENERAL NOTES:
- 1. SUPPORT CONDUIT AND PULL BOXES WITH NON-PENETRATIVE ROOF SUPPORTS. EATON DURA-BLOK DB SERIES OR APPROVED EQUAL.
  - 2. CONTRACTOR SHALL PROVIDE CONDUIT EXPANSION FITTINGS DESIGNED FOR USE WITH RIGID STEEL CONDUIT AND RATED FOR WET LOCATIONS

REV	11-12-21	ISSUED FOR BID
	DATE	DESCRIPTION

KEY PLAN  
NO SCALE

**LFG**  
252 East Avenue  
Norwalk, CT 06855  
(203) 866-4626 Tel  
(203) 866-8019 Fax

LANDMARK  
FACILITIES  
GROUP, INC.

WARDE FAIRFIELD HIGH SCHOOL  
, FAIRFIELD, CT

SCALE: AS NOTED	APPROVED BY:	DRAWN BY: LC
DATE: 7/16/21		CHECKED BY: RS

ELECTRICAL PLAN  
ROOF

FILE NAME: \DIR\DWG	JOB NUMBER:	DRAWING NUMBER: E-102
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• AIR TERMINAL  
 — NEW (BOLD LINE)  
 - - - EXISTING (LIGHT LINE)

—	11-12-21	ISSUED FOR BID
REV	DATE	DESCRIPTION
<div> <div> <div>KEY PLAN</div> <div>NO SCALE</div> </div> <div> <div> </div> <div> <div>252 East Avenue Norwalk, CT 06855 (203) 866-4626 Tel (203) 866-8019 Fax</div> <div> <div>LANDMARK FACILITIES GROUP, INC.</div> </div> </div> </div> </div>		
<div> <div>WARDE FAIRFIELD HIGH SCHOOL</div> <div>, FAIRFIELD, CT</div> </div>		
SCALE: AS NOTED	APPROVED BY:	DRAWN BY: LC
DATE: 7/16/21		CHECKED BY: RS
<div> <div>LIGHTING PROTECION</div> <div>PLAN ROOF</div> </div>		
FILE NAME: DIR\DWG	JOB NUMBER:	DRAWING NUMBER: E-103



NOTES:

1. THE WORK OF THIS DIVISION SHALL INCLUDE ALL LABOR, MATERIALS AND APPARATUS NECESSARY FOR THE COMPLETION OF ALL ELECTRICAL WORK AS SHOWN ON THE DRAWINGS AND AS HEREINAFTER SPECIFIED, LEFT READY FOR SATISFACTORY OPERATION.

2. ANY APPLIANCE, MATERIALS OR LABOR THAT ARE OBVIOUSLY A PART OF THE ELECTRICAL WORK NECESSARY TO ITS PROPER PERFORMANCE, ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON THE DRAWINGS, SHALL BE FURNISHED AND INSTALLED AS IF CALLED FOR IN DETAIL WITHOUT ADDITIONAL COST.

3. WITHOUT INTENDING TO LIMIT AND/OR RESTRICT THE VOLUME OF WORK REQUIRED AND SOLELY FOR THE CONVENIENCE OF THE CONTRACTOR, THE WORK OF THIS DIVISION SHALL, IN GENERAL, COMPRISE THE FOLLOWING:
- A. FURNISHING AND INSTALLATION OF NEW LIGHTING FIXTURES INCLUDING LAMPS AND ASSOCIATED BRANCH CIRCUITRY.
  - B. FURNISHING AND INSTALLATION OF RECEPTACLES AND ASSOCIATED BRANCH CIRCUITRY WIRING.
  - C. FURNISHING AND INSTALLATION OF NEW PANELS.
  - D. CONNECTION (WIRING) OF HVAC UNITS.
  - E. EMPTY CONDUIT RACEWAYS FOR TELEPHONE AND DATA WIRING.
  - F. CONFORMING TO ALL EXISTING CONDITIONS AT THE SITE.
  - G. TEMPORARY FACILITIES (LIGHTING AND POWER).

SHOP DRAWINGS: SUBMIT TO ENGINEER COMPLETE SHOP DRAWINGS, CATALOG CUTS, WIRING DIAGRAMS AND ASSOCIATED DATA, FOR ALL MAJOR ELEMENTS OF THE ELECTRICAL WORK FOR REVIEW, CHECKING AND APPROVAL. NO EQUIPMENT SHALL BE FABRICATED, DELIVERED, ERECTED OR RECONNECTED OTHER THAN FROM DRAWINGS APPROVED BY THE ENGINEER. SHOP DRAWINGS IN THE NUMBER DIRECTED SHALL BE SUBMITTED FOR NOT LESS THAN THE FOLLOWING:

- 1. NEW PANELS.
- 2. TRANSFORMER
- 3. LIGHTING FIXTURES.
- 4. WIRING DEVICES.

IT SHALL BE UNDERSTOOD THAT APPROVAL OF DRAWINGS WILL NOT BIND THE ENGINEER OR THE OWNER TO THE FINAL ACCEPTANCE OF SUCH EQUIPMENT AS THE COMPLETED INSTALLATION AND TEST OF EQUIPMENT AS A WHOLE MUST BE PROVIDED AND GUARANTEED HEREIN AS SPECIFIED.

MATERIALS:

1. GENERAL
- A. ELECTRIC RACEWAY AND SUPPORTING SYSTEMS SHALL BE FURNISHED AND INSTALLED COMPLETE, WITH ALL MATERIALS, FITTINGS, CONNECTIONS AND ACCESSORIES NECESSARY TO PROVIDE IN EACH INSTANCE, A COMPLETE OPERATING INSTALLATION, AS DESCRIBED HEREIN, AND INDICATED ON THE DRAWINGS.
- B. THE DRAWINGS ARE DIAGRAMMATIC AND GENERALLY INDICATIVE OF THE WORK TO BE INSTALLED, BUT DO NOT SHOW ALL BENDS, FITTINGS, AND BOXES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL CAREFULLY INVESTIGATE THE STRUCTURAL AND FINISH CONDITIONS AFFECTING ALL HIS WORK AND ARRANGE SAME ACCORDINGLY, FURNISHING SUCH FITTINGS, BOXES AND SIMILAR ITEMS AS MAY BE REQUIRED TO MEET SUCH CONDITIONS.

2. WIRING:
- A. ALL WIRE AND CABLE, AS INDICATED, SPECIFIED OR REQUIRED, SHALL BE INSTALLED COMPLETE, INCLUDING ALL NECESSARY SPLICES AND CONNECTIONS TO EQUIPMENT DEVICES.
- B. ALL WIRE NO. 8 WIRE AND LARGER SHALL BE SINGLE CONDUCTOR STRANDED COPPER OF NOT LESS THAN 98% CONDUCTIVITY, WITH 600 VOLT WITH THHN INSULATION (THWN FOR DAMP LOCATIONS). WIRE NO. 10 AWG AND SMALLER SHALL BE SOLID COPPER.
- C. WIRE AND CABLE SHALL BE NO. 12 AWG MINIMUM, UNLESS, U.O.N
- D. 15A AND 20A BRANCH CIRCUITS SHALL UTILIZE #12 L & N CONDUCTORS, U.O.N.
- E. 25A AND 30A BRANCH CIRCUITS SHALL UTILIZE #10 L & N CONDUCTORS, U.O.N.
- F. 35A THROUGH 50A BRANCH CIRCUITS SHALL UTILIZE #8 L & N CONDUCTORS, U.O.N.
- G. ALL BRANCH CIRCUITS SHALL HAVE GROUND CONDUCTORS IN ACCORDANCE WITH TABLE 250-122 OF THE NEC, U.O.N.
- H. SUB FEEDERS AND BRANCH CIRCUITS IN EXCESS OF 100LF AND LESS THAN 200LF SHALL UTILIZE THE NEXT LARGER SIZE CONDUCTOR, U.O.N.
- I. BRANCH CIRCUIT NUMBERS INDICATED ON THE DRAWINGS ARE FOR IDENTIFICATION PURPOSES ONLY AND DO NOT NECESSARILY REFER TO PANELBOARD CIRCUIT NUMBERS. BRANCH CIRCUITS SHALL BE CONNECTED TO CIRCUITS ON PANELBOARDS SO AS TO SECURE A REASONABLE BALANCE ON THE THREE PHASES. WHERE MORE THAN ONE CIRCUIT, WITH A COMMON NEUTRAL IS INSTALLED IN THE SAME CONDUIT, EACH PHASE WIRE SHALL BE CONNECTED TO A DIFFERENT LEG OF THE SYSTEM.
- J. ALL CONDUCTORS SHALL BE COLOR CODED THROUGHOUT AND NUMBERED AND TAGGED AT EACH JUNCTION BOX, PULL BOX, PANEL AND DEVICE WITH SUITABLE FIREPROOF TAGS OR ADHESIVE IDENTIFICATION BANDS.

3. CONDUIT:
- A. EXCEPT AS OTHERWISE INDICATED OR SPECIFIED, ALL WIRING INSIDE AND BEYOND CONFINES OF ELECTRIC CLOSET SHALL BE INSTALLED IN EMT (ELECTROGALVANIZED STEEL ELECTRICAL METALLIC TUBING).
- B. GRC (RMC) SHALL BE UTILIZED FOR EXTERIOR INSTALLATIONS WHERE EXPOSED AND SUBJECT TO SEVERE PHYSICAL DAMAGE.
- C. PVC MAY BE USED FOR INSTALLATION WHERE BURIED BELOW GRADE AND WHERE EMBEDDED IN A COVER OF AT LEAST 2" OF CONCRETE LIQUIDTIGHT FLEXIBLE, GALVANIZED STEEL CONDUIT, WITH CONTINUOUS COPPER BONDING CONDUCTOR, SHALL BE USED FOR CONNECTIONS, NOT EXCEEDING 18" IN LENGTH, TO MOTORS AND AT A OTHER LOCATIONS WHERE VIBRATION, OR MOVEMENT ARE ENCOUNTERED. UNLESS OTHERWISE INDICATED OR SPECIFIED, ALL WIRING SHALL BE INSTALLED CONCEALED IN CEILINGS, WALLS, SLABS, PIPE CHASES AND FURRED SPACES WHENEVER POSSIBLE.
- F. CONDUIT AND FITTINGS SHALL CONFORM TO LATEST ACCEPTABLE CODE.
- G. CONDUIT SHALL BE 1/2" TRADE SIZE MINIMUM, U.O.N
- H. ALL CONDUITS WHICH ARE TO REMAIN EMPTY FOR FUTURE INTRODUCTION OF CONDUCTORS SHALL BE PROVIDED WITH A #12 NYLON DRAG WIRE WITH IDENTIFICATION TAG AT BOTH ENDS.
- I. METAL CLAD CABLE (MC) CAN BE USED FOR FINAL CONNECTION OF LIGHTING.
- J. CONDUIT FITTINGS SHALL BE APPROPRIATE FOR USE WITH THE CONDUIT TYPE AND LOCATION - COMPRESSION OR TWO SCREW FITTINGS FOR EMT, THREADED FITTINGS FOR RGS, SOCKET FITTINGS FOR PVC, ETC...

4. EXPANSION-JOINT FITTINGS:
- A. 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.
- B. INSTALL TYPE AND QUANTITY OF FITTINGS THAT ACCOMMODATE TEMPERATURE CHANGE LISTED FOR EACH OF THE FOLLOWING LOCATIONS:
- 1. OUTDOOR LOCATIONS NOT EXPOSED TO DIRECT SUNLIGHT: 125 DEG F TEMPERATURE CHANGE.
  - 2. OUTDOOR LOCATIONS EXPOSED TO DIRECT SUNLIGHT: 155 DEG F TEMPERATURE CHANGE.
  - 3. INDOOR SPACES CONNECTED WITH OUTDOORS WITHOUT PHYSICAL SEPARATION: 125 DEG F TEMPERATURE CHANGE.
  - 4. ATTICS: 135 DEG F TEMPERATURE CHANGE.
  - C. INSTALL FITTING(S) THAT PROVIDE EXPANSION AND CONTRACTION FOR AT LEAST 0.00041 INCH PER FOOT OF LENGTH OF STRAIGHT RUN PER DEGREE F OF TEMPERATURE CHANGE FOR PVC CONDUITS.
  - D. INSTALL EXPANSION FITTINGS AT ALL LOCATIONS WHERE CONDUITS CROSS BUILDING OR STRUCTURE EXPANSION JOINTS.
  - E. 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.

5. JUNCTION BOXES:
- A. JUNCTION BOXES AND PULL BOXES SHALL BE PROVIDED WHERE INDICATED OR SPECIFIED, WHERE REQUIRED BY CODE AND WHERE NECESSARY TO FACILITATE THE INSTALLATION OF EQUIPMENT OR WIRING.
- B. THEY SHALL BE NEMA 3R FOR EXTERIOR LOCATIONS
- C. THEY SHALL BE APPROPRIATE FOR USE WITH THE CONDUIT TYPE AND LOCATION - PLASTIC FOR PVC, SHEET METAL FOR EMT AND CAST STL OR DUCTIL IRON FOR RGS, ETC...

6. OUTLET BOXES:
- A. EACH OUTLET FOR LIGHTING FIXTURE, WALL SWITCH, WALL RECEPTACLE, TELEPHONE OR OTHER USE SHALL BE PROVIDED WITH AN OUTLET BOX SUITABLE FOR THE USE FOR WHICH THE OUTLET IS TO BE INSTALLED AND TO THE LOCATION IN WHICH IT OCCURS, SECURED FIRMLY IN PLACE AND SET TRUE AND SQUARE WITH THE FINISHED SURFACE.
- B. THEY SHALL BE NEMA 3R FOR EXTERIOR LOCATIONS
- C. THEY SHALL BE APPROPRIATE FOR USE WITH THE CONDUIT TYPE AND LOCATION - SHEET METAL FOR EMT AND CAST STL OR DUCTIL IRON FOR RGS, ETC...

7. FASTENINGS, SUPPORTS AND HANGERS:
- A. ALL PARTS OF THE ELECTRICAL INSTALLATION SHALL BE ADEQUATELY SUPPORTED FROM THE BUILDING CONSTRUCTION USING APPROVED CLAMP SCREWS WITH INSERTS OR EXPANSION ANCHORS, EXPANSION BOLTS AND TOGGLE BOLTS "IN NO CASE SHALL THE HUNG CEILING MEMBERS OR WIRES BE USED TO SUPPORT CONDUIT".
- B. ALL FASTENINGS, SUPPORTS, CLAMPS, ANCHORS, AND SIMILAR ITEMS SHALL BE OF TYPE SUITABLE FOR THE PURPOSE - IF SUPPORTING LOADS IN TENSION IN EXCESS OF 200#S OR LOADS IN SHEAR IN EXCESS OF 400#S, THE CONTRACTOR SHALL PROVIDE A REPORT CERTIFIED BY AN ENGINEER ATTESTING TO THE VORACITY OF HIS SELECTION

8. WIRING DEVICES:
- A. ALL DEVICES SHALL BE SPECIFICATION GRADE, U.L. APPROVED.
- A. DUPLEX RECEPTACLE 20 AMP, 1 POLE, 3 WIRE, 125 V, GRD. TYPE HUBBELL #5362W, OR APP. EQUAL
- B. SINGLE RECEPTACLE 20 AMP, 2 POLE, 3 WIRE, 125 V, GRD. TYPE HUBBELL #5361W, OR APP. EQUAL.
- C. SINGLE POLE SWITCH 20 AMP, 125 V, GRD. TYPE, HUBBELL #1221 WHI, OR APP. EQUAL.
- D. THREE WAY SWITCH 20 AMP, 125 V, GRD. TYPE, HUBBELL #1223 WHI, OR APP. EQUAL.
- E. PLATE FOR SINGLE SWITCH - SMOOTH NYLON WHITE, HUBBELL #PW, OR APP. EQUAL
- F. PLATE FOR DUPLEX RECEPTACLE - SMOOTH NYLON WHITE, HUBBELL #PBW, PR APP. EQUAL.
- G. PLATE FOR SINGLE RECEPTACLE - SMOOTH NYLON WHITE, HUBBELL #P7W, OR APP.
- H. WHERE MORE THAN ONE SWITCH OR RECEPTACLE ARE PLACED IN THE SAME LOCATION CONTRACTOR SHALL GANG DEVICES AND USE COMMON MULTI GANG PLATES.
- I. ALL SWITCHES SHALL BE QUIET TYPE.
- J. ALL DEVICES AND PLATES SHALL BE FURNISHED AS INDICATED BY THE ARCHITECT

9. PANELBOARD SCHEDULES
- A. PROVIDE A TYPED PANELBOARD SCHEDULE ENCLOSED IN A PLASTIC ENVELOPE ON THE INSIDE OF THE PANEL DOOR INDICATING CIRCUIT NUMBERS AND CORRESPONDING LOADS AS SHOWN ON THE PANELBOARD SCHEDULE. APPLIES TO NEW AND EXISTING PANELS.

10. SELECTION OF OVERCURRENT PROTECTION AND SWITCHING DEVICES FOR LIGHT AND POWER DISTRIBUTION
- A. DEVICES SHALL HAVE VOLTAGE RATINGS SUITABLE FOR THE SUPPLY CHARACTERISTICS TO WHICH THEY ARE APPLIED.
- B. SHORT CIRCUIT CURRENT RATINGS, AND THE MANUFACTURER'S LABELS ATTESTING TO THESE RATINGS (BASED ON U.L. LISTINGS), SHALL BE REQUIRED FOR OVERCURRENT PROTECTION AND SWITCHING DEVICES, WHERE THEY ARE INDIVIDUALLY MOUNTED (AS FUSED SWITCHES OR AS FUSED SWITCH BUS DUCT PLUG-IN DEVICES), AND FOR THE EQUIPMENT ASSEMBLIES WHEN THEY ARE INCORPORATED IN PANELS. SWITCHBOARDS, ETC. SUCH RATINGS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:-
- 1. IN ORDER TO INSURE THAT THEY ARE AT LEAST EQUAL TO THE AVAILABLE FAULT CURRENT, MINIMUM RATINGS HAVE BEEN SPECIFIED HEREIN FOR THE INDIVIDUAL OVERCURRENT DEVICE TYPES, AND OTHER ASSEMBLIES OF DEVICES. "SERIES CONNECTED RATINGS" WILL BE ACCEPTABLE FOR CIRCUIT BREAKER TYPE PANELBOARDS. THESE MINIMUM RATINGS ARE BASED ON THE USE OF UPSTREAM FUSES WHICH SHALL BE SPECIFICALLY TESTED WITH THE EC'S SELECTED CIRCUIT BREAKERS, AND SHALL BE U.L. LISTED ACCORDINGLY, PROVIDE THE ENGINEER ALL PERTINENT U.L. DOCUMENTATION AND ARRANGE TO REPLACE EXISTING SERVICE SWITCH FUSES AS REQUIRED TO OBTAIN REQUIRED SERIES RATING.

2. WHERE SUCH FUSE-CIRCUIT BREAKER SERIES RATINGS ARE NOT AVAILABLE FROM A PARTICULAR MANUFACTURER, A CURRENT LIMITING CIRCUIT BREAKER MAY BE UTILIZED AS THE UPSTREAM DEVICE IN ORDER TO OBTAIN THE REQUIRED SERIES RATED. SUCH CURRENT LIMITING BREAKERS SHALL BE INCORPORATED AS MAIN DEVICES IN THE PANELBOARDS, AS PART OF UPSTREAM PANELBOARDS, METERING ASSEMBLIES, OR AS INDIVIDUALLY MOUNTED DEVICES OR BUS DUCT PLUG-IN-DEVICES, AS THE CASE MAY BE. WHERE THE REQUIRED RATINGS CAN BE MET WITH MAIN OR UPSTREAM NON-CURRENT LIMITING BREAKERS HAVING APPROPRIATE INTERRUPTING CAPACITIES AS APPROVED BY U.L., SUCH ARRANGEMENTS WILL ALSO BE CONSIDERED ACCEPTABLE.
- C. IN ADVANCE OF, OR IN CONJUNCTION WITH, THE SUBMISSION OF SHOP DRAWINGS FOR APPROVAL, PROVIDE DATA DEFINING IN DETAIL HOW THE REQUIRED SHORT CIRCUIT CURRENT RATINGS WILL BE ACHIEVED WITH THE EQUIPMENT BEING FURNISHED. THE DATA SHALL, IN NARRATIVE OR GRAPHIC FASHION, FULLY DEFINE HOW THE VARIOUS DEVICES, INDIVIDUALLY, OR IN COMBINATION WITH THE "FULLY RATED" OR "SERIES CONNECTED" SHORT CIRCUIT REQUIREMENTS. INCLUDE SPECIFICATIONS FROM MANUFACTURER AS TO THE U.L. APPROVALS FOR THESE RATINGS FOR ALL PROPOSED EQUIPMENT. ALL OVERCURRENT PROTECTION AND SWITCHING DEVICES SHALL BE U.L. LISTED AS SUITABLE FOR THE TERMINATION OF 75°C CONDUCTORS, SIZED IN ACCORDANCE WITH THEIR 75°C AMPACITY RATINGS. DEVICES SHALL BE SPECIFICALLY IDENTIFIED ACCORDINGLY AND SHALL BEAR THE DESIGNATION "60/75°C" OR "75°C". REGARDLESS OF WHETHER INCORPORATED IN PANELBOARDS, SWITCHBOARDS, OR OTHER ASSEMBLIES OR WHETHER INDIVIDUALLY MOUNTED.

- D. SELECT OVERCURRENT PROTECTION AND SWITCHING DEVICES AS FOLLOWS:

CATEGORY OF APPLICATION	ACCEPTABLE DEVICE TYPES (SEE LEGEND BELOW)
MAIN OR BRANCH UNIT IN DISTRIBUTION PANEL OR POWER PANEL	SW-QMGB/CF, EXCEPT, CLCB IF NEEDED IN ORDER TO MEET THE SPECIFIED SERIES CONNECTED RATING OF DOWNSTREAM LIGHTING OR PPLANCE PANEL.
MAIN UNIT IN LIGHTING OR APPLIANCE PANEL	CB-SMC, EXCEPT CLCB OF NEEDED IN ORDER TO MEET SPECIFIED SERIES CONNECTED RATING OF THE PANEL.
BRANCH UNIT IN LIGHTING OR APPLIANCE PANEL	CB-SMC

- E. EXPLANATION OF ABBREVIATIONS USED ABOVE IS AS FOLLOWS:

ABBREVIATION	DESCRIPTION
SW-BP	DISTRIBUTION SWITCH;BOLTED PRESSURE TYPE.
SW-QMGB	DISTRIBUTION SWITCH; QUICK-MAKE, QUICK-BREAK TYPE, /FUSIBLE--FUSED WITH.
CLCB-MC	CURRENT LIMITING CIRCUIT BREAKER; MOLDED CASE TYPE.

- G. SELECT QUICK-MAKE, QUICK-BREAK TYPE DISTRIBUTION SWITCHES IN ACCORDANCE WITH THE FOLLOWING:

- 1. THEY SHALL EQUAL OR EXCEED THE PERFORMANCE REQUIRED FOR NEMA TYPE H.D HORSEPOWER RATED SWITCHES.
- 2. THEY SHALL HAVE ARC QUENCHERS AND CIRCUIT BREAKER TYPE PRESSURE CONTACTS.
- 3. WHERE INTENDED FOR PANELBOARDS OR SWITCHBOARD MOUNTING, THEY SHALL BE OF THE "BOLTED-IN" TYPE.

4. WHERE OF THE FUSIBLE TYPE. THEY SHALL BE DESIGNED FOR USE ONLY WITH CLASS "J" FUSES UP TO 600 AMPS, AND CLASS "L" FUSES ABOVE 600 AMPS, AND SHALL INCORPORATE FACTORY INSTALLED CLIPS DESIGNED TO INSURE THE USE OF PROPER FUSES. COORDINATE TO INSURE THAT FUSES SUPPLIED FOR THE PROJECT MATCH THESE FUSE GAPS.

- H. SELECT CARTRIDGE FUSES IN ACCORDANCE WITH THE FOLLOWING:

- 1. REGARDLESS OF THE ACTUAL AVAILABLE FAULT CURRENT THEY SHALL, AT FULL RECOVERY VOLTAGE, BE CAPABLE OF SAFELY INTERRUPTING FAULT CURRENTS OF 200,000 AMPERES RMS SYMMETRICAL DELIVERABLE AT THE LINE SIDE OF THE FUSE.
- 2. EXCEPT AS NOTED HEREINAFTER, IN SIZES OVER 600 AMPS, THEY SHALL BE OF THE CURRENT LIMITING TYPE, U.L. LISTED AS "CLASS L".
- 3. THEY SHALL BE SUITABLE FOR APPLICATION TO FUSE GAPS WHICH REJECT OTHER TYPES OF FUSING. COORDINATE WITH SUPPLIER(S) OF ALL FUSIBLE SWITCH UNITS (IN PANELS, SWITCHBOARDS, ETC.) FOR THE PROJECT TO INSURE THAT FUSE GAPS MATCH THE SPECIFIED FUSE TYPES.

- I. SELECT STANDARD, MOLDED CASE TYPE CIRCUIT BREAKERS IN ACCORDANCE WITH THE FOLLOWING:

- 1. THEY SHALL CONSIST OF MANUALLY OPERATED QUICK-MAKE, QUICK-BREAK MECHANICALLY TRIP FREE OPERATING MECHANISMS FOR SIMULTANEOUS OPERATION OF ALL POLES, WITH CONTACTS, ARC INTERRUPTERS AND TRIP ELEMENTS FOR EACH POLE, ALL ENCLOSED IN MOLDED PHENOLIC PLASTIC CASES.
- 2. THEIR TRIPPING UNITS SHALL BE OF THE "THERMAL MAGNETIC" TYPE HAVING BIMETALLIC ELEMENTS FOR TIME DELAY OVERLOAD PROTECTION, AND MAGNETIC ELEMENTS FOR SHORT CIRCUIT PROTECTION.
- 3. THEY SHALL BE MANUALLY OPERABLE BY MEANS OF TOGGLE TYPE OPERATING HANDLES HAVING "TRIPPED" POSITIONS MIDWAY BETWEEN THE "ON-OFF" POSITION.
- 4. THEY SHALL EACH BE CONTAINED IN AN INDIVIDUAL CASE ENCLOSING ONLY THE NUMBER OF POLES REQUIRED FOR THE PARTICULAR BREAKER
- 5. WHERE NO FRAME SIZES ARE INDICATED, THEIR INTERRUPTING CAPACITIES (IN RMS SYMMETRICAL AMPERES) SHALL BE NOT LESS THAN THE FOLLOWING:

WHERE INSTALLED	INTERRUPTING CAPACITY
120/208V LIGHTING OR APPLIANCE PANEL	22,000A

6. WHERE FRAME SIZES ARE INDICATED, THE INTERRUPTING CAPACITIES SHALL BE NO LESS THAN THE FOLLOWING:

WHERE INDICATED FRAME SIZE	MINIMUM ACCEPTABLE SYMMETRICAL AMPERES INTERRUPTING RATING IN
100	22,000
225	22,000
400	42,000
600	42,000
800	42,000

7. THE MINIMUM INTERRUPTING CAPACITY IN SYMMETRICAL RMS AMPERES OF THE CIRCUIT BREAKERS INTENDED FOR USE IN PANELBOARDS SHALL BE AS NOTED ABOVE. WHERE NECESSARY IN ORDER TO PROVIDE THE U.L. APPROVED "SERIES CONNECTED" SHORT CIRCUIT PANEL RATINGS SPECIFIED ELSEWHERE. BREAKERS WITH HIGHER INTERRUPTING CAPACITIES SHALL BE PROVIDED AS REQUIRED.

8. WHERE NECESSARY TO ACCOMMODATE OTHER REQUIREMENTS (E.G., PANELBOARDS TO BE CONVERTIBLE TYPE), THEIR FRAME SIZES SHALL BE INCREASED TO CONFORM TO SUCH REQUIREMENTS, FRAME SIZES BEING INDICATED ONLY AS A REFERENCE TO THE MINIMUM ACCEPTABLE INTERRUPTING RATING NOTED ABOVE.
9. THEY SHALL HAVE INTERCHANGEABLE TRIPS IN ALL SIZES FOR WHICH SUCH TRIPS ARE MANUFACTURED AS STANDARD.
10. THEY SHALL BE EQUIPPED WITH AMBIENT TEMPERATURE COMPENSATING FEATURES EXTENDED TO 40°C.
11. THEY SHALL BE EQUIPPED WITH 5 MLI AMP SENSITIVITY GROUND FAULT INTERRUPTING FEATURES WHERE SO INDICATED, AND/ OR WHERE THEY SUPPLY STANDARD CONVENIENCE RECEPTACLES IN BATHROOMS AND OTHER SUCH CODE MANDATORY LOCATIONS.
12. WHERE SINGLE POLE IN TRIP SIZES 20 AMPS OR LESS, THEY SHALL BE RATED FOR SWITCH DUTY.

- J. IF REQUIRED TO PROVIDE "SERIES CONNECTED" RATINGS (AS SPECIFIED ELSEWHERE) WHERE FUSE-BREAKER RATINGS HAVE NOT BEEN LISTED BY U.L., SELECTED MOLDED CASE TYPE CURRENT LIMITING CIRCUIT BREAKERS IN ACCORDANCE WITH THE FOLLOWING:
- 1. IN FRAME SIZES UP TO 400 AMPS, THEY SHALL EACH BE OF THE FUSE-LESS TYPE AND HAVE AN INTERRUPTING CAPACITY OF 200,000 AMPS SYMMETRICAL AT 120/208 (240) VOLTS.
  - 2. IN FRAME SIZES LARGER THAN 400 AMPS, THEY SHALL EACH CONSISTING OF A MOLDED CASE CIRCUIT BREAKER WITH A CURRENT LIMITING FUSE CONNECTED IN EACH POLE, AS NOTED BELOW:
    - a. THEIR FUSES SHALL BE EQUIPPED WITH RELEASE BUTTONS ARRANGED TO TRIP OPEN THE LATCHES OF THEIR CIRCUIT BREAKER ELEMENTS.
    - b. SIZING OF THE FUSES SHALL BE AS DIRECTED.
    - c. EACH SHALL HAVE ITS FUSES AND BREAKER ELEMENTS INTEGRALLY MOUNTED IN A SINGLE OVERALL MOLDED PHENOLIC PLASTIC CASE.
  - 3. THEIR BREAKER ELEMENTS SHALL CONSIST OF MANUALLY OPERATED, QUICK-MAKE, QUICK-BREAK, MECHANICALLY TRIP FREE OPERATING MECHANISMS FOR SIMULTANEOUS OPERATION OF ALL POLES, WITH CONTACTS, ARC INTERRUPTERS AND TRIP ELEMENTS FOR EACH POLE. THEIR BREAKER TRIPPING UNITS SHALL BE OF THE "THERMALMAGNETIC" TYPE HAVING BIMETALLIC ELEMENTS FOR TIME DELAY OVERLOAD PROTECTION, AND MAGNETIC ELEMENTS FOR SHORT CIRCUIT PROTECTION.
  - 5. THEY SHALL BE MANUALLY OPERABLE BY MEANS OF TOGGLE TYPE OPERATING HANDLES HAVING "TRIPPED" POSITIONS MIDWAY BETWEEN THE "ON-OFF" POSITION.
  - 6. THEY SHALL BE OF THE "BOLTED-IN" TYPE.
  - 7. THEY SHALL HAVE INTERCHANGEABLE TRIPS.
  - 8. THEY SHALL BE EQUIPPED WITH AMBIENT TEMPERATURE COMPENSATING FEATURES EXTENDED TO 40°C.

- K. THE FUSE TO BE USED IN CURRENT LIMITING CIRCUIT BREAKER SHALL, REGARDLESS OF ACTUAL AVAILABLE FAULT CURRENT, AT FULL RECOVERY VOLTAGE, BE CAPABLE OF SAFELY INTERRUPTING FAULT CURRENTS IN THE ORDER OF 200,000 AMPERE RMS SYMMETRICAL OF 280,000 AMPERES RMS ASYMMETRICAL. THE CURRENT LIMITING FUSES SHALL COORDINATE WITH AND BACK UP THE CIRCUIT BREAKERS THEY ARE ASSOCIATED WITH SO THAT ALL FAULT OVERLOAD CURRENTS ACCRUING WITHIN THE SAFE CAPABILITY OF THE BREAKERS SHALL CAUSE THE BREAKERS TO OPEN, AND ALL CURRENTS OCCURRING BEYOND THE SAFE CAPABILITY OF THE BREAKERS SHALL CAUSE THE FUSES TO OPEN. THE OPENING OF THE FUSES, BEING SUCH AS TO PREVENT DAMAGE TO ANY CIRCUIT BREAKER COMPONENT PARTS. WHERE DIRECTED, FUSES SHALL BE REDUCED IN SIZE SO AS TO PROVIDE BACKUP PROTECTION FOR DOWNSTREAM OVERCURRENT DEVICES.

- L. ALL APPLICATIONS OF FUSES SHALL BE ON A "SINGLE FUSE PER PHASE LEG" (I.E., EXCLUDE FUSES IN MULTIPLE).

- M. FUSES SHALL BE MOUNTED SO THAT THE LABELS SHOWING THEIR RATINGS CAN BE READ WITHOUT REQUIRING FUSE REMOVAL.

- N. WHERE THE SIZE OF THE OVERCURRENT PROTECTION AND SWITCHING DEVICES ARE INDICATED BY MEANS OF SINGLE NUMBER AMPERAGES, IT SHALL BE UNDERSTOOD THAT THESE AMPERAGES REPRESENT AS APPLICABLE THE SIZE OF THE TRIPS OF FUSES SUPPLIED IN THE SMALLEST CIRCUIT BREAKER FRAMES OR SWITCHES THAT WILL HOLD THEM.

- O. FURNISHED AND DEPOSIT SPARE FUSES AT THE JOB SITE AS FOLLOWS:

- 1. THREE SPARES FOR EACH TYPE AND SIZE, IN EXCESS OF 60 AMPERES, USED FOR INITIAL FUSING.
- 2. TEN PERCENT SPARES FOR EACH TYPE AND SIZE, UP TO AND INCLUDING 60 AMPERES, USED FOR INITIAL FUSING. (IN NO CASE SHALL LESS THAN THREE FUSES OF ONE PARTICULAR TYPE AND SIZE BE FURNISHED).

- P. WHERE FUSES ARE REQUIRED TO BE INSTALLED IN FUSE GAPS WHICH ARE TOO LARGE OR ARE OTHERWISE NOT MATCHED TO THE FUSES, UTILIZE SINGLE STEP REDUCERS OR ADAPTORS TO ACCOMMODATE THE MOUNTING. IN ADDITION, PROVIDE CLIP CLAMPS TO ANCHOR THE REDUCERS OR ADAPTORS INTO THE FUSE GAPS.

- Q. DISTRIBUTION SWITCHES OF THE QUICK-MAKE, QUICK-BREAK TYPE SHALL BE MANUFACTURED BY SIEMENS, GENERAL ELECTRIC, WESTINGHOUSE, OR SQUARE D OR OTHER APPROVED.

- R. CIRCUIT BREAKERS SHALL BE MANUFACTURED BY BUSSMAN, GENERAL ELECTRIC, SIEMENS, OR SQUARE D OR OTHER APPROVED.

- S. FUSES SHALL BE MANUFACTURED BY BUSSMAN, OR GOULD-SHAWMUTT OR OTHER APPROVED.

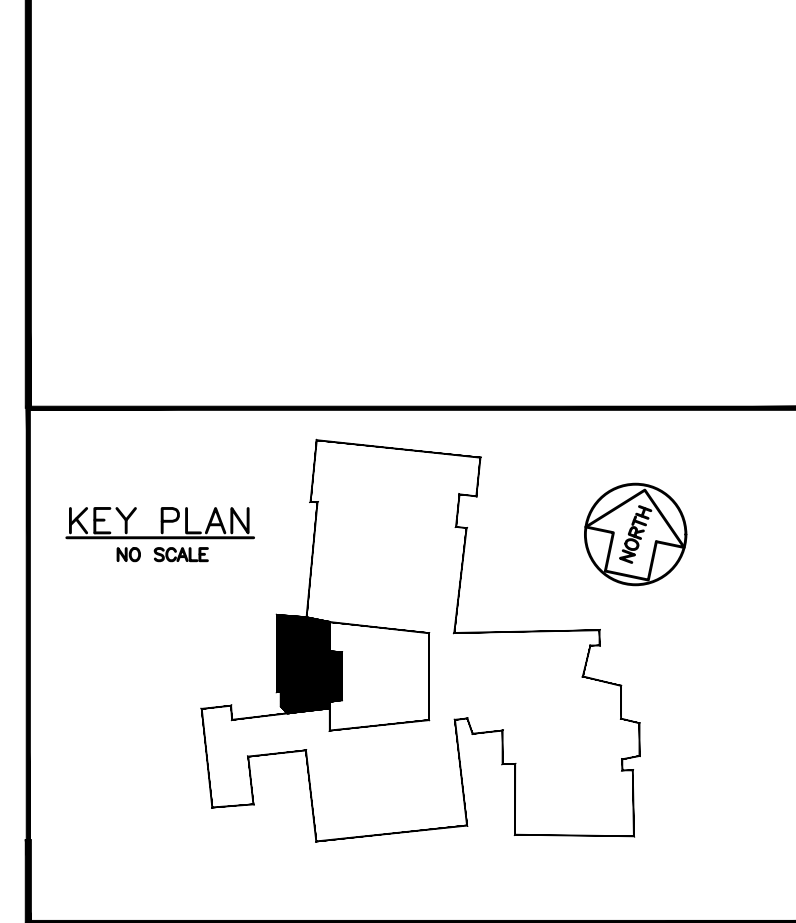
11. SAFETY SWITCHES
- A. SAFETY SWITCHES SHALL BE OF SIZE NOTED ON THE DRAWINGS, OR AS REQUIRED, FUSIBLE OR NON FUSIBLE AND EACH CONTAINED IN A GENERAL PURPOSE NEMA 1 ENCLOSURE WHEN INSTALLED INDOORS AND NEMA 3R ENCLOSURE FOR OUTDOOR INSTALLATION. ALL SWITCHES SHALL BE HEAVY DUTY TYPE AND SHALL HAVE QUICK MAKE QUICK BREAK MECHANISM.
- B. ALL SWITCHES SHALL BE OF PROPER HORSEPOWER RATING AS APPLICABLE AND HAVE DUAL INTERLOCKS DESIGNED TO INTERLOCK THE SWITCH BOX DOOR WITH THE SWITCH OPERATING MECHANISM.


12. GROUNDING
- A. ALL ELECTRICAL WORK SHALL BE GROUNDED IN ACCORDANCE WITH NEC 250
- B. PROVIDE BOTH SYSTEM AND EQUIPMENT GROUNDING IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL INSPECTION AUTHORITIES: USE COPPER STRAPS, WIRES, AND CABLES BRAZED OR BOLTED TO CLAMPS, BUSHINGS, LUGS OR FITTINGS APPROVED FOR THE PURPOSE.
- C. ALL ENCLOSURES AND OTHER NON CURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, RACEWAY SYSTEMS AND EQUIPMENT GROUND BUSES SHALL BE EFFECTIVELY GROUNDED TO THE BUILDING GROUNDING SYSTEMS THROUGH THE SYSTEM GROUND OR THROUGH METALLIC CONDUITS AND OTHER RACEWAYS AND ENCLOSURES FOR CONDUCTORS SHALL BE METALLICALLY JOINED TOGETHER INTO A CONTINUOUS ELECTRICAL CONDUCTOR, AS TO PROVIDE EFFECTIVE ELECTRICAL CONTINUITY.
- D. EQUIPMENT LOCATED REMOTELY FROM THE GROUND CONDUCTORS SHALL BE GROUNDED TO THE NEAREST AVAILABLE COLD WATER PIPING, MOTOR FRAMES SHALL BE GROUNDED THROUGH THEIR CONDUITS.

GENERAL:

- A. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH THE NEC, AND AS APPROVED BY THE AUTHORITY HAVING JURISDICTION IN THE FIELD.
- B. CONTRACTOR SHALL CHECK ALL EXISTING CONDITIONS IN THE FIELD. RELOCATE ALL EXISTING WIRING WHICH INTERFERES WITH NEW INSTALLATION AND MUST BE MAINTAINED.
- C. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ADDITIONAL CONDUITS, CABLES AND PULL BOXES AS REQUIRED FOR ROUTING OF CONDUITS AND PULLING OF CABLES.
- D. ELECTRICAL CONTRACTOR SHALL FILE AND OBTAIN AN APPROVED ELECTRICAL CERTIFICATE FROM THE BUILDING DEPT.
- E. LOCATION OF ALL ELECTRICAL EQUIPMENT IS APPROXIMATE, EXACT LOCATION TO BE VERIFIED IN THE FIELD.
- F. STUDY OTHER SECTIONS OF THE SPECIFICATIONS AND DRAWINGS COOPERATE WITH OTHER TRADES, COORDINATE WORK TO AVOID INTERFERENCES. WHEN IN DOUBT, CONSULT ENGINEER BEFORE PERFORMANCE.
- G. PERFORM ALL NECESSARY CUTTING AND PATCHING. LEAVE PREMISES IN CONDITION SATISFACTORY TO THE ENGINEER/ARCHITECT.
- H. OBTAIN PERMISSION OF ARCHITECT BEFORE CUTTING STRUCTURAL MEMBERS.
- I. NOTIFY ENGINEER OF CONFLICTS BETWEEN DRAWINGS AND SPECIFICATIONS BEFORE BIDDING. THE ENGINEER'S DECISION WILL GOVERN EITHER BEFORE OR AFTER BIDDING.
- J. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC EXCEPT WHERE DIMENSIONED. DO NOT SCALE. FOLLOW ARCHITECTURAL, STRUCTURAL AND MANUFACTURER'S SHOP DRAWINGS FOR GREATER ACCURACY. CONSULT ENGINEER IN CASE OF DOUBT OR CONFLICT. UNLESS NOTED, FIXED DIMENSIONS ARE BASED ON THE PRODUCT OF ONE MANUFACTURER, VERIFY DIMENSIONS WITH THE PRODUCT OF THE SHOP DRAWINGS OF THE MATERIALS ACTUALLY APPROVED OR PURCHASED. THE CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL COST AND DELAYS IN THE WORK RESULTING FROM SUBSTITUTION UNDER THIS DIVISION; INCLUDING, BUT NOT LIMITED TO, ANY CHANGES IN DESIGN, INSTALLATION.
- K. EQUIPMENT, SUCH AS PANELS, JUNCTION BOXES, SAFETY SWITCHES, MOTOR STARTERS, CIRCUIT BREAKERS, AND SIMILAR ITEMS SHALL BE IDENTIFIED BY NAME, WITH ENGRAVED LAMINATED PHENOLIC NAMEPLATES NOT SMALLER TAN 6" X 3" WITH CHARACTERS NOT LESS THAN 1/2" AND FASTENED WITH COUNTER OVAL HEAD BRASS MACHINE SCREWS OR RIVETS. 18. TELEPHONE & SIGNAL REQUIREMENTS
- L. EMPTY CONDUIT SHALL BE OF SIZE INDICATED AND STUB UP 6" ABOVE HUNG CEILING FROM OUTLET BOX.
- M. CONDUIT SHALL BE 1/2" MIN. UNLESS OTHERWISE NOTED.
- N. COLOR, FINISH AND TYPE OF PLATES SHALL BE APPROVED BY THE ARCHITECT PRIOR TO PURCHASE.
- O. ALL CUTTING PATCHING AND FIRE-STOPPING REQUIRED FOR WORK OF THIS DIVISION IS INCLUDED HEREIN. COORDINATION WITH GENERAL CONTRACTOR AND OTHER TRADES IS IMPERATIVE. CONTRACTOR SHALL BEAR THE RESPONSIBILITY FOR AND THE ADDED EXPENSE OF ADJUSTING FOR IMPROPER HOLES, SUPPORTS, ETC.
- P. THE CONTRACTOR SHALL FURNISH THE ENGINEER TWO SETS OF AS BUILT DRAWINGS IN HARD COPY AND ACAD 2016 FOR REVIEW AND APPROVAL. AFTER THE ENGINEERS APPROVAL OF THE DRAWINGS, THE CONTRACTOR SHALL FURNISH THE OWNER WITH ACAD 2016 AND REPRODUCIBLE SETS OF THE SAME FOR HIS RECORDS. THE AS-BUILT DRAWINGS SHALL SHOW THE FOLLOWING INFORMATION:
- 1. LOCATION OF ALL RECEPTACLES, SWITCHES AND LIGHTING FIXTURES.
  - 2. LOCATION OF JUNCTION BOXES, PULL BOXES AND PANELS.
  - 3. LOCATION (ROUTING) OF ALL BRANCH CIRCUITS AND PANELS.
  - 4. DESIGNATION OF ALL BRANCH CIRCUITS.
  - 5. WIRE SIZES WHERE WIRE LARGER THAN #12 AWG IS USED.
  - 6. CONDUIT SIZE
  - 7. LOCATION OF ALL FIRE ALARM DEVICES.
  - 8. FIELD ANNOTATED (CORRECTED) CONTRACT DRAWINGS ARE NOT ACCEPTABLE AS "AS-BUILT" OR "SHOP DRAWINGS".
- T. IN THE EVENT OF ANY CONFLICT BETWEEN INFORMATION ON THE DRAWINGS AND INFORMATION ON THE SPECS, THE MOST COSTLY ALTERNATIVE WILL GOVERN.

-	11-12-21	ISSUED FOR BID
REV	DATE	DESCRIPTION





252 East Avenue  
Norwalk, CT 06855  
(203) 866-4626 Tel  
(203) 866-8019 Fax

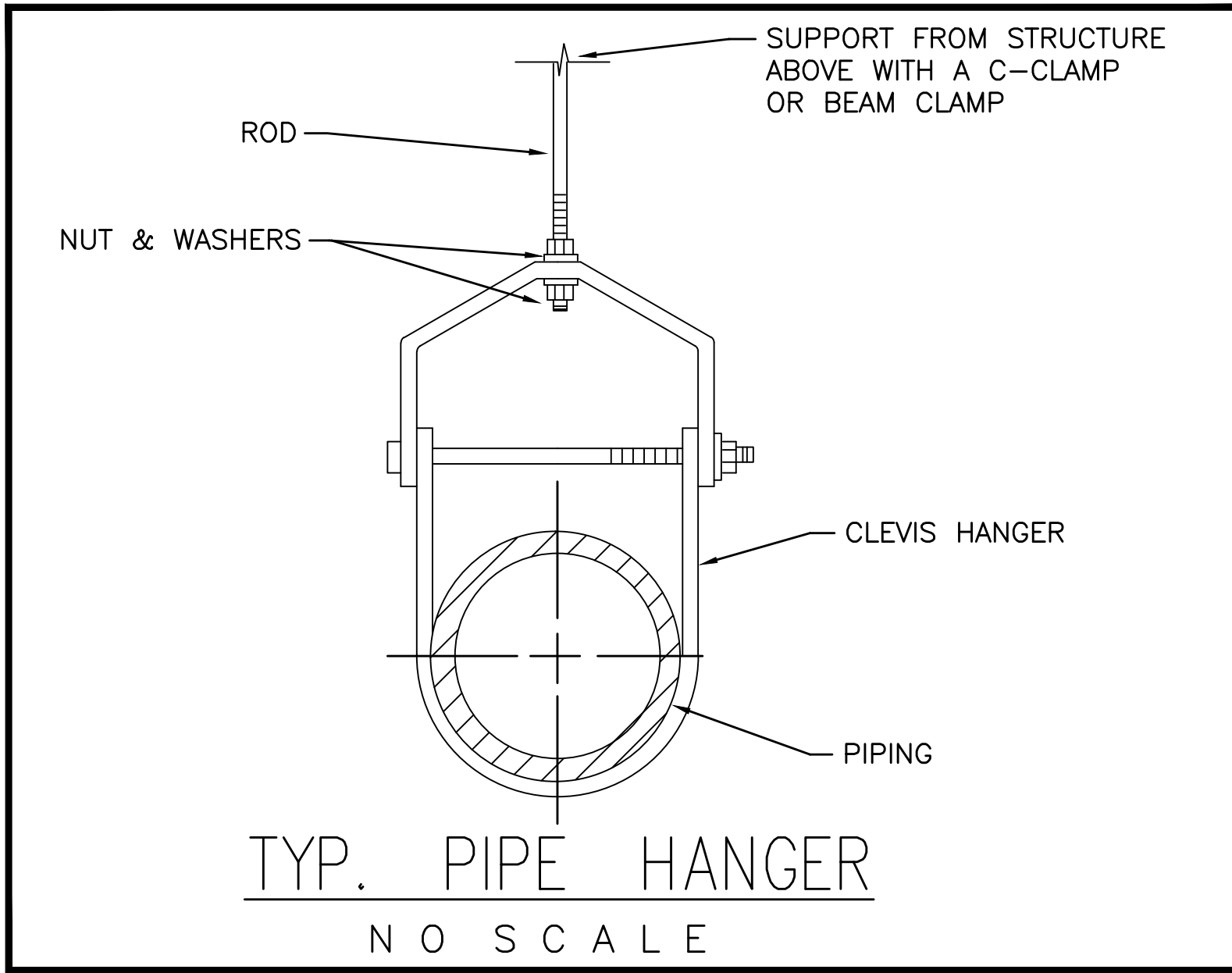
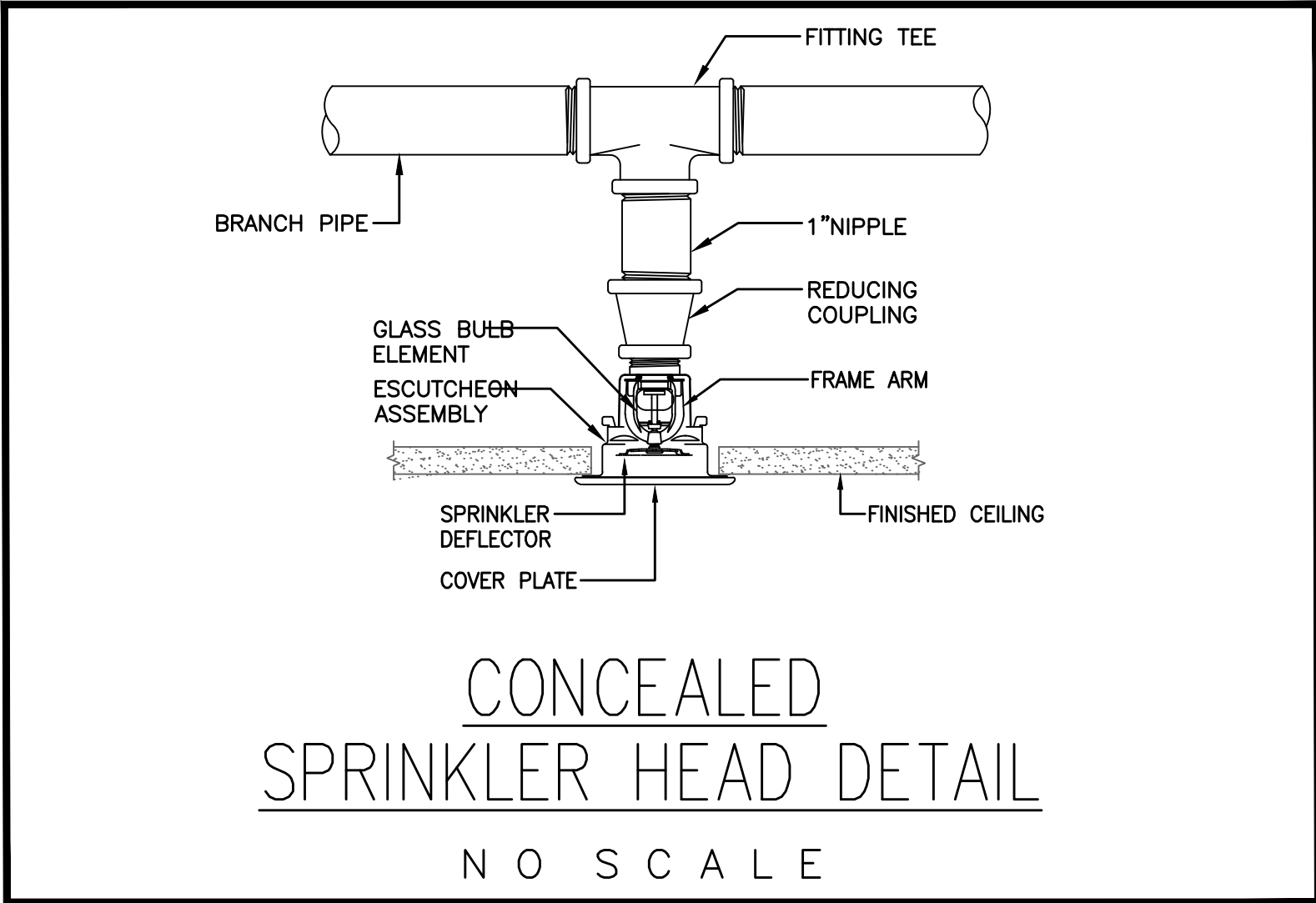
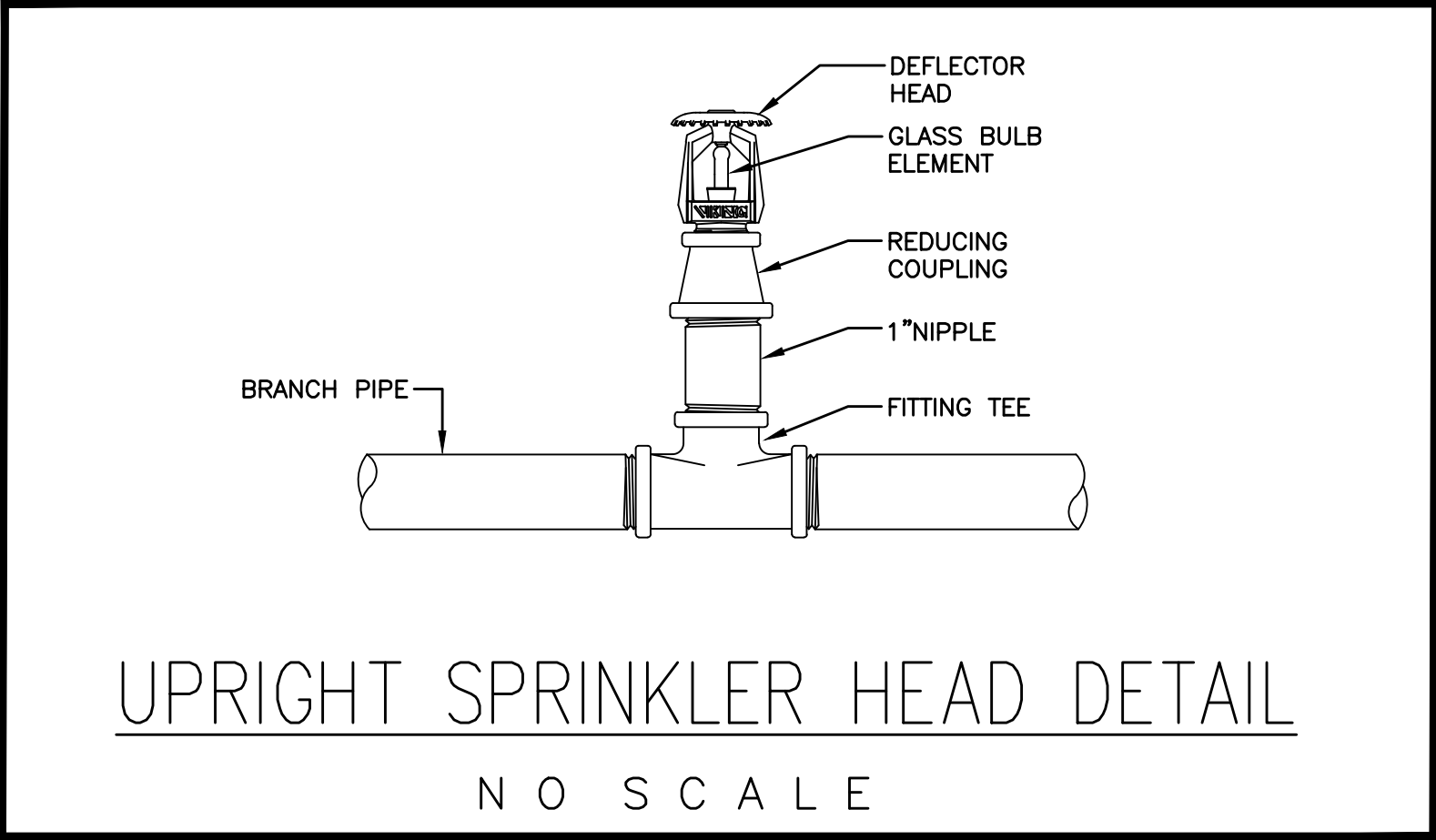
LANDMARK  
FACILITIES  
GROUP, INC.

WARDE FAIRFIELD HIGH SCHOOL  
FAIRFIELD, CT

SCALE: AS NOTED	APPROVED BY:	DRAWN BY: LC
DATE: 7/16/21		CHECKED BY: RS

ELECTRICAL  
SPECIFICATIONS

FILE NAME: DIR\DWG	JOB NUMBER: -	DRAWING NUMBER: E-200
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PIPING AND MATERIALS SCHEDULE						
PIPING SYSTEM	SIZE RANGE	PIPE MATERIALS	JOINTS	FITTINGS	INSULATION	SHUTOFF VALVES
WET PIPING	2" & SMALLER	STEEL, SCH 40, ASTM A53/A53M	THREADED	150# MALLEABLE-IRON	NA	NA
WET PIPING	2 1/2" & LARGER	STEEL, SCH 40, ASTM A53/A53M	GROOVED	VICTAULIC STYLE 77	NA	NA
NOTES: REFER TO SPECIFICATIONS ON DRAWING FOR ADDITIONAL DETAILS						

SPRINKLER LEGEND	
	DRAIN PIPING
	WET SPRINKLER PIPING
	EXISTING PIPING TO REMAIN
	EXISTING PIPING TO BE REMOVED
	DIRECTION OF FLOW
	BOTTOM OF PIPE TAKE-OFF CONNECTION
	PIPE RISE OR UP THRU SLAB
	PIPE DROP OR DOWN THRU SLAB
	TOP OF PIPE TAKE-OFF CONNECTION
	DIRECTION OF FLOW
	NIPPLE & CAP AUXILIARY DRAIN
	PRESSURE GAUGE
	UNION
	TEST VALVE & DRAIN
	OUTSIDE SCREW & YOKE VALVE (OS&Y)
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	PRESSURE REDUCING VALVE
	OUTSIDE SCREW & YOKE (OS&Y) W/ TAMPER SWITCH
	CHECK VALVE
	HOSE VALVE
	FLOW SWITCH
	TAMPER SWITCH
	POINT OF NEW CONNECTION TO EXISTING
	TYPICAL

SPRINKLER PIPE SIZING		
1. BRANCH PIPE SIZING AS FOLLOWS:		
1 SP. HEAD	1"	
2 SP. HEAD	1"	
3 SP. HEAD	1 1/4"	
4 SP. HEAD	1 1/2"	
5 SP. HEAD	1 1/2"	
6 SP. HEAD	2"	
10 SP. HEAD	2"	
11 SP. HEAD	2 1/2"	

-	11-12-21	ISSUED FOR BID
REV	DATE	DESCRIPTION

KEY PLAN  
NO SCALE

252 East Avenue  
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LANDMARK  
FACILITIES  
GROUP, INC.

WARDE FAIRFIELD HIGH SCHOOL  
FAIRFIELD, CT

SCALE: DATE: 7/16/21	APPROVED BY:	DRAWN BY: AD CHECKED BY: RS
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FIRE PROTECTION  
NOTES AND DETAILS

FILE NAME: LDH:LDWG	JOB NUMBER: -	DRAWING NUMBER: FP-001
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1. GENERAL:

- A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.
- B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
- C. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- D. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. PIPE ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF PIPE TO AVOID OBSTRUCTIONS. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS.
- E. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
- F. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.
- G. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES, AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION.
- H. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK.
- I. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
- J. THE LOCATIONS OF THE EXISTING SERVICES ARE BELIEVED TO BE AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF THESE SERVICES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING ANY WORK.
- K. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH NON-SHRINKING FIRE PROOF CAULKING OR OTHER NON COMBUSTIBLE MATERIAL.
- L. PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPING AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AS REQUIRED.
- M. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
- N. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- O. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- P. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- Q. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
- R. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- S. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INDICATE ANY DISCREPANCIES BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN

- EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING PIPE SIZES, CLEARANCES, ETC. AND CONDITIONS.
- T. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
- U. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.
2. SCOPE OF WORK:
- A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMITY WITH THE INTERNATIONAL BUILDING CODE NFPA 13 AND ALL OTHER APPLICABLE NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS HEREIN SPECIFIED.
- B. THE BASE BUILDING DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED HEREIN.
- C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.
- D. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.
3. SHOP DRAWINGS
- A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.
- B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED:
1. PROJECT NAME AND LOCATION
2. NAME OF ARCHITECT AND ENGINEER
3. ITEM IDENTIFICATION
4. APPROVAL STAMP OF PRIME CONTRACTOR
- C. SUBMISSIONS:
1. SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT THE ORIGINAL AND ONE COPY TO THE ENGINEER. SIMULTANEOUSLY SUBMIT ONE COPY TO THE ARCHITECT. ALL CATALOG CUTS SHALL BE COMPLETE.
2. SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT TWO PRINT AND ONE REPRODUCIBLE TO THE ENGINEER. SIMULTANEOUSLY SUBMIT ONE PRINT TO THE ARCHITECT.
- D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
1. PIPE AND FITTINGS
2. SPRINKLER HEADS
3. PIPING HEADS
4. HYDRAULIC CALCULATIONS
5. SUPPORTS, HANGERS AND GUIDES
4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS
- A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.
- B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.
- C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.
- D. REPRODUCIBLE "AS-BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. "AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.
5. GENERAL PROVISIONS FOR FIRE PROTECTION WORK:
- A. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.

B. DEFINITIONS:

1. "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
2. "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
3. "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
4. "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
5. "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
6. "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
7. "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.
- C. QUALITY ASSURANCE
1. QUALITY AND GAUGE OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KINDS, FREE FROM DEFECTS AND LISTED BY UNDERWRITERS LABORATORIES, INC., OR BEARING THEIR LABEL. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.
2. GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF WORK.
- D. PRODUCT DELIVERY, STORAGE AND HANDLING
1. MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.
2. ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR, MINOR DEVIATIONS SHALL BE PERMITTED. CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW.
- E. BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK SOILED OR DAMAGED. CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT.
- F. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
- G. SPRINKLER SYSTEM DESIGN CRITERIA:
1. LIGHT HAZARD OCCUPANCIES: 196 SQ FT/HEAD MAXIMUM COVERAGE; 0.10 GPM/SQ FT DENSITY OVER THE MOST REMOTE 1,500 SQ FT OF THE SYSTEM.
2. ORDINARY HAZARD OCCUPANCIES: 130 SQ FT/HEAD MAXIMUM COVERAGE; 0.16/SQ FT DENSITY OVER THE MOST REMOTE 1,500 SQ FT OF THE SYSTEM.
6. PRODUCTS:
- A. ESCUTCHEONS:
1. ALL EXPOSED PIPING PASSING THROUGH WALLS, FLOORS, PARTITIONS AND CEILINGS SHALL BE PROVIDED WITH CHROME PLATED CAST BRASS ESCUTCHEONS HELD IN PLACE WITH SET SCREWS.
7. PIPE AND FITTINGS:
- A. SCHEDULE 40 STANDARD WEIGHT BLACK STEEL PIPE, WELDED OR SEAMLESS, WITH STANDARD FLAT AND THREADED MALLEABLE IRON COUPLINGS OR RIGID ROLLED GROOVE STANDARD WEIGHT MECHANICAL COUPLINGS.
- B. SCHEDULE 10 LIGHT WEIGHT BLACK STEEL PIPE, WELDED OR SEAMLESS, WITH RIGID GROOVE STANDARD WEIGHT MECHANICAL COUPLINGS.
- C. THE FOLLOWING PRODUCTS ARE NOT ACCEPTABLE:
1. FIT PIPING SYSTEM.
2. PLAIN END PIPING SYSTEM.
3. BOLTLESS COUPLINGS.
4. HOOKER FITTINGS.
- D. ACCEPTABLE MANUFACTURERS: VICTAULIC CO., STOCKHAM.
8. SPRINKLER HEADS:
- A. 1. GENERAL: ALL SPRINKLERS SHALL BE NEW AUTOMATIC TYPE, UPRIGHT, CONCEALED PENDENT OR SIDEWALL TO MEET CONDITIONS AND PROPER TEMPERATURE RATING. DEFLECTOR TO BE MARKED TO INDICATE POSITION.
- B. 1. SPRINKLER HEADS
- A. SHALL MATCH EXISTING RATING AND TYPE, BUT IN NO CASE BE LESS THAN STANDARD REQUIRED TYPE BY NFPA 13.
- B. CONCEALED TYPE TYCO MODEL QUICK RESPONSE TYPE SPRINKLER HEAD WITH COVER PLATE. ORDINARY TEMPERATURE RATING (135°F/165°F), 5.6 K-FACTOR AND, 1/2" ORIFICE, COLOR WHITE COVER PLATE.
- C. UPRIGHT TYPE TYCO BRONZE WITH GLASS BULB.
- D. SIDEWALL TYPE TYCO HSW WITH WALL FLANGE
- HEAD GUARDS: AS REQUIRED FOR HEADS SUBJECT TO MECHANICAL INJURY.

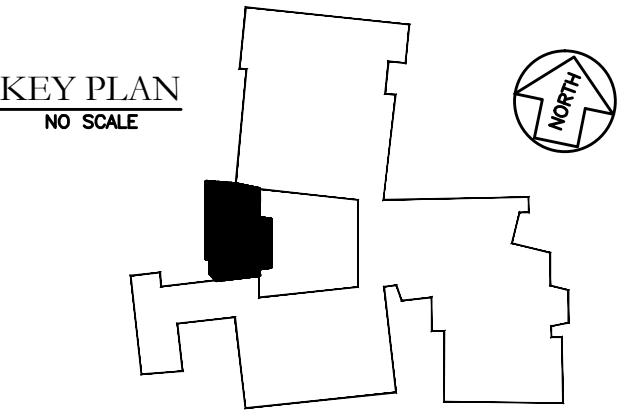
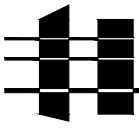
SPARE HEADS: NOT LESS THAN 12. TOTAL NUMBER BASED ON ONE SPARE HEAD OF EACH TYPE.

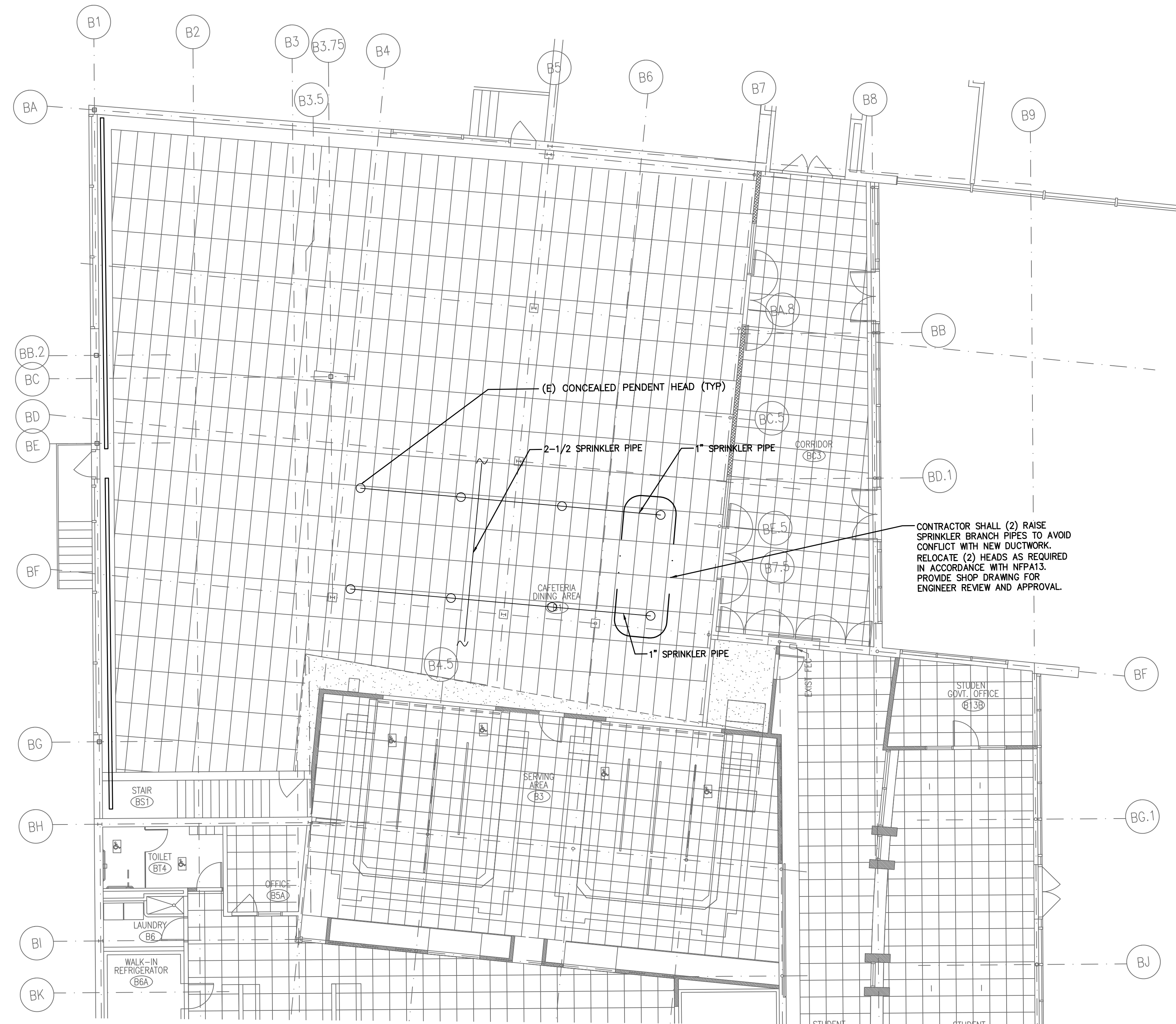
SPARE HEAD CABINET: BAKED ENAMELED STEEL CABINET, HINGED COVER, OF ADEQUATE SIZE TO CONTAIN HEADS AND WRENCH

HEAD WRENCH: PROVIDE AT LEAST ONE,WITH SUITABLE OPENINGS.

B. INSTALLATION:

1. COORDINATE SPRINKLER HEAD LOCATIONS WITH THE CEILING GRID, LIGHT FIXTURES, DIFFUSERS, AUDIO EQUIPMENT AND ALL OTHER COMPONENTS OF THE REFLECTED CEILING PLAN.
2. INSTALL SPRINKLER HEADS IN THE CENTER OF CEILING TILES AND IN A TRUE AXIS LINE IN BOTH DIRECTIONS WITH A MAXIMUM DEVIATION OF 1/2 IN. PLUS OR MINUS FROM THE AXIS LINE AS ESTABLISHED BY THE ARCHITECT FOR USE OF ALL TRADES. AT THE COMPLETION OF THE INSTALLATION, REMOVE AND REINSTALL ANY HEADS FOUND TO EXCEED THE ABOVE MENTIONED TOLERANCE. INSTALL FLUSH PLATE SPRINKLER HEADS WITHIN MANUFACTURE'S TOLERANCES. PRIOR TO INSTALLATION OF FLUSH PLATES, NOTIFY ARCHITECT AND CONSULTING ENGINEER FOR VERIFICATION OF INSTALLATION. ANY HEADS FOUND OUT OF TOLERANCE SHALL BE REMOVED AND REINSTALLED.
9. PIPING SUPPORTS:
- A. SUPPORT ALL PIPING FROM BUILDING CONSTRUCTION BY PROVIDED INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), AND ACCEPTABLE BRACKETS. SUBMIT ALL METHODS FOR REVIEW.
- B. PROVIDE ADDITIONAL FRAMING WHERE BUILDING CONSTRUCTION IS INADEQUATE. SUBMIT FOR REVIEW.
- C. SUSPENDED HORIZONTAL PIPING:
1. SUPPORT ALL PIPING INDEPENDENTLY FROM STRUCTURE USING HEAVY IRON-HINGED TYPE HANGERS, SIMILAR TO GRINNELL CLEVIS NO. 260.
2. PROVIDE ELECTROPLATED SOLID BAND HANGERS SIMILAR TO AUTO-GRIP, FOR TWO-INCH AND SMALLER PIPE.
3. PROVIDE WALL BRACKETS FOR WALL SUPPORTED PIPING AND PROVIDE PIPE SADDLES FOR FLOOR MOUNTED PIPING.
4. SUSPEND PIPING FROM INSERTS, USING BEAM CLAMPS WITH RETAINING CLAMP OR LOCKNUT, STEEL FISHPLATES, CANTILEVER BRACKETS OR OTHER ACCEPTED MEANS. BEAM CLAMPS SHALL BE SIMILAR TO GRINNELL FIGURES 61, 87, 131, OR 225.
5. SUSPEND PIPING BY RODS WITH DOUBLE NUTS.
6. PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED AND ACCEPTED WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING HANGER RODS IN REQUIRED LOCATIONS.
7. MAXIMUM HANGER SPACING AS INDICATED.
- a. PIPE 1 INCH AND SMALLER SHALL BE EVERY 8 FEET.
- b. PIPE 1-1/4 INCH AND LARGER SHALL BE EVERY 10 FEET.
8. VERTICAL PIPING:
- a. PROVIDE EXTENSION PIPE CLAMPS BOLTED TO BARE PIPE ON EACH SIDE AND BEARING EQUALLY ON STRUCTURE OR WELDED TO BEAM.
- b. PROVIDE SPACING AS INDICATED.
- 1.) THREADED AND PIPING GROOVED PIPING SHALL BE EVERY OTHER FLOOR LEVEL, AT MAXIMUM OF 25 FEET ON CENTERS.
- D. EXPANSION ANCHORS:
1. PROVIDE SMOOTH WALL, NON-SELF-DRILLING INTERNAL PLUG EXPANSION TYPE ANCHORS CONSTRUCTED OF AISC 12L14 STEEL AND ZINC PLATED IN ACCORDANCE WITH FED. SPEC. 11-A-325 TYPE 1, CLASS 3.
2. DO NOT EXCEED 1/4 OF AVERAGE VALVES FOR A SPECIFIC ANCHOR SIZE USING 2000 PSIG (13,800 KPA) CONCRETE ONLY, FOR MAXIMUM WORKING LOADS.
3. PROVIDE SPACING AND INSTALL ANCHORS IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
4. EXPANSION ANCHORS SHALL BE U.L. LISTED AND SIMILAR TO HILTI HDI.
10. INSTALLATION:
- A. DURING CONSTRUCTION, PROPERLY CAP ALL LINES AND EQUIPMENT NOZZLES SO AS TO PREVENT THE ENTRANCE OF DIRT, DEBRIS, ETC.
- B. EACH SYSTEM OF PIPING SHALL BE FLUSHED (FOR THE PURPOSE OF MOVING DIRT, DEBRIS, ETC., FROM THE PIPING) FOR AS LONG A TIME AS IS REQUIRED TO THOROUGHLY CLEAN THE SYSTEM.
11. TESTS:
- A. FIRE PROTECTION SYSTEM PIPING SHALL BE TESTED HYDROSTATICALLY AT A PRESSURE OF 200 PSI FOR A DURATION OF TWO HOURS WITHOUT A LOSS IN PRESSURE.
- B. DEFECTS DISCLOSED BY THE TESTS SHALL BE REPAIRED OR REPLACED TESTS SHALL BE REPEATED AS DIRECTED UNTIL ALL WORK IS PROVEN SATISFACTORY.
- C. TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO THE BUILDING AND ITS CONTENTS AS A RESULT OF SUCH TESTS. REPAIR ANY DAMAGE CAUSED.
- D. ARRANGE AND COORDINATE TESTS WITH OWNER 48 HOURS IN ADVANCE. NOTIFY ENGINEER AND ARCHITECT OF TEST DATE AND TIME.

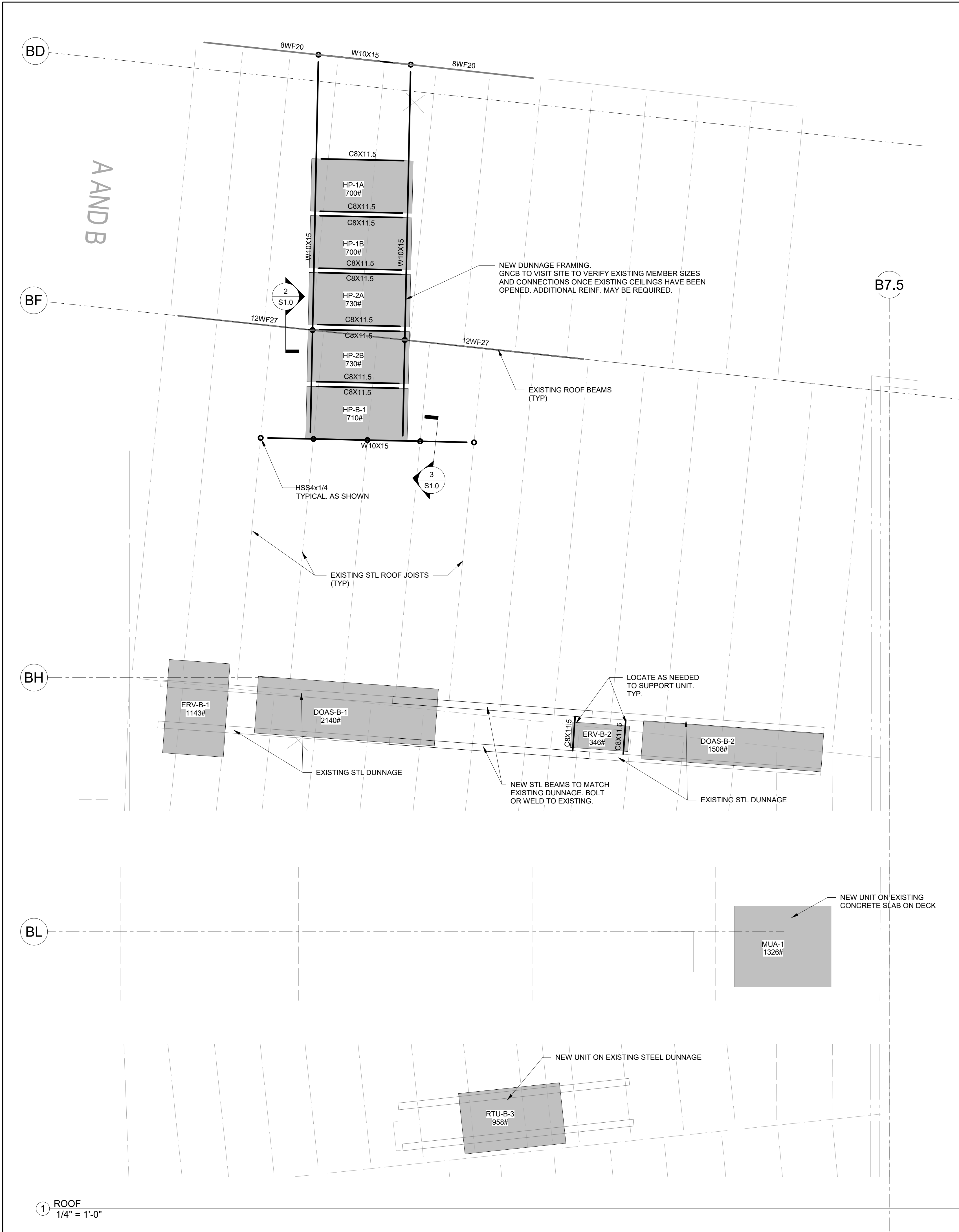
-	11-12-21	ISSUED FOR BID
REV	DATE	DESCRIPTION
<div><div>KEY PLAN</div><div>NO SCALE</div><div></div></div>		
<div><div> <b>LFG</b></div><div>252 East Avenue Norwalk, CT 06855 (203) 866-4626 T-Ed (203) 866-8019 Fax</div><div>LANDMARK FACILITIES GROUP, INC.</div></div>		
WARDE FAIRFIELD HIGH SCHOOL		
, FAIRFIELD, CT		
SCALE:	AS NOTED	APPROVED BY:
DATE:	7/16/21	DRAWN BY: AD
		CHECKED BY: RS
FIRE PROTECTION SPECIFICATIONS		
FILE NAME:	JOB NUMBER:	DRAWING NUMBER:
LDH:LDWG	-	FP-002



01 PROPOSED FIRE PROTECTION FIRST FLOOR PLAN  
1/8" = 1'-0"

-	11-12-21	ISSUED FOR BID
REV	DATE	DESCRIPTION
<p>KEY PLAN NO SCALE</p>		
<p>252 East Avenue Norwalk, CT 06855 (203) 866-4626 Td (203) 866-8019 Fax</p> <p><b>LFG</b> LANDMARK FACILITIES GROUP, INC.</p>		
<p>WARDE FAIRFIELD HIGH SCHOOL , FAIRFIELD, CT</p>		
SCALE: DATE:	AS NOTED 7/16/21	APPROVED BY: DRAWN BY: CHECKED BY:
<p>FIRE PROTECTION FIRST FLOOR</p>		
FILE NAME: LDH100DWG	JOB NUMBER: .	DRAWING NUMBER: FP-100





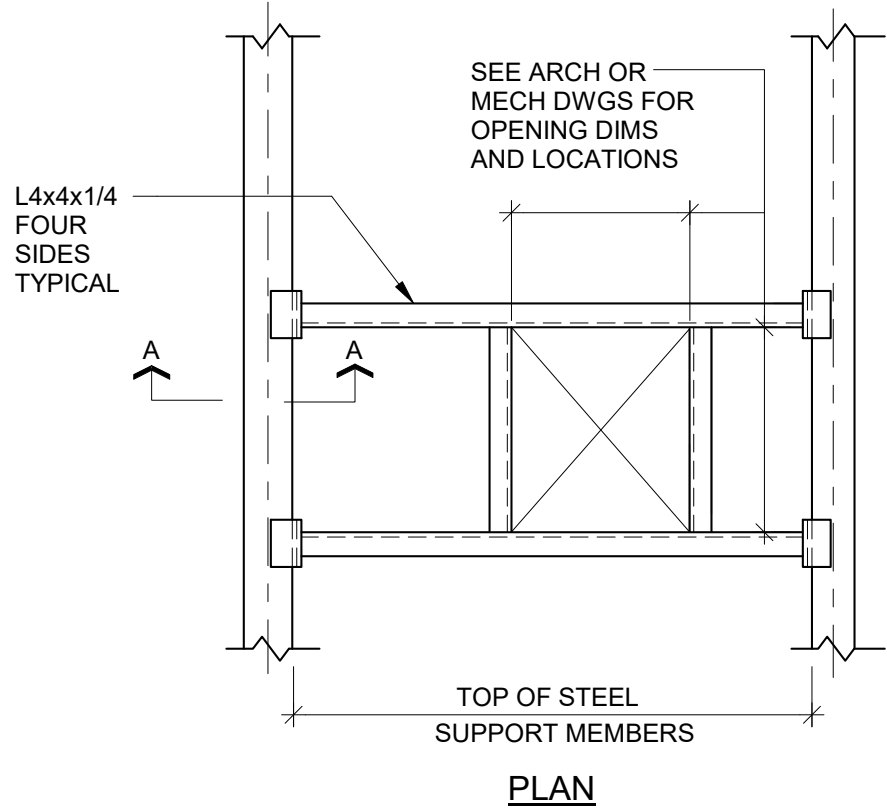
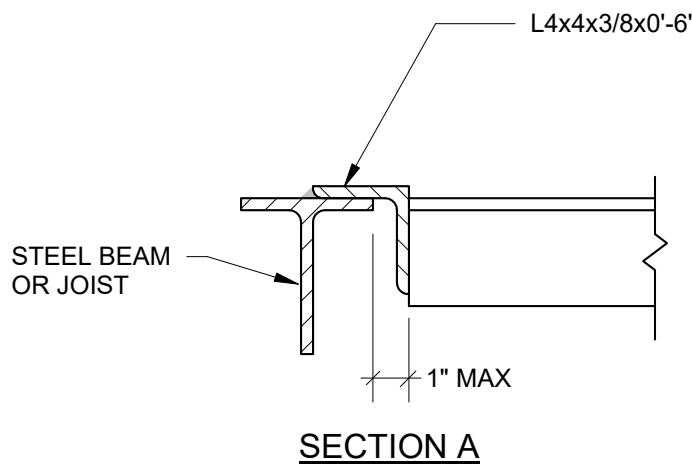
GENERAL

- 2018 STATE OF CONNECTICUT STATE BUILDING CODE AND SUPPLEMENT.
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SHORING AND BRACING TO MAINTAIN THE STABILITY, SAFETY, AND LATERAL LOAD RESISTANCE OF THE BUILDING AND ITS INDIVIDUAL COMPONENTS THROUGHOUT CONSTRUCTION.
- DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST ARCHITECTURAL DRAWINGS.
- THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES. OPENINGS NOT SPECIFICALLY SHOWN SHALL BE APPROVED BY THE ARCHITECT AND ENGINEER.
- FOR RENOVATIONS AND ADDITIONS, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS AND NOTIFY THE STRUCTURAL ENGINEER OF ANY DISCREPANCIES PRIOR TO PERFORMING WORK.
- DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE GENERALLY OBTAINED FROM THE ARCHITECT AND ARE INCLUDED AS INFORMATION COMPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. LAYOUT OF BUILDING FOUNDATIONS OR OTHER ITEMS MAY BE MADE USING THE DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS ONLY IF THE CONTRACTOR HAS COMPARED THESE DRAWINGS WITH THE ARCHITECTURAL DRAWING AND HAS RECEIVED CLARIFICATION, FROM THE ARCHITECT, REGARDING ANY ERRORS, INCONSISTENCIES, OR OMISSIONS.
- DO NOT SCALE DRAWINGS TO OBTAIN INFORMATION.
- SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR WATER/DAMP-PROOFING AND FIREPROOFING REQUIREMENTS.

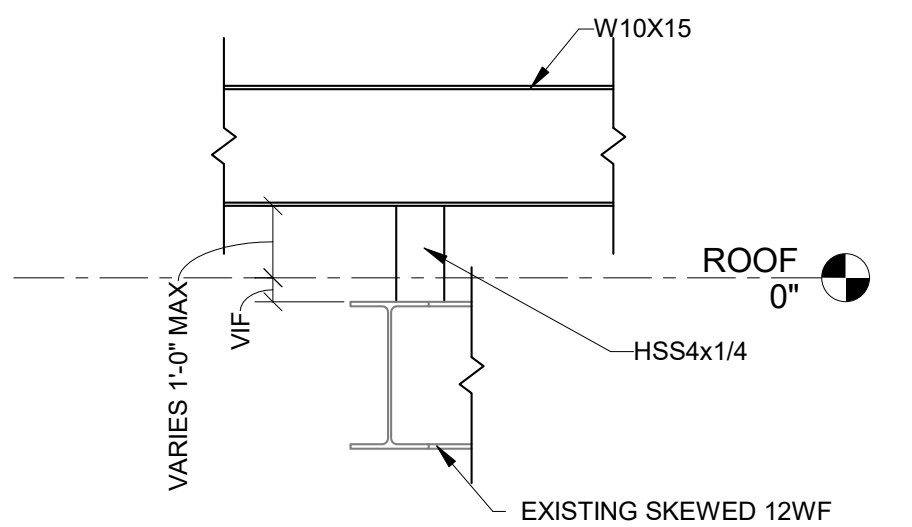
STEEL

- ALL STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS NOTED OTHERWISE ON THE DRAWINGS:  

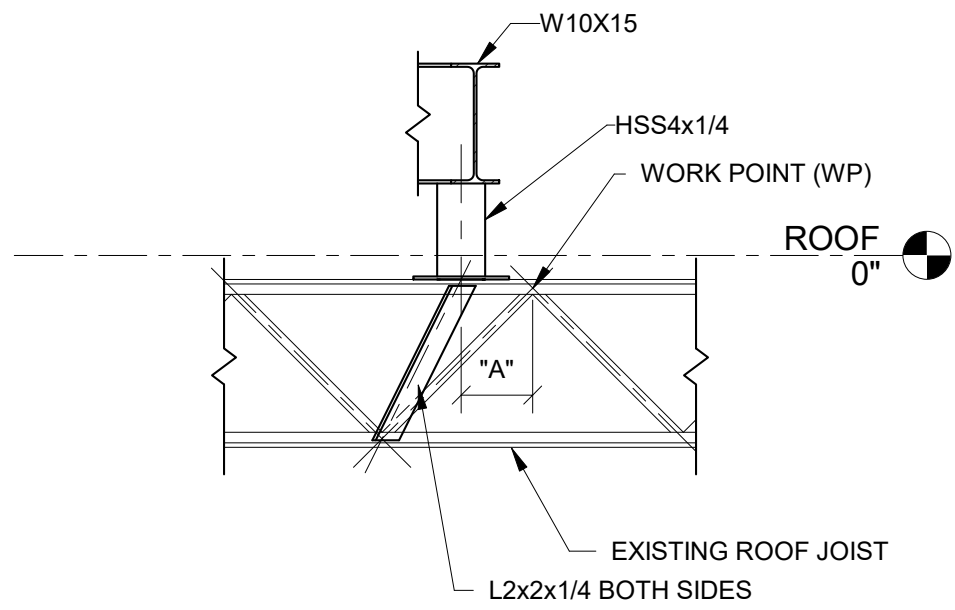
ROLLED WIDE FLANGE SECTIONS:	ASTM A572 OR A992, GRADE 50
ALL OTHER ROLLED SECTIONS:	ASTM A36
TUBULAR SECTIONS:	ASTM A500, GRADE B
PIPE SECTIONS:	ASTM A53, GRADE B
ANCHOR RODS:	ASTM F1554, GRADE 55
MOMENT FRAME CONNECTION PLATES:	ASTM A572, GRADE 50
MISC. PLATES AND CONNECTION MATERIALS:	ASTM A36
- STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC SPECIFICATION FOR STRUCTURAL STEEL
- GRAVITY CONNECTIONS: CONNECTIONS NOT OTHERWISE DETAILED SHALL BE DOUBLE ANGLE FRAMED CONNECTIONS OR SEATED CONNECTIONS WITH TOP CLIP ANGLE STABILIZER. ALL BEAM TO COLUMN CONNECTIONS ARE TO BE MADE WITH HIGH STRENGTH BOLTS. ALL CONNECTIONS SHALL BE DESIGNED TO RESIST 50% OF THE MAXIMUM ALLOWABLE UNIFORM LOAD CAPACITY (70% FOR COMPOSITE BEAM) UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- WIND/SEISMIC CONNECTIONS: LATERAL LOAD CONNECTIONS INDICATED ON THE DRAWING ARE IN ADDITION TO THE GRAVITY CONNECTIONS REQUIRED.
- ALL HIGH STRENGTH BOLTS SHALL CONFORM TO THE CURRENT SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS AS ENDORSED BY AISC. ALL BEAM TO COLUMN CONNECTIONS SHALL BE MADE WITH HIGH STRENGTH BOLTS AND SHALL BE FULLY TENSIONED. ALL OTHER HIGH STRENGTH BOLTED CONNECTIONS MAY BE SNUG TIGHT UNLESS NOTED AS SLIP CRITICAL ON DRAWING.
- THE STRUCTURAL STEEL FABRICATOR SHALL SUBMIT CALCULATIONS FOR EACH TYPE OF CONNECTION UTILIZED ON THE PROJECT. CONNECTIONS SPECIFICALLY DETAILED ON STRUCTURAL DRAWINGS ARE EXCLUDED FROM THIS REQUIREMENT.
- CALCULATIONS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER. CONNECTIONS INCLUDE, BUT ARE NOT LIMITED TO, GRAVITY FRAME CONNECTIONS, MOMENT CONNECTIONS, AND BRACED FRAMING CONNECTIONS.
- UNLESS SPECIFICALLY NOTED, STEEL DETAILS SHOWN ON THE DRAWINGS ARE FOR CONCEPT ONLY AND DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS, SIZE OF WELD, ETC.
- ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY (AWS) STRUCTURAL WELDING CODE - STEEL D1.1, LATEST EDITION. USE E70XX ELECTRODES UNLESS NOTED OTHERWISE.
- ALL STEEL DECK SHALL BE DETAILED, ERECTED AND FASTENED IN ACCORDANCE WITH THE MANUFACTURER'S SUGGESTED SPECIFICATIONS AND THE CURRENT STEEL DECK INSTITUTE SPECIFICATIONS.
- PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES, AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
- STEEL JOISTS AND BRIDGING SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH STEEL JOIST INSTITUTE, SJI, SPECIFICATIONS.
- STEEL JOISTS AND BRIDGING SHALL BE DESIGNED FOR A MIN NET UPLIFT OF 15 PSF U.N.O.
- ALL STEEL EXPOSED TO WEATHER, INCLUDING LINTELS IN EXTERIOR WALLS SHOULD BE HOT DIP GALVANIZED U.N.O.



TYPICAL WELDED ANGLE FRAME DETAIL FOR ROOF OPENINGS



SECTION @ DUNNAGE SUPPORT OVER STL BEAM  
3/4" = 1'-0"



- NOTES:
- WHEN DIMENSION "A" > 4" REINFORCE JOIST TOP CHORD AS SHOWN.
  - WELD REINFORCING ANGLES IN PLACE. WELD SIZE AND LENGTH TO BE DETERMINED BY FIELD CONDITIONS.

SECTION @ DUNNAGE SUPPORT OVER STL BAR JOIST  
3/4" = 1'-0"

**GNCB**  
Consulting Engineers, P.C.  
1358 BOSTON POST ROAD  
POST OFFICE BOX 802  
OLD SAYBROOK  
CONNECTICUT 06475  
PHONE: 860 388 1224  
GNCBENGINEERS.COM

No.	DESCRIPTION	DATE
ISSUED DRAWINGS		

NOTES:

FAIRFIELD WARDE  
HIGH SCHOOL

755 MELVILLE AVE  
FAIRFIELD, CT

ROOF PLAN, NOTES,  
AND DETAILS

SCALE:	As indicated
PROJECT NUMBER:	21253
DATE:	11/17/21
DRAWN BY:	RC
CHECKED BY:	

S1.0

20 YEAR

**A RESOLUTION APPROPRIATING \$1,094,485 FOR THE COSTS OF THE REPLACEMENT OF HVAC ROOFTOP UNITS AT FAIRFIELD WARDE HIGH SCHOOL FITTS HOUSE AND AUTHORIZING THE ISSUANCE OF BONDS TO FINANCE SUCH APPROPRIATION**

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**RESOLVED:**

1. As recommended by the Board of Finance and the Board of Selectmen, the Town of Fairfield (the "Town") hereby appropriates the sum of One Million Ninety-Four Thousand Four Hundred Eighty-Five and 00/100 Dollars (\$1,094,485) for costs related to the replacement of HVAC rooftop units at the Fairfield Warde High School Fitts House and all related engineering, administrative, financing, legal, contingency and other soft costs (the "Project").
2. To finance such appropriation and in lieu of a tax therefor, and as recommended by the Board of Finance and the Board of Selectmen, the Town may borrow a sum not to exceed One Million Ninety-Four Thousand Four Hundred Eighty-Five and 00/100 Dollars (\$1,094,485) and issue its general obligation bonds/bond anticipation notes for such indebtedness under its corporate name and seal and upon the full faith and credit of the Town in an amount not to exceed said sum for the purpose of financing the appropriation for the Project.
3. The Board of Selectmen, the Treasurer and the Chief Fiscal Officer of the Town are hereby appointed a committee (the "Committee") with full power and authority to cause said bonds to be sold, issued and delivered; to determine their form and terms, including provision for redemption prior to maturity; to determine the aggregate principal amount thereof within the amount hereby authorized and the denominations and maturities thereof; to fix the time of issue of each series thereof and the rate or rates of interest thereon as herein provided; to determine whether the interest rate on any series will be fixed or variable and to determine the method by which the variable rate will be determined, the terms of conversion, if any, from one mode to another or from fixed to variable; to set whatever other terms of the bonds they deem necessary, desirable or appropriate; to designate the bank or trust company to certify the issuance thereof and to act as transfer agent, paying agent and as registrar for the bonds, and to designate bond counsel. The Committee shall have all appropriate powers under the Connecticut General Statutes, as amended (the "Statutes") including Chapter 748 (Registered Public Obligations Act) and Chapter 109 (Municipal Bond Issues) to issue, sell and deliver the bonds and, further, shall have full power and authority to do all that is required under the Internal Revenue Code of 1986, as amended, and under rules of the Securities and Exchange Commission, and other applicable laws and regulations of the United States, to provide for issuance of the bonds in tax exempt form and to meet all requirements which are or may become necessary in and subsequent to the issuance and delivery of the bonds in order that the interest on the bonds be and remain exempt from Federal income taxes, including, without limitation, to covenant and agree to restriction on investment yield of bond proceeds, rebate of arbitrage earnings, expenditure of proceeds within required time limitations, the filing of information reports as and when required, and the execution of Continuing Disclosure Agreements for the benefit of the holders of the bonds and notes.

4. The First Selectwoman and Treasurer or Chief Fiscal Officer, on behalf of the Town, shall execute and deliver such bond purchase agreements, reimbursement agreements, line of credit agreement, credit facilities, remarketing, standby marketing agreements, standby bond purchase agreements, and any other commercially necessary or appropriate agreements which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the sale and issuance of bonds, and if the Committee determines that it is necessary, appropriate, or desirable, the obligations under such agreements shall be secured by the Town's full faith and credit.
5. The First Selectwoman and Treasurer or Chief Fiscal Officer shall execute on the Town's behalf such interest rate swap agreements or similar agreements related to the bonds for the purpose of managing interest rate risk which the Committee determines are necessary, appropriate or desirable in connection with or incidental to the carrying or selling and issuance of the bonds, and if the Committee determines that it is necessary, appropriate or desirable, the obligations under such interest rate swap agreements shall be secured by the Town's full faith and credit.
6. The bonds may be designated "Public Improvement Bonds of the Town of Fairfield", series of the year of their issuance and may be issued in one or more series, and may be consolidated as part of the same issue with other bonds of the Town; shall be in serial form maturing in not more than twenty (20) annual installments of principal, the first installment to mature not later than three years from the date of issue and the last installment to mature not later than twenty (20) years from the date of issuance or as otherwise provided by statute. The bonds may be sold at an aggregate sales price of not less than par and accrued interest at public sale upon invitation for bids to the responsible bidder submitting the bid resulting in the lowest true interest cost to the Town, provided that nothing herein shall prevent the Town from rejecting all bids submitted in response to any one invitation for bids and the right to so reject all bids is hereby reserved, and further provided that the Committee may sell the bonds on a negotiated basis, as provided by statute. Interest on the bonds shall be payable semi-annually or annually. The bonds shall be signed on behalf of the Town by at least a majority of the Board of Selectmen and the Treasurer, and shall bear the seal of the Town. The signing, sealing and certification of the bonds may be by facsimile as provided by statute.
7. The Committee is further authorized to make temporary borrowings as authorized by the Statutes and to issue temporary notes of the Town in anticipation of the receipt of proceeds from the sale of the bonds to be issued pursuant to this resolution. Such notes shall be issued and renewed at such time and with such maturities, requirements and limitations as provided by the Statutes. Notes evidencing such borrowings shall be signed by the First Selectwoman and Treasurer or Chief Fiscal Officer, have the seal of the Town affixed, which signing and sealing may be by facsimile as provided by statute, be certified by and payable at a bank or trust company incorporated under the laws of this or any other state, or of the United States, be approved as to their legality by bond counsel and may be consolidated with the issuance of other Town bond anticipation notes. The Committee shall determine the date, maturity, interest rates, form and manner of sale, including negotiated sale, and other details of said notes consistent with the provisions of this resolution and the Statutes and shall have all powers and authority as set forth above in connection with the issuance of bonds and especially with respect to compliance with the requirements of the Internal Revenue Code of

1986, as amended, and regulations thereunder in order to obtain and maintain issuance of the notes in tax exempt form.

8. Pursuant to Section 1.150-2, as amended, of the Federal Income Tax Regulations the Town hereby declares its official intent to reimburse expenditures (if any) paid for the Project from its General or Capital Funds, such reimbursement to be made from the proceeds of the sale of bonds and notes authorized herein and in accordance with the time limitations and other requirements of said regulations.
9. The First Selectwoman, Chief Fiscal Officer and Town Treasurer are hereby authorized, on behalf of the Town, to enter into agreements or otherwise covenant for the benefit of bondholders to provide information on an annual or other periodic basis to the Municipal Securities Rulemaking Board (the "MSRB") and to provide notices to the MSRB of material events as enumerated in Securities and Exchange Commission Exchange Act Rule 15c2-12, as amended, as may be necessary, appropriate or desirable to effect the sale of the bonds and notes authorized by this resolution.
10. The Committee is hereby authorized to take all action necessary and proper for the sale, issuance and delivery of the bonds and notes in accordance with the provisions of the Statutes and the laws of the United States.
11. The First Selectwoman or other proper Town official is authorized to apply for and accept any available State or Federal grant in aid of the financing of the Project, and to take all action necessary and proper in connection therewith. Any such grants or contribution received prior to the issuance of the Bonds authorized herein shall be applied to the costs of the Project or to pay at maturity the principal of any outstanding bond anticipation notes issued pursuant this resolution and shall reduce the amount of the Bonds that can be issued pursuant to this resolution. If such grants and contributions are received after the issuance of the Bonds, they shall be applied to pay the principal on the Bonds or as otherwise authorized by the Board of Selectmen, Board of Finance and Representative Town Meeting provided such application does not adversely affect the tax-exempt status of the Bonds or the Town's receipt of such grant or contribution.