



TOWN OF TRUMBULL, CONNECTICUT

**REQUEST FOR PROPOSAL, CONDITIONS, SPECIFICATIONS,
SPECIAL PROVISIONS AND DRAWINGS**

**TRUMBULL TOWN HALL ROOF REPLACEMENT
AND
TRUMBULL POLICE DEPARTMENT ROOF REPAIRS
TRUMBULL, CONNECTICUT 06611**

RFQ #5946 DUE: MAY 10, 2012 at 3:00PM

**PREPARED FOR THE TOWN OF TRUMBULL BY:
ANTINOZZI ASSOCIATES
271 Fairfield Avenue
Bridgeport, Connecticut 06604
(203) 377-1300 - (203) 378-300 -Fax**

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THERMAL AND MOISTURE PROTECTION

<u>Section No.</u>	<u>Title</u>
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TOWN HALL ROOF REPLACEMENT:

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Attachments:	Annotated Photos

POLICE FACILITY ROOF REPAIRS:

07555	SBS Roofing
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Attachments:	Annotated Photos

**TOWN OF TRUMBULL, CONNECTICUT
REQUEST FOR QUOTATION
REPLACEMENT OF TOWN HALL ROOF AND REPAIRS TO POLICE DEPARTMENT ROOF
GENERAL INSTRUCTIONS TO BIDDERS
BID NUMBER: 5946 DUE: MAY 10, 2012 @ 3:00PM**

The Town of Trumbull, Connecticut (hereinafter referred to as Town), through the Office of the Purchasing Agent, will accept sealed bids for the replacement of the flat roof at the Trumbull Town Hall (5866 Main St., Trumbull, CT) and Repairs to the Trumbull Police Department Roof (158 Edison Road, 23 Priscilla Pl., Trumbull, CT), in accordance with the attached specifications and scope of work.

NOTE: A PRE BID MEETING AND WALK-THROUGH WILL TAKE PLACE ON THURSDAY, APRIL 26, 2012 AT 10:00 AM. BEGINNING AT THE POLICE DEPARTMENT AND PROCEEDING TO THE TOWN HALL.

1. PREPARATION OF BIDS

Bids shall be submitted by using the enclosed BID PROPOSAL FORM that accompanies this request. Submit one (1) ORIGINAL and one (1) EXACT COPY. Bidders should submit bids in a clear, concise and legible manner to permit proper evaluation of responsive bids.

Bidders must submit a list of all equipment to be used and specification sheets for the generator equipment to allow proper bid evaluation. Bidders may also submit, under separate cover with their proposal, any samples of reports and documents that are necessary to meet the requirements (deliverables) of this request should a purchase order be awarded

2. BID SUBMISSION

Bids are to be submitted in DUPLICATE in a sealed envelope and addressed as follows:

Purchasing Agent – BID NUMBER: 5946, DUE: MAY 10, 2012
Town of Trumbull
5866 Main Street
Trumbull, CT 06611

Please be advised that the person signing the formal proposal must be authorized by your organization to contractually bind your firm with regard to prices and related contractual obligations for the delivery period requested.

3. BID TIME

- a) Bids shall be received at the office of the Purchasing Agent, Town Hall, prior to the advertised hour of opening, at which time all proposals will be publicly opened and read aloud. Any bid received after the due date and time noted above shall not be accepted or opened.
- b) A bidder may withdraw a proposal at any time prior to the above scheduled date and time. Any bid received after the above scheduled date and time shall not be considered or opened.

4. TOWN OPTIONS

- a) The Town of Trumbull reserves the right to reject any and all bids and does not bind itself to accept the lowest bid or any proposal. The Town reserves the right to ask for new bids in whole or in part, or to reject any or all bids, or any part thereof, and to waive any requirements, irregularities, technical defects or service therein when it is deemed to be in the best interest of the Town.
- b) If a bid proposal does not meet or better the required specifications, requirements, and scope of work requested on all points that must be outlined in a letter attached to the bid proposal otherwise it will be presumed that the bid as proposed is in accordance with the required specifications.

5. TAXES

All purchases made by the Town, and associated with the award of this requirement shall be tax exempt. Any taxes must not be included in bid prices. A Town Tax Exemption Certificate shall be furnished upon request.

6. INQUIRIES AND SITE VISITS

All inquiries regarding this request shall be answered up to the close of business May 7, 2012 after which time no additional questions will be accepted. To ensure consistent interpretation of certain items, answers to questions the Town deems to be in the interest of all bidders will be made available in writing or by Fax as appropriate to all bidders. Inquiries or requests for onsite visits may be directed to the Mr. Allen White, Director of Facilities (203.452.5070); general inquiries for drawing or specification clarifications may be directed to Mr. Paul Lisi, Antinozzi Associates, (203.377.1300). All other questions may be directed to the Mr. Robert J. Chimini, Purchasing Agent (203.452.5042).

Additionally, after proposals are received, the Town reserves the right to communicate with any or all of the bidders to clarify the provisions of Proposals. The Town further reserves the right to request additional information from any bidder at any time after proposals are opened.

7. AWARD AND AUTHORITY

The Town Purchasing Agent will issue notification of award in writing.

8. PRICING

- a) Bidders are requested to quote as a complete "Turn Key" installation.
- b) All prices quoted are to be firm for a period of at least ninety (90) days following bid opening.
- c) Special Consideration will be given to responses with extended firm price dates. The Town is always interested in any and all cost reduction opportunities.

9. ASSIGNMENT OF RIGHTS, TITLES, AND INTERESTS

Any assignment or subcontracting by a bidder, vendor, or contractor for work to be performed, or goods and/or services to be provided, in whole or in part, and any other interest in conjunction with Town procurement shall not be permitted without the express written consent of the Town of Trumbull.

10. HOLD HARMLESS CLAUSE

Bidder agrees to indemnify, hold harmless and defend the Town from and against any and all liability for loss, damage or expense which the Town may suffer or for which the Town may be held liable by reason of injury, including death, to any person or damage to any property arising out of or in any manner connected with the operations to be performed under an agreement with the Town, whether or not due in whole or in part of any act, omission or negligence of the Town or any of his representatives or employees.

11. WORK REGULATIONS, PREVAILING WAGE, AND STANDARDS

All work activities performed in association with this request must be performed and completed for the Town in accordance with current Federal State and Local regulations. State of Connecticut Prevailing Wage standards apply for this project. All services performed shall also conform to the latest OSHA standards and/or regulations.

12. INSURANCE

The successful bidder shall provide the Town Purchasing Agent with a Certificate of Insurance before work commences. The Town shall be named as an additional insured with an Insurance Company licensed to write such insurance in Connecticut, against the following risks and in not less than the following amounts:

- > Worker's Compensation
- > Contractor's Public Liability and Property Damage
- > Automobile Insurance

General Liability	Each Person	Each Occurrence	Aggregate
Bodily Injury Liability	\$1,000,000	\$1,000,000	\$5,000,000
Property Damage Liability		\$1,000,000	\$5,000,000
Personal Injury Liability		\$1,000,000	\$5,000,000
Comprehensive Automobile Liability			
Bodily Injury	\$1,000,000	\$1,000,000	\$5,000,000
Property Damage		\$1,000,000	\$5,000,000

Such policies shall provide that no coverage shall be changed or cancelled unless thirty- (30) days prior notice of such change or cancellation shall be made to the owner. Such notice shall be made by registered mail; postage prepaid, to the Purchasing Agent, Town of Trumbull, Town Hall, Trumbull, Connecticut 06611.

In the event of cancellation, the contractor shall cease all operations on or before the effective date of said cancellation and he shall not commence work again until he has obtained replacement insurance and has delivered a Certificate of Insurance to the office of the Owner's Purchasing Department.

13. BID, PERFORMANCE AND PAYMENT BONDS

- a) A Bid Bond payable to the Owner must accompany each Bid for ten (10%) percent of the total amount of the Bid. As soon as the Bid prices have been compared, the Owner will return the bonds of all except the three lowest responsible Bidders. When the Agreement is executed, the bonds of the two remaining unsuccessful Bidders will be returned. The Bid Bond of the successful Bidder will be retained until the Payment Bond and Performance Bond have been executed and approved, after which it will be returned. A certified check may be used in lieu of a Bid Bond.
- b) A Performance Bond and a Payment Bond, each in the amount of 100 percent (100%) of the Contract Price, with a corporate surety approved by the Owner, will be required for the faithful performance of the contract. Attorneys-in-fact who sign the Bid Bonds or Payment Bonds and Performance Bonds must file with each bond, a certified and effective dated copy of their power of attorney.
- c) The party to whom the contract is awarded will be required to execute the Agreement and obtain the Performance Bond and Payment Bond within ten (10) calendar days from the date when Notice of Award is delivered to the Bidder. The Notice of Award shall be accompanied by the necessary Agreement and Bond forms. In case of failure of the Bidder to execute the Agreement, the Owner may, at his option, consider the Bidder in default, in which case the Bid Bond accompanying the proposal shall become the property of the Owner.
- d) The Owner, upon receipt of acceptable Performance Bond, Payment Bond and Agreement signed by the Contractor, shall sign the Agreement and return to the Contractor an executed duplicate of the Agreement within a reasonable period of time. The returned executed Agreement by the Owner to the Contractor shall be accompanied with a Notice to Proceed.

14. CONFLICT OF INTEREST

No purchase shall be made from nor shall services (other than services as an officer, agent, or employee of the Town) be secured from any officer or employee of the Town, or from any partnership or corporation in which such officer or employee is a partner or officer, or holds a substantial interest, unless such relationship and the fact that such purchase is contemplated shall be made known in writing to the agency making such purchase, and notice thereof posted, for at least five (5) days before such purchase be made, in the office of the agency making such purchase and in a public place in the Trumbull Town Hall.

15. REFERENCES

Bidders must provide five (5) commercial references using the attached form.

16. SPECIFICATIONS

- a) Should any Bidder find discrepancies in the Specifications, or be in doubt as to the exact meaning, notify the Town at once. The Town may then, at their option, issue Addenda clarifying same. The Town shall not be responsible for oral instructions or misinterpretations of Specifications.
- b) The Town reserves the right to issue Addenda at any time prior to the Bid Opening. All such Addenda become, upon issuance part of the Specification. Each Bidder shall cover such Addenda in the proposal and shall acknowledge receipt of same on the blank provided therefore.
- c) The Town reserves the right to require any or all Bidders to submit statements as to previous experience in performing comparable work; and as to financial and technical organizations and resources available for this work. The mere opening and reading aloud of a bid shall not constitute or imply the Town's acceptance of the suitability of a Bidder or the bid, nor shall possession of Drawings or Specifications constitute an invitation to bid. The competency and responsibility of Bidders as well as the number of working days required for completion will be considered in making an award.

17. **ADENDUMS**

It is the responsibility of the bidder to verify prior to final submittal of a bid or bid if any addenda to this request have been issued. Any addenda to this request shall be posted on the Town of Trumbull website www.trumbull-ct.gov under the Purchasing Department's section. Bidders also call the Purchasing Department directly 203.452.5042 for inquiries regarding addenda.

18. **LIQUIDATED DAMAGES:**

Non-compliance with the scheduled completion date of the Contract shall result in engineering charges as follows:

- The Contractor shall pay liquidated damages of \$250.00 per working day for each day after the agreed Contract completion date up to, and including, the actual date of completion.

19. **GENERAL BID SPECIFICATIONS AND INFORMATION**

- a. TIME IS OF THE ESSENCE after the bid is awarded, the Contractor and representatives from the TOWN shall meet to discuss scheduling of work, safety plans, and the coordination of any work to be provided by the contractor, any subcontractors, and the maintenance staff.
- b. A payment schedule shall be determined by the contractor and the TOWN plant administrator based upon the confirmed order of materials and parts, delivered equipment, and installation progress.
- c. Work may be scheduled during the day so long as any particular operation does not interrupt the safe and normal operation of the building. Tasks that may be disruptive need to be scheduled when the offices are not in session.
- d. Workers must follow all safety protocol while working in or around the building.

**TOWN OF TRUMBULL, CONNECTICUT
REQUEST FOR QUOTATION
REPLACEMENT OF TOWN HALL ROOF AND REPAIRS TO POLICE DEPARTMENT ROOF
BID NUMBER: 5946 DUE: MARCH 1, 2012 @ 3:00PM
REFERENCES**

(To be submitted with proposal – attach additional pages as necessary)

List references for similar services provided for at least five (5) clients in the past five (5) years (attach any other client references if desired). **PLEASE NOTE IT IS THE TOWN'S INTENT TO COMMUNICATE WITH THE REFERENCES LISTED HEREIN.**

CLIENT 1:

Organization Name: _____
Contact Name: _____ Phone: _____
Service Dates: _____
Project(s): _____

CLIENT 2:

Organization Name: _____
Contact Name: _____ Phone: _____
Service Dates: _____
Project(s): _____

CLIENT 3:

Organization Name: _____
Contact Name: _____ Phone: _____
Service Dates: _____
Project(s): _____

CLIENT 4:

Organization Name: _____
Contact Name: _____ Phone: _____
Service Dates: _____
Project(s): _____

CLIENT 5:

Organization Name: _____
Contact Name: _____ Phone: _____
Service Dates: _____
Project(s): _____

**TOWN OF TRUMBULL, CONNECTICUT
REQUEST FOR QUOTATION
REPLACEMENT OF TOWN HALL ROOF AND REPAIRS TO POLICE DEPARTMENT ROOF
BID PROPOSAL FORM**

BID NUMBER: 5946 DUE: MARCH 10, 2012 @ 3:00PM

PROPOSAL

1. OFFER

Pursuant to and in compliance with the Invitation to Bid relating thereto, the Undersigned,

(Company Name)

(Address)

(hereinafter called "Proposer, Bidder"), organized and existing under the laws of the State of Connecticut, and doing business as to the Town of Trumbull, Connecticut (hereinafter called the "Owner"), having reviewed the conditions present and carefully examined all the documents (including the drawings and specifications dated January 13, 2012), General Instructions, Bid Proposal Form, etc., together with all Addenda issued and received prior to closing time for receipt of Bids as prepared by Antinozzi Associates hereby offers and agrees as follows:

To provide all materials, all labor and all else whatsoever necessary to erect and properly finish all work in accordance with said documents for the above mentioned projects to the satisfaction of the Architect and Owner for the stipulated sum of: *(All State of Connecticut taxes are excluded from the Bid Sum.)*

Base Bid (in words)

\$ _____

Base Bid (in figures)

Enclosed herewith is the Bid Guaranty (10% of Base Bid minimum), which is in the form of:

() Bid Bond () Certified Check

2. ACCEPTANCE

- a. This offer shall be open to acceptance for ninety (90) days from the Bid opening date.
- b. If this Bid is accepted by the Owner within the time period stated above, Undersigned will:
- c. Execute this Agreement within ten days of receipt of acceptance of this Bid.
- d. Furnish the required bond (s) within ten days of receipt of acceptance of this Bid.
- e. Commence work within seven days after written Notice to Proceed or Contract signing.
- f. If this Bid is accepted within the time stated, and the Undersigned fails to provide the required Bond(s), the Owner may charge against the Undersigned the difference between the amount of this bid and the amount for which the contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the bid guaranty.
- g. In the event this Bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

3. CONTRACT TIME

If this Bid is accepted, the Undersigned will complete all the work in 120 calendar days from Notice to Proceed. It is additionally understood that liquidated damages, in the amount of \$250.00 per day, will be assessed for failure to complete the project within the above time period as described in the General Conditions.

4. CHANGES TO THE WORK

Equitable adjustments for Changes in the Work will be net cost plus a percentage fee in accordance with the General Conditions.

5. ADDENDA

The following Addenda have been received. The modifications to the Bid Documents noted therein have been considered and all costs thereto are included in the Base Bid.

Addenda # _____, _____, _____, _____, _____

6. ALTERNATES

A. Add Alternate No.1 – Provide and install new waterproofing on existing ductwork. Refer to technical specifications for additional information.

ADD THE SUM OF \$ _____

B. Add Alternate No.2 – Replace existing skylight with new skylight as specified.

ADD THE SUM OF \$ _____

C. Add Alternate No.3 – Provide and install ¼ inch per foot tapered insulation in lieu of the specified 1/8 inch per foot tapered insulation.

ADD THE SUM OF \$ _____

D. Add Alternate No.4 – Upgrade existing lighting protection system as outlined in a report dated 3/7/12 prepared by Woods Lightning Protection LLC. (Note: Base bid shall include re-installation of existing system and final testing.)

E. ADD THE SUM OF \$ _____

7. UNITS PRICES

A. Provide and install additional specified fluid applied flashing: \$ _____ per square foot

B. Provide and install additional specified wood blocking: \$ _____ per linear foot

C. Provide and install additional steel deck replacement: \$ _____ per square foot

D. Provide and install additional specified drain system: \$ _____ per drain

E. Provide and install additional drain line to match existing: \$ _____ per linear foot

F. Provide and install additional specified walk pads: \$ _____ per linear foot

G. Additional man hours for roofer: \$ _____ per hour

8. BID FORM SIGNATURE (S)

The Corporate Seal

(Print the full name of Proprietorship, Partnership, or Corporation)

Was hereunto affixed in the presence of:

(Authorized signing officer)

(Title)

(Seal)

(Authorized signing officer)

(Title)

If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

SECTION 01100 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes:
- B.
 - 1. Work covered by Contract Documents.
 - 2. Contractor use of premises.
 - 3. Coordination with occupants.
 - 4. Work restrictions.
 - 5. Specification and drawing conventions.
- C. Related Section:
 - 1. Division 1 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: Trumbull Town Hall Roof Replacement & Trumbull Police Facility Roof Repairs.
 - 1. Town Hall Project Location: 5866 Main Street, Trumbull, Connecticut.
 - 2. Police Facility Project Location: 158 Edison Road, Trumbull, Connecticut
- B. Owner: Town of Trumbull, 5866 Main Street, Trumbull, Connecticut.
- C. Architect: Antinozzi Associates, P.C.
- D. The Work consists of the following:
 - 1. Town Hall Roof Replacement Work: The Work includes replacement of the existing low slope main roof area including associated work as indicated in the drawings and technical specifications.
 - 2. Police Facility Roof Repairs Scope: The Work includes replacement of the existing flashings and installation of new snow guards including associated work as indicated in the drawings and technical specifications.

1.4 CONTRACTOR USE OF PREMISES

- A. General: Contractor shall have limited use of Project site for construction operations during construction period. Contractor's use of Project site is limited to the areas where work is taking place at any particular time and to common areas required for access to work areas. All other areas shall be restricted. Do not disturb portions of Project site beyond areas in which the Work is indicated.
1. Limits: Confine construction operations to work areas adjacent to the windows.
 2. Limits: Limit site disturbance. All areas disturb by the general contractors, subcontractors, vendors, deliveries, etc. shall be repaired by the contractor.
 3. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, Tenants and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- B. Condition of Existing Building: Maintain portions of existing building affected by construction operations in an acceptable condition throughout construction period. Repair damage caused by construction operations.
- C. The Contractor shall conduct his operations under this Contract in such a manner as to allow, at all times during the performance of the work ingress and egress for the tenants and the public with the Owner's representative to coordinate his work to meet this condition.
- D. The Contractor shall provide all necessary safety equipment, material, and personnel to protect the public walks, entrance to buildings and grounds within the work areas of this Contract in order that pedestrians, tenants and the public be protected at all times.
- E. Contractor must preserve as much of existing parking as possible for owner use during construction.
- F. At all times, the occupants must have safe and full access to all parts of the facility including all the exit stairs and corridors.

1.5 COORDINATION WITH OCCUPANTS

- A. Full Occupancy: Owner will occupy site and existing building during entire construction period. Cooperate with Owner and occupants during construction operations to minimize conflicts and facilitate Owner and occupant's usage. Perform the Work so as not to interfere with Owner's and occupant's day-to-day operations. Maintain existing exits unless otherwise indicated.

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 the Owner not less than 72 hours in advance of activities that will affect Owner's and occupant's operations.

1.6 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 1. Comply with limitations on use of public streets and other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, except as otherwise indicated.
 1. Weekend Hours: Only with prior approval from the owner.
 2. Early Morning Hours: Only with prior approval from owner.
 3. Hours for Utility Shutdowns: 48 hours notice and approval from owner.
- C. Excessive Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to the occupants with Owner.
 1. Notify Owner not less than two days in advance of proposed disruptive operations.
 2. Obtain Owner's written permission before proceeding with disruptive operations.
- D. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor air intakes.
- E. Controlled Substances: Use of tobacco products and other controlled substances within the existing building or on the Project site is not permitted.
- F. Employee Identification: Provide identification tags for Contractor personnel working on the Project site. Require personnel to utilize identification tags at all times.
- G. Employee Screening: Comply with Owner's requirements regarding screening of Contractor personnel working on the Project site.
 1. Maintain list of approved screened personnel with Owner's Representative.
- I. Security: The Owner will not provide security guard service, watchman or escorts for this project. The employment of a security guard service to guard the contractor's employees, equipment or materials shall be at the discretion of the Contractor. However, the Contractor shall be solely responsible for theft, vandalism or similar acts at no extra cost to the Owner.

1.7 SCHEDULING OF WORK

- A. The roof replacement and associated work will be carried on while the existing facility is occupied.
- B. The Contractor shall be given reasonable latitude in scheduling of the work. The Town of Trumbull officials will cooperate mutually with the general contractor in adjusting to situations, which may arise during the construction. In no case will the existing building or any portion of the existing building be vacated.
- C. The Contractor shall include any overtime work that may be required to perform work that can not be completed during regular working hours. If overtime work is required, the contractor must pay the Director of Facilities employed by the Owner, Town of Trumbull for all hours when overtime is in force. No overtime work can take place without the Director of Facilities present.
- D. It is the intent of the Contractor to prosecute the work as rapidly as possible. The final construction schedule will be subject to the approval of the Owner and Architect.

1.8 SPECIFICATIONS AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 1 General Requirements: Requirements of Sections in Division 1 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on the Drawings are described in detail in the Specifications. One or more of the following are used on the Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
 - 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

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Town of Trumbull

Town Hall Roof Replacement &
Police Facility Roof Repairs

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01100

SECTION 01230 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This 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. 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.
- 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. A schedule of alternates is included in the Bid Form.

END OF SECTION 01230

SECTION 01250 - 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 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections include the following:
 - 1. Division 1 Section "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, within this specification.

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 for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
 - 2. Within 5 days 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.

- B. **Contractor-Initiated Proposals:** If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 4. Include costs of labor and supervision directly attributable to the change.
 5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 6. Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.
- C. **Proposal Request Form:** Recommended form is AIA Document G709 for Proposal Requests.

1.5 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 (or similar format).

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. **Construction Change Directive:** Architect may issue a Construction Change Directive on AIA Document G714 (or similar format). 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.

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Town Hall Roof Replacement &
Police Facility Roof Repairs

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01250

SECTION 01270 - 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 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.
- B. Related Sections include the following:
 - 1. Division 1 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.3 DEFINITIONS

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

1.4 PROCEDURES

- A. Unit prices include all necessary labor, 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.
- D. List of Unit Prices: A list of unit prices is included in the Bid Form. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

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Town Hall Roof Replacement &
Police Facility Roof Repairs

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not used)

END OF SECTION 01270

SECTION 01290 - 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 1 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 include the following:
 - 1. Division 1 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

1.3 DEFINITIONS

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

1.4 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. Submittals Schedule.
 - c. Contractor's Construction Schedule.
 - 2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven 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 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 the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
- a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value.
- 1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
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 several line items for principal subcontract amounts, where appropriate.
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 specified, include evidence of insurance or bonded warehousing.
6. 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.
- C. Retainage: Owner shall retain 10% of each progress payment until proof of the project's substantial completion. Upon substantial completion, Owner shall retain 5% of the remaining project completion cost. Upon final project completion and closeout, the Owner will then proceed to release the remaining retainage amount and make final payment to the Contractor.

1.5 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.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

- C. **Payment Application Forms:** Use AIA Document G702 and AIA Document G703 Continuation Sheets 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 of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. **Transmittal:** Submit 3 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt. One copy shall include waivers of lien and similar attachments if required.
- F. **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. When an application shows completion of an item, submit final or full waivers.
 2. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 3. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 4. **Waiver Forms:** Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- G. **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.
 5. Schedule of unit prices.
 6. Submittals 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.
 16. Initial settlement survey and damage report if required.

- H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. 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.
- I. 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 01290

SECTION 01310 - 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 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Coordination
2. Administrative and supervisory personnel.
3. Project meetings.
4. Requests for Interpretation (RFIs).

- B. Related Sections include the following:

1. Division 1 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
2. Division 1 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Division 1 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.4 COORDINATION

- A. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- 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 and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's Construction Schedule.
 2. Preparation of the Schedule of Values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Preinstallation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1.5 SUBMITTALS

- A. Key Personnel Names: Within 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 and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
- B. Coordination Drawings: Prepare Coordination Drawings where space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
1. Indicate relationship of components shown on separate Shop Drawings.
 2. Indicate required installation sequences.

1.6 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Minutes: Architect will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Contractor, within three days of the meeting.
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. 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. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures.
 - k. Preparation of Record Documents.
 - l. Use of the premises.
 - m. Work restrictions.
 - n. Owner's occupancy requirements.
 - o. Responsibility for temporary facilities and controls.
 - p. Construction waste management and recycling.
 - q. Parking availability.
 - r. Office, work, and storage areas.
 - s. Equipment deliveries and priorities.
 - t. First aid.
 - u. Security.
 - v. Progress cleaning.
 - w. Working hours.
 3. Minutes: Architect will record and distribute meeting minutes.
- C. Progress Meetings: Conduct progress meetings at regular intervals not exceeding every 2 weeks. Coordinate dates of meetings with preparation of payment requests.

1. 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 conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. 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) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) RFIs.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
3. Minutes: Architect will record and distribute the meeting minutes to the Project team.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 - 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.

1.7 REQUESTS FOR INTERPRETATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned 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 interpretation and the following:
1. Project name.
 2. Date.
 3. Name of Contractor.
 4. Name of Architect.
 5. RFI number, numbered sequentially.
 6. Specification Section number and title and related paragraphs, as appropriate.
 7. Drawing number and detail references, as appropriate.
 8. Field dimensions and conditions, as appropriate.
 9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 10. Contractor's signature.
 11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
 - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. Hard-Copy RFIs: CSI Form 13.2A.
1. Identify each page of attachments with the RFI number and sequential page number.
- D. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.
1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- E. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow five working days for Architect's response for each RFI. RFIs received after 3:00 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 RFIs with numerous errors.
2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
 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 Division 1 Section "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- F. 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 days if Contractor disagrees with response.
- G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log at each progress meeting. 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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01310

SECTION 01320 - 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 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This 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. Submittals Schedule.
 - 3. Special reports.
- B. Related Sections include the following:
 - 1. Division 1 Section "Payment Procedures" for submitting the Schedule of Values.
 - 2. Division I Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
 - 3. Division 1 Section "Submittal Procedures" for submitting schedules and reports.

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 activities are activities on the critical path. They 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. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

- E. Event: The starting or ending point of an activity.
- F. 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.
- G. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- H. Major Area: A story of construction, a separate building, or a similar significant construction element.
- I. Milestone: A key or critical point in time for reference or measurement.
- J. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.
- K. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.4 SUBMITTALS

- A. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
 - 6. Scheduled date for Architect's final release or approval.
- B. Contractor's Construction Schedule: Submit two opaque copies of initial schedule, large enough to show entire schedule for entire construction period.
- C. Special Reports: Submit two copies at time of unusual event.

1.5 QUALITY ASSURANCE

- A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to the Preliminary Construction Schedule and Contractor's Construction Schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints.
4. Review delivery dates for Owner-furnished products.
5. Review schedule for work of Owner's separate contracts.
6. Review time required for review of submittals and resubmittals.
7. Review requirements for tests and inspections by independent testing and inspecting agencies.
8. Review time required for completion and startup procedures.
9. Review and finalize list of construction activities to be included in schedule.
10. Review submittal requirements and procedures.
11. 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.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
 1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
 2. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."
- B. Time Frame: Extend schedule from date established for commencement of the Work to date of Final 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.
- C. Activities: Treat each 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 20 days, unless specifically allowed by Architect.

2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 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 Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
 4. 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.
- D. 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. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Use of premises restrictions.
 - b. Work Sequence.
- E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.
- F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for the Notice to Proceed. Base schedule on the Preliminary Construction Schedule and whatever updating and feedback was received since the start of Project.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

2.4 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At bi-monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule at 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 Actual Completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. 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 01320

SECTION 01330 - 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 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Sections include the following:
 - 1. Division 1 Section "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
 - 2. Division 1 Section "Closeout Procedures" for submitting warranties.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's responsive action. Submittals may be rejected for not complying with requirements.
- B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings may be provided by Architect for Contractor or sub-contractor use in preparing submittals. Fees and disclaimers will be requested.
- 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 requires sequential activity.
 - 2. 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 reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

- C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's and Architect's Consultants 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 10 working 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. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 10 working days for review of each resubmittal.
 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 15 working days for initial review of each submittal.
 5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 10 working days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
 6. Submittals requiring color selections will be reviewed for compliance only. Colors will be released all at the same time once approved by the Client.
- D. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Architect or Architect's Consultant.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name and Architect's Project number.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal numbers must be coordinated with the Architect's submittal procedures. Standard transmittal and memorandum to Contractors regarding submittal procedure will be provided by Architect, if necessary, upon award of Contract.
 - 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. Other necessary identification.

- E. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.
- F. Additional 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.
1. Submit one original and (2) copies of submittal to Architect in addition to specified number of copies to concurrent reviewer.
 2. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.
- G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect and Architect's Consultants will return submittals, without review, received from sources other than General Contractor or Construction Manager.
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. Drawing number and detail references, as appropriate.
 - j. Transmittal number, numbered consecutively.
 - k. Submittal and transmittal distribution record.
 - l. Remarks.
 - m. Typed name and 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 and Architect's Consultant on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
- H. 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.
- I. 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.
- J. Use for Construction: Use only final submittals with mark indicating "No Exceptions Taken" or "Make Corrections Noted" by Architect or Architect's Consultant.

1.5 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

- A. General: At Contractor's written request, copies of Architect's CAD files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:
1. Review, approval and signing of disclaimer form regarding use of drawings.
 2. Fees will be requested as deemed appropriate per drawing sheet or file.

1.6 AMERICAN RECOVERY & REINVESTMENT ACT OF 2009 (ARRA)

- A. Per the American Recovery & Reinvestment Act of 2009 (ARRA), all products incorporated into the work of this project must be manufactured in the United States of America. It is the intent of the technical specifications to have specified only products made in the USA. All substitutions must comply with this requirement.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- 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 printed 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 written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Wiring diagrams showing factory-installed wiring.
 - g. Printed performance curves.
 - h. Operational range diagrams.
 - i. Mill reports.
 - j. Standard product operation and maintenance manuals.
 - k. Compliance with specified referenced standards.
 - l. Testing by recognized testing agency.
 - m. Application of testing agency labels and seals.
 - n. Notation of coordination requirements.
 4. Submit Product Data before or concurrent with Samples.

5. Number of Copies: Submit four (4) copies of Product Data, unless otherwise indicated. Architect will return three (3) copies.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Construction Documents, unless submittals of Architect's CAD Drawings are otherwise permitted.
1. Preparation: Fully illustrate requirements as shown in the Contract Documents. Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shopwork manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Design calculations.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.
 - l. Notation of dimensions established by field measurement.
 - m. Relationship to adjoining construction clearly indicated.
 - n. Seal and signature of professional engineer if specified.
 - o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
 3. Number of Copies: Submit four (4) copies of each submittal, where copies are not required for operation and maintenance manuals. Submit five (5) copies where copies are required for operation and maintenance manuals. Architect and Consultant will retain one copy each; remainder will be returned to Contractor.
- 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. Color photos or digital images are not accepted.
1. Transmit Samples that contain multiple, related components such as accessories together in one 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 appropriate 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.
 4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of samples: Submit two (2) full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three (3) sets of Samples. Architect will retain two (2) Sample sets; remainder will be returned.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
 6. Paint samples:
 - a. General Contractor to provide one 2'x2' color sample for each color painted in finish as specified.
 - b. All colors to be submitted at once.
 - c. Five (5) day notice required prior to submitting paint samples.
 - d. Architect reserves the right to change color.
- E. Product Schedule or List: 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.
 2. Number and name of room or space.

3. Location within room or space.
 4. Number of Copies: Submit three (3) copies of product schedule or list, unless otherwise indicated. Architect will return two (2) copies.
- F. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."
- G. Submittals Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."
- H. Application for Payment: Comply with requirements specified in Division 1 Section "Payment Procedures."
- I. Schedule of Values: Comply with requirements specified in Division 1 Section "Payment Procedures."

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit two (2) copies of each submittal, unless otherwise indicated. Architect will not return copies.
 2. Certificates and Certifications: Provide a notarized 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.
 3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements."
- B. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."
- C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- E. Installer Certificates: Prepare 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.
- F. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

- G. **Product Certificates:** Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- H. **Material Certificates:** Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- I. **Material Test Reports:** Prepare 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.
- J. **Product Test Reports:** Prepare 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.
- K. **Schedule of Tests and Inspections:** Comply with requirements specified in Division 1 Section "Quality Requirements."
- L. **Preconstruction Test Reports:** Prepare 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.
- M. **Compatibility Test Reports:** Prepare 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.
- N. **Field Test Reports:** Prepare reports written by a qualified testing agency, on testing agency's standard form, 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.
- O. **Maintenance Data:** Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section "Operation and Maintenance Data."
- P. **Design Data:** Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- Q. **Manufacturer's Instructions:** Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
 - 1. Preparation of substrates.
 - 2. Required substrate tolerances.
 - 3. Sequence of installation or erection.

4. Required installation tolerances.
 5. Required adjustments.
 6. Recommendations for cleaning and protection.
- R. **Manufacturer's Field Reports:** Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service 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.
- S. **Insurance Certificates and Bonds:** Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. 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. **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 AND ARCHITECT'S CONSULTANT ACTION

- A. **General:** Architect and Architect's Consultant will NOT review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. **Action Submittals:** Architect and Architect's Consultant will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect or Architect's Consultant will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

- C. Informational Submittals: Architect and Architect's Consultant 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 are not acceptable, will be considered non-responsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01330

SECTION 01500 - 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 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes requirements for temporary facilities and controls.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Electric power service.
 - 2. Lighting.
 - 3. Telephone service.
 - 4. Water Service
 - 5. Sanitary Facilities.
 - 6. Protection Facilities.

1.3 USE CHARGES

- A. Temporary Utilities Service: With the exception of telephone service, the owner will pay for service use charges for usage of temporary utilities, by all parties engaged in construction, at Project site for construction operations for this project.

1.4 QUALITY ASSURANCE

- A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.
 - 1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
 - 2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

- A. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:

1. Keep temporary services and facilities clean and neat.
2. Relocate temporary services and facilities as required by progress of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials. Provide materials suitable for use intended.
- B. Tarpaulins: Fire-resistive labeled with flame-spread rating of 15 or less.

2.2 EQUIPMENT

- A. General: Provide equipment suitable for use intended.
- B. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Water Service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- B. Sanitary Facilities: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- C. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- D. Lighting: If required, provide temporary lighting that provides adequate illumination to allow for safe working conditions during normal working hours.

3.2 TEMPORARY FACILITIES INSTALLATION

- A. Lighting: If required, provide temporary lighting that provides adequate illumination for construction operations and traffic conditions.

- B. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
1. Prior to commencing work, isolate the HVAC system in area where work is to be performed in accordance with procedures approved by the architect.
 - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas as required.
 - b. Maintain negative air pressure within work area using HEPA-equipped air filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust containment devices.
 3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.

3.3 OPERATION, TERMINATION, AND REMOVAL

- A. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage.
- B. Termination and Removal: Remove each temporary facility when need for its service has ended.
1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 1 Section "Closeout Procedures."

END OF SECTION 01500

SECTION 01600 - 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 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This 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; product substitutions; and comparable products.
- B. Related Sections include the following:
 - 1. Division 1 Section "Closeout Procedures" for submitting warranties for Contract closeout.

1.3 DEFINITIONS

- A. Products: Items purchased 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, or where indicated as a product substitution, 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. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," 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 other named manufacturers.

1.4 SUBMITTALS

- A. **Product List:** Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
 2. **Completed List:** Within 15 days after Notice to Proceed, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
 3. **Architect's Action:** Architect will respond in writing to Contractor within 5 days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.
- B. **Substitution Requests:** Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. **Substitution Request Form:** Use CSI Form 13.1A.
 2. **Documentation:** Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified material or product cannot be provided.
 - 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 comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
 - i. 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 lack of availability or delays in delivery.
 - j. Cost information, including a proposal of change, if any, in the Contract Sum.

- k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
 - l. 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 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
- a. Form of Acceptance: Change Order.
 - b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.
- C. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Division 1 Section "Submittal Procedures."
 - b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.
- D. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be 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. 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. Coordinate delivery with Owner.
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 ensure compliance with the Contract Documents and to ensure 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. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.
8. 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:** Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. **Effective Date:** Warranty period shall commence upon the date of the Owner's final acceptance of the installed product(s) and / or system(s).

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final 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 appropriate form properly executed.

3. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that 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. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
 7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
 3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
 4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
 5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
 6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
 7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the

- specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
8. **Basis-of-Design Product:** Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
 9. **Visual Matching Specification:** Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
 10. **Visual Selection Specification:** Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
 - a. **Standard Range:** Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
 - b. **Full Range:** Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

- A. **Timing:** Architect will consider requests for substitution if received within 60 days after commencement of the Work. Requests received after that time may be considered or rejected at discretion of Architect.
- B. **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:
 1. 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.
 2. Requested substitution does not require extensive revisions to the Contract Documents.
 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 4. Substitution request is fully documented and properly submitted.
 5. Requested substitution will not adversely affect Contractor's Construction Schedule.

6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.3 COMPARABLE PRODUCTS

- A. Conditions: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01600

SECTION 01700 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. General installation of products.
 - 3. Progress cleaning.
 - 4. Protection of installed construction.
 - 5. Correction of the Work.
- B. Related Sections include the following:
 - 1. Division 1 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
 - 2. Division 1 Section "Submittal Procedures" for submitting surveys.
 - 3. Division 1 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
 - 4. Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Acceptance of Conditions: 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. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

2. 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, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

- A. **Verification:** Before proceeding to lay out the Work, verify layout information shown on Drawings. If discrepancies are discovered, notify Architect promptly.

3.4 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. **Anchors and Fasteners:** Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
1. **Mounting Heights:** Where mounting heights are not indicated, mount components at heights directed by Architect.
 2. Allow for building movement, including thermal expansion and contraction.
 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- 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.

3.5 PROGRESS CLEANING

- A. **General:** Project work area is located in an occupied functioning building. Contractor shall use the utmost care to eliminate, when possible, or diminish all noise, water, dust, odors, etc. from the Project work area. Clean Project work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. 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 materials more than 7 days during normal weather or 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.
- B. **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.
- C. **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.
- D. **Concealed Spaces:** Remove debris from concealed spaces before enclosing the space.
- E. **Exposed Surfaces in Finished Areas:** Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- F. **Waste Disposal:** Washing waste materials down drains will not be permitted.

- G. 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.
- H. 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.
- I. 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 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.

3.7 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
 - 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.

END OF SECTION 01700

SECTION 01731 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.

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 surfaces to original conditions after installation of other Work.

1.4 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. 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. Operating elements include the following:
 - 1. Primary operational systems and equipment.
 - 2. Mechanical systems piping and ducts.
 - 3. Control systems.
 - 4. Communication systems.
 - 5. Electrical wiring systems.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related 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. Miscellaneous elements include the following:
 - 1. Equipment supports.
 - 2. Piping, ductwork, vessels, and equipment.
 - 3. Noise- and vibration-control elements and systems.

- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces 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.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut. Provide temporary dams to contain water and moisture.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Protect fixtures and personal property on other occupied floors in building from moisture, dust and impact damage.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.3 PERFORMANCE

- A. 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. **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 as small as possible, neatly to 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 / 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.
- C. **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 possible. Provide materials and comply with installation requirements specified in other Sections.
1. **Inspection:** Where feasible, test and inspect patched areas after completion to demonstrate 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 eliminate 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.
- D. **Cleaning:** Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01731

SECTION 01732 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Demolition and removal of selected portions of a building or structure.
 - 2. Repair procedures for selective demolition operations.
- B. Related Sections include the following:
 - 1. Division 1 Section "Construction Facilities and Temporary Controls" for temporary construction and environmental-protection measures for selective demolition operations.
 - 2. Division 1 Section "Cutting and Patching" for cutting and patching procedures for selective demolition operations.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.
- B. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during selective demolition remain Owner's property.

Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.

1.5 SUBMITTALS

- A. **Qualification Data:** For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- B. **Proposed Dust-Control and Noise-Control Measures:** Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.
- C. **Stamped shoring layout drawings prepared by the General Contractor's Professional Engineer,** indicating location, method and design loads for the temporary shoring system utilized.
- D. **Schedule of Selective Demolition Activities:** Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 - 2. Interruption of utility services.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Use of elevator and stairs.
 - 5. Locations of temporary partitions and means of egress.
 - 6. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- E. **Inventory:** After selective demolition is complete, submit a list of items that have been removed and salvaged.
- F. **Predemolition Photographs or Videotape:** Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.
- G. **Landfill Records:** Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.6 QUALITY ASSURANCE

- A. **Demolition Firm Qualifications:** An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- B. **Professional Engineer Qualifications:** Current Professional Engineer's License valid in the State of Connecticut.

- C. **Regulatory Requirements:** Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. **Standards:** Comply with ANSI A10.6 and NFPA 241.
- E. **Predemolition Conference:** Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to selective demolition including, but not limited to, the following:
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.
 - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

1.7 PROJECT CONDITIONS

- A. Owner will occupy portions of site immediately adjacent to selective demolition areas. Conduct selective demolition so Owner's operations will not be disrupted. Provide not less than 72 hours' notice to the Owner's Representative of activities that will affect Owner's operations.
- B. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
 - 1. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from authorities having jurisdiction.
- C. Owner assumes no responsibility for condition of areas to be selectively demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- D. **Hazardous Materials:** Hazardous materials, if present shall be the responsibility of the building owner. Do not disturb hazardous materials or items suspected of containing hazardous materials. The contractor shall contact the owner immediately upon discovery of suspect material.
- E. Storage or sale of removed items or materials on-site will not be permitted.
- F. **Utility Service:** Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

1.8 WARRANTY

- A. **Existing Warranties:** Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

- A. Use repair materials identical to existing materials.
 - 1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 2. Use materials whose installed performance equals or surpasses that of existing materials.
- B. Comply with material and installation requirements specified in individual Specification Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to the Architect.
- E. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations. Professional Engineer shall develop shoring layout plan for all temporary shoring and supervise the General Contractor's implementation of that plan. See paragraph 1.5 for submittal requirements.
- F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES

- A. Existing Utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.
- B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Construction Administrator and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.

1. Provide at least 72 hours' notice to Construction Administrator if shutdown of service is required during changeover.
- C. Utility Requirements: Refer to Division 15 and 16 Sections for shutting off, disconnecting, removing or capping utilities. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.3 PREPARATION

- A. Dangerous Materials: Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference walks, walkways, and other adjacent occupied and used facilities.
1. Do not close or obstruct walks, walkways, or other adjacent occupied or used facilities without permission from the owner's representative and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
 2. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
 3. Protect existing site improvements, appurtenances, and landscaping to remain.
- C. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
- D. Temporary Enclosures: Provide temporary enclosures for protection of existing building and construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
1. Where heating and cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
- E. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.

- F. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of construction to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of selective demolition.

3.4 POLLUTION CONTROLS

- A. Dust Control: Use water mist, temporary enclosures, and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations.
1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding and pollution.
 2. Wet mop floors to eliminate trackable dirt and wipe down walls and doors of demolition enclosure. Vacuum carpeted areas.
- B. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- C. Cleaning: Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.5 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows.
1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.

5. Maintain adequate ventilation when using cutting torches.
 6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 9. Dispose of demolished items and materials promptly.
 10. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.
- B. Existing Facilities: Protect existing elevators, stairs, walkways, loading docks, building entries, and other building facilities during selective demolition operations.
- C. Removed and Reinstalled Items: Comply with the following:
1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Construction Administrator, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.
- E. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.
- F. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.
- G. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI-WP and its Addendum.
1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.

3.6 PATCHING AND REPAIRS

- A. General: Promptly repair damage to adjacent construction caused by selective demolition operations.
- B. Patching: Comply with Division 1 Section "Cutting and Patching."

- C. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
 - 1. Completely fill holes and depressions in existing masonry walls that are to remain with an approved masonry patching material applied according to manufacturer's written recommendations.
- D. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.
- E. Floors and Walls: Where walls or partitions that are demolished extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - 1. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
 - 2. Where patching occurs in a painted surface, apply primer and intermediate paint coats over patch and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces.
 - 3. Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
- F. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.8 SELECTIVE DEMOLITION SCHEDULE

- A. The general intent of scope for Selective Demolition is indicated on the Drawings.

END OF SECTION 01732

SECTION 01770 - 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 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Final cleaning.
- B. Related Sections include the following:
 - 1. Division 1 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
 - 2. Division 1 Section "Execution Requirements" for progress cleaning of Project site.

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 in 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. 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.
 - 3. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 - 4. Advise Owner of changeover in heat and other utilities.
 - 5. Complete final cleaning requirements, including touchup painting.
 - 6. 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 date of Final Completion, complete the following:
 1. Submit a final Application for Payment according to Division 1 Section "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.
- 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. Expenses incurred by the Architect for more than one reinspection will be the responsibility of the Contractor and will be invoiced directly.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit one copy of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding into the building in order of the room numbers indicated on the Drawings.
 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.

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

3.1 FINAL CLEANING

- A. **General:** Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. **Cleaning:** Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - b. Clean exposed hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances.
 - c. Sweep concrete floors broom clean in unoccupied spaces.
 - d. Remove labels that are not permanent.
 - e. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
- C. Comply with safety standards for cleaning. Do not dump debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01770

SECTION 07555 – SBS ROOFING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Install an insulated, tapered, cold applied two-layer SBS roof membrane over a steel roof deck.
- B. Duct Waterproofing (ALTERNATE #1) also included in this section
- C. Skylight Replacement (ALTERNATE #2) also included in this section

1.2 RELATED SECTIONS

- A. Section 07620: Sheet Metal
- B. Annotated Photos

1.3 DESIGN BASIS: The design basis of this section is the Siplast, Inc., Paradiene 20/30FR system.

This is not intended to limit competition, and products of other Roofing System Manufacturers (RSM) may be submitted for approval.

Wherever the phrase “or as approved” is used in this section it means that materials, components and equipment may be proposed for work in lieu of those named. They will be considered acceptable if, in the opinion of the Architect, they will perform the functions imposed by the general design and, if they meet the standards of the items named and the Manufacturer agrees in writing to the provisions of this section of the specifications.

Potential Bidders may submit Requests for Evaluation for Approval to the Architect a minimum of 14 days before the published Bid Due date. Within 5 days of the Bid Date, if not earlier, all Bidders of Record will be notified of ‘approvals’ granted.

- A. At the completion of the Project provide:
 - 1. "As built" drawings showing the location of all projections and penetrations, and any modifications that were made.
 - 2. RSM's printed recommendations for proper maintenance of the roofing system including recommended inspection frequencies, roof modification notification policies, temporary repair recommendations and leak reporting procedures.

1.4 SUBMITTALS

- A. Submit 3 sets of the following to the Architect and receive written approval before ordering materials.
1. Samples of materials to be used as part of the roofing system.
 2. Current RSM technical literature pertaining to the installation of the roofing system.
 3. Dimensioned roof plan, including defined "perimeter" and "corner" areas, and shop drawings bearing approval by the RSM. These, where applicable, should be prepared in conjunction with other Sections.
 4. A letter from an authorized technical representative of the RSM, including as an attachment a Contractor submitted "Project Registration" form and specimen warranty, stating:
 - a. The Contractor is an authorized applicator of the RSM's warranted roofing systems.
 - b. The RSM has reviewed and accepted the attached "Project Registration" form.
 - c. The specified RSM warranty will be issued upon successful completion of the project.
- B. Prior to the commencement of work the Contractor shall provide a resume for the Foreman and Project Manager assigned to the Project. If these individuals are replaced during the Project, resumes for their replacements shall also be submitted.
- C. At the completion of the Project provide:
1. "As built" drawings showing the location of all projections and penetrations, and any modifications that were made.
 2. RSM's printed recommendations for proper maintenance of the roofing system including recommended inspection frequencies, roof modification notification policies, temporary repair recommendations and leak reporting procedures.

1.5 QUALITY ASSURANCE

- A. Roofing Installers must be authorized by the RSM to install the Roof System specified or approved.
1. Installer of the roofing system must have had at least 10 years experience in the application of the specified or approved roofing systems on projects of similar scope.
 2. The Foreman, including any substitute or replacement Foreman, assigned to the Project must have a minimum of 10 years experience with built-up roofing membranes.

B. RSM Qualifications

1. Company specializing in the manufacture of the materials specified or submitted for approval for not less than 10 years in the United States.
2. RSM shall agree to perform weekly inspections with direct trained personnel and conduct a final inspection upon Project completion.
3. Materials shall be the products of or be approved by the RSM.

1.6 WARRANTY: Deliver to the owner

- A. Deliver to the Owner the RSM's 20-year labor and materials warranty. It shall cover all roofing system components. The warranty shall not be prorated nor shall it have any deductibles or limitation on coverage amount.
- B. Neither the Warranty nor any attachment referenced in the Warranty shall impose record keeping obligations on the Owner.
- C. The warranty shall contain no provisions that allow for post issuance cancellation based on failure of the warranted roof to conform to the RSM's technical specifications.

1.7 DELIVERIES, STORAGE AND HANDLING

- A. **Packing and Shipping:** Deliver materials in manufacturer's original, unopened containers and rolls with labels intact and legible. Deliver materials requiring fire resistance classification with labels attached and packaged as required by labeling service. Deliver materials in sufficient quantity to allow continuity of roofing installation.
- B. **Storage and Protection**
 1. Handle rolled goods so as to prevent damage to edge or ends. Select and operate material handling equipment without damaging existing construction or installed roofing.
 2. Store insulation, roofing and related materials on clean, raised platform with weather-protective covering when stored outdoors. Properly secure insulation to prevent blow-off. Store rolled goods on end. Provide continuous protection of materials against wetting and moisture absorption. Protect materials against damage by construction traffic. Manufacturers' wrappings do not constitute weather protective covering.
 - a. Comply with fire and safety regulations.
 - b. Store adhesives and sealants in secure, well-ventilated, watertight place. Do not leave unused materials on roof overnight or when roofing installation is not in progress.
 3. Remove wet material from Site.

1.8 PROJECT / SITE CONDITIONS

- A. Environmental Conditions: Proceed with roofing installation only when weather conditions comply with RSM's recommended limitations, and when conditions permit installation to proceed in accordance with specified requirements and RSM's recommendations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. This section is based principally on specified products manufactured by Siplast, Inc., Arkadelphia, Arkansas.
- B. Single Source - Maintain single source responsibility for performance of membrane system and comply with Manufacturer's warranty requirements.
 - 1. Obtain SBS based roofing and flashing sheets, stripping plies, SBS adhesives, asphalt primers, asphalt mastics from a single RSM.
 - 2. Obtain other components of the roofing system covered by Roofing System Manufacturer's Warranty from suppliers approved by the RSM.

2.2 SBS MINERAL SURFACED ROOFING

- A. Roof membrane assembly consisting of two layers of a prefabricated, reinforced, homogeneous Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane, applied over a prepared substrate. Both reinforcement mats shall be impregnated/saturated and coated each side with an SBS modified bitumen blend and coated one side with a SBS bitumen blend adhesive layer. The roof system shall pass 500 cycles of ASTM D 5849 Resistance to Cyclic Joint Displacement (fatigue) at 14°F (-10°C). Passing results shall show no signs of membrane cracking or interply delamination after 500 cycles. The roof system shall pass 200 cycles of ASTM D 5849 after heat conditioning performed in accordance with ASTM D 5147. The assembly shall possess waterproofing capability, such that a phased roof application, with only the modified bitumen base ply in place, can be achieved for prolonged periods of time without detriment to the watertight integrity of the entire roof system.
 - 1. Modified Bitumen Base Layer and Stripping Ply: Siplast Paradiene 20
 - 2. Modified Bitumen Top Layer: Siplast Paradiene 30 FR
 - 3. Modified Bitumen Flashing Layer: Siplast Aluminum Veral
- B. Base Sheet: Siplast Parabase
- C. Membrane Adhesive: Siplast SFT Adhesive
- D. Flashing Adhesive: Siplast SFT Cement
- E. Low Point Filling Material: Siplast Paraslope

- F. Fluid Applied Flashing shall be a catalyzed acrylic resin system: Siplast Parapro 123 or approved equal. The system shall be a specialty flashing consisting of a liquid-applied, fully reinforced, multi-component acrylic membrane installed over a prepared or primed substrate. The flashing system consists of a catalyzed acrylic resin primer, basecoat and topcoat, combined with a non-woven polyester fleece. The resin and catalyst are pre-mixed immediately prior to installation.

2.3 Roof Insulation shall consist of tapered and flat stock isocyanurate insulation with a waterproof gypsum overlay. Maximum size of insulation and overlay boards as delivered to jobsite shall be 4 feet X 4 feet.

- A. Tapered and flat stock isocyanurate insulation shall be 25 PSI, manufactured by Siplast, or as approved. The physical properties of the foam shall be:

Property	Test Method	Result
Water absorption	ASTM C209	<1% (foam only)
Dimensional Stability`	ASTM D2126	2% max (7 days (Length and Width)
Compressive Strength	ASTM D1621	25 PSI
Moisture vapor Trans	ASTM E96	<1 perm
Service temperature		-100F-250F
Flame Spread	ASTM E84	@25 (foam core only)

- B. Gypsum sheathing overlay shall be 1/4 inch. Dens-Deck Prime Gypsum Roof Board, manufactured by Georgia Pacific Corporation: Atlanta, GA. Alternate overlays acceptable to the RSM will be approved. Maximum size of insulation and overlay boards as delivered to jobsite shall be 4 feet X 4 feet.

- C. Insulation adhesive: shall be Siplast Parastik.

2.4 BITUMINOUS CUTBACK MATERIALS

- A. Primer: Siplast PA-1125 Asphalt Primer or as approved
- B. Mastic: Siplast PA-828 or as approved non-asbestos product.

2.5 RELATED COMPONENTS

- A. Sealants
 - 1. Sealant: Siplast PS 304 elastomeric sealant or as approved by RSM.
 - 2. Butyl tape: shall be 1/8 inch thick X 1/2 inch wide Tremco 440 or as approved.
- B. Mineral Granules: Siplast supplied mineral granules or as approved by RSM

- C. Walktread: A prefabricated, puncture resistant, polyester core reinforced, polymer modified bitumen sheet material topped with a ceramic-coated wearing surface conforming to the following:
Thickness: 0.217 inches
Weight: 1.8 lb./square foot
Width: 30 inches
1. Siplast Paratread Protection Material, or as approved by RSM.
- D. Rough Carpentry. Lumber used for nailers, curbs, cants, etc., shall be No. 2 kiln dried (19% maximum moisture content after treatment), grade marked, and surfaced on four sides.
- E. Fasteners
1. Insulation Fasteners and Plates Fasteners: Siplast Parafast Insulation Fasteners and Plates.
 2. Wood to wood: Rawl: # 12 Perma-seal deck screws or as approved. Length shall be sufficient to achieve 1-inch penetration. Nails are not permitted.
 3. Fasteners for securing wood nailers to steel angles: Dekfast #14
 4. Fasteners for securing membrane to concrete or brick: RAWL: stainless steel Zamac Nailin® or as approved. Length shall be sufficient to achieve 1-inch embedment.
- F. Pipe Supports:
1. PipeGuard manufactured by Olympic
- G. Roof Hatch:
1. Bilco S-50 Type S roof Hatch
- H. Duct Work Waterproofing: (ALTERNATE #1)
1. Duct work insulation: 1.5-inch isocyanurate.
 2. Duct work waterproofing: Johns Manville .060 EPDM
 3. Waterproof connection between HVAC equipment and ductwork with specified fluid applied flashing.
- I. Skylight:
1. Manufactured by Daylighter Skylights
Sales & Technical Office
159 Crocker Park Road
Suite 400
Cleveland, OH 44145
Phone: 440-385-4360

PART 3 - EXECUTION**3.1 GENERAL**

These Specifications may limit the installation options from those generally acceptable to the RSM. These conditions shall also apply to any materials approved as an equal

These requirements include:

- A. Application of the top layer of modified material may not be installed until
 - 1. The first layer has been completed in its entirety.
 - 2. The metal edging, drains and other flanged penetrations have been installed and stripped.
 - 3. The first layer of roofing has been inspected and approved by both the Architect and a technical representative of the RSM.
- B. Apply Adhesive Bleed Granules to all bleeds, regardless of width, at the time the top layer is installed. Work shall not proceed unless granules are on site.
- C. Maximum width of flashing shall be the width of the roll.
- D. Do not proceed with roof membrane demolition in a drain's contributory area until the drain body is in place and connected to internal discharge lines.

3.2 SUBSTRATE PREPARATION

- A. Remove existing roofing, insulation, base flashings and related components.
- B. Wood Blocking
 - 1. Re secure existing perimeter nailers:
 - a. One fastener within 6 inches of the end of each length of nailer and one fastener per 2 lineal feet.
 - b. Replace damaged nailers. Allow for the replacement of 20 lineal feet of 2 inch by 8 inch nailer in your Bids
 - 2. New Blocking:
 - a. Install wood blocking around perimeter to receive metal edging using specified fasteners.
 - b. Install blocking as required by the RSM at walls and around penetrations as per RSM requirements.
 - c. Anchor new blocking sufficiently to resist a 200 pound per lineal foot
 - d. Use only specified threaded fasteners.

C. Drains

1. Install new drain body level with the deck. Do not proceed with work in the contributory area of an individual drain until that drain has been replaced (or in the case of a new drain location, installed for the first time) and connected to interior plumbing.

D. Roof Deck Replacement

1. Replace damaged or deteriorated steel deck as directed by Architect. Replacement steel decking to match existing decking is size type and securement. Include 50 square feet of deck replacement in your Bid.

E. Low Point Filling Material

1. Include 100 Square Feet x 2 inches deep compacted in base bids.

F. General

1. Remove only that amount of roofing that can be covered with the base layer in that same day.
2. Leave roof in watertight condition at end of each workday.
3. Removals shall not proceed if rain is forecast for any portion of the time that the roof covering will be removed. Maintain on hand on the roof level being worked, for emergency tarpaulins or other covering materials in sufficient quantity to temporarily cover open areas on the roof in the event of unanticipated rainfall.
4. Maintain operating water pumps and hoses to keep areas free of standing water.

3.3 INSTALLATION

Although this Specification is based principally on products manufactured by Siplast, the requirements contained herein may be more stringent.

- A. Comply with instructions and recommendations of roofing materials manufacturer for specified roofing system to ensure watertight installation in normal weather exposures and no deterioration in excess of manufacturer's published limitations.
 1. Membrane Adhesives to be applied per manufacturer recommendations.
 2. Confinement of Materials: Do not allow fluid and plastic materials to spill or migrate beyond surfaces of intended application, or to flow into drains or conductors.

- B. Insulation Installation: Comply with recommendations and instructions of SBS roofing system manufacturer and insulation manufacturer for handling and installation of insulation. Cut insulation to fit around all projections.
1. Multiple Layers: Stagger joints of each layer at least 12" in each Direction.
 2. Fastening
 - a. Secure first layer of insulation to deck with specified fasteners in strict accordance with manufacturer's recommendations. Run long joints for insulation in continuous straight lines, perpendicular to roof slope with end joints staggered between rows.
 - i. Field: 1 fastener per 4 square feet
 - ii. Perimeters (8 Feet): 1 fastener per 2 square feet
 - iii. Corners (8 Feet x 8 Feet): 1 fastener per 1 square feet
 - b. Secure second layer of insulation and gypsum overlay with specified adhesive in strict accordance with manufacturer's recommendations. Run long joints for insulation in continuous straight lines, perpendicular to roof slope with end joints staggered between rows.
 - i. Field: Adhesive beads to be spaced 12 inches on center
 - ii. Perimeters (8 Feet): Adhesive beads to be spaced 7 inches on center
 - iii. Corners (8 Feet x 8 Feet): Adhesive beads to be spaced 4 inches on center
 3. Insulation Criteria
 - a. Tapered Insulation, 1/8 inch per foot in field, 1/4 inch per foot at crickets.
(ALTERNATE #3: 1/4 inch per foot in field, 1/2" per foot at crickets)
 - b. Average R: 20.
- C. Installation of Roofing System: Install roofing system in strict accordance with manufacturer's recommendations and instructions, unless otherwise indicated. Thoroughly clean debris from surface of insulation prior to installation of roofing system. Install flashings in strict accordance with manufacturer's recommendations.

3.4 PHASED CONSTRUCTION REQUIREMENT

- A. The top layer of SBS may not be installed until after installation of the bottom layer is completed, metal-flanged components have been stripped in; and this portion of the work has been inspected and approved by the Manufacturer and the Architect.

3.5 WALKPAD:

- A. Install 100 lineal feet of specified walk pad per manufacturer's recommendations.

3.6 PIPE SUPPORTS:

- A. Install new pipe supports per manufacturer's recommendations regarding size height and frequency.

3.7 ROOF HATCH

- A. Install specified roof hatch per manufacturer's requirements.
- B. Size: Match Existing

3.8 DUCT WATERPROOFING**A. Duct Work Waterproofing: (ALTERNATE #1)**

1. Fasten specified isocyanurate to existing ductwork on all sides to create an even substrate.
2. Apply Bonding Adhesive to both the membrane sheet and the substrate to achieve continuous coating of both surfaces at a coverage rate of approximately 120 square feet per gallon per one surface (membrane or substrate) or approximately 60 square feet per gallon per finished surface (includes coverage on both membrane and substrate).
3. Fully adhere specified EPDM to prepared ductwork.
4. Waterproofing to be installed on all ductwork surfaces.
5. All seams and transitions to be stripped in with pressure sensitive flashing.
6. Areas where access points are located need to remain accessible.

3.9 SKYLIGHT**A. Skylight Replacement: (ALTERNATE #2)**

1. Replace damaged skylight with specified unit.
2. Size and Type of Dome: Match existing
3. Install per manufacturers written recommendations and requirements.

END OF SECTION 07555

SECTION 07620 – SBS ROOFING SHEET METAL

PART 1 - GENERAL

1.1 Section Includes

- A. This Section includes proprietary metal edge, sleeve metal, scupper, leader and miscellaneous roof related sheet metal components.
- B. Refer to Drawings and referenced literature for other pertinent information.
- C. SMACNA references are to SMACNA Architectural Sheet Metal Manual, 5th Edition.

1.2 Related Sections

- A. Section 07555 SBS Roofing
- B. Annotated Photos

1.3 Submittals: Submit 3 sets of the following to the Architect and receive written approval before ordering materials.

- A. Samples of proposed formed sections, if requested.
- B. Shop Drawings for basic conditions, showing dimensions for sheet metal and wood blocking as well as fastening specifics: type, length and density. Prepare Shop Drawings in conjunction with those prepared to fulfill the requirements of Section 07555.

1.4 Quality Assurance

- A. Comply with the standards specified in this section, those shown on the Project Drawings and as listed elsewhere.
- B. Qualifications of the Manufacturers: Products used in the work of this section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production and product installations.
- C. Qualifications of Installers: Installers shall be thoroughly trained and experienced in the necessary crafts.

In the acceptance or rejection of the Work of this section, no allowance will be made for lack of skill or specification understanding on the part of the workers. It shall be incumbent upon the Contractor to use adequate numbers of skilled installers and to instruct them in the requirements of the project specifications.

Part 2 Products

- 2.1 Proprietary Metal Edge: Siplast Paraguard Proform Gravel Stop System or equal supplied by the primary Roofing System Manufacturer fabricated from 0.50 Aluminum.
- A. Thickness of gravel stops and extenders: Thickness of splice plates and cleats shall be per RSM recommendation.
 - B. Color: Architect shall select from standard color chart.
 - C. Provide extenders per RSM recommendations where sheet metal covered surface is greater than 10 inches.
- 2.2 Proprietary Expansion Joint: Siplast Paraguard Aluminum Expansion Joint Covers or equal approved by RSM fabricated from .050 Aluminum.
- A. Color: Match metal edge
 - B. Accessories required for transition to gravel stop and rising wall
- 2.3 Sleeve Metal: Shop fabricate from .040 Mill Finish Aluminum.
- 2.4 Scupper: Shop fabricate from stainless steel from 26 Ga. Stainless steel.
- 2.5 Leaders: Shop fabricate from .040 Kynar finished aluminum.

Part 3 Execution

- 3.1 General
- A. Examine the areas and conditions under which the Work of this section will be performed. Correct detrimental conditions.
 - B. Do not permit dissimilar metals to come in contact with one another. Provide bituminous paint or other protective coating on concealed surfaces to prevent interaction of materials.
 - C. Field verify dimensions shown on the Drawings; form sheet metal accurately and to the required dimensions and shapes.
 - D. Comply with pertinent recommendations contained in "Architectural Sheet Metal Manual", 1993 (5th) edition, as published by SMACNA.
 - E. Install flanged sheet metal components between the application of the first and second SBS layers. Do not begin application of the second layer of SBS until these components have been installed and stripped in.

- 3.2 Proprietary Metal Edge:
- A. Install specified metal edge where shown on roof plan per manufacturers recommendations.
- 3.3 Proprietary Expansion Joint
- A. Curbing extent: 8 inches above highest adjacent roof surface (exclude cant)
 - B. Tie new expansion joint covers into perimeter walls with fluid applied flashing specified in section 07555 per manufacturer's recommendations.
 - C. All transitions and terminations shall be factory fabricated.
- 3.4 Sleeve Metal: Fabricate aluminum sleeve counterflashing to match profiles shown in Project Drawings.
- A. Install sleeve metal in all locations where existing counterflashing measures exist.
- 3.5 Scupper: Fabricate gutter to match profiles shown in Project Drawings.
- A. Install scupper where shown on drawings.
 - B. All seams and laps to be riveted and soldered watertight.
- 3.6 Leader:
- A. Install new 4"x5" leader to match existing conditions.

End of Section 07620

ANNOTATED PHOTOS



Photo 1:
Terminate new roof system per manufacturer's recommendations.

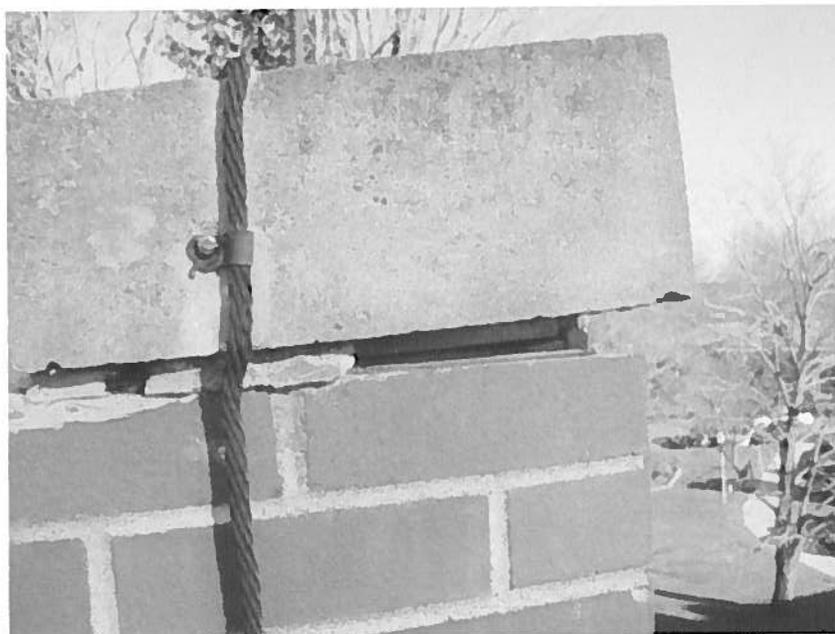


Photo 2:
Remove loose mortar and repoint area.



Photo 3:

Install new wood blocking to meet height of new roof. Steel duct support height may require adjustment. All work involved is Contractor's responsibility.

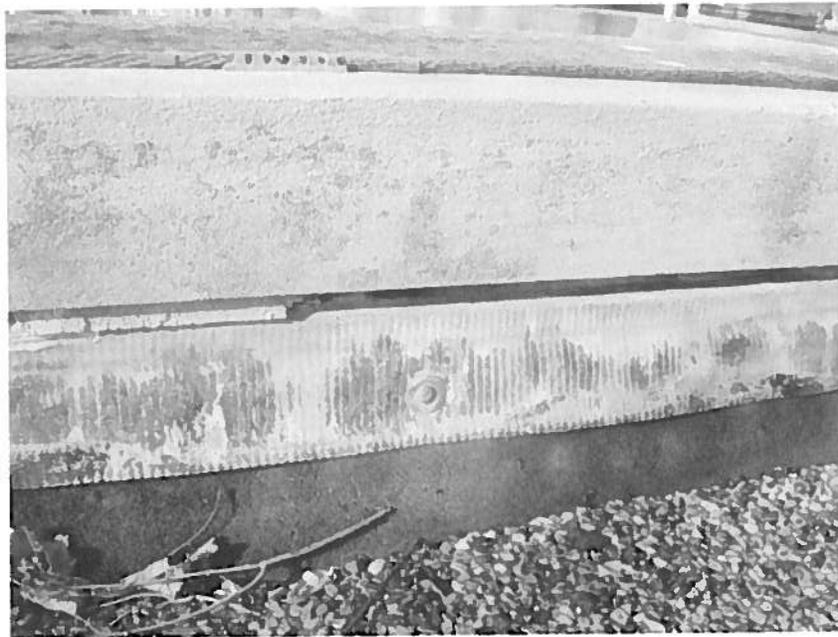


Photo 4:

Bend existing flashing up and terminate per Construction Drawings.



Photo 5:

Tie new fluid applied flashing into existing ornamental corner stones. Turn new fluid applied flashing up two inches. Here and elsewhere.



Photo 6:

Remove and reinstall existing condensate lines to match existing layout. Here and elsewhere.



Photo 7:

Clean all lightning protection termination points. Remove and reinstall all lightning protection components to match existing construction.



Photo 8:

Tie new expansion joint cover into surrounding coping stones with specified fluid applied flashing. Here and elsewhere.

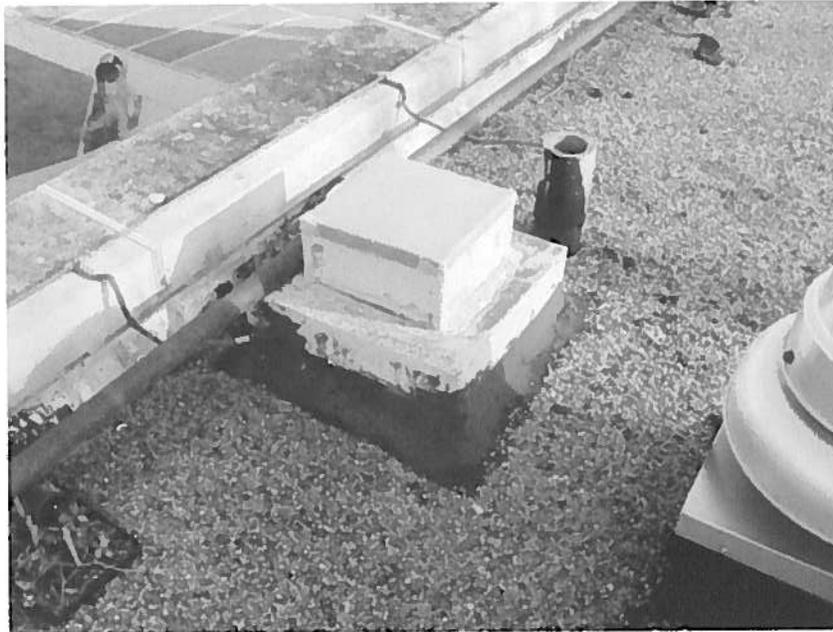


Photo 9:

Remove abandoned curbs and equipment where directed by Architect. Here and elsewhere.



Photo 10:

Properly prepare and flash all joints and transitions with fluid applied flashing specified in section 07555. Install fluid applied flashing per manufacturers recommendations. Here and elsewhere.

SECTION 07555 – SBS ROOFING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Removal of the existing base flashings to the bottom of the cant and preparation of existing built up roofing to receive new SBS flashings applied in cold adhesive.

1.2 RELATED SECTIONS

- A. Section 07620: Sheet Metal
- B. Section 077253: Snow Guards
- C. Annotated Photos

1.3 DESIGN BASIS: The design basis of this section is the Siplast, Inc., Paradiene 20/30FR system.

This is not intended to limit competition, and products of other Roofing System Manufacturers (RSM) may be submitted for approval.

Wherever the phrase "or as approved" is used in this section it means that materials, components and equipment may be proposed for work in lieu of those named. They will be considered acceptable if, in the opinion of the Architect, they will perform the functions imposed by the general design and, if they meet the standards of the items named and the Manufacturer agrees in writing to the provisions of this section of the specifications.

Potential Bidders may submit Requests for Evaluation for Approval to the Architect a minimum of 14 days before the published Bid Due date. Within 5 days of the Bid Date, if not earlier, all Bidders of Record will be notified of 'approvals' granted.

- A. At the completion of the Project provide:
 - 1. "As built" drawings showing the location of all projections and penetrations, and any modifications that were made.
 - 2. RSM's printed recommendations for proper maintenance of the roofing system including recommended inspection frequencies, roof modification notification policies, temporary repair recommendations and leak reporting procedures.

1.4 SUBMITTALS

- A. Submit 3 sets of the following to the Architect and receive written approval before ordering materials.
 - 1. Samples of materials to be used as part of the roofing system.

2. Current RSM technical literature pertaining to the installation of the roofing system.
 3. Dimensioned roof plan, including defined "perimeter" and "corner" areas, and shop drawings bearing approval by the RSM. These, where applicable, should be prepared in conjunction with other Sections.
 4. A letter from an authorized technical representative of the RSM, including as an attachment a Contractor submitted "Project Registration" form and specimen warranty, stating:
 - a. The Contractor is an authorized applicator of the RSM's warranted roofing systems.
 - b. The RSM has reviewed and accepted the attached "Project Registration" form.
 - c. The specified RSM warranty will be issued upon successful completion of the project.
- B. Prior to the commencement of work the Contractor shall provide a resume for the Foreman and Project Manager assigned to the Project. If these individuals are replaced during the Project, resumes for their replacements shall also be submitted.
- C. At the completion of the Project provide:
1. "As built" drawings showing the location of all projections and penetrations, and any modifications that were made.
 2. RSM's printed recommendations for proper maintenance of the roofing system including recommended inspection frequencies, roof modification notification policies, temporary repair recommendations and leak reporting procedures.

1.5 QUALITY ASSURANCE

- A. Roofing Installers must be authorized by the RSM to install the Roof System specified or approved.
1. Installer of the roofing system must have had at least 10 years experience in the application of the specified or approved roofing systems on projects of similar scope.
 2. The Foreman, including any substitute or replacement Foreman, assigned to the Project must have a minimum of 10 years experience with built-up roofing membranes.
- B. RSM Qualifications
1. Company specializing in the manufacture of the materials specified or submitted for approval for not less than 10 years in the United States.
 2. RSM shall agree to perform weekly inspections with direct trained personnel and conduct a final inspection upon Project completion.
 3. Materials shall be the products of or be approved by the RSM.

1.6 WARRANTY: Deliver to the owner

- A. Deliver to the Owner a Contractors 2-year labor and materials warranty. It shall cover all roofing system components. The warranty shall not be prorated nor shall it have any deductibles or limitation on coverage amount.
- B. Neither the Warranty nor any attachment referenced in the Warranty shall impose record keeping obligations on the Owner.
- C. The warranty shall contain no provisions that allow for post issuance cancellation based on failure of the warranted roof to conform to the RSM's technical specifications.

1.7 DELIVERIES, STORAGE AND HANDLING

- A. **Packing and Shipping:** Deliver materials in manufacturer's original, unopened containers and rolls with labels intact and legible. Deliver materials requiring fire resistance classification with labels attached and packaged as required by labeling service. Deliver materials in sufficient quantity to allow continuity of roofing installation.
- B. **Storage and Protection**
 - 1. Handle rolled goods so as to prevent damage to edge or ends. Select and operate material handling equipment without damaging existing construction or installed roofing.
 - 2. Store insulation, roofing and related materials on clean, raised platform with weather-protective covering when stored outdoors. Properly secure insulation to prevent blow-off. Store rolled goods on end. Provide continuous protection of materials against wetting and moisture absorption. Protect materials against damage by construction traffic. Manufacturers' wrappings do not constitute weather protective covering.
 - a. Comply with fire and safety regulations.
 - b. Store adhesives and sealants in secure, well-ventilated, watertight place. Do not leave unused materials on roof overnight or when roofing installation is not in progress.
 - 3. Remove wet material from Site.

1.8 PROJECT / SITE CONDITIONS

- A. **Environmental Conditions:** Proceed with roofing installation only when weather conditions comply with RSM's recommended limitations, and when conditions permit installation to proceed in accordance with specified requirements and RSM's recommendations.

PART 2 - PRODUCTS**2.1 MANUFACTURERS**

- A. This section is based principally on specified products manufactured by Siplast, Inc., Arkadelphia, Arkansas.
- B. Single Source - Maintain single source responsibility for performance of membrane system and comply with Manufacturer's warranty requirements.
 - 1. Obtain SBS based roofing and flashing sheets, stripping plies, SBS adhesives, asphalt primers, asphalt mastics from a single RSM.
 - 2. Obtain other components of the roofing system covered by Roofing System Manufacturer's Warranty from suppliers approved by the RSM.

2.2 SBS MINERAL SURFACED ROOFING

- A. Roof membrane assembly consisting of two layers of a prefabricated, reinforced, homogeneous Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane, applied over a prepared substrate. Both reinforcement mats shall be impregnated/saturated and coated each side with an SBS modified bitumen blend and coated one side with a SBS bitumen blend adhesive layer. The roof system shall pass 500 cycles of ASTM D 5849 Resistance to Cyclic Joint Displacement (fatigue) at 14°F (-10°C). Passing results shall show no signs of membrane cracking or interply delamination after 500 cycles. The roof system shall pass 200 cycles of ASTM D 5849 after heat conditioning performed in accordance with ASTM D 5147. The assembly shall possess waterproofing capability, such that a phased roof application, with only the modified bitumen base ply in place, can be achieved for prolonged periods of time without detriment to the watertight integrity of the entire roof system.
 - 1. Modified Bitumen Base Layer and Stripping Ply: Siplast Paradiene 20
 - 2. Modified Bitumen Top Layer: Siplast Paradiene 30 FR
 - 3. Modified Bitumen Flashing Layer: Siplast Parafor 50 (Black)
- B. Base Sheet: Siplast Parabase
- C. Membrane Adhesive: Siplast SFT Adhesive
- D. Flashing Adhesive: Siplast SFT Cement

2.4 BITUMINOUS CUTBACK MATERIALS

- A. Primer: Siplast PA-1125 Asphalt Primer or as approved
- B. Mastic: Siplast PA-828 or as approved non-asbestos product.

2.5 RELATED COMPONENTS

A. Sealants

1. Sealant: Siplast PS 304 elastomeric sealant or as approved by RSM.
2. Butyl tape: shall be 1/8 inch thick X 1/2 inch wide Tremco 440 or as approved.

B. Mineral Granules: Siplast supplied mineral granules or as approved by RSM

C. Fasteners

1. Wood to wood: Rawl: # 12 Perma-seal deck screws or as approved. Length shall be sufficient to achieve 1-inch penetration. Nails are not permitted.
2. Fasteners for securing wood nailers to steel angles: Dekfast #14
3. Fasteners for securing membrane to concrete or brick: RAWL: stainless steel Zamac Nailin® or as approved. Length shall be sufficient to achieve 1-inch embedment.

PART 3 - EXECUTION

3.1 GENERAL

These Specifications may limit the installation options from those generally acceptable to the RSM. These conditions shall also apply to any materials approved as an equal

These requirements include:

A. Application of the top layer of modified material may not be installed until

1. The first layer has been completed in its entirety.
2. The first layer of roofing has been inspected and approved by both the Architect and a technical representative of the RSM.

B. Apply Adhesive Bleed Granules to all bleeds, regardless of width, at the time the top layer is installed. Work shall not proceed unless granules are on site.

C. Maximum width of flashing shall be the width of the roll.

3.2 SUBSTRATE PREPARATION

A. Remove existing base flashings to base of cant (include cant in removal) and related components.

1. Allow for 24 inch tie in of new flashing materials.
2. Preserve all existing sheet metal components and flashings.

B. General

1. Remove only that amount of roofing that can be covered with the base layer in that same day.
2. Leave roof in watertight condition at end of each workday.
3. Removals shall not proceed if rain is forecast for any portion of the time that the roof covering will be removed. Maintain on hand on the roof level being worked, for emergency tarpaulins or other covering materials in sufficient quantity to temporarily cover open areas on the roof in the event of unanticipated rainfall.
4. Maintain operating water pumps and hoses to keep areas free of standing water.

3.3 INSTALLATION

Although this Specification is based principally on products manufactured by Siplast, the requirements contained herein may be more stringent.

- A. Comply with instructions and recommendations of roofing materials manufacturer for specified roofing system to ensure watertight installation in normal weather exposures and no deterioration in excess of manufacturer's published limitations.
 1. Membrane Adhesives to be applied per manufacturer recommendations.
 2. Confinement of Materials: Do not allow fluid and plastic materials to spill or migrate beyond surfaces of intended application, or to flow into drains or conductors.
- B. Installation of Roofing System: Install roofing system in strict accordance with manufacturer's recommendations and instructions, unless otherwise indicated. Thoroughly clean debris from surface of insulation prior to installation of roofing system. Install flashings in strict accordance with manufacturer's recommendations.

3.4 PHASED CONSTRUCTION REQUIREMENT

- A. The top layer of SBS may not be installed until after installation of the bottom layer is completed and this portion of the work has been inspected and approved by the Manufacturer and the Architect.

END OF SECTION 07555

SECTION 07620 – SBS ROOFING SHEET METAL

PART 1 - GENERAL

1.1 Section Includes

- A. This Section includes sleeve metal sheet metal components.
- B. Refer to Drawings and referenced literature for other pertinent information.
- C. SMACNA references are to SMACNA Architectural Sheet Metal Manual, 5th Edition.

1.2 Related Sections

- A. Section 07555: SBS Roofing
- B. Section 077253: Snow Guards
- C. Annotated Photos

1.3 Submittals: Submit 3 sets of the following to the Architect and receive written approval before ordering materials.

- A. Samples of proposed formed sections, if requested.
- B. Shop Drawings for basic conditions, showing dimensions for sheet metal and wood blocking as well as fastening specifics: type, length and density. Prepare Shop Drawings in conjunction with those prepared to fulfill the requirements of Section 07555.

1.4 Quality Assurance

- A. Comply with the standards specified in this section, those shown on the Project Drawings and as listed elsewhere.
- B. Qualifications of the Manufacturers: Products used in the work of this section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production and product installations.
- C. Qualifications of Installers: Installers shall be thoroughly trained and experienced in the necessary crafts.

In the acceptance or rejection of the Work of this section, no allowance will be made for lack of skill or specification understanding on the part of the workers. It shall be incumbent upon the Contractor to use adequate numbers of skilled installers and to instruct them in the requirements of the project specifications.

Part 2 Products

2.3 Sleeve Metal: Shop fabricate from .040 Mill Finish Aluminum.

Part 3 Execution**3.1 General**

- A. Examine the areas and conditions under which the Work of this section will be performed. Correct detrimental conditions.
- B. Do not permit dissimilar metals to come in contact with one another. Provide bituminous paint or other protective coating on concealed surfaces to prevent interaction of materials.
- C. Field verify dimensions shown on the Drawings; form sheet metal accurately and to the required dimensions and shapes.
- D. Comply with pertinent recommendations contained in "Architectural Sheet Metal Manual", 1993 (5th) edition, as published by SMACNA.
- E. Install flanged sheet metal components between the application of the first and second SBS layers. Do not begin application of the second layer of SBS until these components have been installed and stripped in.

3.2 Sleeve Metal: Fabricate aluminum sleeve counterflashing to match profiles shown in Project Drawings.

- A. Install sleeve metal in all locations where existing counterflashing measures exist.
- B. Fasten new sleeve metal 9 inches on center through new base flashings.

End of Section 07620

SECTION 077253 – SNOW GUARDS

PART 1 - GENERAL

1.1 Section Includes

- A. This Section includes snow guards and installation instructions.
- B. Refer to Drawings and referenced literature for other pertinent information.

1.2 Related Sections

- A. Section 07555: SBS Roofing
- B. Section 07620: SBS Roofing Sheet Metal
- C. Annotated Photos

1.3 Submittals: Submit 3 sets of the following to the Architect and receive written approval before ordering materials.

- A. Samples of proposed formed sections, if requested.
- B. Shop Drawings for basic conditions, showing dimensions for installation as well as fastening specifics: type, length and density.
- C. Submit manufacturer's specifications, standard detail drawings, snow guard manufacturer's recommended layout and installation instructions.

1.4 Quality Assurance

- A. Comply with the standards specified in this section, those shown on the Project Drawings and as listed elsewhere.
- B. Qualifications of the Manufacturers: Products used in the work of this section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production and product installations.
- C. Qualifications of Installers: Installers shall be thoroughly trained and experienced in the necessary crafts.

In the acceptance or rejection of the Work of this section, no allowance will be made for lack of skill or specification understanding on the part of the workers. It shall be incumbent upon the Contractor to use adequate numbers of skilled installers and to instruct them in the requirements of the project specifications.

1.5 Design Requirements

- A. Bracket spacing to be recommended by snow guard manufacturer.

1.6 System Description:

A. Components:

1. #202 Snow Guard System consists of a snow guard bracket and L-202 base.
2. Tubing (Snow Fence)
3. Couplings
4. End Caps
5. End Collars
6. Ice Flags
7. Fasteners
 - a. To be of metal compatible with snow guards.
 - b. Fasteners should be selected for compatibility with the roof deck.
 - c. Fastener strength should exceed or be equal to that of the snow guard system.

Part 2 Products

2.1 Snow Guards: Alpine SnowGuards. A division of Vermont Slate & Copper Services Inc., 289 Harrel St. Morrisville, VT 05661 (888) 766-4273, www.alpinesnowguards.com or approved equal.

A. Snow Guard Bracket and L-202 Base – 6000 Series Aluminum

B. Tubing:

1. Aluminum – 6000 Series, 1” outside diameter and .120” wall thickness, extruded.

C. Couplings:

1. Aluminum – 6000 Series
 - a. Internal and concealed coupling 3” long.
 - b. External and exposed coupling which can also serve as an expansion mechanism 5” long.

D. End Caps:

1. 304 – Stainless Steel

E. End Collars:

1. 6000 Series Aluminum

F. Ice Flags:

1. 6000 Series Aluminum 3” wide x length (as needed per manufacturer)

G. Fasteners to be compatible with roof application and meet required pull out values.

H. Finish: Mill Finish

- I. "Simple Seal" Bushings
- J. Sealant:
 1. Tremco – TremPro 651

Part 3 Execution

3.1 General

- A. Examine the areas and conditions under which the Work of this section will be performed. Correct detrimental conditions.
- B. Do not permit dissimilar metals to come in contact with one another. Provide bituminous paint or other protective coating on concealed surfaces to prevent interaction of materials.
- C. Field verify dimensions shown on the Drawings; form sheet metal accurately and to the required dimensions and shapes.
- D. Comply with pertinent recommendations contained in "Architectural Sheet Metal Manual", 1993 (5th) edition, as published by SMACNA.

3.2 Snow Guards: Comply with manufacturer's recommendations for location of system. Comply with manufacturer's written installation instructions for installation and layout.

- A. Install snow guards where show on construction drawings.
- B. Install minimum of 2 rows of specified snow rail.
- C. Seal all new openings and fastening points in existing metal roofing with specified sealant prior to installation of specified brackets.

End of Section 077253

ANNOTATED PHOTOS



Photo 1

Cut existing flashing leaving 2 inches of metal to counter flash new sleeve metal.



Photo 2

Be sure to preserve existing sheet metal flashing



Photo 3

Assure all connections to existing flashings are reviewed and approved by Architect.