



PROJECT MANUAL

2025 Roof Replacement Program Roof Areas D, E, G, J, K and L

MARYSVILLE MIDDLE SCHOOL
400 Collard Drive
Marysville, Michigan 48040

Marysville Public Schools
495 E. Huron Blvd.
Marysville, Michigan 48040

NTH Project No. 24002588-00
January 2025

ADVERTISEMENT FOR BIDS

- PROJECT:** **MARYSVILLE PUBLIC SCHOOLS**
Partial Roof Replacement
Marysville Middle School
400 Collard Drive
Marysville, Michigan 48040
- DESCRIPTION:** Complete removal of designated sections of existing EPDM roofs (adhered and ballasted - approximately 22,000 sq. ft.) and replacement with new fully adhered EPDM roof membrane over polyisocyanurate insulation.
- OWNER:** Marysville Public Schools
495 East Huron Boulevard
Marysville, Michigan 48040
- CONSULTANT:** NTH Consultants, Ltd.
41780 Six Mile Rd.
Northville, Michigan 48168
Contact: Mike Neal 734-391-5511
- BID DUE DATE:** **Thursday, February 20, 2025 at 2:00 PM** at the Marysville Public Schools Administrative Offices (see address above). All bids will be publicly opened and read aloud immediately thereafter. Bids will not be accepted or considered after 2:00 PM on the bid due date.
- DOCUMENTS:** Bid documents, including plans and specifications, will be available to download on or about **Monday, February 3, 2025** from the Marysville Public Schools website:
<http://www.marysville.k12.mi.us>
- BID BOND:** A bid bond in the amount of 5% of the base bid amount, executed by an acceptable Surety Company, or a cashier's check, payable to Marysville Public Schools shall be submitted with each proposal. The successful bidder will be required to furnish and pay for satisfactory Performance and Payment Bonds.
- PRE-BID MEETING:** A "mandatory" pre-bid meeting will be held on **Monday, February 10, 2025 at 10:00 AM** at Marysville Middle School.
- RIGHTS OF OWNER:** The Owner reserves the right to accept or reject any or all bids, in whole or in part, waive any informalities, accept any bid when, in the opinion of the Owner such action will serve in the best interest of Marysville Public Schools consistent with competitive bidding requirements, and award the Contract to other than the low bidder.
- SIGNED:** Owner's Representative:
Mrs. Jennifer McKay
Director of Finance
Marysville Public Schools
495 E. Huron Blvd.
Marysville, Michigan 48040
(810) 455-6012



DOCUMENT 00 01 10

TABLE OF CONTENTS

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

00 01 01	Project Title Page	00 01 01-1
00 01 10	Table of Contents	00 01 10-1 and 2
00 01 15	List of Drawing Sheets	00 01 15-1
00 11 13	Advertisement for Bids	00 11 13-1
00 21 13	Instructions to Bidders	00 21 13-1 thru 3
00 41 13	Contractor's Bid Form	00 41 13-1 and 2

DIVISION 01 - GENERAL REQUIREMENTS

01 11 13	Summary of Work	01 11 13-1 and 2
01 14 00	Work Restrictions	01 14 00-1 thru 5
01 25 13	Product Substitution Procedures	01 25 13-1 and 2
01 31 19	Project Meetings	01 31 19-1 thru 3
01 33 23	Submittals	01 33 23-1 thru 4
01 45 23	Quality Assurance Program (QAP)	01 45 23-1 thru 5
01 50 00	Temporary Facilities and Controls	01 50 00-1 thru 4
01 66 00	Material Storage and Handling Procedures	01 66 00-1 and 2
01 78 00	Closeout Submittals	01 78 00-1 and 2

DIVISION 02 - EXISTING CONDITIONS

02 25 29	Existing Roofing System Information	02 25 29-1 and 2
02 35 00	Interior Protection	02 35 00-1 thru 3



DIVISION 03 - CONCRETE

03 51 13 Cementitious Wood Fiber (Tectum) Deck Repair 03 51 13-1 and 2

DIVISION 05 - METALS

05 01 30 Steel Roof Deck Repair 05 01 30-1 thru 4

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

06 10 53 Miscellaneous Rough Carpentry 06 10 53-1 thru 3

DIVISION 07 - THERMAL & MOISTURE PROTECTION

07 01 50 Roof Removals and General Substrate Preparation 07 01 50-1 thru 5

07 22 16 Roof Insulation over Cementitious Wood Fiber Deck (Tectum) 07 22 16-1 thru 3

07 22 17 Roof Insulation over Steel Deck 07 22 17-1 thru 5

07 22 19 Roof Cover Board 07 22 19-1 thru 3

07 53 24 Fully Adhered EPDM Single-Ply Roofing 07 53 24-1 thru 5

07 62 01 Metal Flashings - EPDM Roofing 07 62 01-1 thru 5

07 72 00 Roofing Accessories 07 72 00-1 and 2

07 92 13 Elastomeric Joint Sealants 07 92 13-1 and 2

DIVISION 22 - PLUMBING

22 14 26 Roof Drains 22 14 26-1 thru 4

END OF DOCUMENT



DOCUMENT 00 01 15

LIST OF DRAWINGS

The following drawings are a component part of the Contract Documents:

	<u>Sheet</u>
Title Sheet	1
General, Demolition, and Project Specific Notes	2
Enlarged Roof Plan – Area D (Alternate No. 1)	3
Enlarged Roof Plan – Area E (Alternate No. 2)	4
Enlarged Roof Plan – Areas G (Base Bid) and L (Alternate No. 3)	5
Enlarged Roof Plan – Areas J and K (Base Bid)	6
Roof Flashing Details – Details 1 and 2	7
Roof Flashing Details – Details 3 and 4	8
Roof Flashing Details – Details 5 and 6	9
Roof Flashing Details – Details 7 and 8	10
Roof Flashing Details – Details 9 and 10	11
Roof Flashing Details – Details 11 and 12	12
Roof Flashing Details – Details 13 and 14	13

END OF DOCUMENT



DOCUMENT 00 21 13

INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

1.01 PRE-BID MEETING

- A. The bidder is required to attend and participate in a Pre-Bid Meeting.
 - 1. Refer to the Invitation to Bid for the Pre-Bid Meeting date, time, and location.
 - 2. The Owner's Representatives will present an overview of the project requirements at the Pre-Bid Meeting, provide verbal answers to inquiries regarding the project, and discuss procedures for arranging site visits.
 - 3. After the Pre-Bid Meeting, bidders shall make all additional inquiries in writing to the Owner. If it is necessary upon review of the inquiries, an Addendum will be issued to all bidders.

1.02 EXAMINATION OF SITE

- A. It is the bidder's responsibility to become familiar with the existing conditions and the materials and labor required to complete the project. No additional compensation will be allowed to complete the work due to the bidder's failure to fulfill this requirement.
- B. Test cuts into the roof system must be approved in advance by the Owner and repaired to a watertight condition.
- C. Submittal of a bid implies that the bidder is conversant with all the site conditions under which the work must be performed.

1.03 ADDENDA

- A. The bidder may, during the bidding period, be advised by Addendum of changes to the Specifications and Drawings. Such changes are included in the work and become part of the Contract Documents.
- B. List each Addendum by number in the space provided on the Bid Form.



1.04 QUALITY ASSURANCE PROGRAM (QAP)

- A. Refer to Section 01 45 23 for QAP requirements.

1.05 CONTRACTOR'S BID FORM

- A. Submit the bid on the form provided by the Owner, with all items of the form properly completed.
 - 1. Base your submitted bid only on the materials and constructions described in this Project Manual.
 - 2. If required by the Owner, include the premiums and all other related charges for Performance and Payment Bonds, and extra premiums or costs for the insurance coverage required in the Contract.
 - 3. Obtain and pay the fees for all permits, licenses, and code inspections that may be required by the Owner.
 - 4. The person signing the Bid Form must initial erasures or other changes made to the Bid Form.

1.06 BID TRANSMITTAL

- A. Submit the Bid Form and all required attachments via US Mail, UPS, FedEx or hand delivered.
- B. Bid due date: February 20, 2025 at 2:00 pm.
- C. Bids received after the bid due date and time will not be opened. Bidders may withdraw their bids, by written notice, at any time prior to the indicated date and time scheduled for receipt of bids. However, no bidder may withdraw a bid for a period of 90 calendar days after the bid opening.

1.07 BID OPENING

- A. Bids will be privately opened.
- B. Right to Reject: The Owner reserves the right to reject any or all bids, either whole or in part; to award contract to other than the low bidder; to waive any irregularities and/or informalities; and, in general, to make awards in any manner deemed to be in the best interests of the Owner.



1.08 CONTRACT AWARD

- A. The Owner reserves the right to determine which bid is best suited for its use, to accept any or all parts of a bid, and assign all or part of the contract to one or more qualified bidders.

- C. In awarding the contract, the Owner will consider the past performance of the Contractor; conformity of the bid to the Bidding Requirements; bid price; and availability of funds.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF DOCUMENT



DOCUMENT 00 41 13

PROPOSAL PRICING BID FORM

Contractor Name: _____

Address: _____

City, State, Zip: _____

Contact Person: _____

Phone Number: _____

E-Mail Address: _____

**PROJECT: Marysville Middle School
400 Collard Drive
Marysville, Michigan 48040**

Roofing Base Bid:

Roof Area G: \$ _____

Roof Area J: \$ _____

Roof Area K: \$ _____

Contingency Allowance: \$ 3,000.00

TOTAL BASE BID: \$ _____

Roofing Alternate Bid:

Roof Area D: \$ _____

Roof Area E: \$ _____

Roof Area L: \$ _____

TOTAL ALTERNATE BID: \$ _____



UNIT PRICE SCHEDULE

The undersigned agrees that upon the Owner's approval, the Contract Base Bid Sum(s) may be altered by the Unit Prices indicated below. In preparing the unit price bids, include costs to provide the labor and material, permits, bonds, insurance, and all other items necessary to complete the indicated unit price work within the Contract start and completion dates (including quality control monitoring). Refer to the technical specification sections for specific unit price work requirements.

Section 05 01 30 – Steel Roof Deck Repair

Unit Price #1:	Remove corrosion and prime deck (per SF):	\$ _____
Unit Price #2:	Steel plate stock (16-gauge) – 2 ft. by 2 ft. (each):	\$ _____
Unit Price #3:	Steel deck panels (18-gauge) – Type B (per SF):	\$ _____

Section 03 51 13 – Cementitious Wood Fiber (Tectum) Deck Replacement

Unit Price #4:	Tectum panels (per SF):	\$ _____
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Section 06 10 53 – Miscellaneous Rough Carpentry

Unit Price #5:	Removal and replacement of existing damaged or deteriorated wood nailers and blocking, (per board foot):	\$ _____
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Section 22 14 26 – Roof Drains

Unit Price #6:	Cast iron roof drain strainer (each):	\$ _____
Unit Price #7:	Cast iron roof drain clamping ring (each):	\$ _____
Unit Price #8:	Cast iron roof drain assembly, including drain bowl, clamping ring, strainer, and accessories (each):	\$ _____
Unit Price #9:	Roof drain insert (each):	\$ _____



SECTION 01 11 13

SUMMARY OF WORK

PART 1 - GENERAL

1.01 WORK INCLUDES

- A. Roof replacement, including removal of existing roofing systems down to the roof deck; inspection/repair/replacement of roof decking; miscellaneous component inspection/repair/replacement; general substrate preparation; and the installation of new roofing system components.
- B. Quality Assurance Program (QAP): Full-time construction observation during all phases of specified work performed by the contractor(s).

1.02 GENERAL SUMMARY OF WORK AND MATERIALS

- A. Interior protection: As directed by the Owner.
- B. Steel roof deck: Areas D, E, K and L.
- C. Cementitious roof deck (Tectum): Areas G and J.
- D. Removal and disposal of existing roof system components down to roof deck.
- E. Roof insulation: Polyisocyanurate insulation.
- E. Roof cover board: High-density gypsum board.
- F. Roofing membrane and base flashings: Fully adhered EPDM.
- G. Metal flashings and accessories: Gutter replacement. Prefinished 24-gauge galvanized steel and miscellaneous metals.
- H. Roof drains: Video inspection and mechanical clearing of drain lines (before and after roofing work).

PART 2 - PRODUCTS

NOT USED



PART 3 - EXECUTION

NOT USED

END OF SECTION



SECTION 01 14 00

WORK RESTRICTIONS

PART 1 - GENERAL

1.01 FIELD CONDITIONS AND DIMENSIONS

- A. Prior to ordering materials, preparing shop drawings, or performing work, site-verify all dimensions, details, and conditions that may affect the Work. No allowance for additional compensation will be considered for discrepancies between dimensions or sizes indicated on the drawings (or sizes indicated elsewhere in the documents) and actual field dimensions, or for the Contractor's failure to comply with this requirement.

1.02 QUALITY ASSURANCE

- A. The Contractor shall be fully responsible for all construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the work under the Contract with the Owner.
- B. Always provide an authorized representative at the site during working hours to act on behalf of the Contractor and to receive and execute orders from the Owner.
- C. Maintain a copy of the Contract Documents, including but not limited to the technical specifications and drawings, including addenda, at the project site at all times.

1.03 CODE AND REGULATION COMPLIANCE

- A. Comply with all applicable federal, state, and local codes and regulations relating to buildings, employment, the preservation of public health and safety, use of streets, and the performance of the Work under this Contract. It shall be the responsibility of the Contractor to fully understand all such requirements and to ensure that such are fully and faithfully enforced.
- B. Work that is known or should have been known to be contrary to existing codes, laws, rules, and regulations, and for which the Contractor fails to give notice of such fact to the Owner, shall be the responsibility of the Contractor.



The Contractor shall bear all costs arising therefrom and hold the Owner harmless for any such violation.

- C. Upon completion of the Work and if required, submit a certificate of inspection by the civic authority having jurisdiction to the Owner. The certificate shall show that the Work has been properly inspected and approved to meet current code requirements.

1.04 PROJECT SAFETY

- A. The Contractor shall be solely responsible for initiating, maintaining, and supervising safety precautions and programs associated with the Work. Do not jeopardize the safety of the building occupants or the public.
- B. All the Contractor's and Contractor's Subcontractor's employees who will be working at the project site (excluding material/equipment delivery personnel) are required to attend a site orientation and safety training meeting prior to the start of Work. The estimated meeting time is one to two hours.
- C. The Contractor shall be solely responsible for safety practices and the safety of the Contractor's personnel and subcontractors. Provide a full-time, on-site Contractor Safety Representative who shall report safety data to the Owner on a weekly basis. Providing safety information to the Owner does not relieve the Contractor of its responsibility for compliance with safety rules, regulations, and practices and the safety of its personnel and subcontractors.
- D. Work shall be accomplished in accordance with applicable construction safety standards, rules, and regulations for construction operations, as set forth by the Department of Labor in the state where the project is located.
- E. Where the requirements of authorities having jurisdiction conflict with the requirements stated in the Project Manual, the more stringent condition shall prevail.
- F. Furnish, install, maintain if necessary, and remove when no longer required, adequate barriers, warning signs and lights, and other necessary or prudent safety measures at dangerous locations for the protection of Contractor personnel, building occupants, and the public during work operations.
- G. Whenever lifting materials or equipment over or near occupied buildings, provide advance notice of such activities and arrange to have potentially endangered spaces vacated.



- H. During work operations, provide temporary partitions, barriers, curtains, and guards as necessary to confine materials, dust, and debris to the immediate work areas. Do not allow dust or debris to enter the building interior. Coordinate the location of temporary barriers or partitions with the Owner.

1.05 PROTECTION OF PROPERTY

- A. Coordinate work operations with the Owner so that adequate interior protection, as necessary, is provided and disruption to normal building operations is minimized. Repair property damage caused by lack of such protection to the satisfaction of the Owner.
- B. Confine equipment, storage of materials, debris, and the operations and movements of workers within the physical limits and time limits directed by the Owner. Such activities are to be governed by applicable local building codes and the traffic regulation and safety and fire regulations of local authorities.
- C. During work operations, provide protection for existing buildings, finishes, walks, drives, and landscaping in, and adjacent to, the work areas. Repair or replace building components or site property damaged during the work to match its condition before the damage. If the Contractor fails to repair or replace such damage, the Owner will have the repair work done by others and the costs of such work will be charged to the Contractor.
- D. Do not store materials, tools, or equipment on an existing roof adjacent to the work site unless approved by the Owner and proper protection of the existing roof is provided. If protection is provided, limit the weight of stored materials to 20 pounds per square foot.
- E. The cost for vandalism damage to material, equipment and items finished or installed under this contract shall be borne by the Contractor. The Contractor is responsible for such vandalism from the start of construction until the Owner conditionally accepts the construction.

1.06 FIRE SAFETY

- A. No open flame is permitted on the building site at any time unless approved by the Owner's Representative at the project site.



- B. Take precautions to eliminate fire hazards at the site, including, but not limited to, the following:
 - 1. Remove combustible debris from the work and storage areas daily.
 - 2. Store highly flammable materials in well-ventilated areas; mixing and preparation of such materials are also restricted to such areas. Handle such materials in accordance with safe practices and the requirements of authorities having jurisdiction.
 - 3. If possible, avoid storage of large quantities of flammable materials at the site.

1.07 MISCELLANEOUS FACILITIES AND CONTROLS

- A. Do not use or interfere with existing public access, drives, roads, or parking lots, except as specifically indicated by prior arrangement with the Owner.
- B. Contractor's employee parking, delivery trucks and other construction vehicle parking will only be allowed in areas designated by the Owner.
- C. Also refer to Section 01 50 00 Temporary Facilities and Controls.

1.08 REMOVAL OF DEBRIS

- A. Remove rubbish and debris from the site daily, or more often if directed by the Owner. Maintain the premises as clean as practical, consistent with the neatness required for the Owner's normal operations.
- B. No storage of removed items or debris will be permitted on the roof unless so directed by the Owner.
- C. The location of the trash dumpsters is subject to the Owner's approval.
- D. If directed by the Owner, cover and seal trash dumpsters to prevent wind-blown debris and access into dumpsters during non-construction hours.
- E. Upon completion, ensure that the work and site are left in a clean, neat, and finished condition.



PART 2 - PRODUCT

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION



SECTION 01 25 13

PRODUCT SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.01 PRODUCT SUBSTITUTION PROCEDURES

- A. Wherever the proposal of substitute material, equipment or process is permitted by the Specifications, submit the proposed substitute material, equipment, or process per the project specifications.
- B. After the start of construction, the proposal for substitute material, equipment or process will be considered only for the following reasons:
 - 1. The manufacture or production of the specified material, equipment or process has been delayed or discontinued.
 - 2. The specified material, equipment, or process is not available in sufficient quantity or quantities to complete the work.
 - a. Failure to award subcontracts in sufficient time, or failure to order materials and equipment to ensure delivery or execution without delaying the work, do not establish cause for approval of substitutions.
 - 3. Delays resulting from, but not limited to, strikes, lockouts, storms, fires, or earthquakes, which preclude the procurement and delivery of material or equipment for the Project.
 - 4. Advancement of the delivery date provided this advances the overall progress of the work.
 - 5. Reduction in cost provided that the Owner receives the full benefit of such a reduction in cost by a corresponding modification to the contract price.
 - a. Fully substantiate such credits given the Owner by making available to the Owner copies of all proposals, invoices, and other documents related to the cost of the substitution.



6. Improvement in quality or function of the material, equipment, or process.
- C. Proposed substitute materials, equipment, or processes are subject to the following further conditions:
1. Submittal of the request for a substitution in a timely manner to allow ample lead time for review by the Owner, preparation of the Shop Drawings and submittals, and fabrication and delivery, without delaying the work.
 2. Approval of substitutions by the Owner.
 3. Approval of material substitutions does not discharge the Contractor's responsibilities for material performance, methods of installation, and defects.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION



SECTION 01 31 19

PROJECT MEETINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes meetings required by, and conducted by, the Owner throughout the duration of the project to enable orderly review of the Work progress and to provide for systematic discussion of problems and job schedule.

1.02 SUBMITTALS

- A. At least 24 hours in advance of each meeting, submit a list of items to be added to the meeting agenda.

1.03 QUALITY ASSURANCE

- A. For those people designated to attend and participate in meetings, provide required authority to commit the entity that each person represents to solutions agreed upon in the project meetings.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.01 GENERAL

- A. Agenda for the Pre-Construction Meeting:
 - 1. Establish channels and procedures for communication.
 - 2. Review Project Manual, including Specifications, Drawings, and Addenda.
 - 3. Review rules and regulations governing performance of the Work and quality assurance requirements.



4. Review procedures for contract modifications.
5. Review provisions for safety and first aid, property protection, security, maintenance of equipment and materials, quality control, housekeeping, grounds maintenance, and related matters.
6. Review construction facilities and temporary control requirements, including availability and access for the Owner and Contractor parking.
7. Establish designated work hours, including acceptable times for operating equipment.
8. Review material delivery, storage, and handling requirements.
9. Review Construction Schedule, including sequence of critical work and completion date of work items at each designated work area.
10. Walkover all project roof areas, as well as material storage, staging and roof access areas, to review project conditions.
11. Mandatory attendees:
 - a. Owner's Representatives
 - b. Roofing Contractor's Project Manager
 - c. Roofing Contractor's Superintendent
 - d. Roofing Contractor's Foreman
 - e. Roofing Contractor's Safety Manager
 - f. Roofing Membrane Material Manufacturer Representative

B. Agenda for Progress Meetings (if required):

1. Review progress of the Work since last meeting.
2. Review Construction Schedule for the remainder of the Work.
3. Identify problems that impede planned progress, such as significant work down time due to inclement weather, crew size, out-of-scope work items, or unforeseen conditions.
4. Develop corrective measures and procedures to revise the planned schedule if a revised completion date is considered mandatory by the Owner.



5. Review status of contract modifications and payment requests.
6. Review impact of Work on Owner operations and review alternative procedures if requested by the Owner.

3.02 SCHEDULE

- A. The Pre-Construction Meeting will be held one to two weeks prior to the actual start of the project mobilization and will be scheduled by the Owner.
- B. Project meetings may be held throughout the duration of the project at the discretion of the Owner.

END OF SECTION



SECTION 01 33 23

SUBMITTALS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes requirements for processing of submittals required by the Project Manual.

1.02 QUALITY ASSURANCE

- A. Prior to forwarding submittals, carefully review and coordinate all aspects of each item being submitted.
- B. Verify that each item and its submittal conform in all respects with the specified requirements.

PART 2 - PRODUCTS

2.01 CONSTRUCTION SCHEDULE

- A. Submit multiple copies of the Construction Schedule at the Pre-Construction Meeting.
- B. Submit updated copies of the Construction Schedule at each Project Meeting.
- C. Schedule format: Bar chart type schedule, showing the start and completion dates for each significant phase of Work.

2.02 MATERIAL MANUFACTURER DATA

- A. Submit a current statement from the roofing material manufacturer, addressed to the Owner, that the Contractor meets the criteria required to install the manufacturer's roofing system specified herein.
- B. Warranty requirements:
 - 1. Warranty Application: Provide a manufacturer acknowledgement of the project, including the application for warranty. Roof area designations must be noted on the application.



2. Refer to Section 07 53 24 Fully Adhered EPDM Single-Ply Roofing for warranty requirements.

2.03 PRODUCT DATA

- A. Submit technical data sheets for all materials specified herein, including, but not limited to:
 1. Section 03 51 13 Cementitious Wood Fiber (Tectum) Deck Repair
 2. Section 05 01 30 Steel Roof Deck Repair
 3. Section 06 10 53 Miscellaneous Rough Carpentry
 4. Section 07 22 16 Roof Insulation over Tectum Deck
 5. Section 07 22 17 Roof Insulation over Steel Roof Deck
 6. Section 07 22 19 Roof Cover Board
 7. Section 07 53 24 Fully Adhered EPDM Single-Ply Roofing
 8. Section 07 62 00 Metal Flashings – EPDM Roofing
 9. Section 07 72 00 Roofing Accessories
 10. Section 07 92 13 Elastomeric Joint Sealants
- B. Where submitted manufacturer's literature includes data not pertinent to the required submittal, clearly indicate on the technical data sheet which product(s) are being submitted for review.
- C. Submit the following prior to the start of Work:
 1. Work-Day Sequence Plan.
 2. Pre-Task Plan.
 3. Site-specific Contractor Safety Plan.
 4. Crane Lift Plan.
 5. Contractor employee contact list (names and cell phone numbers).
- D. Submit Safety Data Sheets to the Owner's Representative for all materials and products used in the Work, as well as those materials and products stored on site, directly or indirectly as part of the Work.



2.04 SHOP DRAWINGS

- A. Submit tapered insulation and saddle layout drawings.
- B. Submit other shop drawings as may be required by the specifications and the Owner's Representative.

2.05 SAMPLES

- A. Where required by the Owner's Representative, provide samples of materials identical to the product proposed for use.
- B. Where the specified product naturally exhibits a range of colors (or finishes), provide a sample that accurately represents the anticipated variations.

2.06 COLORS AND PATTERNS

- A. Unless the precise color (or finish) is identified in the Project Manual, and whenever a choice of color (or finish) is available in the specified products, submit accurate color charts to the Owner for selection.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Consecutively number all submittals.
- B. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number and applicable Specification section.
- C. Accompany submittals with a letter of transmittal.
- D. Resubmittals:
 - 1. Transmit resubmittals under a new letter of transmittal and with a new submittal number.
 - 2. Cite the original submittal number for reference.



3.02 SCHEDULE

- A. Transmit submittals to the Owner's Representative for approval at least two weeks (14 calendar days) before the Pre-Construction Meeting to allow adequate time for reviews and approvals, for revisions and resubmittals, and for placing orders and securing delivery.
- B. Submittal review by the Owner's Representative does not relieve the Contractor from responsibility for errors or omissions which may exist in the submitted data.
- C. The Owner Representative's review of submittals shall not relieve the Contractor of responsibility for deviation from requirements of the Project Manual unless the Contractor has informed the Owner's Representative in writing of such deviation at the time of submission and the Owner's Representative has given written approval to the specific deviation, in accordance with Section 01 25 13 Product Substitution Procedures.
- D. Revisions:
 - 1. Make submittal revisions required by the Owner's Representative.
 - 2. Notify the Owner's Representative if any required revision is interpreted by the Contractor to be a change to the Project Manual.
 - 3. Make only those revisions directed or accepted by the Owner's Representative.
 - 4. Resubmit revised submittals until accepted by the Owner's Representative.

END OF SECTION



SECTION 01 45 23

QUALITY ASSURANCE PROGRAM (QAP)

PART 1 - GENERAL

1.01 QUALITY ASSURANCE SITE MANAGEMENT SERVICES

- A. The Roofing Contractor shall retain the services of NTH Consultants, Ltd. (NTH) to provide full-time construction observation and site management services, as described herein, for the entire duration of the specified roofing program.

1.02 DEFINITIONS

- A. "Owner" is Marysville Public Schools.
- B. "Work" is defined to include all phases of specified roofing and sheet metal work, including, but not limited to, mobilization, material delivery, roof drain scoping, gravel removal, demobilization and clean-up, and inclement weather responsibilities.
- C. "Final construction completion deadline" is defined as the date when all work, as defined herein, must be 100% complete with no punch list.

1.03 CONSTRUCTION PERIOD AND WORKDAYS

- A. Work start date: June 16, 2025
- B. Final construction completion deadline: No later than 08/15/2025.
- C. Allowable workdays and hours:
 - 1. Monday through Saturday, within the hours approved by the Owner and/or allowed by local laws and ordinances.
 - 2. Work will not be allowed on National Holidays, except if approved or required by the Owner.
 - 3. Requests for work to be performed during non-allowable hours must be approved by the Owner.



1.04 SAFETY

- A. The on-site NTH QAP Site Manager shall follow all safety requirements of the Owner and OSHA as they relate to the roofing work being performed.
- B. The Contractor shall always provide the NTH QAP Site Manager with safe access to all work areas.

1.05 CONSTRUCTION OBSERVATION WORK HOURS

- A. The NTH QAP Site Manager shall be on the job site, as follows:
 - 1. Every day, beginning on the specified start date (including mobilization, material delivery, roof drain scoping, and gravel removal) and ending on the actual final construction completion date, to observe all phases of work, as defined herein.
 - 2. Monday through Friday: 8.00 hours per day, beginning on the specified work start date and ending at final construction completion.
 - 3. Added work hours: Hours worked more than 8.00 hours per day.
 - 4. Deducted work hours: Work hours lost due to inclement weather (maximum deduction of 4.0 hours per day).

1.06 SCOPE OF SERVICES

- A. The NTH QAP Site Manager shall ensure that all Roofing Contractor work meets the requirements of the contract documents and project specifications.
- B. The NTH QAP Site Manager shall perform the following services:
 - 1. Perform visual observation of the specified roofing and related sheet metal work on a full-time basis from project start through completion.
 - 2. Provide verification of materials used and ensure compliance with specifications and material manufacturer requirements.
 - 3. Provide verification that roofing, and sheet metal materials, are installed in strict accordance with the project specifications, material manufacturer requirements, and NRCA industry standards.



4. Prepare and submit field reports which provide documentation of daily activities, work areas, and other data conforming compliance to the project specifications and contract documents.
 5. The Roofing Contractor and Owner must be notified immediately of any materials or application procedures that are not in compliance with project requirements.
- C. The NTH QAP Site Manager shall also:
1. Attend the Pre-Construction Roofing Conference at the project site.
 2. Communicate with the Owner's Representative(s) on a daily basis.

1.07 INCLEMENT WEATHER

- A. In the event work is not performed due to inclement weather:
1. The NTH QAP Site Manager and a Roofing Contractor representative shall thoroughly review the job site for material storage conformance, equipment storage, debris containment, and the watertight integrity of new work, existing adjacent work, and overnight tie-ins.
 2. Deficiencies and roof leaks must be immediately repaired by the Roofing Contractor.

1.08 EXCLUSIONS

- A. The NTH QAP Site Manager shall not have control or charge of, and shall not be responsible for, construction means, methods, sequences, procedures, and job safety.
- B. The NTH QAP Site Manager shall not be responsible for the Roofing Contractor's failure to perform work in accordance with Contract Document requirements.
- C. Failure of the Owner and/or NTH QAP Site Manager, during the progress of the work, to discover or reject materials or work not in accordance with the Contract Documents shall neither be deemed acceptance thereof nor a waiver of defects therein.
- D. No acceptance or waiver shall be inferred or implied due to payments made to the Roofing Contractor, or by use of the interior space below the work, by the Owner.



PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.01 FULL-TIME CONSTRUCTION OBSERVATION

- A. Beginning on the specified start date and ending at final construction completion date, the NTH QAP Site Manager will visit the site every day to observe all phases of work, as defined below.
- B. Include all NTH fees for full-time QAP Construction Observation services in the Base Bid. Calculate the cost of QAP services as follows:
 - 1. Estimate the total number of Contractor and Contractor's subcontractor(s) crew work hours required to fully complete all phases of specified work (including inclement weather days).
 - 2. Multiply the total number of estimated crew work hours by the hourly QAP Construction Observation Rate (and as indicated in Item Nos. 3.03 B, C, D, and E below) and include this amount in the Base Bid.
- C. QAP Construction Observation Rate: **\$195.00** per hour.

3.02 MANDATORY WORKDAYS AND HOURS

- A. Monday through Friday, within the hours allowed by local laws or Ordinances, and as approved by the Owner. No work on National Holidays, except if allowed by the Owner.

3.03 CONSTRUCTION OBSERVATION HOURS AND FEES

- A. NTH will prepare a log of daily on-site QAP time (Daily Field Time Summary) with a tabulation of hours (calculated as indicated below) and general work activities.
- B. Base charge: 8.0 hours for every allowable workday, Monday through Friday, beginning on the specified work start date (including mobilization, material delivery, roof drain scoping, and gravel removal) and ending at final construction completion.



1. Hours added to base charge: Work hours over 8.0 hours per day, multiplied by a 1.5 premium factor.
 2. Hours deducted from base charge: Work hours lost due to inclement weather. A minimum charge of 4.0 regular hours will apply Monday through Friday.
- C. For work performed, or scheduled to be performed, on Saturday:
1. NTH will tabulate Saturday work in accordance with Item 3.03 B above and multiply the hours by a 1.5 premium factor.
 2. A minimum charge of 8.0 regular hours will apply for Saturday (regardless of weather, even if no work is performed).
- D. For work performed, or scheduled to be performed, on Sunday:
1. NTH will tabulate Sunday work in accordance with Item 3.03 B above and multiply the hours by a 2.0 premium factor.
 2. When scheduled, a minimum charge of 12.0 regular hours will apply for Sunday (regardless of weather, even if no work is performed).
- E. For work performed on any day without notification to NTH and without NTH present on site:
1. NTH will assess a minimum charge of 16.0 regular hours per day for any phase of work that occurs without NTH on site.
 2. NTH reserves the right to reject all work performed by the Contractor without NTH on site.

3.04 QUALITY ASSURANCE PROGRAM (QAP) PAYMENT PROCEDURES

- A. NTH will provide an invoice at the end of each month and at final construction completion for QAP Construction Observation Services, based on the hourly rate indicated above and the hours tabulated by NTH on the QAP Daily Field Time Summary.
- B. Payment of NTH invoices is due on receipt.

END OF SECTION



SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 STORAGE

- A. Store all materials in areas designated by the Owner. Arrange stored materials to maintain full access to and throughout the building. Materials stored outdoors shall be neat, orderly, and covered to prevent damage or vandalism. When stored in a central storage area, transport to the project site via covered truck and/or trailer only those materials intended for installation that day. Return materials not installed that day to the central storage area.

1.02 TEMPORARY UTILITIES

A. Temporary Electric

1. The Owner may pay the charges for reasonable amounts of electrical power energy used for temporary lighting and power required for this work.
2. Provide and maintain any temporary electrical lighting and power required for this work. At the completion of the work, remove and dispose of all such temporary electrical facilities.
3. Provide temporary electrical power to comply with the regulations and requirements of the National Electrical Code.

B. Temporary Heat

1. Provide, maintain, and pay for all weather protection and heating as required upon the determination of the Owner to properly protect all parts of the structure from damage during construction. This includes protective coverings and enclosures, space heaters with vent pipes to outside of building, fuel, and the necessary attendance. Maintain heat as required. Failure of the Owner to request temporary heat does not relieve the Contractor of responsibility for damage in event protection has not been provided. The Owner will not supply temporary heat.



C. Temporary Water

1. The Owner may pay the charges for reasonable amounts of fresh water used for this work.
2. As approved by the Owner, connect portable hoses to designated hose bibs. Furnish and install water shut-off devices on hoses to limit the continuous flow of water when not in use.
3. Disconnect hoses from Owner-designated hose bibs at the end of each workday. Neatly store hoses in the designated set-up area.

D. Temporary Sanitary Facilities

1. Provide portable sanitary facilities for use by Contractor personnel. Maintain such facilities in a neat and sanitary condition for the duration of work.
2. Locate portable sanitary facilities within the designated set-up area or at locations designated by the Owner.

1.03 BARRIERS

- A. If required by the Owner, supply and maintain traffic barriers at specific locations of the project site. Adequately size the barriers to be visible to vehicular traffic and provide a suitable barrier for pedestrians.

1.04 SECURITY

- A. Accept responsibility for the security of this project. Construct and maintain pedestrian walkways, barricades, screens, railings, and fences as necessary and in strict accordance with applicable codes for protection of pedestrians and parking structure users.

1.05 TEMPORARY CONTROLS

- A. Noise Control: Conform to Owner and City requirements.
- B. Dust Control: Furnish all labor, materials, equipment, supervision, and incidentals necessary to install dust proof partitions to contain dust and debris within the work area.



- C. Debris Control: Conform to Owner and City requirements. Remove debris daily from the worksite.

1.06 FIRE PRECAUTIONS

- A. Take necessary actions to eliminate fire hazards and to prevent damage to construction areas, set-up and staging areas, existing structures, equipment, and other property.
- B. During the construction, provide the type and quantity of fire extinguishers and fire hoses to meet safety and fire prevention practices by appropriate rules and regulations.
- C. Provide the necessary personnel and fire-fighting equipment to effectively control incipient fires resulting from welding, flame-cutting or other operations involving the use of flame, sparks or sparking devices. During such operations, remove all highly combustible or flammable materials from the immediate working area. If removal is impossible, protect such materials with suitable non-combustible shield against sparks, flame, or hot metal.
- D. Not more than one-half day's supply of flammable liquids shall be brought to the project area at any one time.
- E. Locate only a reasonable working supply of flammable materials in the project area, if allowed by the Owner.
- F. No flammable fuel shall ever be brought into the building. All storage and handling of fuels must comply with Owner requirements.
- G. Remove all oil-soaked rags, papers, and other similar combustible materials from the project area at the close of each day's work, or more often if necessary, and place these materials in metal containers, with self-closing lids.
- H. Materials and equipment stored in cardboard cartons, wood crates or other combustible containers shall be stored in an orderly manner and accessibly located. Place fire-fighting equipment of approved types in the immediate vicinity of any materials or equipment stored in this type of crate or carton.
- I. Do not dispose of gasoline, benzene, or like combustible materials into sewers, manholes, or traps.



- J. Remove and legally dispose of all rubbish from the work site. Do not burn rubbish, waste materials, or trash on the site.
- K. The Contractor is responsible for the conduct of employees relative to smoking with all smoking to be in areas designated by the Owner.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION



SECTION 01 66 00

MATERIAL STORAGE AND HANDLING PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes requirements for protection of materials scheduled for use in the Work, by means including, but not necessarily limited to, those described in this Section.

1.02 SUBMITTALS

- A. All contractor materials must have a corresponding Safety Data Sheet (SDS) submitted to the Owner for review and approval prior to material delivery to the project site.

1.03 QUALITY ASSURANCE

- A. Use procedures as are required to ensure full protection of work and materials.
- B. Except as otherwise approved by the Owner's Representative, comply with manufacturers' recommendations for product handling, storage, and protection.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Acceptance at site:
 - 1. Deliver products and equipment to the job site in their manufacturer's original container, with labels intact and legible. Ensure that packaging labels indicate conformance with the specified standard applicable to the material.
 - 2. The Owner's Representative may reject as non-complying such materials and products that do not bear identification satisfactory to the Owner's Representative as to manufacturer, grade, quality, shelf life and expiration date, and other pertinent information.
 - 3. Inspect materials delivered to the site for evidence of contact with moisture. Reject delivery of materials with stained or wet wrappers, or torn covers.



- B. Storage and Handling:
1. Do not expose materials to moisture in any form. If allowed by the Owner, store materials in a completely enclosed building.
 2. Maintain packaged materials with seals unbroken and labels intact until time of use.
 3. When out-of-doors, store on clean raised platforms at least four inches above the ground or roof surface.
 - a. Completely cover all materials with weatherproof covers (tarps) to protect them from weather and moisture.
 - b. Factory applied plastic wrap is not an acceptable weatherproof cover.
 - c. Rooftop storage of materials is not permitted except for materials intended for installation that same day.
 4. QAP Site Manager:
 - a. Inspect stored materials for evidence of contact with moisture. Mark improperly protected materials, unprotected materials, and materials that get wet or damaged. Do not use these materials in the new roof system.
 - b. Ensure damaged materials and unsuitable items are promptly removed from the job site, and promptly replaced with material meeting the specified requirements, at no additional cost to the Owner.
- C. Additional time required to secure replacements resulting from the Contractor's failure to appropriately protect stored materials will not be considered by the Owner to justify an extension of the contract time.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED



SECTION 01 78 00

CLOSEOUT SUBMITTALS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes administrative procedures and closeout submittals to be used at final completion of the Work.

1.02 SUBMITTALS

- A. Closeout submittals include, but are not necessarily limited to:
 - 1. Roofing Material Manufacturer's long-term warranty. Roof areas included in the warranty must be accurately identified.
 - 2. Evidence of compliance with requirements of governmental agencies having jurisdiction, including but not necessarily limited to Certificates of Inspection.
 - 3. Evidence of payment to, and release of liens from, all subcontractors.
- B. Project Record Documents
 - 1. Throughout progress of the Work, maintain a complete and accurate record of Project Manual changes.
 - 2. Make a complete and accurate record of the Work as actually installed. Neatly mark on a set of drawings and specifications with appropriate supplementary notes.
 - 3. The purpose of the final Project Record Documents is to provide information regarding all aspects of the Work, as-built or as-constructed.



1.03 QUALITY ASSURANCE

A. Completion:

1. When the Work is complete, certify to the Owner that the Work has been inspected by the roof system material manufacturer for compliance with the Project Manual and has been completed in strict accordance with all project requirements.
2. Upon completion, the Owner's Representative will perform a final inspection. Provide the Owner's Representative with safe access to the Work as required to perform this inspection.
3. When the Owner has determined that the Work is acceptable under the Project Manual, provide the closeout submittals specified herein.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.01 ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting to the Owner, showing all adjustments to the Contract Sum.
- B. If so required, the Owner's Representative will prepare a final Change Order showing adjustments to the Contract Sum that were not made previously by Change Orders.
- C. Final payment may be withheld if warranties and other closeout submittals do not comply with the requirements of the Project Manual.

END OF SECTION



SECTION 02 25 29

EXISTING ROOFING SYSTEM INFORMATION

PART 1 - GENERAL

1.01 EXISTING ROOFING SYSTEM CONSTRUCTION

- A. The following information regarding existing roofing system components and configurations is for informational purposes only. Unless otherwise indicated, the following data is based on random and limited cores made into the roofing systems for purposes not necessarily relating to roof replacement. Conditions at the core locations may not be representative of the entire roof area. Use of the following data, for whatever purpose, is done solely at the user's risk.

Roof Areas G & J

- Adhered EPDM single ply membrane
- 3.0 inches of polyisocyanurate roof insulation (R-value = 16.8)
 - Insulation mechanically fastened with plastic auger screws
- Bituminous underlayment
- Cementitious wood fiber (Tectum) deck

Roof Areas D, E, K, and L

- Gravel ballasted EPDM single ply membrane
- 2 layers of 1.5-inch polyisocyanurate insulation (R-value 16.8)
 - Insulation loose laid
- Steel Deck (Type B)

1.02 APPROXIMATE ROOF SIZES

- A. The following information regarding existing roofing system sizes at roof replacement areas is for informational purposes only. The following data is based on measurements for purposes not necessarily relating to roof replacement. Use of the following data, for whatever purpose, is done solely at the user's risk:

Roof Area D	Classroom/Hallway	3,448 sq. ft.
Roof Area E	Classroom/Bathrooms	2,829 sq. ft.
Roof Area G	Office/Locker Room	7,050 sq. ft.
Roof Area J	Locker Room	2,262 sq. ft.
Roof Area K	Band Room	3,103 sq. ft.
Roof Area L	Classroom/Office	<u>3,276 sq. ft.</u>
		21,968 sq. ft.



PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION



SECTION 02 35 00

INTERIOR PROTECTION

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes requirements for materials and procedures to be used for interior protection.

1.02 FIELD CONDITIONS AND DIMENSIONS

- A. Prior to ordering materials, or doing any work, verify at the site all dimensions, details, and conditions that may affect the work. No allowance for additional compensation will be considered for discrepancies between dimensions indicated in the specifications and drawings and actual field dimensions, or for the Contractor's failure to comply with this requirement.

1.03 CONFLICTS

- A. Immediately refer any conflicts among requirements of these specifications, those of regulatory agencies, material manufacturers, and good roofing practices to the Owner for resolution.

PART 2 - PRODUCTS

2.01 INTERIOR PROTECTION SHEETING

- A. Polyethylene sheeting: High strength, polyethylene film; clear, reinforced, extrusion laminate, 6 mil total nominal thickness.

PART 3 - EXECUTION

3.01 GENERAL

- A. Notify building occupants prior to the start of construction activities. Post a roof/floor plan in accessible locations providing an anticipated schedule for each bay/grid and the cell phone number of the designated contact person, including but not limited to the QAP Site Manager. Keep occupants informed of any major changes to the anticipated schedule.



- B. Designate a contact person to receive any concerns from building occupants (i.e., unusual amounts of particulate entering the building or construction debris). This individual should then address concerns directly with either the Contractor or construction coordinator; discussion should take place before work begins deciding who is to be contacted. Periodic meetings should be held to discuss and resolve any concerns. A designated person should keep a log of this information including corrective actions that were taken and any deadlines for corrective action.
- C. Do not begin roof removal work until adequate interior protection is in place.
- D. Control existing roofing removals and other project removals to prevent dust, dirt, and debris from entering the building interior. Provide interior protection as required by the Owner and as necessary to protect building personnel and contents.
- E. If conditions are uncovered or created which would be detrimental to the proper conduct of specified work, immediately notify the Owner for resolution.

3.02 PREPARATION FOR ROOF REMOVAL

A. General:

- 1. Protect the building interior area and occupants below roof replacement areas and obsolete roof penetration removal areas:
 - a. Use red danger tape or other Owner-approved barricades to create a safe zone to keep building occupants or pedestrians away from the affected area.
 - b. Station a “safety person” at the interior area below roof replacement areas and obsolete roof penetration removal areas to ensure that building occupants do not enter the area until removals are complete, and at least two layers of roof insulation are in place. Always maintain direct communication with Roofing Foreman and QAP Site Manager on the roof.
 - c. Remove all interior debris resulting from these operations on a daily basis.
- 2. Prior to installation of interior protection, inspect the underside of the roof deck for corrosion, damage, deck openings, and other defects. Locate affected areas on a roof plan for reference during roof removal and substrate preparation work activities.



3. Erect a canopy, as needed per direction of the Owner, to protect personnel and equipment below and prevent any disruption of facility operations. The installation must be completed prior to the start of the roof removal operations and should not allow falling or blown particulate materials to endanger employees, equipment, or product.
 - a. The preferred method of providing a “total seal” during roof removal is a suspended cover. Install reinforced plastic sheeting from the overhead structural steel roof structure, sealing all sides of the sheeting, and sealing the sheeting to all penetrations.
 - b. Minimize interference with lights, sprinklers, normal air flow, plenums, and returns.
 - c. Securely fasten all suspended sheeting to contain dust and debris and prevent collapse or displacement (debris of less than 10 lbs. per 100 square feet). Material should be installed using the largest sheet size possible on a sight line to ensure the necessary height requirement with the least amount of penetrations. All seams and penetrations must be tape-sealed to ensure a “total seal.”
 - d. Tape should be of compatible poly materials to create a tight bond to the sheet film.
 - e. Where applicable, products or equipment on the floor may be draped with plastic film to provide additional protection from contamination.
 - f. Care must be taken to completely contain all dust and debris in any suspended cover system. The timing of the takedown is to be coordinated with the Owner. All tape and support systems used for the installation are to be removed and the debris disposed of accordingly.
4. Installation of interior protection polyethylene sheeting must be scheduled per direction of Owner.

END OF SECTION



SECTION 03 51 13

**CEMENTITIOUS WOOD FIBER (TECTUM)
ROOF DECK REPAIR**

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes cementitious wood fiber roof deck repair associated with roof replacement at:
 - 1. Roof Areas G and J.

1.02 FIELD CONDITIONS AND DIMENSIONS

- A. Prior to ordering materials, or doing any work, verify at the site all dimensions, details, and conditions that may affect the work. No allowance for additional compensation will be considered for discrepancies between dimensions indicated in the specifications and drawings and actual field dimensions, or for the Contractor's failure to comply with this requirement.

1.03 CONFLICTS

- A. Immediately refer any conflicts among requirements of these specifications and drawings, those of regulatory agencies, and those of roof system/materials manufacturer's recommendations and good roofing practices to the Owner for resolution.

PART 2 - PRODUCTS

2.01 STEEL PLATE STOCK

- A. For repair of roof deck openings that do not exceed 6 inches in any direction: 16-gauge galvanized; dimensions to extend a minimum of 6 inches on all sides of the roof deck opening.
- B. Steel plate adhesive: Asphalt roofing cement; ASTM D 4586, asbestos free.



2.02 CEMENTITIOUS WOOD FIBER ROOF DECK PANELS

- A. Type to match existing adjacent deck panels.
- B. Type recommended by the cementitious wood fiber roof deck panel manufacturer.

PART 3 - EXECUTION

3.01 GENERAL

- A. General: Inspect existing decking panels for deterioration and other defects.
- B. Refer to Section 07 0150 Roof Removals and General Substrate Preparation for general work and substrate preparation requirements.

3.02 TECTUM DECK REPAIR

- A. At roof deck openings that do not exceed 6 inches in any direction: Set steel plate in roof cement over the opening. Ensure that the steel plate extends a minimum of 6 inches on all sides of the roof deck opening and that the steel plate/cement is secure before proceeding with work.

3.03 TECTUM DECK REPLACEMENT

- A. To the extent indicated by the Owner, replace deteriorated decking panels, or panels with deck openings that exceed 6 inches in any direction, with matching panel type and thickness, to provide a structurally sound roof deck suitable to receive new materials. Apply grout in the joints of the replacement panels in accordance with the requirements and recommendations of the cementitious wood fiber roof deck manufacturer.

END OF SECTION



SECTION 05 01 30

STEEL ROOF DECK REPAIR

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes requirements for steel roof deck repair associated with roof replacement at:

- 1. Roof Areas D, E, K, and L

1.02 REFERENCES

- A. FM Global (FM)
- B. Steel Deck Institute (SDI)

1.03 FIELD CONDITIONS AND DIMENSIONS

- A. Prior to ordering materials, or doing any work, verify at the site all dimensions, details, and conditions that may affect the work. No allowance for additional compensation will be considered for discrepancies between dimensions indicated in the specifications and drawings and actual field dimensions, or for the Contractor's failure to comply with this requirement.

1.04 CONFLICTS

- A. Immediately refer any conflicts among requirements of these specifications and drawings, those of regulatory agencies, and those of roof system materials manufacturers' recommendations and good roofing practices to the Owner for resolution.

PART 2 - PRODUCTS

2.01 DECK PRIMER

- A. Primer: Such as "Omnithane Series v530" moisture-cured aromatic urethane primer for steel decks; manufactured by Tnemec.



- B. Accelerator: Such “Urethane Accelerator 44-710” catalyst additive for urethane coating, affording low temperature application and accelerated cure; manufactured by Tnemec.

2.02 STEEL PLATE

- A. For repair of corroded decking resulting in deck openings 12 inches x 12 inches or less, or for repair of other deck openings 12 inches x 12 inches or less:
 - 1. Steel plate stock: 18-gauge galvanized; 2-feet x 2-feet.

2.03 REPLACEMENT STEEL ROOF DECKING

- A. For use at locations where removal of damaged or corroded roof decking results in openings larger than 12 inches x 12 inches and at other deck openings larger than 12 inches x 12 inches.
- B. Steel roof decking to match existing profile, and as necessary to comply with requirements of applicable insurance agencies and local codes:
 - 1. Type B, 18-gauge galvanized (minimum), 1.5-inches deep; interior finish primed white color, if required by the Owner.

2.04 FASTENERS

- A. Type: TEKS by Buildex, Division of ITW. Substitute fasteners will be considered.
 - 1. Fasteners for deck side lap stitching: 10-16 x 3/4-inch Hex Washer Head, TEKS/1 with pilot point.
 - 2. Fasteners for deck to steel (1/4-inch-thick max.): 12-24 x 7/8-inch Hex Washer Head, TEKS/4.
 - 3. Fasteners for deck to structural steel (1/2-inch-thick max.): 12-24 x 1-1/4-inch Hex Washer Head, TEKS/5.



PART 3 - EXECUTION

3.01 GENERAL

- A. Refer to Section 07 01 50 Roof Removals and General Substrate Preparation for general work requirements.

3.02 STEEL ROOF DECK REPAIR

- A. Inspect exposed steel roof deck for corrosion, openings, and loose sections.
- B. Perform deck repairs to the extent indicated by the Owner's Representative.
- C. Remove corrosion and prime deck – **UNIT COST ITEM:**
 - 1. Inspect the deck in the removal area to determine if the corrosion is through the deck.
 - 2. If corrosion is not through the deck:
 - a. Wire-brush or scrape the corrosion. Remove dust and debris by power vacuum.
 - b. Apply primer and accelerator over the corroded area(s); allow time to dry. Exercise caution to prevent primer from entering the building.
 - 3. If corrosion is through the deck, install steel plate stock or new roof deck panels as indicated in Items D and E below.
- D. Install steel plate – **UNIT COST ITEM:**
 - 1. Where corrosion extends through the steel roof deck and the extent of this defect is 12 inches x 12 inches or less in size.
 - 2. Where other steel roof deck openings 12 inches x 12 inches or less in size are encountered.
 - 3. Remove corrosion and prime deck as specified above.
 - 4. Lap the steel plate a minimum of 6-inches on all sides of the defect. Fasten the plate with No. 14 self-drilling screws installed at each perpendicular rib and on 12-inch centers along the outside parallel ribs.



Position the fasteners a minimum of two inches in from the outside edge of the repair plate.

E. Install new steel roof deck panels – **UNIT COST ITEM:**

1. Where corrosion extends through the steel roof deck, or openings exist, and the extent is larger than 12 inches x 12 inches in size.
2. Where abandoned or obsolete equipment curbs are designated on the drawings to be removed and discarded.
3. Examine support framing and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the deck work. Verify that the structural steel framing is acceptable to receive the new steel roof decking.
4. Install new decking in accordance with the requirements of FM, Steel Deck Institute, and applicable local codes.
5. Place deck panels on structural supports and adjust to final position with ends lapped or butted over structural supports with a minimum end bearing of 1-1/2 inches. Attach the deck panels firmly to the supports immediately after placement.
6. Ensure that Type B deck panels extend over a minimum of two joist spans (and are attached to three separate joists).

F. Repair loose steel roof deck sections - **INCLUDE IN BASE BID:**

1. Refasten steel roof deck sections to structural steel at 12 inches maximum on center.
2. Refasten steel roof deck side laps at 36 inches on center (maximum).

END OF SECTION



SECTION 06 10 53

MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes requirements for miscellaneous rough carpentry work associated with roof replacement, including existing wood blocking and nailer removal, and installation of new wood blocking, nailers, and plywood.

1.02 REFERENCES

- A. American Wood Preservers Association (AWPA)
- B. American Wood Preservers Institute (AWPI)
- C. American National Standards Institute (ANSI)
- D. Western Wood Products Association (WWPA)

1.03 FIELD CONDITIONS AND DIMENSIONS

- A. Prior to ordering materials, or doing any work, verify at the site all dimensions, details, and conditions that may affect the work. No allowance for additional compensation will be considered for discrepancies between dimensions indicated in the specifications and drawings and actual field dimensions, or for the Contractor's failure to comply with this requirement.

1.04 CONFLICTS

- A. Immediately refer any conflicts among requirements of these specifications, those of regulatory agencies, material manufacturers, and good roofing practices to the Owner for resolution.

PART 2 - PRODUCTS

2.01 WOOD NAILERS AND WOOD BLOCKING

- A. Species and grade (for non-exposed use): Kiln-dried Douglas Fir or Yellow Pine; WWPA Structural Joist and Plank Class, No. 2 Grade.



- B. For exposed wood blocking:
 - 1. Preservative treated lumber: ACQ-treated (pressure-treated).
- C. Dimensions:
 - 1. For wood nailers and blocking: Dimensions as indicated on the drawings; dimensions as required by conditions encountered; and/or dimensions to match existing adjacent wood nailers and blocking in size and shape.

2.02 PLYWOOD

- A. Standards: PS 1/ANSI A199.1 for plywood panels.
- B. Grade: C-C EXT-APA.
- C. Thickness: 3/4-inch.

2.03 FASTENERS

- A. For securing wood to steel roof deck: No. 14 fluorocarbon-coated screws; length as necessary to penetrate minimum 3/4 inch and maximum 1 inch through the deck.
- B. For securing wood to masonry: 1/4-inch diameter "Tapcon" screws or other fastener type suitable to adequately secure the wood to the building wall.
- C. For securing wood to wood: No. 14 fluorocarbon-coated screws, or double-dipped galvanized nails; length as necessary to penetrate minimum 1-1/4 inches into wood for screws and 1-1/2 inches into wood for nails.
- D. For fastening to pressure-treated lumber: Stainless steel screws; size as noted above.

PART 3 - EXECUTION

3.01 GENERAL

- A. Refer to Section 07 01 50 Roof Removals and General Substrate Preparation for wood nailer and blocking inspection and general work and substrate preparation requirements.



3.02 WOOD NAILERS AND WOOD BLOCKING

- A. Remove, discard, and replace damaged, deteriorated, or otherwise defective wood nailers and blocking as determined by the inspection and to the extent indicated by the Owner's Representative – **UNIT COST ITEM.**
- B. Provide new wood nailers at the following locations:
 - 1. Where shown on the drawings.
 - 2. As necessary for other conditions encountered, such as raising curb heights to allow for minimum 8-inch flashing height.
- C. Wood securement to steel roof deck and building construction:
 - 1. Secure wood members with the specified fasteners at 18-inches o.c. (maximum), and, in addition, within 6 inches of each end, to adequately secure nailers to the deck or building construction.
- D. Wood securement to other wood nailers and blocking:
 - 1. Secure the top nailer(s) to the lower secured nailer with the specified nails or screws, of sufficient length to penetrate a minimum of 1-1/2 inches into the lower wood nailer (for nails) and 1-1/4 inches into the wood (for screws).
 - 2. Space fasteners 18 inches o.c. (maximum) and staggered. In addition, provide fasteners within 6 inches of all ends of nailers.
 - a. Within 10 feet of any outside building corner, reduce the indicated fastener spacing to 9 inches o.c. (maximum).

3.03 PLYWOOD

- A. Install plywood at vertical locations shown on the drawings secured in place at the rate of one fastener per two square feet (minimum) or as required by conditions encountered.

END OF SECTION



SECTION 07 01 50

**ROOF REMOVALS AND
GENERAL SUBSTRATE PREPARATION**

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes specification for removal of existing roofing components; roof deck inspection; wood nailer and blocking inspection; roof drain component inspection; and general work requirements and substrate preparation for roof replacement work.

1.02 CONFLICTS

- A. Immediately refer any conflicts among requirement of these specifications, those of regulatory agencies, material manufacturers, and good roofing practices to the Owner for resolution.

PART 2 - PRODUCTS

2.01 MISCELLANEOUS

- A. Roof insulation (for roof protection): Rigid board roof insulation; any foam product other than expanded polystyrene; 1.5-inch minimum thickness.
- B. Plywood (for roof protection): 3/4-inch-thick by 4-foot by 8-foot sheets.
- C. Lumber (for roof protection): Nominal 2 x 6.
- D. Fasteners (for securing plywood to lumber): No. 12 screws.
- E. Polyethylene sheeting: High strength, polyethylene film; clear, reinforced, extrusion laminate, 6 mil total nominal thickness.



PART 3 - EXECUTION

3.01 GENERAL

- A. Control existing roofing removals and other project removals to prevent dust, dirt, and debris from entering the building interior. Provide interior protection as necessary to protect building personnel and contents and as further required by the Owner.
- B. At exterior fresh air intake locations, if required:
 - 1. Cover the intake with one layer of polyethylene sheeting. Seal all edges with duct tape. Schedule the covering and shutdown of fresh air intakes 24 hours in advance. Uncover and re-activate fresh air intakes immediately after completing work in the affected area.
 - 2. Where intakes cannot be covered or shut down, construct a temporary enclosure, as necessary, to prevent fumes, dust, and debris from being drawn into the intake.
- C. Exercise caution to avoid damage to components indicated as remaining in place.
- D. Do not disturb any existing structure, piping, apparatus, or other construction unless required by roof replacement operations.
- E. Perform cutting, drilling, and removals in a manner that will avoid damage to adjoining construction that is to remain.
 - 1. Prior to any cutting, drilling, or removal, view both sides of the components affected.
 - 2. Repair or replace existing adjacent finishes/components defaced or damaged during removals to the satisfaction of the Owner.
- F. Do not begin work until the substrates have been prepared, as specified and as necessary, and are ready and acceptable to have new materials installed. By beginning work, the Contractor acknowledges that the substrates are satisfactory.
- G. Do not install roofing or sheet metal during inclement weather, except for temporary work necessary during inclement weather to protect materials that are already installed. Remove all temporary work before installing permanent materials.



- H. Do not install materials when moisture can be seen or felt on the surface to receive materials.
- I. Where wheeled or other traffic over new roofing work (or adjacent existing roofing to remain in-place) is unavoidable, provide and use 3/4-inch plywood set over a minimum of 1.5- inch-thick rigid board insulation to protect roofing components in place. Secure the plywood to 2 x 6 wood nailers located at the bottom outer edges of the plywood with No. 12 screws spaced 12 inches on center.
- J. Do not use existing or new roofs as work or storage platforms, without adequate protection as indicated above.
- K. Provide temporary watertight cut-offs and tie-ins between the old roof and new roof at the end of each workday, as necessary to maintain dry conditions. Remove all temporary work at the beginning of the next workday.
- L. If conditions are uncovered or created which would be detrimental to the satisfactory performance of specified work, immediately notify the Owner for resolution.
- M. Remove debris daily from all work areas, staging and set-up areas, and material storage areas. Place all loose debris in dumpsters or dump trailers. If required by Owner, cover dumpsters or dump trailers with reinforced tarps at the end of the workday. Extend the tarps a minimum of one foot down each side of the container; secure the tarps with rope, cord, or similar material.

3.02 SUBSTRATE PREPARATION

A. General:

- 1. Use chutes or hoisting equipment to remove old materials and debris from the roof to appropriate containers.
- 2. Avoid damage to components indicated to remain in place. Repair damaged components. Exposed substrates are to be clean (except for residual stains), dry, and suitable to receive new materials.

B. Removals:

- 1. Only remove as many existing roof system components as can be completely replaced with new underlayments, insulation, cover board, and roof membrane the same day. All new materials must be installed as specified and sealed watertight on a daily basis.



2. Adjust power roof cutters to ensure that the existing roof deck will not be cut or otherwise damaged during removal of existing roofing.
 3. Completely remove and discard debris, roofing membranes (including aggregate), flashings, insulation, underlayments (except as noted below), and metal flashings and accessories down to a suitable substrate to receive new materials.
 - a. Remove roofing debris, including aggregate, bituminous materials, and insulation, from the ribs (flutes) of the steel roof deck, using a power broom blower, or vacuum. Do not use power blowers on acoustic decks.
 - b. Underlayments that are solidly bonded to the roof deck may be left in place. Remove loose and unbonded underlayment materials.
 - c. Replace glass fiber batt insulation at acoustical steel decks that is damaged or removed during roof replacement work.
 - d. Remove and discard existing roof hatches (if present).
 4. Remove and discard obsolete penetrations (such as rooftop equipment and curbs) indicated on the roof plan drawings.
 - a. Remove and discard all obsolete wiring, cables, and hoses laying on the roof surface, as directed by the Owner.
- C. Shut off all affected electrical, plumbing and gas lines and temporarily disconnect all electrical, plumbing, gas lines and ventilation ducts where required to allow for lifting mechanical units. Schedule and coordinate all shut offs with Owner.
1. Retain a licensed mechanical/electrical contractor to disconnect the electrical systems of the mechanical units.
 2. Lift the units off the curbs or supports in a manner that will not damage the structural roof deck, electrical, plumbing, gas lines, ventilation equipment, or the unit.
- D. Temporarily displace other components indicated on drawings or as necessary, to allow for new work.



- E. Temporarily displace electrical junction boxes and other items that may interfere with work. Retain a licensed mechanical/electrical contractor to disconnect and modify these items as applicable to the work being performed. Schedule shut offs and disconnections with the Owner.
- F. Lift or remove remaining sheet metal and other metal components (indicated to remain) installed in conjunction with the existing roof system, as required, to allow for the installation of new materials.
- G. Roof decks:
 - 1. Inspect exposed roof deck for corrosion, damage, deck openings, and other defects.
 - 2. Refer to Section 05 01 30 Steel Roof Deck Repair for repair requirements.
 - 3. Refer to Section 03 51 13 Cementitious Wood Fiber (Tectum) Roof Deck Repair for repair requirements.
- H. Wood nailer and blocking inspection:
 - 1. Inspect exposed wood nailers and blocking for damage, deterioration, and other defects.
 - 2. Refer to Section 06 10 53 Miscellaneous Rough Carpentry for wood nailer and blocking removal and replacement requirements.
- I. Roof drain inspection:
 - 1. Refer to Section 22 14 26 Roof Drains for roof drain component inspection, removals, repair, and mechanical clearing.
 - 2. Temporarily cover existing roof drains during roof removal operations to prevent clogging of drain lines with debris.

END OF SECTION



SECTION 07 22 16

**ROOF INSULATION OVER
CEMENTITIOUS WOOD FIBER DECK (TECTUM)**

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes specification for polyisocyanurate roof insulation over bituminous underlayment at:

- 1. Roof Areas G and J.

1.02 FIELD CONDITIONS AND DIMENSIONS

- A. Prior to ordering materials, or doing any work, verify at the site all dimensions, details, and conditions that may affect the work. No allowance for additional compensation will be considered for discrepancies between dimensions indicated in the specifications and drawings and actual field dimensions, or for the Contractor's failure to comply with this requirement.

1.03 CONFLICTS

- A. Immediately refer any conflicts among requirements of these specifications and drawings, those of regulatory agencies, material manufacturers and good roofing practices to the Owner for resolution.

PART 2 - PRODUCTS

2.01 GENERAL

- A. All insulation products must be manufactured by, or approved by, the roofing system manufacturer.

2.02 ROOF INSULATION

- A. Polyisocyanurate roof insulation (flat stock): ASTM C 1289, Type II, Class 2, Grade 2 (20 psi), with double coated inorganic fiberglass facer; HCFC-FREE and Zero Ozone Depletion Potential (ODP):



1. Long Term Thermal Resistance (LTTR) Value: 5.6 minimum per inch.
2. First (bottom) layer thickness: 2.00 inches (R = 11.4).
3. Second (top) layer thickness: 1.50 inches (R = 8.60).
4. Board Size: 4-feet by 8-feet (bottom layer) and 4-feet by 4-feet (top layer).

2.03 TAPERED ROOF INSULATION (Roof Area G only)

- A. Tapered polyisocyanurate roof insulation: ASTM C 1289, Type II, Class 2, Grade 2 (20 psi), with double coated inorganic fiberglass facer; HCFC-FREE and Zero Ozone Depletion Potential (ODP):

1. Slope: 1/8-inch per foot; maximum board thickness 2.0 inches.

2.04 ROOF SUMP INSULATION

- A. Hinged Target Sump: Tapered Polyisocyanurate roof insulation; ASTM C1289, Type II (20 psi); sloped for maximum drainage; as manufactured by Hunter Panel, Portland, Maine, 888-746-1114.

2.05 INSULATION FASTENERS

- A. Nylon auger-type fastener and 3-inch steel plate, acceptable to the insulation manufacturer, for securement of roof insulation installed directly to cementitious wood fiber roof deck. Such as: “Polymer GypTec Fastener”; OMG Roofing Products.
1. Fastener lengths (general): Length as necessary to penetrate through both layers of insulation. Fastener penetration into the cementitious wood fiber roof deck should be 2 inches.
 2. Fastener length: 5.5 inches long.

PART 3 - EXECUTION

3.01 GENERAL

- A. Refer to Section 07 01 50 Roof Removals and General Substrate Preparation for material removals and general work and substrate preparation requirements.



- B. Ensure that the substrate is ready and acceptable to receive insulation materials.

3.02 INSULATION INSTALLATION

A. General:

1. Neatly cut insulation boards to fit around all penetrations through the roof deck. At locations where less than a full-sized sheet of insulation is required, use the largest size practical to fill in the area. Do not install numerous small sections of the insulation at these locations.
2. Fill gaps between insulation boards and between insulation boards and walls, curbs, blocking, and equipment with additional insulation material.
3. Protect all insulation from weather and standing water at all times. Install no more insulation than can be completely covered with the roofing membrane on the same day.
4. Install temporary water cut-offs at the edges of insulation at the end of each workday.

B. Insulation securement:

1. Closely butt the insulation boards. Stagger joints within, and between, the insulation layers by maximum dimensions possible.
2. Install the specified fasteners and plates at the rates and patterns shown on the drawings.

3.03 ROOF SUMPS

- A. At roof drains: Construct roof sumps around roof drains (sized as shown on drawings and as field conditions allow) to provide a gradual transition from the top layer of insulation down to the roof drain bowl.

END OF SECTION



SECTION 07 22 17

ROOF INSULATION OVER STEEL DECK

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes requirements for polyisocyanurate roof insulation over steel roof decks at:
 - 1. Roof Areas D, E, K, and L.

1.02 FIELD CONDITIONS AND DIMENSIONS

- A. Prior to ordering materials, or doing any Work, verify at the site all dimensions, details, and conditions that may affect the Work. No allowance for additional compensation will be considered for discrepancies between dimensions indicated in the specifications and drawings and actual field dimensions, or for the Contractor's failure to comply with this requirement.

1.03 CONFLICTS

- A. Immediately refer any conflicts among requirements of these specifications, those of regulatory agencies, material manufacturers, and good roofing practices to the Owner for resolution.

PART 2 - PRODUCTS

2.01 GENERAL

- A. All insulation products must be manufactured by, or approved by, the roofing membrane manufacturer.

2.02 ROOF INSULATION

- A. Polyisocyanurate roof insulation (flat stock): ASTM C 1289, Type II, Class 2, Grade 2 (20 psi), with double coated inorganic fiberglass facer; HCFC-FREE and Zero Ozone Depletion Potential (ODP):
 - 1. Long Term Thermal Resistance (LTTR) Value: 5.6 minimum per inch.



2. First (bottom) layer thickness: 2.00 inches (R = 11.40).
3. Second (top) layer thickness: 1.50 inches (R = 8.60).
4. Board Size: 4-feet by 8-feet (bottom layer) and 4-feet by 4-feet (top layer).

2.03 ROOF SUMP INSULATION

- A. Hinged Target Sump: Tapered “Q-Panel” polyisocyanurate roof insulation; ASTM C 1289, Type II, Class 2, Grade 2 (20 psi); size as noted on the drawings as manufactured by Hunter Panels.

2.04 SADDLES AND CRICKETS

- B. Tapered polyisocyanurate roof insulation: ASTM C 1289, Type II, Class 2, Grade 2 (20 psi), with double coated inorganic fiberglass facer; HCFC-FREE and Zero Ozone Depletion Potential (ODP):
 1. Slope: 1/4-inch per foot minimum; maximum board thickness 2.0 inches.
 2. Size: Width to equal 1/3 of length for full diamond-shaped saddles (or as conditions allow).

2.05 INSULATION FASTENERS

- A. Heavy-duty fluorocarbon coated self-drilling screws and galvanized plate system, acceptable to the insulation manufacturer, for securement of roof insulation installed directly to steel roof deck.
 1. Fastener lengths (general): Length as necessary to penetrate through the base layer of insulation and the top flange of the steel roof deck. Fastener penetration through the steel roof deck should be a minimum of 3/4 inch and maximum of 1 inch.
 2. Fastener length (first/bottom base layer): 3 inches long.

2.06 INSULATION ADHESIVE

- A. Basis of Design: OlyBond 500 Insulation Adhesive, manufactured by OMG.
 1. For insulation-to-insulation, including saddles, crickets, and tapered edge strips.



2. For minimum ambient and surface temperatures of 40°F and rising: Standard product.
3. For ambient and surface temperatures of less than 40°F: Winter grade product (25°F to 65° F).
4. Store in a cool, dry location at temperatures between 55°F and 85°F. Protect from freezing at all times. The minimum product temperature before application should be 72°F.

PART 3 - EXECUTION

3.01 GENERAL

- A. Refer to Section 07 01 50 Roof Removals and General Substrate Preparation for material removals and general work and substrate preparation requirements.
- B. Ensure that the deck has been prepared as necessary and is ready and acceptable to receive insulation materials. Refer to Section 05 01 30 Steel Roof Deck Repair.
- C. Before installing the insulation, inspect the underside of the steel roof deck to determine if objects, such as sprinklers, lights, conduits, fans, or gas lines are attached to the deck. Exercise caution to ensure that insulation fasteners do not penetrate these objects.

3.02 INSULATION INSTALLATION

- A. General:
 1. Neatly cut insulation boards to fit around all penetrations through the roof deck. At locations where less than a full-sized sheet of insulation is required, use the largest size practical to fill in the area. Do not install numerous small sections of the insulation at these locations.
 2. Fill gaps between insulation boards and between insulation boards and walls, curbs, blocking, and equipment with additional insulation material.
 3. Protect all insulation from weather and standing water at all times. Install no more insulation than can be completely covered with the roofing membrane on the same day.



4. Install temporary water cut-offs at the edges of insulation at the end of each workday.
- B. Insulation in direct contact with the steel roof decks:
1. Closely butt the insulation boards. Stagger joints within the insulation layer by maximum dimensions possible. Position joints over deck flanges.
 2. Install the specified fasteners and plates at the rates and patterns shown on the drawings.
- C. For insulation-to-insulation securement:
1. Adhere the insulation boards with the specified low-rise foam adhesive, applied in a squared-off serpentine pattern as shown on the drawings. Allow adhesive to rise $\frac{3}{4}$ inch to 1 inch above the substrate. (unless directed otherwise by the adhesive manufacturer). Decrease row spacing at roof area perimeter and corners as shown on the drawings.
 2. Ensure that the insulation boards are dry and lay flat.
 3. Set the boards into the risen adhesive within the time frame required by the adhesive manufacturer. Closely butt the boards and stagger joints within each insulation board layer and between layers by a minimum of 16 inches. Press boards firmly into place. Ensure that the boards are firmly and uniformly embedded edge-to-edge into the adhesive.
 4. Immediately weigh down the insulation at corners with four 5-gallon cans of roof cement or adhesive (or equivalent weight) per board to ensure full and uniform contact with the adhesive. Do not remove the weight ballast until the adhesive is completely set and the insulation boards are fully adhered (minimum of 10 minutes).

3.03 SADDLES AND CRICKETS

- A. Before installation of roof cover boards, install saddles and crickets, at locations indicated on drawings and where appropriate for conditions encountered, in low-rise foam adhesive as specified above.
1. Extend ends of saddles 12 inches into sump areas around roof drains.



2. Install crickets along the upslope side of all curbs greater than 2 feet wide.

3.04 ROOF SUMPS

- A. At roof drains: Using Q-Panel tapered insulation, install the 8-foot by 8-foot roof sumps (unless otherwise noted) around roof drains (as field conditions allow) to provide a gradual transition from the top layer of insulation down to the roof drain bowl. The outer edges of the roof sump insulation must be flush with the adjacent field of insulation.

END OF SECTION



SECTION 07 22 19

ROOF COVER BOARD

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes requirements for roof cover board installation over insulation in the general field of roofing.

1.02 FIELD CONDITIONS AND DIMENSIONS

- A. Prior to ordering materials, or doing any work, verify at the site all dimensions, details, and conditions that may affect the work. No allowance for additional compensation will be considered for discrepancies between dimensions indicated in the specifications and drawings and actual field dimensions, or for the Contractor's failure to comply with this requirement.

1.03 CONFLICTS

- A. Immediately refer any conflicts among requirements of these specifications, those of regulatory agencies, material manufacturer recommendations, and good roofing practices to the Owner for resolution.

PART 2 - PRODUCTS

2.01 ROOF COVER BOARD

- A. Gypsum-fiber roof cover board (over insulation and beneath fully adhered EPDM single-ply roof membrane):
 1. "Dens Deck Prime," ½-inch thick; 900 psi compressive strength; thermal R-value of 0.56; 4-foot by 4-foot board size; manufactured by Georgia Pacific.
 2. "DEXcell FA Glass Mat Roof Board," 1/2-inch thick; compressive strength 900 psi; thermal R-value of 0.43; 4-foot by 4-foot board size; manufactured by National Gypsum.



3. “Securock,” 1/2-inch-thick; 1,800 psi compressive strength; thermal R-value of 0.50; 4-foot by 4-foot board size; manufactured by US Gypsum.

2.02 ROOF COVER BOARD ADHESIVE

- A. Basis of Design: OlyBond 500 Insulation Adhesive, manufactured by OMG:
 1. For cover board to insulation.
 2. Store in a cool, dry location at temperatures between 55°F and 85°F. Protect from freezing. The minimum product temperature before application should be 72°F.
 3. For minimum ambient and surface temperatures of 40°F and rising: Standard product.
 4. For ambient and surface temperatures of less than 40°F: Winter grade product (25°F to 65° F).

PART 3 - EXECUTION

3.01 GENERAL

- A. Refer to Section 07 01 50 Roof Removals and General Substrate Preparation for roof removals and general work and substrate preparation requirements.
- B. Ensure that the insulation substrates are ready and acceptable to receive the roof cover board. Refer to Sections 07 22 16 Roof Insulation over Cementitious Wood Fiber Deck and 07 22 17 Roof Insulation Over Steel Roof Deck.

3.02 ROOF COVER BOARD INSTALLATION

- A. General:
 1. Neatly cut roof cover boards to fit around all penetrations through the roof deck. At locations where less than a full-sized sheet of cover board is required, use the largest size practical to fill in the area. Do not install numerous small sections of the coverboard at these locations.
 2. Install cover board so adjacent surfaces are flush. Fill gaps between cover board and walls, curbs, blocking, and equipment with additional cover board material.



3. Protect all cover boards from weather and standing water at all times. Install no more cover board than can be completely covered with the roofing membrane on the same day.
4. Install temporary water cut-offs at the edges of the cover board at the end of each workday.

B. Installation over insulation:

1. Adhere the cover boards with the specified low-rise foam adhesive, applied in a squared-off serpentine pattern as shown on the drawings. Allow adhesive to rise $\frac{3}{4}$ inch to 1 inch above the substrate. Decrease row spacing at roof area perimeter and corners as shown on the drawings.
2. Ensure that the cover boards are dry and lay flat.
3. Cut over boards at tapered insulation saddle locations to conform to transition and ensure full adhesion (no bridging) along edges of saddles and crickets.
4. Set the boards into the risen adhesive within the time frame required by the adhesive manufacturer. Closely butt the boards and stagger joints within the cover board layer by maximum dimension possible. Stagger joints between cover board and underlying insulation a minimum of 8 inches. Press boards firmly into place. Ensure that the boards are firmly and uniformly embedded edge-to-edge into the adhesive.
5. Immediately weigh down the cover board at corners with four 5-gallon cans of roof cement or adhesive (or equivalent weight) per board to ensure full and uniform contact with the adhesive. Do not remove the weight ballast until the adhesive is completely set and the insulation boards are fully adhered (minimum of 10 minutes).
6. Install cover board over insulation in roof sumps at roof drains (unless otherwise noted).
7. Do not travel across freshly installed coverboard with excessive weight, such as materials on pallets or carts.

END OF SECTION



SECTION 07 53 24

FULLY ADHERED EPDM SINGLE-PLY ROOFING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes requirements for fully adhered EPDM roofing membrane and related flashings.

1.02 FIELD CONDITIONS AND DIMENSIONS

- A. Prior to ordering materials, or doing any work, verify at the site all dimensions, details, and conditions which may affect the work. No allowance for additional compensation will be considered for discrepancies between dimensions indicated in the specifications and drawings and actual field dimensions, or for the Contractor's failure to comply with this requirement.

1.03 CONFLICTS

- A. Immediately refer any conflicts among requirements of these specifications and drawings, those of regulatory agencies, and those of roof system materials manufacturers' recommendations and good roofing practices to the Owner for resolution.

1.04 ROOF SYSTEM MANUFACTURER WARRANTY

- A. Provide roofing material manufacturer's no-dollar-limit 20-Year Roof System Warranty covering materials and workmanship, including insulation, cover board, roofing membrane, and flashings.

PART 2 - PRODUCTS

2.01 APPROVED ROOFING MATERIAL MANUFACTURERS

- A. Carlisle Syn Tec Systems
- B. Elevate/Holcim (formerly Firestone Building Products)



2.02 ROOFING SHEETS

- A. EPDM single-ply roofing membrane: Cured, non-reinforced, nominal 60-mil thickness; black color. Carlisle “Sure-Seal EPDM Kleen Non-Reinforced Membrane” or Elevate “Fire Retardant (FR) RubberGard EPDM Membrane.”
- B. EPDM base flashing membrane: Uncured, 6-inch, 9-inch, and 12-inch widths, nominal 60-mil thickness; black color. Carlisle “Sure-Seal EPDM Pressure-Sensitive Elastoform Flashing” or Elevate “RubberGard EPDM FormFlash Flashing.”

2.03 EPDM MEMBRANE SPLICE SYSTEM

- A. Cleaner/primer: Carlisle “HP-250 Primer” or Elevate “QuickPrime Plus.”
- B. In-seam splice tape: Carlisle “Pressure-Sensitive SecurTAPE” or Elevate “QuickSeam Splice Tape.”
- C. Perimeter fastening strip: Carlisle “Pressure-Sensitive RUSS” or Elevate “QuickSeam Reinforced Perimeter Fastening (RPF) Strip.”

2.04 SELF-ADHERING FLASHINGS AND STRIPPINGS

- A. For stripping at membrane field seams/splices: Carlisle “Pressure-Sensitive Cured Cover Strip (6-inch)” or Elevate “QuickSeam Cover Strip (5-inch).”
- B. For tubular penetration flashings: Carlisle “Pressure-Sensitive Elastoform Flashing” or Elevate “QuickSeam FormFlash.”

2.05 RELATED EPDM PRODUCTS

- A. Roof membrane and flashing adhesive: Carlisle “90-8-30A Bonding Adhesive” or Elevate “EPDM Bonding Adhesive BA-2004(T).”
- B. Roof membrane and flashing splice adhesive: Carlisle “EP-95 Splicing Cement” or Elevate “Splice Adhesive SA-1065 (for flashing).”
- C. Lap edge sealant: Carlisle “Lap Sealant” or Elevate “Lap Sealant HS.”
- D. Roof membrane and flashing compression seal: Carlisle “Water Cut-Off Mastic” or Elevate “Water-Block Seal (S-20).”
- E. Roof membrane corner flashing: Carlisle “Pressure-Sensitive Inside/Outside Corners” or Elevate “QuickSeam Corner Flashing.”



- F. Walkway pads: Carlisle “Pressure-Sensitive Molded Walkway Pads” or Elevate “QuickSeam Walkway Pad.”

2.06 FASTENERS

- A. Roofing membrane and flashing fasteners: Unless otherwise indicated, types as required by Carlisle or Elevate/Holcim.

2.07 MISCELLANEOUS MATERIALS

- A. Pitch pan fill materials:
 - 1. Pourable sealer (for top fill): Carlisle “One-Part Pourable Sealer” or Elevate “One-Part Pourable Sealer.”
 - 2. Non-shrink grout (for bottom fill): Quick-set, fast-drying grout; product such as: Quikrete “Commercial Grade FastSet Non-Shrink Grout.”
- B. Compressible backer rod: Closed cell, polyethylene, flexible, rope-like foam joint backing material; diameter 50% greater than joint opening.

PART 3 - EXECUTION

3.01 ROOFING MEMBRANE

- A. General:
 - 1. Ensure that the cover board is installed as specified in Section 07 22 19 Roof Cover Board and is suitable to receive new roofing membrane materials.
- B. EPDM installation precautions:
 - 1. Do not use plastic roof cement in conjunction with EPDM materials.
 - 2. Waste products (petroleum, grease, oil and solvents, vegetable or mineral oil, and animal fat) should not be allowed to contact the EPDM roof membrane system.
 - 3. Installation of the roofing system is not restricted because of cold temperatures. Follow precautions as recommended by the EPDM manufacturer.
 - 4. All membrane splicing and bonding surfaces must be clean and dry.



5. Daily seal: Care should be exercised to ensure that water does not flow beneath any completed sections of the roof by temporarily sealing the loose edge of the membrane when the weather is threatening. The manufacturer's requirements should be followed closely.
6. Do not use any open flame to dry the roof membrane or to heat the flashing materials.

C. Roofing membrane:

1. Fully adhere EPDM roofing membrane to cover board substrate daily. Phased construction (not completing new roof system daily) is not allowed.
2. Except as may be modified by these specifications, install roofing membrane in accordance with the requirements and recommendations of the EPDM manufacturer for a fully adhered system, using current printed instructions.
 - a. Use perimeter fastening strips for membrane securement at base tie-ins.
 - b. Apply self-adhered cover strips over all membrane field seams. Center the flashing over the seam and install in accordance with manufacturer requirements and recommendations.
 - c. Apply 6-inch and 9-inch-wide self-adhered stripping centered over all membrane field splices where the membrane cannot be seamed by overlapping adjacent sheets.

3.02 FLASHINGS AND STRIPPINGS

- A. Complete all flashings and strippings daily as the new roof system work progresses.
- B. Curb flashings, parapet flashings, and roof-to-wall flashings: Install as indicated on drawings and in accordance with the requirements and recommendations of the EPDM manufacturer.
- C. Tubular penetration flashing:
 1. Ensure that finished penetration flashings are a minimum of 8 inches above the finished roof level.
 2. Install only field-fabricated flashings at round or square penetrations.
 3. Do not use pre-molded flashing boots.



- D. Follow the additional requirements and recommendations of the EPDM manufacturer regarding flashing product installation.

3.03 MISCELLANEOUS INSTALLATIONS AND TREATMENTS

- A. Walkway pads:
 - 1. Install walkway pads at all roof access doors, roof hatches, and the base and top of roof access ladders.
 - 2. Install walkway pads around perimeter of all serviceable mechanical rooftop units.

END OF SECTION



SECTION 07 62 01

**METAL FLASHINGS AND ACCESSORIES
EPDM ROOFING**

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes requirements for metal flashings and accessories associated with EPDM roofing systems.

1.02 FIELD CONDITIONS AND DIMENSIONS

- A. Prior to ordering materials, or doing any work, verify at the site all dimensions, details, and conditions that may affect the work. No allowance for additional compensation will be considered for discrepancies between dimensions indicated in the specifications and drawings and actual field dimensions, or for the Contractor's failure to comply with this requirement.

1.03 CONFLICTS

- A. Immediately refer any conflicts among requirements of these specifications, those of regulatory agencies, material manufacturers, and good roofing practices to the Owner for resolution.

PART 2 - PRODUCTS

2.01 METAL ACCESSORIES

- A. Prefinished galvanized steel: G-90, Kynar 500 coating, 24 gauge; metal color as selected/approved by the Owner (excluding premium-cost finishes). Use for the following metal components where indicated:
 - 1. Counterflashings: Fabricate counterflashing to dimensions indicated on drawings. Provide the counterflashing with a 3/4-inch hemmed drip edge and, on surface mounted counterflashing, a 1/2-inch 45-degree angle sealant slot; maximum length of counterflashing sections must be 10 feet.



2. Copings, expansion joint covers, divider curbs, and obsolete curb caps: Fabricate with standing seams to configuration and dimensions shown on drawings. Provide a 3/4-inch hemmed drip edge. The maximum length of sections must be 10 feet.
 3. Fascia: Fabricate to configurations and dimensions indicated on drawings with a 3/4-inch hemmed drip edge. The maximum length of fascia sections must be 10-feet.
 4. Pitch pans: Minimum 4-inch depth; other dimensions to be kept to the minimum size necessary to provide 2-inch clearance on all sides from the penetration which is being flashed.
 5. Gutters and downspouts:
 - a. Gutters: Fabricate a one-piece (with integral roof flange) gutter in 10-foot maximum length sections, to dimensions indicated on drawings.
 - b. Downspouts: Fabricate downspouts in accordance with SMACNA Figure 1-32B, Fabricate downspout hangers in accordance with SMACNA Figure 1-35G.
- B. Galvanized steel: ASTM A653 hot-dipped zinc-coated sheet steel, commercial quality; coating designation G 90, phosphatized, not chemically treated, not oiled; gauges as follows:
1. Continuous cleats at copings and fascia: 22 gauge.
- C. Non-galvanized steel: ASTM A36/A36M (or A529 Grade 50):
1. Bracket (for gutters): 3/16-inch by 1-inch.
 2. Spacers (for gutters): 1/16-inch by 1-inch, with 180-degree twist.
- D. Aluminum:
1. Base flashing anchor (termination) bar: 1-inch x 1/8-inch extruded aluminum with sealant slot and slotted holes spaced a maximum of 12 inches o.c.



2.02 FASTENERS

- A. For aluminum and galvanized: Galvanized or cadmium-plated steel fasteners. Where fastener heads are exposed, provide EPDM-gasketed metal washers.

2.03 SEALANT

- A. Refer to Section 07 92 13 Elastomeric Joint Sealants.

2.04 MISCELLANEOUS

- A. For expansion joints:
 - 1. Batt insulation: Unfaced glass fiber batt insulation.
 - 2. Batt insulation backer: EPDM roofing membrane.
- B. Gutter seal (for gutter joints): "Gutter Seal" elastomeric gutter sealant, manufactured by Tremco Commercial sealants and Waterproofing.
- C. Concrete splash blocks for use at gutter downspouts.

PART 3 - EXECUTION

3.01 GENERAL

- A. Refer to Section 07 01 50 Roof Removals and General Substrate Preparation for existing material removal and general substrate preparation and work requirements.
- B. Fabricate rounded corners of metal flashings that come into contact with EPDM membrane.

3.02 INSTALLATION

- A. Counterflashings:
 - 1. Secure counterflashings with fasteners spaced as indicated on drawings.
 - 2. Provide a continuous bead of sealant along the top edge of surface mounted counterflashings to shed water and provide a watertight seal.



- B. Slip counterflashings: Provide slip counterflashings at locations where existing sheet metal counterflashings cannot be lifted or removed during installation of flashing materials.
- C. Copings, expansion joint covers, divider curbs, and obsolete curb caps:
 - 1. Continuous cleats: Secure the specified continuous cleats to the nailer with the specified No. 12 screws spaced as indicated on drawings; ensure that screws penetrate the nailer a minimum of 1-1/4 inch.
 - 2. Joints: Fabricate joints with standing seams in accordance with the recommendations of SMACNA.
 - 3. Fastening: Secure the outside face of the coping to the continuous cleat. Secure the inside face of the coping to the wall/wood nailer with screws and EPDM-gasketed washers spaced 18 inches on center maximum.
- D. Fascia: Install, as detailed, at locations indicated on drawings, and as follows:
 - 1. Continuous cleats: Secure the specified continuous cleats to the nailer with the specified No. 12 screws, spaced as indicated on drawings; screws shall penetrate the nailer a minimum of 1-1/4-inch.
 - 2. Secure the fascia to the cleats. Set the fascia flange in place and stagger nail flange 3 inches on-center.
- E. Gutters and downspouts:
 - 1. Gutters: Install gutters at locations shown on the drawings. Install gutters in 10-foot maximum length sections.
 - a. Laps and expansion joints: Provide 1-inch laps; apply sealant at the laps and rivet 1-inch on center. Fabricate expansion joints every 50 feet.
 - b. Bracket and spacers: Prior to installation, prime (one coat) and paint (two coats) steel gutter brackets and spacers. Apply primer and paint in accordance with the requirements and recommendations of the primer and paint manufacturer(s). Set the new gutter in brackets spaced 30-inches o.c. (or at 24-inches o.c., if necessary to attain adequate screw retention into truss/rafter tails). Install gutter spacers staggered at midpoint between the brackets.



2. Gutter flange: Stagger-nail the flange 3-inches on center.
 3. Gutter seal: Install the specified sealant over the inside gutter joints. Install in accordance with the requirements and recommendations of the gutter seal manufacturer.
 4. Downspout: Install downspout and hangers at locations indicated on drawings. Secure downspouts and hangers as shown in specified SMACNA guidelines.
 - a. Downspout termination: Provide an elbow and concrete splashblock over a walkpad at base of the downspout. Install and position the downspout elbow and splashblock to ensure that water exiting the downspout flows onto the splashblock. Extend downspouts, if necessary, to achieve the desired condition.
- F. Tubular penetrations: Install a field-fabricated flashing to the penetration as indicated in Section 07 53 24 Fully Adhered EPDM Single-Ply Roofing; also refer to the drawings.
- G. Pitch pan flashings: Flash unusually shaped penetrations with the specified metal pitch pans:
1. Flange stripping: Refer to Section 07 53 24 Fully Adhered EPDM Single-Ply Roofing; also refer to the drawings.
- H. Base flashing anchor (termination) bar: Install termination bars at locations shown on drawings. Fasten and the anchor bar as shown on drawings. Apply water block to the flashing substrate approximately 1 inch below membrane termination.

3.03 JOINT SEALANTS

- A. Ensure that sealants are applied at sealant slots of counterflashings, and other locations, where shown on drawings or required by conditions encountered. Refer to Section 07 92 13 Elastomeric Joint Sealants.

END OF SECTION



SECTION 07 72 00

ROOFING ACCESSORIES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes specifications for special roofing accessories.

1.02 CONFLICTS

- A. Immediately refer any conflicts among requirements of these specifications, those of regulatory agencies, material manufacturers, and good roofing practices to the Owner for resolution.

PART 2 - PRODUCTS

2.01 PIPE SUPPORTS

- A. Prefabricated pipe supports: Such as “Dura-Block DB10,” for roof top support of gas and refrigeration piping systems, cable trays, electrical conduit, and HVAC equipment (height and width to accommodate existing conditions); supplied by Eaton, 1000 Eaton Blvd., Cleveland, OH 44122.

PART 3 - EXECUTION

3.01 PIPE SUPPORTS

- A. Install pipe supports where required at all existing gas and refrigeration piping systems, cable trays, electrical conduit, and HVAC equipment.

END OF SECTION



SECTION 07 92 13

ELASTOMERIC JOINT SEALANTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes requirements for installation of sealant materials at metal flashings and other locations in conjunction with roofing replacement work.

1.02 FIELD CONDITIONS AND DIMENSIONS

- A. Prior to ordering materials, or doing any work, verify at the site all dimensions, details, and conditions that may affect the work. No allowance for additional compensation will be considered for discrepancies between dimensions indicated in the specifications and drawings and actual field dimensions, or for the Contractor's failure to comply with this requirement.

1.03 CONFLICTS

- A. Immediately refer any conflicts among requirements of these specifications, those of regulatory agencies, material manufacturers, and good roofing practices to the Owner for resolution.

PART 2 - PRODUCTS

2.01 SEALANTS

- A. General use:
 - 1. Polyurethane-based non-sag elastomeric sealant: "Sikaflex-1A," ASTM C-920, Type S, Grade NS, Class 35; manufactured by Sika Corporation; color to match sheet metal.
 - 2. Polyurethane sealant: "Vulkem 116," ASTM C-920, Type S, Grade NS, Class 25; manufactured by Tremco; color to match sheet metal.
- B. Closed cell backing materials, bond breakers, and primers as recommended by the sealant manufacturer for the joint conditions encountered.



PART 3 - EXECUTION

3.01 SEALANT INSTALLATION

- A. **Cleaning:** Clean surfaces immediately before installation of sealants to provide surfaces suitable for the installation of sealant.
- B. **Primer:** Apply primer if required by the sealant manufacturer for the type of sealant and conditions encountered. Apply primer in accordance with the sealant manufacturer's requirements and recommendations. Do not allow primer to spill onto adjacent surfaces.
- C. **Sealant installation:** Install sealant where required in accordance with the requirements and recommendations of the sealant manufacturer. Tool the joint immediately after installation.

END OF SECTION



SECTION 22 14 26

ROOF DRAINS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes roof drain component requirements for existing and new roof drains.

1.02 ADDITIONAL SUBMITTALS

- A. Provide thumb drive with video from the licensed plumbing contractor showing that the roof drains have been inspected, mechanically cleared, repaired, and drain to maximum capacity.

1.03 CONFLICTS

- A. Immediately refer any conflicts among requirements of these specifications, those of regulatory agencies, material manufacturers, and good roofing practices to the Owner for resolution.

PART 2 - PRODUCTS

2.01 ROOF DRAIN COMPONENTS – EXISTING ROOF DRAIN LOCATIONS

- A. Roof drain strainers:
 - 1. For use with cast metal drains where strainer is plastic, missing, damaged, or does not properly fit the clamping ring: Cast iron strainer; type and size to fit existing clamping ring.
- B. Roof drain clamping rings:
 - 1. For use with cast metal drains where clamping ring is missing, damaged, or does not properly fit the drain bowl: Cast iron; type and size to fit existing drain bowl.



C. Roof drain assembly:

1. For use where existing roof drain bowl is damaged or new roof drain is indicated: Cast iron drain bowl, clamping ring, strainer, and related fittings.
 - a. Josam Company; Type 215xx (xx = drain size to match existing drains to be replaced).
 - b. Zurn Industries, LLC; Type Z100, drain size to match existing drains to be replaced.
 - c. Jay R. Smith Mfg. Co.: Type 1010, drain size to match existing drains to be replaced.
2. Piping:
 - a. Malleable iron or material to match existing by size and type (as necessary to comply with applicable local codes).
3. Drain connectors, hangers, and clamps:
 - a. Drain connections as required and as necessary to comply with applicable and local codes.

D. Roof drain inserts:

1. “Hercules-Plus RetroDrain with Vortex Breaker Strainer,” size appropriate for the existing roof drainpipe; manufactured by OMG.

PART 3 - EXECUTION

3.01 EXISTING ROOF DRAINS

A. Inspect existing roof drain assemblies:

1. Inspect the drain strainer, clamping ring/flashing clamp, and drain bowl/body for damage. If there is no damage to these components, remove drain strainers and clamping rings/flashing clamps and save for reuse. Thoroughly clean drain strainers, bowls, and clamping rings/flashing clamps.



3.03 INTERIOR ROOF DRAIN LINE INSPECTION AND REPAIR

- A. Perform roof drain line inspections, and resultant repair work, utilizing a licensed plumbing contractor and with QAP Site Manager present.
- B. At project start (prior to roof removals) and again at project completion (following completion of roof replacement work), thoroughly inspect the roof drain lines with a video camera to ten feet below grade.
- C. Ensure that the roof drain lines are free of debris and bituminous roofing materials and will perform to maximum drainage capacity. Provide a water source if necessary.
- D. If debris and bituminous roof materials are encountered, mechanically clear drain lines until maximum drainage capacity is achieved.
 - 1. If obstructions are encountered prior to the start of roof replacement work, the Owner will be responsible for the cost of mechanically clearing, or replacing, the drain line(s).
 - 2. If obstructions are encountered after completion of roof replacement work, the Contractor will be responsible for the cost of mechanically clearing, or replacing, the drain line(s).
- E. Provide thumb drive with video from the plumbing contractor showing (1) the initial drain line obstructions (if any), and (2) after roof completion, that the roof drains have been inspected, mechanically cleared, repaired, and drain to maximum capacity.

END OF SECTION