PROJECT MANUAL

2019 Roof Replacement Program

Roof Areas: A1, A3, and B

Educational Services Center
850 Ladd Rd., Building D
Walled Lake, Michigan 48390

NTH Project No. 62-190094-01
June 18, 2019
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## Advertisement for Bid

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GENERAL NOTES

1. ALL ROOF PLAN DIMENSIONS, IF SHOWN, ARE APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR.

2. ALL COMPONENTS SHOWN IN THE DETAILS ARE "NEW" UNLESS OTHERWISE INDICATED.

3. REFER TO SPECIFICATIONS AND MANUFACTURER REQUIREMENTS FOR FURTHER CLARIFICATION.

4. INSTALL CRICKETS ON UPSIDE SLOPE OF CURBS GREATER THAN 24-INCHES WIDE.

5. PROVIDE WALKPADS AT THE BASE AND TOP OF LADDERS, AT ROOF ACCESS DOORS AND OTHER ACCESS POINTS.

6. PROVIDE WALKPADS AROUND THE PERIMETER OF ALL HVAC UNITS.

7. TEMPORARILY REMOVE WALL-MOUNTED EQUIPMENT AS NEEDED FOR ROOF REPLACEMENT WORK AND REINSTALL.

8. TEMPORARILY REMOVE EQUIPMENT RESTING ON THE ROOF SURFACE. AS DIRECTED BY THE OWNER, REINSTALL ON WALKPADS AFTER COMPLETION OF ROOF REPLACEMENT WORK.

9. TEMPORARILY LIFT AND SUPPORT ROOFTOP PIPING AS NEEDED FOR ROOF REPLACEMENT WORK. INSTALL PIPE SUPPORTS TO MATCH THE PREFABRICATED SUPPORTS IN PLACE AT THE YELLOW GAS LINE. GAS LINE SUPPORTS CAN BE REUSED IF UNDAMAGED. INSTALL SUPPORTS AT 6-FEET O.C., MAX.

PROJECT SPECIFIC NOTES

A REMOVE TWO LARGE SATELLITE DISHES AND RELATED BALLAST, SUPPLY LINES AND ANY DEDICATED ENTRY CURBS.

B PROVIDE PRECAST CONCRETE SPLASHBLOCK OVER WALKPAD AT THE BASE OF ROOF CONDUCTOR WHICH SPILLS ONTO ROOF.

C RESET EXISTING STEEL CURBS ON WOOD BLOCKING ON ROOF DECK. BLOCKING SIZE TO MATCH CURB BASE; THICKNESS AS NEEDED TO MAINTAIN EXISTING UNIT ELEVATION. COVER VERTICAL SURFACES OF CURB WITH CURB INSULATION WITH A WOOD NAILING STRIP ALONG THE TOP EDGES. FLASH CURBS WITH EPDM.
EXISTING METAL SIDING

EXISTING SHEET METAL FLASHING; REMOVE FOR FLASHING WORK AND REINSTALL. REPLACE IF DAMAGED.

FASTENERS WITH GASKETED WASHERS; INSTALL INTO EXISTING HOLES

EPDM ROOF MEMBRANE

REINFORCED PERIMETER FASTENING STRIP

INSULATION

UNDERLAYMENT; WHERE APPLICABLE

EXISTING STRUCTURAL DECK
SHEET METAL FASCIA, SECURE FLANGE 3" O.C. IN TWO STAGGERED ROWS.

5" OR 6" PRESSURE SENSITIVE FLASHING

NOMINAL 6" WOOD BLOCKING AS NEEDED TO MATCH ELEVATION OF BLOCKING SHOWN IN DETAIL NO. 4. SECURE TO SUBSTRATE 18" O.C.

9-INCH PRESSURE SENSITIVE FLASHING; PROVIDE LAP SEALANT AT ALL EDGES OF 9-INCH FLASHING

1-1/2 INCH X 12-INCH TAPERED EDGE STRIP

48-INCH TAPERED INSULATION PANEL; 1/4-INCH PER FOOT SLOPE

EPDM ROOF MEMBRANE

EXISTING STRUCTURAL DECK

UNDERLayment; WHERE APPLICABLE

INSULATION

EXISTING WOOD BLOCKING

REMOVE EXIST. TAPERED WOOD

SHEET METAL FASCIA EXTENSION. FULLY HOOK TO CONTINUOUS CLEAT. SECURE TOP EDGE 18-INCHES O.C.

SHEET METAL CONTINUOUS CLEAT. SECURE TO SUBSTRATE 18" O.C. MAX. REDUCE FASTENER SPACING TO 9" O.C. MAX. WITHIN 10' OF A BUILDING CORNER.
SHEET METAL FASCIA, SECURE FLANGE 3" O.C. IN TWO STAGGERED ROWS.

5" OR 6" PRESSURE SENSITIVE FLASHING

NOMINAL 6" WOOD BLOCKING AS NEEDED TO MATCH ELEVATION OF BLOCKING SHOWN IN DETAIL NO. 4. SECURE TO SUBSTRATE 18" O.C.

9-INCH PRESSURE SENSITIVE FLASHING; PROVIDE LAP SEALANT AT ALL EDGES OF 9-INCH FLASHING

1-1/2 INCH X 12-INCH TAPERED EDGE STRIP

48-INCH TAPERED INSULATION PANEL; 1/4-INCH PER FOOT SLOPE

EPDM ROOF MEMBRANE

EXISTING STRUCTURAL DECK

UNDERLayment; WHERE APPLICABLE

INSULATION

EXISTING WOOD BLOCKING

REMOVE EXIST. TAPERED WOOD

SHEET METAL FASCIA EXTENSION. FULLY HOOK TO CONTINUOUS CLEAT. SECURE TOP EDGE 18-INCHES O.C.

SHEET METAL CONTINUOUS CLEAT. SECURE TO SUBSTRATE 18" O.C. MAX. REDUCE FASTENER SPACING TO 9" O.C. MAX. WITHIN 10' OF A BUILDING CORNER.
Sheet metal steel fascia. Secure flange 3" o.c. in two staggered rows.

5" or 6" pressure sensitive flashing

2x6 nominal wood blocking. Secure to substrate 18" o.c.

9"-inch pressure sensitive flashing; provide lap sealant at all edges of 9"-inch flashing

1-1/2 inch x 12-inch tapered edge strip

48-inch tapered insulation panel; 1/4-inch per foot slope

EPDM roof membrane

Existing structural deck

Underlayment; where applicable

Insulation

Existing wood blocking

Remove exist. tapered wood

Sheet metal fascia extension. Fully hook to continuous cleat. Secure top edge 18"-inches o.c.

Sheet metal continuous cleat. Secure to substrate 18" o.c. max. Reduce fastener spacing to 9" o.c. max. within 10' of a building corner.
SHEET METAL FASCIA. SECURE FLANGE 3" O.C. IN TWO STAGGERED ROWS.

5" OR 6" PRESSURE SENSITIVE FLASHING

2X6 WOOD BLOCKING; SECURE TO SUBSTRATE 18" O.C.

9-INCH PRESSURE SENSITIVE FLASHING; PROVIDE LAP SEALANT AT ALL EDGES OF 9-INCH FLASHING

EPDM ROOF MEMBRANE

REINFORCED PERIMETER FASTENING STRIP

EXISTING STRUCTURAL DECK

UNDERLAYMENT; WHERE APPLICABLE

INSULATION

EXISTING CONSTRUCTION

SHEET METAL FASCIA EXTENSION. FULLY HOOK TO CONTINUOUS CLEAT. SECURE TOP EDGE 18-INCHES O.C.

SHEET METAL CONTINUOUS CLEAT. SECURE TO SUBSTRATE 18" O.C. MAX. REDUCE FASTENER SPACING TO 9" O.C. MAX. WITHIN 10' OF A BUILDING CORNER.
EXISTING METAL SIDING; CUT OFF LOWER END AS NEEDED TO RESULT IN 8-INCH MINIMUM FLASHING HEIGHT.

SHEET METAL COUNTERFLASHING, SECURE WITH APPROVED FASTENERS 12" O.C. AND WITHIN 2" OF EACH END

3/4-INCH PLYWOOD OR 18 GA. STEEL BACKER AS NEEDED

EPDM ROOF MEMBRANE

REINFORCED PERIMETER FASTENING STRIP

INSULATION

UNDERLAYMENT; WHERE APPLICABLE

EXISTING STRUCTURAL DECK
EXISTING SKYLIGHT ASSEMBLY

SHEET METAL COUNTERFLASHING,
SECURE WITH APPROVED FASTENERS 12" O.C. AND WITHIN 2" OF EACH END

SEALANT

EPDM ROOF MEMBRANE

REINFORCED PERIMETER FASTENING STRIP

INSULATION

UNDERLAYMENT; WHERE APPLICABLE

EXISTING STRUCTURAL DECK

MAX. HEIGHT POSSIBLE

DETAIL NO. 7 - SKYLIGHT
WALLED LAKE CONSOLIDATED SCHOOLS
EDUCATION SERVICES CENTER

NTH PROJECT NO: 62-190094-01
DATE: 06/18/2019
ALTERNATE:

1. WHERE EXISTING UNIT CANNOT BE DISPLACED, INSTALL SLIP COUNTERFLASHING SECURED 12" O.C. MAX. AND 6" FROM EACH END WITH GASKETED FASTENERS

2. SECURE TOP EDGE OF BASE FLASHING WITH ALUMINUM TERMINATION BAR SECURED 12" O.C. MAX. AND WITHIN 2" OF EACH END. INSTALL WATER CUT-OFF MASTIC BEHIND TERMINATION BAR PRIOR TO INSTALLATION OF SLIP COUNTERFLASHING

EXISTING ROOFTOP EQUIPMENT ON CURB – TEMPORARILY DISPLACE TO ALLOW FOR INSTALLATION OF NEW ROOF SYSTEM. REINSTALL AFTER COMPLETION OF WORK. RE-SECURE WITH RUBBER GASKETED FASTENERS 18" O.C. AND WITHIN 2" OF EACH END, MIN. 2 FASTENERS PER SIDE.

NOMINAL 2" WOOD BLOCKING (IF NECESSARY) TO ACHIEVE 8" MINIMUM FLASHING HEIGHT

EPDM CURB FLASHING
REINFORCED PERIMETER FASTENING STRIP
EPDM ROOF MEMBRANE
PRESSURE SENSITIVE FLASHING; ADHERED
INSULATION
UNDERLayment; WHERE APPLICABLE
EXISTING STRUCTURAL DECK

TYPICAL ROOF CURB
WALLED LAKE CONSOLIDATED SCHOOLS
EDUCATION SERVICES CENTER

NTH PROJECT NO.: 62-190094-01
DATE: 06/18/2019
EXISTING ROOF DRAIN ASSEMBLY.

PROVIDE 24-FOOT BY 24-FOOT TAPERED SUMP AREAS WITH A STARTING THICKNESS OF 1-INCH AND 1/4-INCH PER FOOT TAPER.

EXTEND EPDM MEMBRANE INTO BOWL 1/2" MIN. OR 3/4" MAX. INSTALL ONE TUBE OF WATERBLOCK BETWEEN EPDM MEMBRANE AND SUBSTRATE.

EXISTING STRUCTURAL DECK
TAPERED INSULATION/TAPERED EDGE STRIPS
EPDM ROOF MEMBRANE
INSULATION
UNDERLAYMENT; WHERE APPLICABLE
EXISTING TUBULAR PENETRATION – PROVIDE PIPE EXTENSIONS (IF NECESSARY) TO ACHIEVE MIN. 8" FLASHING HEIGHT

LAP SEALANT – INSTALL AT ALL EDGES OF PRESSURE SENSITIVE FLASHING

9" PRESSURE SENSITIVE FLASHING. ADHERED

9" PRESSURE SENSITIVE FLASHING. ADHERED

9" PRESSURE SENSITIVE FLASHING. ADHERED

5" OR 6" PRESSURE SENSITIVE FLASHING. ADHERED

5" OR 6" OUTERSEAM FLASHING

EXISTING STRUCTURAL DECK

INSULATION

EPDM ROOF MEMBRANE

UNDERLAYMENT; WHERE APPLICABLE
EXISTING STRUCTURAL DECK
INSULATION
EPDM ROOF MEMBRANE
5" OR 6" OUTERSEAM FLASHING
UNDERLAYMENT; WHERE APPLICABLE

SHEET METAL JUNCTION BOX
SOLDER ALL LAPS WATERTIGHT. SEAL AROUND PENETRATIONS.

EXISTING IRREGULAR PENETRATION SIZE AND SHAPE VARIES

12" PRESSURE SENSITIVE FLASHING FULLY ADHERED. EXTEND 3" BEYOND 9" PRESSURE SENSITIVE FLASHING.

9" PRESSURE SENSITIVE FLASHING FULLY ADHERED. EXTEND 3" BEYOND SHEET METAL FLANGE.

SHEET METAL PITCH PAN SEAL ALL LAPS AND SEAMS WATERTIGHT. INSTALL WATERBLOCK BETWEEN FLANGE AND ROOF MEMBRANE

NON-SHRINK GROUT – FILL PAN TO 1" BELOW TOP OF PAN

POURABLE SEALER – SLOPE TO ALLOW FOR PROPER DRAINAGE
"X" DIMENSION

<table>
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<tr>
<th>LOCATION</th>
<th>MAXIMUM &quot;X&quot; DIMENSION</th>
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<tr>
<td>FIELD</td>
<td>12&quot;</td>
</tr>
<tr>
<td>PERIMETER</td>
<td>6&quot;</td>
</tr>
<tr>
<td>CORNERS</td>
<td>4&quot;</td>
</tr>
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</table>
FIELD OF ROOF  
(10 FASTENERS)

PERIMETER OF ROOF  
(16 FASTENERS)

Corners of roof  
(32 fasteners)
PART 1 - GENERAL

1.01 PRE-BID MEETING
A. The bidder is required to attend the 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 of 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 43 00 for QAP requirements.

1.05 CONTRACTOR’S BID FORM

A. Submit the bid on the form provided in Document 00 41 13 Contractor’s Bid Form, 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 as discussed at the Pre-Bid Meeting.

B. Bid due date: As noted on the Advertisement for Bids, or as determined at the Pre-Bid Meeting.

C. Mail or hand-deliver the Bid Form and other required documents.

D. Bids received after the bid due date and time will be returned unopened to the Bidder. 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 publicly opened and read aloud at 2:00 PM on the due date/time.
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 of the qualified bidders.

B. In awarding the contract, the Owner will consider the past performance of the Contractor; conformity of the bid to the Bidding Requirements; bid price(s); and availability of funds.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF DOCUMENT
CONTRACTOR’S BID FORM

BIDDER: ____________________________________________________________

TO: Victoria Amore, CPA, CFO
    Manager, Finance and Purchasing
    Walled Lake Consolidated Schools
    850 Ladd Rd., Building D
    Walled Lake, Michigan 48390

PROJECT: EDUCATIONAL SERVICES CENTER
          850 Ladd Rd., Building D
          Walled Lake, Michigan 48390

The Bidder, having examined the Bidding Documents (Project Manual dated June 16, 2019) and being familiar with all conditions affecting this proposed Project, hereby proposes to furnish all labor, material, tools, equipment, utilities, transportation and other facilities and services necessary to perform and complete the roof replacement and repair work indicated for this project in accordance with the Bidding Documents for the base bid and unit price sums indicated herein.

**Roof Replacement**

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<th>Amount</th>
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<tr>
<td>Roof Area A1:</td>
<td>$__________</td>
</tr>
<tr>
<td>Roof Area A3:</td>
<td>$__________</td>
</tr>
<tr>
<td>Roof Area B:</td>
<td>$__________</td>
</tr>
<tr>
<td>Mobilization:</td>
<td>$__________</td>
</tr>
<tr>
<td>Contingency Allowance:</td>
<td>$ 10,000.00</td>
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</table>

**Total bid for All Work:**

$__________
# 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 indicated technical specification sections for specific unit price work requirements.

## Section 06 10 53 – Miscellaneous Rough Carpentry

<table>
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<tr>
<th>Unit Price No. 1:</th>
<th>Removal and replacement of existing damaged or deteriorated wood nailers and blocking, (or for use where presently not specified as field conditions may indicate) (per board foot):</th>
<th>$____________</th>
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<tr>
<td>Unit Price No. 2:</td>
<td>¾-inch-thick plywood for use where presently not specified as field conditions may indicate (per square foot):</td>
<td>$____________</td>
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## Section 22 14 26 – Roof Drains

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<th>Unit Price No. 3:</th>
<th>Cast iron roof drain strainer (each):</th>
<th>$____________</th>
</tr>
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<tr>
<td>Unit Price No. 4:</td>
<td>Cast iron roof drain clamping ring (each):</td>
<td>$____________</td>
</tr>
<tr>
<td>Unit Price No. 5:</td>
<td>Cast iron roof drain assembly, including drain bowl, clamping ring, strainer, and accessories; cast iron (each):</td>
<td>$____________</td>
</tr>
<tr>
<td>Unit Price No. 6:</td>
<td>Roof drain inserts (each):</td>
<td>$____________</td>
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ACKNOWLEDGEMENTS

1. The Bidder acknowledges:

   a. That this bid was developed without any collusion, undertaking, or agreement, either directly or indirectly, with any other bidder or bidders to maintain the prices of indicated work or prevent any other bidder or bidders from bidding the work.

   b. That required attachments are appended.

   c. That this bid will not be withdrawn for a period of 90 calendar days after the indicated date for receipt of bids.

   d. Receipt of the following Addenda:

      Addendum No. ____, dated ________
      Addendum No. ____, dated ________

NAME OF BIDDER'S FIRM

ADDRESS

CITY/STATE/ZIP

TELEPHONE

AUTHORIZED CORPORATE OFFICER

Signature

Printed Name

Date

END OF DOCUMENT
ATTACHMENT B

FAMILIAL DISCLOSURE AFFIDAVIT

The undersigned, the owner or authorized officer of ________________________ (the “Contractor”), pursuant to the familial disclosure requirement provided in the Walled Lake Consolidated School District’s (the “School District”) Request For Proposals For 2019 Roof Replacement Project, hereby represents and warrants that, except as provided below, no familial relationships exist between the owner or any employee of the Contractor, and any member of the Board of Education of the School District or the Superintendent of the School District. A list of the School District’s Board of Education Members and its Superintendent may be found at http://www.wlcsd.org.

List any Familial Relationships:

CONTRACTOR:
______________________________

By: ____________________________

Its: ____________________________

STATE OF _____________ )
________________ ) ss.
COUNTY OF ___________ )

This instrument was acknowledged before me on the _____ day of ____________, 20__, by _________________________.

__________________________________________, Notary Public

_________________________ County, _______________________

My Commission Expires: _______________________

Acting in the County of: _______________________

ATTACHMENT C

IRAN ECONOMIC SANCTIONS ACT AFFIDAVIT OF COMPLIANCE
Michigan Public Act No. 517 of 2012

The undersigned, the owner or authorized officer of the below-named contractor (“Contractor”), pursuant to the compliance certification requirement provided in the Walled Lake Consolidated School District’s (the “School District”) Request For Proposals For 2019 Roof Replacement Project (the “RFP”), hereby certifies, represents and warrants that the Contractor (including its officers, directors and employees) is not an “Iran linked business” within the meaning of the Iran Economic Sanctions Act, Michigan Public Act No. 517 of 2012 (the “Act”), and that in the event Contractor is awarded a contract as a result of the aforementioned RFP, the Contractor will not become an “Iran linked business” at any time during the course of performing any Work under the Contract.

The Contractor further acknowledges that any person who is found to have submitted a false certification is responsible for a civil penalty of not more than $250,000.00 or 2 times the amount of the contract or proposed contract for which the false certification was made, whichever is greater, the cost of the School District’s investigation, and reasonable attorney fees, in addition to the fine. Moreover, any person who submitted a false certification shall be ineligible to bid on a request for proposal for three (3) years from the date it is determined that the person has submitted the false certification.

CONTRACTOR:

________________________________________
Name of Contractor

By: ______________________________________

Its: ______________________________________

Date: _____________________________________

STATE OF ____________________________

) ss.

COUNTY OF ________________

This instrument was acknowledged before me on the _____ day of ____________, 20__, by

________________________________________.

, Notary Public

______________________ County, ____________________

My Commission Expires: ______________________

Acting in the County of ________________________
SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.01 WORK INCLUDES

A. Roof replacement, including removal of existing roofing system 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.

1.02 SUMMARY OF WORK

A. Gypsum roof deck: All roof areas; except steel deck at Area A3.

B. Interior protection, as directed by the Owner.

C. Removal and disposal of all existing roof system components down to structural deck.

D. Roof insulation: Polyisocyanurate insulation.


F. Metal flashings and accessories: Pre-finished 24-gauge galvanized steel and miscellaneous metals.

G. Roof drains: Inspection and mechanical clearing.
PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION
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. Provide an authorized representative at the site at all times during working hours to act on behalf of the Contractor and to receive and execute orders by 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.

D. Submit the following plans prior to the start of Work:
   1. Pre-Task Plan.

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. SAFETY IS OF ABSOLUTE IMPORTANCE.

B. 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 general public.

C. All of 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 two hours.

D. The Contractor shall be solely responsible for safety practices and the safety of Contractor’s personnel and subcontractors. Provide a 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.

E. 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.

F. Where the requirements of authorities having jurisdiction conflict with the requirements stated in the Project Manual, the more stringent condition shall prevail.
G. Furnish, install, maintain as long as 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 general public during work operations.

H. Whenever lifting materials or equipment over or near occupied buildings, provide advance notice of such activities and arrange to have potentially endangered spaces vacated.

1. Submit a crane lift plan for approval.

I. 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 workmen 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.

B. Take precautions to eliminate possible fire hazards at the site, including, but not limited to, the following:

1. Remove combustible debris from the work and storage areas on a daily basis.

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 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION
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 of substitute material, equipment or process will be considered only for one of the following reasons:

1. The manufacture or production of the specified material, equipment or process has been 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 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 29 73

SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes procedural and submittal requirements for allocating values to each of the various parts of the Work, for use in evaluating Contractor's Payment Requests.

1.02 SUBMITTALS

A. Submit Schedule of Values to the Owner immediately following contract award.

B. Upon request by the Owner, submit data that will substantiate magnitude of values.

C. Include itemized costs on the Schedule of Values for at least each of the following:

1. Mobilization and Demobilization

2. General Conditions

3. Roofing Material

4. Roofing Labor

5. Sheet Metal Materials

6. Sheet Metal Labor

7. Approved Change Orders, if applicable

D. The sum of the Schedule of Values listing of costs must equal the total Contract Sum.
PART 2 - PRODUCTS
NOT USED

PART 3 - EXECUTION
NOT USED

END OF SECTION
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 persons 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.

4. Review procedures for processing submittals requiring Consultant and Owner review.

5. Review procedures for contract modifications.


7. Review construction facilities and temporary control requirements, including availability and access for the Owner and Contractor parking.

8. Establish designated work hours, including acceptable times for operating equipment.

9. Review material acquisition timetable, as well as delivery, storage and handling requirements.

10. Review Construction Schedule, including sequence of critical work and completion date of work items at each designated work area.

11. Walkover all project roof areas, as well as set-up and roof access areas, to generally review project conditions.

12. 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

B. Agenda for Progress Meetings if applicable:

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 planned schedule, if a revised completion date is considered mandatory by the Owner.

5. Review status of submittals, 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 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 00

SUBMITTAL PROCEDURES

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 APPROVED APPLICATOR STATEMENT

A. Submit a current statement from the roofing membrane material manufacturer, addressed to the Owner, that the Contractor meets the criteria necessary to install the roofing system manufacturer’s specified system.
2.03 PRODUCT DATA

A. Submit technical data sheets for all materials specified in:

1. Section 07 22 13 Bituminous Underlayment over Gypsum Concrete Roof Deck
2. Section 07 22 15 Roof Insulation Over Bituminous Underlayment
3. Section 07 53 24 Fully Adhered EPDM Single-Ply Roofing
4. Section 07 92 00 Elastomeric Joint Sealants

B. Where submitted manufacturer's literature includes data not pertinent to the required submittal, clearly show which portions of the contents are being submitted for review.

C. Submit Safety Data Sheets for all materials and products used for 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/or saddle layout drawing(s).

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 article proposed for use.

B. Where the specified product naturally exhibits a range of colors or textures, provide a sample that accurately represents the anticipated variations.

2.06 COLORS AND PATTERNS

A. Unless the precise color and pattern is identified in the Project Manual, and whenever a choice of color or pattern 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 7 calendar days before the Pre-Construction Meeting to allow adequate time required for reviews, for securing necessary approvals, for possible 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 43 00

QUALITY ASSURANCE PROGRAM (QAP)

PART 1 - GENERAL

1.01 QUALITY ASSURANCE SITE MANAGEMENT SERVICES

A. The Roofing Contractor shall retain the services of a professional firm to provide full-time construction observation and site management services, as described herein, for the entire duration of the specified roofing program.

B. Qualifications:

1. The professional firm must specialize in architecture or engineering, and roof consulting.

2. The professional firm must currently be in business, with a minimum of 20 years of appropriate experience in assessing and designing industrial roofing systems, as well as providing on-site roof construction observation and site management services.

3. The firm must have experienced and qualified individuals professionally registered in the field of architecture or engineering, and roof consulting.

4. The professional firm must have substantial and acceptable prior experience working with WLCS on roof removal and replacement projects.

1.02 DEFINITIONS

A. “Owner” is Walled Lake Consolidated Schools (WLCS).

B. “Work” is defined to include all phases of specified roofing work, including, but not limited to, mobilization, material delivery, 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 above, must be 100% complete with no punch list.
1.03 CONSTRUCTION PERIOD AND WORK DAYS

A. Work start date: No later than 30 days after receipt of Purchase Order.


C. Allowable work days 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 Sundays and 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 QAP Site Manager shall follow all safety requirements of the Owner and OSHA as they relate to the roofing work being performed.

B. The Owner shall provide the QAP Site Manager with safe access to all work areas.

1.05 CONSTRUCTION OBSERVATION WORK HOURS

A. The QAP Site Manager shall be on the job site, as follows:
   1. Every workday, beginning on the specified start date (including mobilization and material delivery) and ending on the final construction completion date, to observe all phases of work, as defined above.
   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 deduct of 4.0 hours per day).

1.06 SCOPE OF SERVICES

A. The QAP Site Manager shall ensure that the Roofing Contractor is meeting the requirements of the contract documents and project specifications.
B. The QAP Site Manager shall perform the following services:

1. Perform visual construction 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 to be 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 daily field reports (Monday through Friday) 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 of project requirements.

C. Additional services to be provided by the QAP Site Manager:

1. Attend the Pre-Construction Roofing Conference at the project site.

2. Communicate with the WLCS Facility Engineer on a daily basis before roofing work begins.

3. Review condition and integrity of the interior protection polyethylene sheeting below roof removal areas, on a daily basis, prior to the start of daily roof removal operations. Immediately contact responsible parties to make appropriate repairs, if required.

1.07 INCLEMENT WEATHER

A. In the event work cannot be performed due to inclement weather:

1. The QAP Site Manager and the Roofing Contractor 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 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 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 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 space below the work, by the Owner.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION
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 and 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. Owner may pay for 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. Owner will not supply temporary heat.
C. Temporary Water

1. Owner may pay 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 in order 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(s).

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(s) or 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 possible 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 building materials in the project area, if allowed by the Owner.

F. No flammable fuels shall ever be brought into the building. All storage and handling of fuels much 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
PART 1 - GENERAL

1.01 SUMMARY

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

1.02 QUALITY ASSURANCE

A. Use procedures as required to ensure full protection of work and materials.

B. Except as otherwise approved by the Owner, determine and comply with manufacturers' recommendations for product handling, storage, and protection.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Acceptance at site:

1. Deliver all materials to the job site in the unopened manufacturer's original containers or packaging, clearly labeled with the manufacturer’s name, brand name, identifying numbers indicating conformance with the specified standard, and instructions for storage, handling and use.

2. Verify date of manufacture on all materials used for completing the Work. Verify expiration dates for material shelf life prior to using the material. Use all materials within the time limits prescribed by the material manufacturer.

3. Reject as non-complying such material 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.

4. Inspect materials delivered to the site for evidence of contact with moisture. Reject materials with stained or wet wrappers, or torn covers.
B. Storage and protection:

1. Maintain packaged materials with seals unbroken and labels intact until time of use.
2. If allowed by Owner, store materials in a completely enclosed building or trailer.
3. Rooftop storage of materials is not permitted, except for materials intended for installation that same day.
4. When out-of-doors, store materials on clean raised platforms at least four inches above the ground surface.
5. Completely cover all materials with weatherproof covers to protect from weather and moisture. Arrange covers to allow venting; do not allow covers to extend to the ground.
6. Do not expose materials to moisture in any form at any time.
7. Factory-applied plastic wrap is not an acceptable weatherproof cover.
8. Inspect stored materials for evidence of contact with moisture. Mark improperly stored materials, unprotected materials, and materials that get wet or damaged.
9. Promptly remove unsuitable materials from the job site, and promptly replace with material meeting the specified requirements, at no additional cost to the Owner.

C. Material Replacement:

1. Additional time required to secure material replacements resulting from Contractor failure to appropriately protect stored materials, will not be considered by the Owner to justify an extension in the Contract time.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED
SECTION 01 77 00

CLOSEOUT PROCEDURES

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) warranty.

2. Evidence of compliance with requirements of governmental agencies having jurisdiction, including but not necessarily limited to Certificates of Inspection.

3. Evidence of payment and release of liens.

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 factual information regarding all aspects of the Work, as-built or as-constructed.

1.03 QUALITY ASSURANCE

A. Final completion:

1. When the Work is finally 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 accordance therewith.

2. Upon receipt of the certification, the Owner’s Representative will perform an inspection. Provide 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.

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 requirements of the Project Manual.

3.02 FINAL CLEANING

A. In preparation for final inspection, ensure that all areas have been cleaned and debris and rubbish have been removed.

B. Repair, patch, or touch up any marred surfaces to match finish and quality of adjacent undamaged areas, in a manner satisfactory to the Owner.

C. Leave paved areas, sidewalks and parking level surfaces in a broom-clean condition.

D. Leave grass and landscaped areas in a rake-clean condition.
E. Remove material spills from windows, parking level and sidewalk surfaces, architectural finishes, etc.

END OF SECTION
SECTION 02 25 00

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 Area A1**
Gravel-surfaced asphalt built-up roof membrane
One layer of 3/4-inch glass fiber roof insulation (R-value = 3.0)
One layer of 1.5-inch phenolic foam roof insulation (R-value = 8.6)
Bituminous underlayment (asphalt felt)
Gypsum concrete roof deck

**Roof Area A3**
Slag-surfaced asphalt built-up roof membrane
One layer of 3/4-inch glass fiber roof insulation (R-value = 3.0)
One layer of 3/4-inch perlite roof insulation (R-value = 2.0)
Steel roof deck

**Roof Area B**
Gravel-surfaced asphalt built-up roof membrane
One layer of 3/4-inch glass fiber roof insulation (R-value = 3.0)
Gypsum concrete roof deck
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:

<table>
<thead>
<tr>
<th>Roof Area</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>48,596 sq.ft.</td>
</tr>
<tr>
<td>A3</td>
<td>1,049 sq.ft.</td>
</tr>
<tr>
<td>B</td>
<td>1,698 sq.ft.</td>
</tr>
<tr>
<td></td>
<td>51,395 sq.ft.</td>
</tr>
</tbody>
</table>

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION
SECTION 02 26 23

ASBESTOS-CONTAINING MATERIAL ASSESSMENT

PART 1 - GENERAL

1.01 LABORATORY TESTING FOR ASBESTOS

A. Refer to the attached laboratory reports from Apex Research, Inc.

B. The report indicates that no asbestos-containing building materials (ACBMs) were found in the sampled and tested roofing system components.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION
PART 1 - GENERAL

1.01 SUMMARY

A. Section includes specification for materials and procedures 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 requirement of these specifications, those of regulatory agencies, material manufacturers, and good roofing practices of 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 anticipated schedule for each bay/grid and the cell phone number of the designated contact person. 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 plant 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 interior area and occupants below roof replacement areas and obsolete roof penetration removal areas:

   a. Use red danger tape or other Owner-approved barricade devices 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 to ensure that building occupants and/or pedestrians do not enter the area until roof removals are complete and the roof insulation and membrane (base ply minimum) are in place. Maintain 2-way communication at all times with Roofing Foreman and QAP Site Manager on the roof.

   c. Remove all interior debris on a daily basis resulting from these operations.

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, 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, product 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
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 of 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; thickness, 1.5 inches minimum.

B. Plywood (for roof protection): ¾-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 and/or shutdown, construct temporary baffles, 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 the Contract.

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 removals, 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 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 the 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 proper conduct 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 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. Adjust power roof cutters to ensure that the existing roof deck will not be cut or otherwise damaged during removal of existing roofing.

2. Completely remove and discard debris, roofing membranes, 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 gravel, 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.

3. Remove and discard obsolete penetrations (such as rooftop equipment and curbs) indicated on the enlarged roof plan drawings.

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. Steel and gypsum concrete roof decks:

1. Inspect exposed roof deck for corrosion, damage, deck openings, and other defects.

2. Refer to Sections 03 01 50 Gypsum Concrete Roof Deck Repair and 05 01 30 Steel 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 03 01 50

GYPSUM CONCRETE ROOF DECK REPAIR

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes specification for gypsum concrete roof deck repair associated with roof replacement.

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 GYPSUM CONCRETE ROOF DECK REPAIR

A. Ready-mix gypsum: “SECUROCK Gypsum-Concrete Patch” (formerly Pyrofill), ASTM C317; manufactured by USG Corporation.

B. Steel plate stock for repair of deck openings:

1. Deck openings 12 inches x 12 inches or less: 16-gauge galvanized steel plate; interior finish primed white color, if required by the Owner.

2. Deck openings greater than 12 inches x 12 inches up to 30 inches x 30 inches: ¼-inch-thick steel plate; interior finish primed white color, if required by Owner.
PART 3 - EXECUTION

3.01 GENERAL
A. Refer to Section 02 41 00 Roof Removals and General Substrate Preparation for deck inspection and general work requirements.

3.02 GYPSUM CONCRETE ROOF DECK REPAIR
A. To the extent indicated by the Roofing Consultant, replace damaged or deteriorated gypsum decking, excluding formboard, with gypsum of thickness to match existing adjacent gypsum and to provide a structurally sound roof deck suitable to receive new materials. Install the gypsum in accordance with the requirements and recommendations of the gypsum concrete manufacturer.

3.03 GYPSUM CONCRETE ROOF DECK OPENING REPAIR
A. As directed by the Owner, at deck openings 12 inches x 12 inches or less:
Install 16-gauge galvanized steel plate over the deck opening.

1. Extend the steel plate at least 6 inches beyond the opening out onto the surrounding deck surface.

2. Fasten the plate to the deck with a minimum of four fasteners.

END OF SECTION
PART 1 - GENERAL

1.01 SUMMARY

A. Section includes specification for steel roof deck repair associated with roof replacement:

1. Roof Area A3.

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 STEEL PLATE STOCK

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: 16-gauge galvanized; 2-feet x 2-feet; interior finish primed white color, if required by the Owner.

2.02 REPLACEMENT STEEL ROOF DECKING

A. For use at locations where removal of damaged or corroded steel 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; or

1. Type B, 18-gauge galvanized (minimum), 1.5-inches deep; interior finish primed white color, if required by the Owner.

2. Type N, 18-gauge galvanized (minimum), 3.0-inches deep; interior finish primed white color, if required by the Owner.

2.03 PRIMER

A. Primer: "Omnithane Series 530” moisture-cured aromatic urethane primer for steel decks; manufactured by Tnemec.

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

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 02 41 00 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.

C. Remove corrosion and prime deck:

1. Inspect the deck in the corrosion 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 primer 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 stock:

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. 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:

1. Where corrosion extends through the steel roof deck, or openings exist, and the extent of this defect is larger than 12 inches x 12 inches in size.

2. Where abandoned and/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. Where possible, 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:

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
PART 1 - GENERAL

1.01 SUMMARY
A. Section includes specification 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 requirement of these specifications, those of regulatory agencies, material manufacturers, and good roofing practices of 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:


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: 1/2-inch and 3/4-inch; and as shown on drawings.

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 02 41 00 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 in Section 02 41 00, and to the extent indicated by the Owner.

B. Provide new wood nailers at the following locations:
   1. Where shown on 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. 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 locations shown on drawings.

END OF SECTION
SECTION 07 22 13

BITUMINOUS UNDERLAYMENT OVER GYPSUM CONCRETE ROOF DECK

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes specification for bituminous underlayment requirements over gypsum concrete roof deck.

1. Roof Areas A1 and B.

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, and good roofing practices to the Owner for resolution.

PART 2 - PRODUCTS

2.01 BITUMINOUS UNDERLAYMENT

A. Polyester base sheet; “SBS Poly Base,” ASTM D 6164, Type I, Grade S; 85 lbs. per square, 90 mils thick, 149 sq. ft. per roll coverage.

2.02 UNDERLAYMENT FASTENERS

A. To secure base sheet to gypsum concrete roof deck: “OlyLok Locking Impact Nail”, manufactured by OMG, Inc.

1. Fastener length: 1.8 inches.
PART 3 - EXECUTION

3.01 GENERAL

A. Refer to Section 02 41 00 for general work and substrate preparation requirements.

3.02 BITUMINOUS UNDERLAYMENT INSTALLATION

A. Ensure that the roof deck has been prepared as necessary and is ready and acceptable to receive insulation underlayment materials. Refer to Section 03 01 50.

B. Install the base sheet with 2-inch side laps and 6-inch end laps.

1. Mechanically fasten the base sheet to the deck with three rows of fasteners.
   a. Secure the first row (on the lap) 9 inches on-center.
   b. Locate the second row 14 inches from the leading edge and fasten 18 inches on center.
   c. Locate the third row 26 inches from the leading edge (12 inches from the second row) and fasten 18 inches on center. Stagger the second and third rows by 9 inches.

END OF SECTION
SECTION 07 22 15

ROOF INSULATION OVER BITUMINOUS UNDERLAYMENT

PART 1 - GENERAL

1.01 SUMMARY

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

1. Roof Areas A1 and B.

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 system manufacturer.

2.02 ROOF INSULATION

A. First (bottom) layer: Polyisocyanurate roof insulation; ASTM C1289, Type II, Class 1, Grade 2 (20 psi); HCFC-Free and Zero Ozone Depletion Potential (ODP).

1. Long Term Thermal Resistance (LTTR) Value: 5.6 minimum per inch.
2. Flat stock thickness: 2.0 inches (thermal R-value = 11.4).

3. Board Size: 4 feet by 4 feet.

B. Second (top) layer: Polyisocyanurate roof insulation; ASTM C1289, Type II, Class 1, Grade 2 (20 psi); HCFC-Free and Zero Ozone Depletion Potential (ODP).

1. Long Term Thermal Resistance (LTTR) Value: 5.6 minimum per inch.

2. Flat stock thickness: 2.0 inches (thermal R-value = 11.4).

3. Board Size: 4 feet by 4 feet.

2.03 TAPERED ROOF INSULATION (ROOF SUMPS)

A. Polyisocyanurate roof insulation; ASTM C1289, Type II, Class 1, Grade 2 (20 psi); HCFC-Free and Zero Ozone Depletion Potential (ODP).

1. Long Term Thermal Resistance (LTTR) Value: 5.6 minimum per inch.

2. Board Size: 4-feet by 4-feet.


4. Starting thickness at low point: 1.0 inch (up to 4.0 inches).

2.04 SADDLES AND CRICKETS

A. Tapered polyisocyanurate roof insulation; ASTM C1289, Type II, Class 1, Grade 2 (20 psi); HCFC-Free and Zero Ozone Depletion Potential (ODP).

1. Slope: 1/2-inch per foot; maximum board thickness 2.0 inches.

2. Size: Width to equal 1/3 of length for full saddles.

2.05 TAPERED EDGE STRIPS

A. Tapered edge strips: Polyisocyanurate, ASTM C1289; 1-1/2 inches thick by 12 inches wide, or 2 inches by 24 inches wide, as needed.

2.06 INSULATION ADHESIVE

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

2. For minimum ambient and surface temperatures of 40°F and rising:
   a. Bag-in-Box; using PaceCart 2.
   b. 15-gallon drum; using Patriot Junior, or equal.
   c. SpotShot, Regular (40°F +); in twin cartridges.

3. For ambient and surface temperatures of less than 40°F:
   a. Bag-in-Box, Winter Grade (25°F to 65°F); using PaceCart 2.
   b. 15-gallon drum, Winter Grade (25°F to 65°F); using Patriot Junior, or equal.
   c. SpotShot, Winter Grade (0°F to 65°F); in twin cartridges.

4. Store in a cool, dry location at temperatures between 55°F and 85°F. Protect from freezing at all times. Minimum product temperature before application should be 72°F.

PART 3 - EXECUTION

3.01 GENERAL
   A. Refer to Section 02 41 00 Roof Removals and General Substrate Preparation for material removals and general work and substrate preparation requirements.
   B. Ensure that the bituminous underlayment has been prepared as necessary and 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. Roof insulation to bituminous underlayment and insulation-to-insulation:

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 ¾ 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 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. Install saddles and crickets, if necessary 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 upslope side of all curbs greater than 2 feet wide.
3.04 TAPERED EDGE STRIPS

A. Install tapered edge strips in low rise foam adhesive.

3.05 ROOF SUMPS

A. At roof drains: Construct the 24-foot by 24-foot roof sumps around roof drains (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 ROOF DECK

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes specification of polyisocyanurate roof insulation over steel roof deck at:

1. Roof Area A3.

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 system manufacturer.

2.02 ROOF INSULATION

A. First (bottom) layer: Polyisocyanurate roof insulation; ASTM C1289, Type II, Class 1, Grade 2 (20 psi); HCFC-Free and Zero Ozone Depletion Potential (ODP).

1. Long Term Thermal Resistance (LTTR) Value: 5.6 minimum per inch.

2. Flat stock thickness: 2.0 inches (thermal R-value = 11.4).
3. Board Size: 4 feet by 8 feet.

B. Second (top) layer: Polyisocyanurate roof insulation; ASTM C1289, Type II, Class 1, Grade 2 (20 psi); HCFC-Free and Zero Ozone Depletion Potential (ODP).
   1. Long Term Thermal Resistance (LTTR) Value: 5.6 minimum per inch.
   2. Flat stock thickness: 2.0 inches (thermal R-value = 11.4).
   3. Board Size: 4 feet by 4 feet.

2.03 ROOF SUMP INSULATION
   A. Hinged Target Sump: Pre-fabricated tapered polyisocyanurate roof insulation; ASTM C1289, Type II, Class 1, Grade 2 (20 psi); 8 feet by 8 feet, sloped for maximum drainage; as manufactured by Hunter Panels, Portland Maine, 888-746-1114.

2.04 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 ¾ inch and maximum of 1 inch.
      2. Fastener length (first/bottom layer): 3 inches long.

2.05 INSULATION ADHESIVE
   A. Basis of Design: OlyBond 500 Insulation Adhesive, manufactured by OMG.
      1. For insulation to concrete roof deck and insulation-to-insulation, including saddles, crickets, and tapered edge strips.
      2. For minimum ambient and surface temperatures of 40°F and rising:
         a. Bag-in-Box; using PaceCart 2.
         b. 15-gallon drum; using Patriot Junior, or equal.
c. SpotShot, Regular (40°F +); in twin cartridges.

3. For ambient and surface temperatures of less than 40°F:
   a. Bag-in-Box, Winter Grade (25°F to 65°F); using PaceCart 2.
   b. 15-gallon drum, Winter Grade (25°F to 65°F); using Patriot Junior, or equal.
   c. SpotShot, Winter Grade (0°F to 65°F); in twin cartridges.

4. Store in a cool, dry location at temperatures between 55°F and 85°F. Protect from freezing at all times. Minimum product temperature before application should be 72°F.

PART 3 - EXECUTION

3.01 GENERAL

A. Refer to Section 02 41 00 Roof Removals and General Substrate Preparation for material removals and general work and substrate preparation requirements.

B. Ensure that the steel roof deck has been prepared as necessary, and is ready and acceptable to receive insulation materials. Refer to Sections 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 deck:

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 ¾ 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 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 ROOF SUMPS

A. At roof drains: Construct the 8'-foot by 8'-foot roof sumps around roof drains (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 53 24

FULLY-ADHERED EPDM SINGLE-PLY ROOFING

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes specification for installation of 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 Firestone "Red Shield" no-dollar-limit 20-Year Roof System Warranty covering materials and workmanship, including insulation, cover board (if applicable), roofing membrane, and flashings.

PART 2 - PRODUCTS

2.01 ROOFING SHEETS


B. EPDM base flashing sheets: “Low Slope Fire Retardant (LSFR) RubberGard” (cured) and Firestone “RubberGard EPDM FormFlash Flashing” (uncured; 6-inch, 9-inch, 12-inch, etc. widths), nominal 60-mil thickness; black color, manufactured by Firestone Building Products Co.
2.02 EPDM MEMBRANE SPLICE SYSTEM

A. Cleaner/primer: “QuickPrime Plus”, manufactured by Firestone Building Products Co.

B. In-seam splice tape: “QuickSeam Splice Tape”, 3-inch width, manufactured by Firestone Building Products Co.

C. Perimeter fastening strip: “QuickSeam Reinforced Perimeter Fastening Strip”, manufactured by Firestone Building Products Co.

2.03 SELF-ADHERING FLASHINGS AND STRIPPINGS

A. For stripping at membrane field seams/splices: “QuickSeam Flashing”, 5-inch; black color, manufactured by Firestone Building Products Co.

B. For tubular penetration flashings: “QuickSeam Flashing”, 5-inch width, and “QuickSeam FormFlash”, 9-inch-width, manufactured by Firestone Building Products Co.

2.04 RELATED EPDM PRODUCTS

A. Roof membrane and flashing adhesive: “EPDM Bonding Adhesive BA-2004(T),” manufactured by Firestone Building Products Co.


C. Roof membrane and flashing cleaner: “Splice Wash SW-100,” manufactured by Firestone Building Products Co.

D. Lap edge sealant: “Lap Sealant HS,” manufactured by Firestone Building Products Co.

E. Roof membrane and flashing compression seal: “Water Block Seal (S-20),” manufactured by Firestone Building Products Co.

F. Roof membrane joint cover: “QuickSeam Joint Cover,” manufactured by Firestone Building Products Co.

G. Corner flashing: “QuickSeam Corner Flashing,” manufactured by Firestone Building Products Co.
H. Walkway pads: “QuickSeam Walkway Pads”, manufactured by Firestone Building Products Co.

2.05 FASTENERS

A. Roofing membrane and flashing fasteners: Unless otherwise indicated, types as required by Firestone Building Products Co.

2.06 MISCELLANEOUS MATERIALS

A. Pitch pan fill materials:

1. Non-shrink grout (for bottom fill): Quick-set, fast-drying grout; product of any manufacturer is acceptable.


B. Compressible backer rod: Closed cell, polyethylene, flexible, rope-like foam joint backing material; diameter 50% greater than joint opening.

2.07 SAFETY STRIPE

A. Yellow safety stripe tape: “QuickSeam Yellow Safety Strip,” 5.5 inches wide, 30 mils thick; manufactured by Firestone Building Products Co.

PART 3 - EXECUTION

3.01 GENERAL

A. Refer to Section 02 41 00 Roof Removals and General Substrate Preparation for general work and substrate preparation requirements.

3.02 ROOFING MEMBRANE

A. General:

1. Ensure that the insulation substrate is installed as specified in Section 07 22 16 Roof Insulation Over Concrete Roof Decks and 07 22 17 Roof Insulation Over Steel Roof Decks 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 come in contact with 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. Provide temporary overnight tie-in to existing roofing as necessary to prevent leakage.

7. Do not use any open flame to dry the roof membrane or to heat the flashing materials.

C. Roofing membrane:

1. Except as may be modified by these specifications and drawings, 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 Firestone “QuickSeam” products wherever existing conditions and Firestone requirements allow.
   b. Use “QuickSeam Reinforced Perimeter Fastening Strip” for membrane securement at base tie-ins.
   c. Apply 5-inch wide “QuickSeam Flashing” as a stripping over all membrane field seams. Center the flashing over the seam and install in accordance with manufacturer requirements and recommendations.

3.03 FLASHINGS AND STRIPPINGS

A. Complete all flashings and strippings on a daily basis 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. Do not use pre-molded flashing boots.

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

3.04 MISCELLANEOUS INSTALLATIONS AND TREATMENTS

A. Walkway pads:
   1. Install “QuickSeam Walkway Pads” at all roof access doors and the base and top of roof access ladders.

B. Safety Stripe:
   1. Install one strip of the specified safety stripe tape as a fall hazard warning line placed fifteen (15) feet in from all perimeter roof edges. Apply the safety stripe tape in accordance with the requirements and recommendations of Firestone.

END OF SECTION
SECTION 07 62 02
METAL FLASHINGS AND ACCESSORIES
EPDM ROOFING

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes specifications and requirements for metal flashings and accessories associated with EPDM single-ply 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 and drawings, those of regulatory agencies, material manufacturer, recommendations 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 counterflashings to dimensions indicated on drawings. Provide the counterflashings with a 3/4-inch hemmed drip edge and, on surface mounted counterflashings, a 1/2-inch 45 degree angle sealant slot; maximum length of counterflashings sections to be 10 feet.
2. Curb caps: Fabricate with standing seams to configuration and dimensions indicated on drawings. Provide a 3/4-inch hemmed drip edge. Maximum length of sections to be 10 feet.

3. Fascia: Fabricate to configurations and dimensions indicated on drawings with a 3/4-inch hemmed drip edge. Maximum length of fascia sections to be 10-feet.

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: 20 gauge.

C. Copper: ASTM B 370, temper standard H00. Use for the following components as indicated:

1. High temperature tubular penetration flanged sleeve (20 oz.): Refer to detail drawings.

D. Aluminum:

1. Base flashing anchor (termination) bar: 1-inch x 1/8-inch extruded aluminum with slotted holes spaced a maximum of 8 inches o.c. (No sealant slot).

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 00 Elastomeric Joint Sealants.

PART 3 - EXECUTION

3.01 GENERAL

A. Refer to Section 02 41 00 Roof Removals and General Substrate Preparation for existing material removal and general substrate preparation and work requirements.
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. 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. Tubular penetrations: Install a field-fabricated flashing to the penetration as indicated in Section 07 53 24 Fully-Adhered EPDM Membrane Roofing; also refer to the drawings.

1. High temperature tubular penetrations: Fabricate a one-piece sleeve to extend a minimum of 8 inches above the roof surface. Solder all seams watertight. Set the flange on the roof deck maintaining a 1-1/2 inch air space between the hot penetration and the sleeve. Fasten the flange to the roof deck with a minimum of four fasteners. Install a field-fabricated flashing to the sleeve as indicated in Section 07 53 24 Fully-Adhered EPDM Membrane Roofing; also refer to the drawings.

F. Pitch pan flashings: Flash unusual shaped penetrations with the specified copper pitch pans:

1. Flange stripping: Refer to Section 07 53 24 Fully-Adhered EPDM Membrane Roofing; also refer to the drawings.

G. Base flashing anchor (termination) bar: Install termination bars at locations indicated on drawings. Fasten and seal the anchor bars as shown on drawings.
3.03 JOINT SEALANTS

A. Ensure that sealants are applied at sealant slots of counterflashings and other locations where indicated on drawings or required by conditions encountered. Refer to Section 07 92 00 Elastomeric Joint Sealants.

END OF SECTION
SECTION 07 92 00

ELASTOMERIC JOINT SEALANTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes specification for installation of sealant materials at metal flashings and accessories and other locations in conjunction with roofing replacement or repair 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 and drawings, 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.


B. For use at high temperature tubular penetrations:

1. Non-Silicone:

2. Silicone:
   b. High temperature silicone sealant: "TremPro 644;" manufactured by Tremco.

C. 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 specifications for roof drain component requirements for existing and new roof drains.

1.02 ADDITIONAL SUBMITTALS

A. Provide letters from the licensed plumbing contractor certifying 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 not fitted properly to 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 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 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 RetroDrain”, size appropriate for the existing roof drain; 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.
2. At cast metal drains:
   a. If the drain strainer is plastic, missing, damaged, or not fitted properly to the clamping ring/flashing clamp, install a new cast iron strainer.
   b. If the clamping ring is damaged, missing, or does not fit the drain bowl, install a new cast iron clamping ring.

3. If the roof drain bowl/body is damaged, install a new cast iron roof drain assembly as specified in Item 3.02 below.

B. Roof drain inserts:
   1. Install roof drain inserts at drain locations as directed by the Owner.
   2. Install the drain inserts in accordance with the requirements and recommendations of the roof drain insert manufacturer. Install appropriate roof membrane stripping over the roof drain insert flange.

3.02 ROOF DRAIN ASSEMBLY INSTALLATION

A. Install new roof drain assemblies at the following locations:
   1. Where the existing roof drain bowls are damaged, as determined during the roof drain inspection.
      a. Install roof drain bowl, clamping ring, strainer, and related fittings at location of original drain assembly. Connect the bowls to the existing interior drain piping in accordance with all local and state plumbing codes.
   2. Where new roof drains are indicated on the drawings:
      a. Install roof drain bowl, clamping ring, strainer, and related fittings at approximate location indicated. Tie-in the new roof drain into existing interior drain piping in accordance with all local and state plumbing codes.

B. Exercise caution to prevent damage to existing interior and exterior finishes. Restore finishes that are damaged by drain installation to the satisfaction of the Owner.
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 a distance of 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 water source if necessary.

D. If debris and bituminous roof materials are encountered, mechanically clear drain lines until maximum drainage capacity is achieved.

E. Provide letters at project start and at project completion certifying that the roof drains have been inspected, mechanically cleared and repaired (if required), and drain to maximum capacity.

END OF SECTION