

**INVITATION TO Re-BID
MUNICIPAL BUILDING RE-ROOFING
Project No. 2020-01**

Sealed bids will be received until:

May 12th

1:00 p.m.

Office of the Town clerk
N5024 Long Rd
Chilton, Wi 53014

Contact for Questions
Town Supervisor Dean Joas
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Email: ffdjoas@gmail.com

Issue Date Dec 26th, 2019

Sealed bids will be received at the Office of the Town Clerk, Town of Stockbridge until 1:00 p.m. on Tuesday May 12th 2020, at which time they will be opened and publicly read at the Joint quarterly meeting Tuesday May 12th @7:00pm, Meeting changes due to Covid 19 the Clerk will notify the bidding company of such change. MUNICIPAL BUILDING RE-ROOFING Project No. 2020-01 175 south Military in the Village of Stockbridge, the joint boards are requesting sealed bids from qualified firms to re-roof the Municipal (Fire Station and community hall) Building located at 175 South Military Stockbridge, Wi. Only roof contractors that have been in business for five (5) years or more will be considered. The work involved with the project shall include, but may not be limited to, the furnishing of all labor, materials, tools, equipment, disposal, machinery, superintendence and services necessary for the complete in place construction of the project. The Boards reserve the right to award the bid to the lowest, most responsive, responsible bidder, as determined by the Joint Boards, subject to the right of the Joint Boards to reject any and all bids, to waive any irregularity in the bids or bidding procedure, and subject also to the right of the Joint Boards to award bid and contract to bidders other than the low bidder.

Stockbridge Fire Department and Community Hall

Original Bids denied

Request for rebid with items highlighted from original request:

Re-Roof Project

This project is figured into (3) sections.

- : The Community Hall 40' x 45' Average R- Value?.....\$
- : Middle Bay: 40'x 68'.....Average R-Value ?.....\$
- : North Bay : 40'x40'.....Average R-Value ?.....\$
- : Discount for South bay and middle bay done at the same time.\$

All Roofs

- : Fully Adhered 60 Mil EPDM Roofing System.
- : Removal of existing roofing system down to existing roof deck Community hall. Remove deteriorated areas in middle bay and reinstall to pitch per drawing.

To include curb flashings and perimeter flashings. All materials disposed of in a certified land fill.

- : If wood nailers are deteriorated at the perimeter of the existing roof dispose of and replace. This would be a time and material cost. Cost per/ HR
- : Fasten tapered insulation to existing roofs per roof plan supplied.
- : Fasten (2) layers of 2" polyiso insulation per FM wind rating.
- : Total average R- Value stated above
- : Fully adhere 60 mil EPDM membrane per manufactures specifications.
- : Seal all roof penetrations per manufactures specifications.
- : Fabricate and install 24 GA. E.Z. edge perimeter flashing, overflow scuppers with conductor box and downspout.
- : **20 year warranty. Material and workmanship**

Price to include the following:

- All 3 areas at once. _____
- South and middle bay. _____
- Each Separate _____

STOCKBRIDGE COMMUNITY HALL AND FIRE DEPARTMENT REROOF PROJECT

SECTION 075323 - ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

PART I - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Adhered ethylene-propylene-diene-terpolymer (EPDM) roofing system.
 - 2. Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
 - 3. Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
 - 4. Roof Specialties for manufactured roof edge flashings.
 - 5. Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D1079 and glossary of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.
- B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:
1. Layout and thickness if insulation.
 2. Base flashings and membrane terminations.
 3. Flashing details at penetrations.
 4. Tapered insulation, thickness, and slopes.
 5. Roof plan showing orientation of steel roof deck and orientation of roof membrane and fastening spacings and patterns for mechanically fastened roofing system.
 6. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
 7. Tie-in with air barrier.
- C. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and manufacturer.
- B. Manufacturer Certificates:
1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
 - a. Submit evidence of complying with performance requirements.
 2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.
- C. Field quality-control reports.
- D. Sample Warranties: For manufacturer's special warranties.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is listed in FM Approvals' RoofNav for roofing system identical to that used for this Project.
- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.**
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.**
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.**
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.**
- D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.**

1.8 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.**

1.9 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.**
 - 1. Special warranty includes roof membrane, base flashings, roof insulation, fasteners, roof pavers, and other components of roofing system.**
 - 2. Warranty Period: 20 years from Date of Substantial Completion.**
- B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roof membrane, base flashing, roof insulation, fasteners, vapor retarders, and walkway products, for the following warranty period:**
 - 1. Warranty Period: Twenty years from Date of Substantial Completion.**

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance:** Installed roofing system and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and flashings shall remain watertight.
 - 1. Accelerated Weathering:** Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
 - 2. Impact Resistance:** Roof membrane shall resist impact damage when tested according to ASTM D3746, ASTM D4272, or the Resistance to Foot Traffic Test in FM Approvals 4470.
- B. Material Compatibility:** Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
- C. FM Approvals' RoofNav Listing:** Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.
 - 1. Fire/Windstorm Classification:** Class 1A-165.
- D. Exterior Fire-Test Exposure:** ASTM E108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- E. Fire-Resistance Ratings:** Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.2 ETHYLENE-PROPYLENE-DIENE-TERPOLYMER (EPDM) ROOFING

- A. EPDM Sheet:** ASTM D4637/D4637M, Type II, scrim or fabric internally reinforced, EPDM sheet with factory-applied seam tape.
 - 1. Manufacturers:** Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a.**
 - b. Firestone Building Products.**
 - c. Johns Manville; a Berkshire Hathaway company.**

2. Thickness: 60 mils, nominal.
3. Exposed Face Color: Black.
4. Source Limitations: Obtain components for roofing system from roof membrane manufacturer or manufacturers approved by roof membrane manufacturer.

2.3 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
 1. Adhesive and Sealants: Comply with VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: 60-mil- thick EPDM, partially cured or cured, according to application.
- C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- D. Seaming Material: Factory-applied seam tape, width as recommended by manufacturer.
- E. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, molded pipe boot flashings, preformed inside and outside corner sheet flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

2.4 SUBSTRATE BOARDS (None)

- 1.

2.5 VAPOR RETARDER (None)

- A.

ROOF INSULATION

2.6

- A. General: Preformed roof insulation boards manufactured or approved by EPDM roof membrane manufacturer, approved for use in FM Approvals' RoofNav-listed roof assemblies.

B. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 2, Grade 2, felt or glass-fiber mat facer on both major surfaces.

1. **Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:**

- a. **Versico**
- b. **Firestone Building Products.**
- c. **GAF.**
- d. **Johns Manville; a Berkshire Hathaway company.**

2. **Compressive Strength: psi.**

3. **Size: 48 by 96 inches.**

4. **Thickness:**

- a. **Base Layer: " thickness. (2")**
- b. **Upper Layer: " thickness. (2")**

C. Tapered Insulation: Provide factory-tapered insulation boards. 1/4' per 1'

1. **Material: Match roof insulation.**

2. **Slope: As indicated on drawings.**

2.7 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.

- a. **Single-Ply Roof Membrane Sealants: 450 g/L.**

2.8 WALKWAYS (None)

A.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.**
 - 1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.**
 - 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.**
 - 3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."**
- B. Proceed with installation only after unsatisfactory conditions have been corrected.**

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.**
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.**
- C. Perform fastener-pullout tests according to roof system manufacturer's written instructions.**
 - 1. Submit test result within 24 hours of performing tests.**
 - a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.**

3.3 INSTALLATION OF ROOFING, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.**

- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
- C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition.

3.5 INSTALLATION OF INSULATION

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.
- B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Installation Over Decking:
 - 1. Install base layer of insulation with joints staggered not less than 24 inches in adjacent rows and with long joints continuous at right angle to flutes of decking.
 - a. Locate end joints over crests of decking.
 - b. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
 - c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 - d. Make joints between adjacent insulation boards not more than 1/4 inch in width.
 - e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
 - 1) Trim insulation so that water flow is unrestricted.

- f. Fill gaps exceeding 1/4 inch with insulation.
- g. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
- h. Loosely lay base layer of insulation units over substrate.
- i. Mechanically attach insulation using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to metal decks.

- 2. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.
 - a. Staggered end joints within each layer not less than 24 inches in adjacent rows.
 - b. Install with long joints continuous and with end joints staggered not less than 12 inches in adjacent rows.
 - c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 - d. Make joints between adjacent insulation boards not more than 1/4 inch in width.
 - e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
 - f. Trim insulation so that water flow is unrestricted.
 - g. Fill gaps exceeding 1/4 inch with insulation.
 - h. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
 - i. Loosely lay each layer of insulation units over substrate.
 - j. Fasten insulation according to requirements in FM Approvals' RoofNav for specified Windstorm Resistance Classification.
 - k. Fasten insulation to resist specified uplift pressure at corners, perimeter, and field of roof.

3.6 INSTALLATION OF ADHERED ROOF MEMBRANE

- A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.
- B. Unroll membrane roof membrane and allow to relax before installing.

- C. Start installation of roofing in presence of roofing system manufacturer's technical personnel.
- D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- E. Fabric-Backed Roof Membrane Adhesive: Apply to substrate at rate required by manufacturer, and install fabric-backed roof membrane.
- F. Apply roof membrane with side laps shingled with slope of roof deck where possible.
- G. Factory-Applied Seam Tape Installation: Clean and prime surface to receive tape.
 - 1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
 - 2. Apply lap sealant and seal exposed edges of roofing terminations.
- H. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.
- I. Spread sealant or mastic bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

3.7 INSTALLATION OF BASE FLASHING

- A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.8

1.

3.9 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing system, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.10 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
 - 1. Owner: <Insert name of Owner>.
 - 2. Address: <Insert address>.
 - 3. Building Name/Type: <Insert information>.

ETHYLENE-PROPYLENE-DIENE-MONOMER
(EPDM) ROOFING
Project #18112

075323 - 11
February 4, 2020

4. Address: <Insert address>.
5. Area of Work: <Insert information>.
6. Acceptance Date: _____.
7. Warranty Period: <Insert time>.
8. Expiration Date: _____.

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;
 - b. peak gust wind speed exceeding <Insert mph>;
 - c. fire;
 - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and
 - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.

5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____,

1. Authorized Signature: _____
2. Name: _____
3. Title: _____

END OF SECTION 075323

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SECTION 02 41 19
SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

SCOPE

Include all materials and labor, services and incidentals for the completion of the following scope of work: Roof System, Sheet Metal flashing and Trim.

RELATED WORK

Section 07 01 50.23 Roof Removal

Section 07 62 00 Sheet Metal Flashing and Trim

SECTION REQUIREMENTS

Comply with EPA regulations and hauling and disposal regulations of authorities having jurisdiction. Comply with ANSI A10.6 and NFPA 241.

Pre-demolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces. Submit before Work begins.

Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

It is expected that hazardous materials will be encountered in the Work--specifically, asbestos-containing roof material and sealants. The contractor shall be responsible for its removal and disposal.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

DEMOLITION

Requirements for Building Reuse:

Maintain existing building structure (including structural roof decking) not indicated to be demolished; do not demolish such existing construction beyond indicated limits.

Maintain services/systems and protect them against damage during selective demolition operations. Before proceeding with demolition, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of the building.

Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

Protect existing finish work that are to remain

Promptly remove demolition waste materials from Project site and legally dispose of them. Do not burn demolished materials.

- 1** Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition
- 2** operations. Return adjacent areas to condition existing before demolition operations began.
- 3**
- 4**

END OF SECTION

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**SECTION 06 10 00
ROUGH CARPENTRY**

PART 1 - GENERAL

SCOPE

Include all materials and labor, services and incidentals for the completion of the following scope of work: Wood Plates and Curbs.

PART 2 - PRODUCTS

WOOD PRODUCTS, GENERAL

Lumber: Provide dressed lumber, S4S, marked with grade stamp of inspection agency.

Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

LUMBER

Dimension Lumber:

Maximum Moisture Content: 15 percent.

Framing Other Than Non-Load-Bearing Interior Partitions: Construction or No. 2, Construction, Stud, or No. 3.

Miscellaneous Lumber: Construction, or No. 2 grade with 15 percent maximum moisture content of any species. Provide for nailers, blocking, and similar members.

MISCELLANEOUS PRODUCTS

Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

PART 3 - EXECUTION

INSTALLATION

Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

Install supplemental roof framing to match that located adjacent to abandoned rough opening. But in no case shall the framing be less than 2x8 framing of 16" oc.

END OF SECTION

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**SECTION 07 01 50.19
PREPARATION FOR RE-ROOFING**

PART 1 - GENERAL

CONDITIONS OF THE CONTRACT

The conditions of the contract relating to the work specified herein also apply to this section.

WORK INCLUDED

WORK INCLUDED

Provide all labor, materials, services and incidentals necessary to prepare for re-roofing operations.

RELATED SECTIONS

RELATED SECTIONS

Section 07 01 50.23 - Roof Removal

REGULATORY REQUIREMENTS

REGULATORY REQUIREMENTS

All roofing operations, at a minimum, shall comply with the following regulatory requirements:

OSHA 29 Part 1910.12 - 1910.333, 1910.1002 - 1910.1201.

OSHA 29 CFR Part 1926

All federal, State, and local codes regulating the roofing and roofing related industry.

SUBMITTALS

SUBMITTALS

If requested by Owner, submit the following for Owner's approval:

Written company policy addressing the following OSHA 29 Part 1926 Subparts:

Subpart A - General

Subpart B - General Interpretations

Subpart C - General Safety and Health Provisions

Subpart D - Occupational Health and Environmental Controls

Subpart E - Personal Protective Equipment and Life Saving Equipment

Subpart F - Fire Protection and Prevention

Subpart G - Signs, Signals, and Barricades

Subpart H - Materials Handling, Storage, Use, and Disposal

Subpart I - Tools, Hand and Power

Subpart J - Welding and Cutting

Subpart K - Electrical

Subpart L - Scaffolds

Preparation for Re-Roofing

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2 Subpart M – Fall Protection
3
4 Subpart N – Cranes, Derricks, Hoists, Elevators, and Conveyors
5
6 Subpart O – Motor Vehicles, Mechanized Equipment, and Marine Operations
7
8 Subpart P – Excavations
9
10 Subpart Q – Concrete and Masonry Construction
11
12 Subpart R – Steel Erection
13
14 Subpart T – Demolition
15
16 Subpart W – Rollover Protective Structures, Overhead Protection
17
18 Subpart X – Stairways and Ladders
19
20 Subpart Z – Toxic and Hazardous Substances
21
22 Emergency contact list:
23
24 List must contain a list of emergency contacts available 24 hours per day, 7 days a week.
25
26 If an emergency occurs during a period when Contractor is not able to be contacted, Owner or
27 Owner's Representative will direct any necessary operations to protect Owner's property.
28 Any expenses occurred to the Owner, including A/E or Owner's Representative expenses,
29 during Emergency operations will be reimbursed to the Owner by the Contractor.
30
31 Site safety plan: Plan must contain at a minimum:
32
33 Description and location of all ladders, scaffolding, and fall protection during the project.
34
35 Emergency access and egress points during construction.
36
37 Specific hazard communication plan for this project.
38
39 Location and cleaning schedule of all Contractor supplied toilet facilities.
40
41 Accident response plan, to contain the following minimum information:
42
43 Emergency contact phone numbers for local police, fire, and emergency medical services.
44
45 List of communications equipment to contact emergency services, i.e. cellular phone, radio,
46 etc.
47
48 Chain of command during an emergency.
49
50 Emergency rally point or rendezvous locations.
51
52 Hazardous and Flammable materials storage locations and protection plan: Plan to include fire
53 prevention strategies, fire extinguisher numbers and locations.

1 Torch, or other hazardous equipment policies:
2
3 Site usage plan, documenting the following:
4
5 Proposed staging areas and areas of operations
6
7 Employee parking and break areas
8
9 Crane placement
10
11 Large truck and dumpster locations
12
13 Owner property protection plan:
14
15
16 Submit plan indicating methods to protect Owner's property, including interior spaces, during
17 construction. Plan must include date and time of inspection by Contractor prior to
18 construction start of all areas under, around, and adjacent to areas of operations. If Owner's
19 property underneath operations needs to be protected from dust or other falling debris,
20 describe methods to do so.
21
22 Materials List and Descriptions complete with the following attachments and endorsed by the
23 roofing Manufacturer. Attachments:
24
25 Material Safety Data Sheets (MSDS) for the materials listed in the site.
26
27 Roofing Manufacturer publications for proposed roofing materials.
28
29 **OCCUPANCY**
30 The Owner shall occupy the building during demolition and construction and the facility shall
31 remain operational.
32
33 **COORDINATION**
34 Coordinate all work in advance with the Owner.
35
36 All work that requires saw cutting, vacuuming and other similar functions that create
37 substantial noise and/or vibration shall be coordinated well in advance of the work with the
38 Owner and Owner's Representative. These functions typically create disturbance to building
39 occupants and with proper coordination the impact to occupants can be reduced.
40
41 Prior to the start of any project, and daily after the start, the Contractor shall review the type
42 of space below the roof being worked on to ensure that all special requirements because of
43 occupancy type are complied with prior to start of work.
44
45 Protecting Persons and the Building:
46
47 Protect the building, contents and surrounding areas, including trees, shrubs, buildings, sanitary
48 and storm sewers, water piping, gas piping, electric conduit or cable, etc., from damage and
49 protect building occupants and others from injury during execution of work. Do this in a
50 manner which will not affect the normal operations in the building. It is the Contractor's
51 responsibility to determine the nature of these operations and to provide the appropriate level
52 of protection. Contractor shall repair damage, caused by lack of such protection, to Owner's
53 satisfaction at no additional cost to Owner.

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**SECTION 07 01 50.23
ROOF REMOVAL**

PART 1 - GENERAL

CONDITIONS OF THE CONTRACT

The conditions of the contract relating to the work specified herein also apply to this section.
Applicable provisions of Division 00 and Division 01 shall govern work under this section.

WORK INCLUDED

Provide all labor, materials, services and incidentals necessary to perform the following work:
Removal of existing roofing systems.

Existing Roofing Assembly Types:

Overall Roof Area: Community Center : Removal existing roofing system and sheet metal .
Middle Bay: Figure into bid 544 square feet of removal and replacement.
a) Option for additional removal and replacement square foot pricing.
North Bay: Remove existing epdm membrane and mechanically fasten 1/4" secure rock.

Penthouse: (None)

RELATED SECTIONS

Section 07 01 50.19 Preparation for Re-roofing

REGULATORY REQUIREMENTS

When dealing with (roofing or sealants) materials that contain asbestos, at minimum the following regulatory requirements shall be enforced:

OSHA 29 CFR Part 1926.1101, "Asbestos"

Wisconsin Administrative Code: NR 506.10 "Asbestos", Ind. 1910.93.a, HFS 159, and s.140.06, Wisconsin Statutes.

US DOT 49 CFR Parts 171 and 172 "Hazardous Substances".

Disposal of materials related removal shall be in accordance with all Federal, State, and local rules, regulations, codes, and ordinances.

Disposal shall comply with all State of Wisconsin Department of Natural Resources Rules, in particular:

NR 500, General Solid Waste Management

NR 502, Solid Waste Storage, Transportation

NR 600, Solid and hazardous waste disposal requirements

Roof Removal

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NR 605.08, Toxicity Testing Defined

NR 610.07, Very Small Quantity Generators

NR 615.06, Large quantity generator standards

NR 620, Transporter standards and licensing requirements

PROTECTION

When Work involves removal of roofing materials not containing asbestos (Non-ACRM):

Protect all existing utilities against damage. Maintain during demolition operations.

Protect passageways and maintain all exitways to ensure the safe passage of persons around the area of demolition.

Conduct operations in a manner that will prevent damage by falling debris, or other causes.

Provide interior and exterior shoring, bracing, or support required to prevent movement, settlement, or collapse of adjacent facilities indicated to remain.

Protect all remaining portions of the building and property not scheduled for demolition during demolition and removal of debris. Any resulting damage shall be repaired or replaced to like-new condition by the Contractor responsible.

Protect all landscaping from damage and replace or repair any landscaping to like-new condition by the Contractor responsible.

Cover air vents designated by Owner with filter fabric or plastic sheet to prevent visible dust and debris from entering building. Remove filter fabric or plastic sheet upon job completion.

When work involves removal of materials containing asbestos (ACRM):

Comply with all requirements of removal of roofing materials not containing asbestos (See above.).

Verify that all air handling equipment is shut down.

Protect all penetrations with 6 mil. polyethylene sheeting. Secure with duct tape.

OCCUPANCY

The Owner shall occupy the building during demolition and construction and the facility shall remain operational.

Coordinate all work in advance with the Owner.

DUST CONTROL

When work involves removal of roofing material not containing asbestos (Non-ACRM):

It is imperative that dust be kept to a minimum during removal of the roofing system.

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Debris shall be transported on covered trucks.

Debris shall be removed as it accumulates.

As it pertains to interior conditions, no excessive disturbance of the structure which causes air-borne debris will be tolerated.

PART 2 - PRODUCTS

PART 3 - EXECUTION

DEMOLITION IN STRUCTURES AND CONSTRUCTION TO REMAIN

Remove existing construction including roofing membrane, insulation, flashings, sheet metal and blocking as required to complete the installation of new roofing work as shown or specified.

Refer to Division 01 for additional requirements relating to protection of existing structure and property.

Provide protective devices, enclosures, rails and similar items necessary to provide for normal public passage and to prevent bodily injury to occupants of the building.

Use of the building, or any of its mechanical or electrical systems, shall not be curtailed without prior agreement with the building Owner.

DISPOSAL OF MATERIALS

All demolition material not scheduled for reuse and shall be removed from the Owner's site by the Contractor.

No prolonged accumulation of debris will be allowed.

Remove all salvaged items from the site as demolition progresses. Storage or sale of removed items on the site will not be allowed.

Notify in writing the proper regulating authorities having jurisdiction as to the intent of the demolition. Time is of essence.

Line refuse dumpsters with plastic sheeting and disposing sheeting with each load of refuse which includes roof materials containing asbestos.

Contractor is responsible for the proper location and method of disposal for each individual component of the roofing system.

No burning on site will be permitted.

Comply with all other disposal of materials requirements.

END OF SECTION

**SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS**

PART 1 - GENERAL

SECTION REQUIREMENTS

Contractor shall be responsible provisions of this section as it pertains to their work.

Use Charges: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated.

Water and Electric Power: Available from Owner's existing system without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

PART 2 - PRODUCTS

MATERIALS

Fencing: As required by owner.

TEMPORARY FACILITIES

Provide field offices, storage and fabrication sheds, and other support facilities as necessary for construction operations. Store combustible materials apart from building.

PART 3 - EXECUTION

TEMPORARY UTILITY INSTALLATION

Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.

SUPPORT FACILITIES INSTALLATION

Install project identification and other signs in locations approved by Owner to inform the public and persons seeking entrance to Project.

Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.

SECURITY AND PROTECTION FACILITIES INSTALLATION

Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

EPA Construction General Permit requirements apply to construction sites greater than one acre.

Furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.

Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

SECTION 07 62 00 – FLASHING, SHEET METAL AND METAL PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections apply to this section.
- B. Comply with Wisconsin Commercial Building Codes/International Building Code (IBC).
- C. Comply with ADA Standards for Accessible Design - Latest Edition.
- D. All metal edgings shall be tested and meet ANSI/SPRI/FM 4435/ES-1 Standard to a design pressure of 190 to 215 lbs./ft.² and comply with Wisconsin Commercial Building Codes/International Building Code (IBC).

1.2 SUMMARY

- A. Conform to profiles and sizes shown on drawings, and comply with "Architectural Sheet Metal Manual" by SMACNA, for each general category of work required.
 - 1. Metal flashing and counter flashing.
 - 2. Metal roof edge
 - 3. Miscellaneous sheet metal accessories.
 - 4. Roof Drainage System: Downspouts.

1.3 RELATED SECTIONS

- A. Division 06 Section "Rough Carpentry".
- B. Division 07 for roofing systems.

1.4 SUBMITTALS

- A. Submit in accordance with Section 076200 – Submittal Procedures.
- B. Provide sample of manufactures written guarantee covering film integrity, fading, chalking.
- C. Color chart, samples.
- D. Shop bent materials are acceptable but must meet the ANSI/SPRI/FM 4435/ES-1 Standard to a design pressure of 215 lbs./ft.² and comply with Wisconsin Commercial Building Codes/International Building Code (IBC). Provide documentation from the State of Wisconsin that testing has been completed and approved.
 - 1. The NRCA details can be used to achieve compliance with the building code as long as the contractor is an NRCA member authorized fabricator.
- E. Provide documentation with shop drawings for compliance with and tested in accordance with ANSI/SPRI/FM 4435/ES-1.
 - 1. Provide Certification of compliance with ANSI/SPRI ES-1 standards.
- F. Shop drawings showing layout, profiles, method of joining, anchorage details, etc.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop and field-assembled work.
 - 3. Include identification of material, thickness, weight, and finish for each item and location in Project.
 - 4. Include details for forming, including profiles, shapes, seams, and dimensions.
 - 5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.

6. Include details of termination points and assemblies.
7. Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.
8. Include details of roof-penetration flashing.
9. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counter flashings as applicable.
10. Include details of special conditions.
11. Include details of connections to adjoining work.

1.5 REFERENCE STANDARDS

- A. NRCA's – "The NRCA Roofing Manual".
- B. SMACNA's – "Architectural Sheet Metal Manual".
- C. ANSI/SPRI/FM 4435/ES-1 requirements.
- D. American Architectural Manufacturers Association (AAMA)
 1. AAMA 611 - Specification for Anodized Architectural Aluminum.
 2. AAMA 2605 - Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Architectural Extrusions and Panels.
- E. ASTM International (ASTM)www.astm.org:
 1. ASTM B 449 - Standard Specification for Chromates on Aluminum.
 2. ASTM D 1730 - Standard Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting.
 3. ASTM D 2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
 4. ASTM D 4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films.

1.6 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leak proof, secure, and noncorrosive installation.

1.7 QUALITY ASSURANCE

- a.

- c. Specular gloss: 8.2.
- d. Dry film hardness: 8.3.
- e. Dry adhesion: 8.4.1.1.
- f. Wet adhesion: 8.4.1.2.
- g. Boiling water adhesion: 8.4.1.3.
- h. Direct impact: 8.5.
- i. Abrasion resistance: 8.6.
- j. Muriatic acid resistance 8.7.1.
- k. Mortar resistance: 8.7.2.
- l. Nitric acid resistance: 8.7.3.
- m. Detergent resistance: 8.7.4.
- n. 24-hour window cleaner resistance: 8.7.5.
- o. Online Quality Assurance Inspection:
 - 1) Proper paint coverage: 5.0.
 - 2) Visual/appearance: 5.2.
 - 3) Dry-film thickness: 5.3.
 - 4) Color 2ÅE per ASTM D2244, Section 3.
 - 5) Gloss: +/- 5 units of manufacturer's specification.
- p. Apply AAMA 2605 compatible water-based air-dry system.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
- B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.9 WARRANTY

- A. Provide the manufacturer's warranty for specified products for the roof edge system, when installed per manufacturer's instructions. Warranty will not exceed the life of the roof membrane on which the product was originally installed.
- B. Furnish manufacturer's Twenty (20) year warranty providing coverage that coatings:
 - 1. Will not chip, crack or peel (lose adhesion) but this does not include minute fracturing which may occur in proper fabrication of building parts.
 - 2. Will not chalk in excess of ASTM D4214 Number 8 rating, determined by procedure outlines in ASTM D4214.
 - 3. Will not change color more than five Delta-E Hunter units (square root of the sum of square Delta L, Delta a, and Delta b) as determined by ASTM D2244, Method 6.3. Fading or color changes may not be uniform if surfaces are not equally exposed to sun and elements. Mica and metallic coatings are exempt due to inability to accurately measure color; mica and metallic flakes reflect and scatter light in random patterns.
- C. Furnish applicator's ten (10) year warranty providing coverage against failure of PVDF-based coating over improper pretreatment where coating was not applied in accordance with ASTM D1730, Type B, Method 5 or ASTM B449, Section 5.
- D. Furnish manufacturer's five (5) year warranty providing coverage that coatings:
 - 1. Will not chip, crack or peel (lose adhesion) but this does not include minute fracturing which may occur in proper fabrication of building parts.
 - 2. Will not chalk in excess of ASTM D4214 Number 8 rating, determined by procedure outlines in ASTM D4214.

3. Will not change color more than five Delta-E Hunter units (square root of the sum of square Delta L, Delta a, and Delta b) as determined by ASTM D2244, Method 6.3. Fading or color changes may not be uniform if surfaces are not equally exposed to sun and elements. Mica and metallic coatings are exempt due to inability to accurately measure color; mica and metallic flakes reflect and scatter light in random patterns.
- E. Furnish applicator's five (5) year warranty providing coverage against failure of PVDF-based coating over improper pretreatment where coating was not applied in accordance with ASTM D1730, Type B, Method 5 or ASTM B449, Section 5.
- F. Furnish applicator's ten (10) year warranty providing coverage that coatings:
1. Will resist cracking, crazing, flaking, and blistering if forming and welding are completed prior to finishing; post-forming or welding voids warranty.
 2. Will not chalk in excess of ASTM D4214 Number 8 rating, determined by procedure outlined in ASTM D-4214.
 3. Will not change color more than five Delta-E Hunter units (square root of the sum of square Delta L, Delta a, and Delta b) as determined by ASTM D2244, Method 6.3. Fading or color changes may not be uniform if surfaces are not equally exposed to sun and elements.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. **General:** Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. **Sheet Metal Standard for Flashing and Trim:** Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. **SPRI Wind Design Standard:** Manufacture and install roof edge flashings and etc. tested according to ANSI/SPRI/FM 4435/ES-1 and capable of resisting the following design pressure:
1. Design Pressure: 90.
- D. **Thermal Movements:** Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

2.2 MATERIALS

- A. **Prefinished Metal:** 22 gauge., hot dipped galvanized sheet (G90), commercial quality, primed and finished 1 side with Kynar 500 based fluoropolymer coating, AAMA 2605 with 30 year warranty, (color as selected by Architect from manufacturer's standards Non-standard Kynar color) and wash coat on back surface. Provide strippable plastic film on face.
1. Vincent Metals "Colorclad".
 2. Foremost Manufacturing Co.
 3. Peterson Aluminum Corporation "Pac-Clad".
 4. Firestone Building Products "Una-Clad".

- B. **Metal Roof Edge:** 22 gauge, hot dipped galvanized sheet with Kynar 500 finish. Provide factory manufactured inside and outside corners and accessories and fastener used in ANSI/SPRI ES-1 testing.
1. **Metal Era: Anchor-Tite System.** Products by the following are approved equals:
 - a. MM Systems Corporation
 - b. OMG Edge Systems
- C. **Roof Edge Scuppers:** 22 gauge, hot dipped galvanized sheet with Kynar 500 finish. Provide factory manufactured accessories and fastener used in ANSI/SPRI ES-1 testing.
1. **Metal Era: Equal to Anchor-Tite System Overflow Scupper Type OSB (Flat).** Products by the following are approved equals:
 - a. MM Systems Corporation
 - b. OMG Edge Systems
- D. **Roof Edge Downspout Scuppers:** 22 gauge, hot dipped galvanized sheet with Kynar 500. Provide factory manufactured accessories and fastener used in ANSI/SPRI ES-1 testing.
1. **Metal Era: Equal to Anchor-Tite System Downspout Scupper Type DSA or Type DSB as required for roof condition, include downspouts.** Products by the following are approved equals:
 - a. MM Systems Corporation
 - b. OMG Edge Systems
- E. **Roof Drainage System Downspouts:** 22 gauge, hot dipped galvanized sheet with Kynar 500.
1. **Downspouts: Metal-Era "Seal-Tite" open-face industrial downspouts.**
 - a. Provide at open face downspouts, colored liner to match exterior color.
 - b. Material: 22 gauge, hot dipped galvanized sheet
 - c. Formed Lengths: 12'-0".
 - d. Attachment Straps: Style 1.
 - 1) Width: 2 inches.
 - 2) Straps per 12-Foot Downspout Length: 3.
 - e. Downspout Spacers:
 - 1) Width: 2 inches.
 - 2) Straps per 12-Foot Downspout Length: 3.
 - f. Standard Elbows: Style A.
 - g. Offset Elbows: Wall condition.
 - 1) Material: 22 gauge, hot dipped galvanized sheet.
 - 2) Finish: Match downspouts.
 - 3) Color: Match downspouts.
 - h. Outlets: 22 gauge, hot dipped galvanized sheet.
 - i. Downspout Transitions:

- 1) **Material:** Match downspouts.
Finish: Match downspouts.
Color: Match downspouts.
Seams: Quicklock.
- F. **Thru-Wall Scuppers:** 24 gauge, hot dipped galvanized sheet with Kynar 500 finish. Provide factory manufactured accessories and fastener used in ANSI/SPRI ES-1 testing.
1. **Metal Era:** Equal to Metal Era Wall Scupper. Products by the following are approved equals:
 - a. **MM Systems Corporation**
 - b. **OMG Edge System**

2.3 GENERAL FABRICATION

- A. **General:** Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 2. Obtain field measurements for accurate fit before shop fabrication.
 3. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. **Fabrication Tolerances:** Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- C. **Expansion Provisions:** Form metal for thermal expansion of exposed flashing and trim.
1. Use lapped expansion joints.

- D. Sealant Joints: Where movable, non-expansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.
 - 1. Do not use graphite pencils to mark metal surfaces.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 - 1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 2. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Anchor work in place with non-corrosive fasteners, adhesives, setting compounds, tapes and other materials and devices as recommended by manufacturer of each material or system. Provide for thermal expansion and building movements. Comply with recommendations of "Architectural Sheet Metal Manual" by SMACNA.
- B. All metal edgings shall be tested and meet ANSI/SPRI/FM 4435/ES-1 standards and comply with Wisconsin Commercial Building Codes/International Building Code (IBC).
- C. Seal moving joints in metal work with elastomeric joint sealants, complying with requirements specified in Division 07 Section "Joint Sealants."
- D. Clean metal surfaces of soldering flux and other substances that could cause corrosion.
- E. Nail flanges of expansion joint units to substrates at spacing of 6 inches o.c.
- F. Composition Stripping: Cover flanges (edges) of work set on bituminous substrate with 2 courses of glass fiber fabric (ASTM D-1668) set in and covered with asphaltic roofing cement.
- G. Performance: Watertight and weatherproof performance of flashing and sheet metal work is required.

END OF SECTION 07 62 00

