





Industrial Roofing Services, Inc.

13000 West Silver Spring Drive

Butler, Wisconsin 53007

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www.irsroof.com

SPECIFICATIONS

for

ROOF REPLACEMENT PROJECT

ROCK COUNTY FAIRGROUNDS GRANDSTANDS

ROOF AREA 1

IRS JOB# 17800

Located at

1301 CRAIG AVENUE

JANESVILLE, WISCONSIN

Prepared for

Mr. Dave Froeber
Facilities Superintendent

Rock County
51 S. Main Street
Janesville, Wisconsin 53545

February 13, 2023

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**#2023-06
INVITATION TO BID
FAIRGROUNDS GRANDSTAND ROOF REPLACEMENT
1301 CRAIG AVE
JANESVILLE, WISCONSIN
FOR
ROCK COUNTY FACILITIES MANAGEMENT**

Bids due in Rock County Purchasing Division by: **March 23, 2023 – 2:00 p.m (local time).**

Bids received after this date and time will be rejected.

Bids must remain in effect for 45 days from due date

Address Bid to: Sherry Oja
Finance Director
Rock County Courthouse
51 S. Main Street
Janesville WI. 53545

Rock County reserves the right to accept or reject any or all bids; to waive any technicality or error in any bid or part therein, and to accept the same or combinations, in whole or in part, whichever is deemed to be in the best interest of Rock County.

Contracts are awarded to the lowest, most qualified, responsible and responsive bidder on the basis of the base bid and full consideration of any or all alternatives, as may be in the best interest of Rock County. In determining the award of contract, Rock County will consider the scope of the work involved, time of delivery, competency of bidder, bidder's ability to render satisfactory service, and past performance. If two or more bidders submit identical bids, Rock County will make award to bidder of its choice and such decision will be final.

INSTRUCTIONS FOR BID

The proposer is required to submit electronically via DemandStar (www.demandstar.com) or submit five (5) hardcopies of their proposal in a sealed envelope marked ITB #2023-06 to Sherry Oja, Finance Director, 51 South Main Street, Janesville, WI 53545. All proposals must be received by **2:00 p.m. (local time) March 23, 2023**. Any proposal submitted after this date and time will be rejected. No faxed or emailed proposals will be accepted.

Bidders are responsible for ensuring that the above office receives their bid before the deadline. Bid "packets" must be clearly labeled with vendor name, return address, bid title, date and the name of the bidders's primary contact for proposal questions.

Bids shall be signed with name typed below signature. Where bidder is a corporation, bid must be signed with the legal name of the Corporation followed by the legal signature of an officer authorized to bind the Corporation to contract.

Bidders must be licensed to business in the State of Wisconsin when required by law.

PRE-BID CONFERENCE & SITE TOUR

A Pre-Bid Conference and site tour will be held on, **March 8, 2023 at 9:00 a.m.**

The Pre-Bid is not mandatory, but it will be the only opportunity for contractors to tour the site. Representatives of the Owner and Architect will be in attendance.

Interested vendors should be meet at the Rock County Fairgrounds, 1301 Craig Ave, Janesville, Wisconsin.

INQUIRIES

All questions concerning this Invitation to Bid shall be submitted **in writing** to Sherry Oja, Finance Director. Questions shall be received by **12:00 noon (local time), March 14 , 2023**. Questions received after this date and time will not be answered. Questions shall be e-mailed to sherry.oja@co.rock.wi.us and must include ITP #2023-06 in the subject line.

No verbal explanation or instructions will be given in regard to the meaning of the drawings or specifications during the bid period. Bidders shall bring inadequacies, omissions or conflicts to Rock County's attention in writing by the question cut-off date and time. If necessary, answers to questions will be provided to all specification holders in the form of an addendum. Addendum will include a list of each question received and Rock County's response.

ADDENDA

All changes in or interpretations of the Bidding Documents prior to bid opening will be made by written addenda issued by Rock County to each recipient of the Bidding Documents on record. All addenda will be issued no later than 72 hours prior to bid opening. All addenda or notice of addenda will be posted on Rock County's website, www.co.rock.wi.us and on DemandStar (www.demandstar.com)

PROJECTED TIMETABLE

| | |
|-----------------------------------|-----------------------------|
| Issue Invitation to Bid | February 21, 2023 |
| Pre-Bid Conference and Site Visit | March 8, 2023- 9:00 a.m. |
| Questions Due | March 14, 2023 – 12:00 noon |
| Amendments Issued by | March 16, 2023– 5:00 p.m. |
| Bids Due | March 23, 2023 – 2:00 p.m. |
| Governing Committee Approval | April 4, 2023 |
| County Board Approval | April 13, 2023 |

Vendors not involved in the final selection process will be notified in writing. The above schedule is for informational purposes only and is in no way binding upon Rock County.

PERFORMANCE BOND AND LABOR AND MATERIALS PAYMENT BOND - REQUIRED

The successful Contractor shall furnish a Performance Bond and Labor and Materials Payment Bond each in the amount of 100% of the Contract Sum. All such bonds shall be issued by a surety company licensed to do business in the State of Wisconsin. Contractor shall pay all premiums. Deliver said bonds to Rock County no later than the date of execution of the contract. Failure or neglecting to deliver said bonds as specified, shall be considered as having abandoned the Contract, and the Bid Security will be retained as liquidated damages.

VENDOR SUPPLIED DOCUMENTATION AND MATERIALS

All vendor-supplied materials, including the vendor's bid, become the property of Rock County. We will work with vendors to meet their confidentiality requirements, provided that they are within reason. All vendor confidential material must have each page clearly marked as confidential. Wisconsin "Open Records Laws" apply. Rock County's determination to treat matters as public or confidential under the Wisconsin Open Records Law shall be final.

BID AND PRESENTATION COSTS

Rock County will not be liable in any way for any costs incurred by the offerors in the presentation of their Bid in response to this Invitation to Bid nor for the presentation of their Bid and/or participation in any discussions or negotiations.

COMPLIANCE WITH INVITATION TO BID

Bids submitted shall be in strict compliance with the Invitation to Bid. Failure to comply with all provisions on the ITB may result in disqualification. Failure to visit the site or failure to examine any and all Contract Documents will in no way relieve the successful Bidder from necessity of furnishing any materials or equipment, or performing any work, that may be required to complete the work in accordance with the drawings and specifications. Neglect of the above requirements will not be accepted as reason for the delay in the work or additional compensation.

COMPLETION DATE

Provide a start and finish date on the Bid Form in which your Company could complete this project if awarded as indicated.

IMPLIED REQUIREMENTS

Products and services that are not specifically addressed in this Invitation to Bid, but which are necessary to provide functional capabilities proposed by the offeror, must be included in the bid.

NON-DISCRIMINATION

In connection with the performance of work under this contract, the contractor agrees not to discriminate against any employee or applicant for employment because of age, race, religion, color, handicap, sex, physical condition, developmental disability as defined in s.51.01 (5)(a), sexual orientation, national origin, or military service as defined in §111.355(1), Wis. Stats. This provision shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor further agrees to take affirmative action to ensure equal employment opportunities. The contractor agrees to post in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the non-discrimination clause (Wisconsin Statutes S.16.765 (2)).

INDEMNIFICATION

The contractor to perform services for Rock County shall indemnify, hold harmless, and defend Rock County, its officers, agents, and employees from any and all liability including claims, demands, losses, costs, damages and expenses of any kind and description or damage to person or property arising out of or in connection with or occurring during the course of any agreement between the contractor and Rock County where such liability is founded upon or grows out of the acts, omissions, negligence or misconduct of any agents or employees of the contractor.

INSURANCE REQUIREMENTS

The Contractor further agrees that in order to protect itself and County it will at all times during the term of this agreement keep in force and effect worker's compensation, comprehensive general, and auto liability insurance policies by a company or companies authorized to do business in Wisconsin with minimum limits:

| | | |
|----------------------------|-----------------|-------------|
| Personal and bodily injury | Per person | \$1,000,000 |
| | Per accident | \$2,000,000 |
| Property damage: | Each Occurrence | \$500,000 |
| | Aggregate | \$500,000 |

Coverage shall apply as primary with County named as an additional named insured. Contractor shall also provide a copy of the additional insured endorsement. Contractor shall furnish satisfactory proof of insurance to County prior to the date of Contract Execution, or commencing work for the County.

MODIFICATION AND WITHDRAWAL

Bids may not be modified after submittal. Bidders may withdraw Bids at any time before the Bid opening, but may not resubmit them. No Bid may be withdrawn or modified after the Bid opening except where the award of Contracts has been delayed for more than 60 days from the day of the Bid opening.

PROOF OF COMPETENCY OF BIDDER

Any Bidder may be required to furnish evidence satisfactory to Rock County that the Bidder and proposed subcontractors have sufficient means, expertise, financial ability, and experience in the types of work bid to assure completion of the Contract in a satisfactory manner.

CONFLICT OF INTEREST

All respondents must disclose with their Bid, the name of any officer, director or agent who is also an officer or employee of Rock County. Further, all respondents must disclose the name of any Rock County officer or employee who owns, directly or indirectly, any interest in the vendor's firm or any of its branches. Failure to disclose this information will result in disqualification of Bid and/or cancellation of Contract. Rock County reserves the right to seek damages for recoupment of losses in having to re-let or reassign.

QUANTITIES

Quantities shown within the Invitation to Bid are based upon estimated needs. The County reserves the right to increase or decrease quantities to meet actual needs or availability of funds.

QUALITY LEVEL

Unless otherwise indicated in the Invitation to Bid, all materials shall be first quality. Items which are used, obsolete, or which have been discontinued are unacceptable without prior written approval by Rock County.

DEVIATION AND EXCEPTIONS

Deviations and exceptions from terms, conditions, or specifications will be described fully under the bidder's letterhead, signed, and attached to the Bid. In the absence of such statements, the bid will be accepted as in strict compliance with all terms, conditions, and specifications and the bidder shall be held liable.

SUBSTITUTIONS

When substitutions are bid, they must be identified by manufacturer, stock number, and other descriptive information to establish equivalencies. Substitution shall be requested prior to the question cut-off date and time. Approved substitutions will be included in the Addenda. Rock County shall be the sole judge of equivalency.

DISQUALIFICATION

Rock County reserves the right to disqualify Bids, before and after opening upon evidence of collusion with the intent to defraud or other illegal practices upon the part of the Bidder.

AWARD

Award will not be made to any Bidder in default of a Contract with Rock County, or to any Bidder having as its agent or employee, any individual previously in default or guilty of misrepresentation.

DEBARMENT

The Contractor certifies through signing their Bid that neither the Contractor nor any of its principals are debarred, suspended, proposed for debarment or declared ineligible by any federal department or agency. In addition, the Contractor shall notify Rock County within five business days in writing by registered mail if the Contractor or its principals receive a designation from the federal government that they are debarred, suspended, proposed for debarment, or declared ineligible by a federal agency.

REQUEST FOR CLARIFICATION

All requests by Rock County for clarification of bids will be in writing. Such requests shall not alter the offeror's pricing information contained in its bid.

SAFETY REQUIREMENTS

Materials, equipment and supplies provided to the County shall comply fully with all safety requirements that are set forth by the Wisconsin Administrative Code, Rules of the Industrial Commission on Safety, and all applicable OSHA standards. When furnishing toxic or hazardous materials as defined in sub-part "Z" of the U. S. Occupational Safety and Health Standards, the contractor shall furnish OSHA Form 20, "Material Safety and Data Sheet", for each item provided. Further, during the course of performing the service necessary to satisfy the requirements of any Invitation to Bid, the contractor is fully liable for public and private protection while work is in progress or at any site exposed as a potential hazard. Contractor shall provide warning devices and/or signs, which shall be prominently installed and displayed, and be fully in compliance with safety regulations.

TAXES

Rock County is exempt from the payment of all federal excise taxes, registration no. 008102042190606 (For tax-free transactions under Chapter 32 of the Internal Revenue Code. The certificate of exemption is on file with the District Attorney, U. S. Treasury Department, Internal Revenue Service, Milwaukee, Wisconsin). Rock County is exempt from Wisconsin State and Local taxes on its purchases except Wisconsin excise tax as the Wisconsin Department of Revenue does not issue state exempt numbers to Counties per Wisconsin Statute 77.54 (9) (a). Contractors performing construction activities are required to pay state user tax on the cost of materials which they purchase. Rock County is required to pay an excise tax on Wisconsin beer, liquor, wine, cigarettes, tobacco products, motor vehicle fuel engine oil and aviation fuel.

OWNER PURCHASE – ACT 126

Gov. Scott Walker has signed into law Senate Bill (SB) 227 on Dec. 16, 2015, allowing contractors to purchase construction materials on behalf of certain tax-exempt clients without paying Wisconsin sales or use tax. The law applies to construction material contracts signed beginning Jan. 1, 2016. The new exemption applies to contracts with a Wisconsin county, city, village, municipality, school district, city or county hospital, and local sewer and water districts. It also covers real property construction jobs with religious, charitable, educational, and other nonprofit organizations that are themselves exempt under Wisconsin's statutes. The bill excludes highway, street, and road projects from the scope of the sales and use tax exemption.

SUBSTANCE ABUSE POLICY

Pursuant to Wis. Stat. 103.503(3), contractor, subcontractor or agent of a contractor or subcontractor that will be performing any work on this public works project verifies that it has in place, prior to the commencement of any work on this project, a written program for the prevention of substance abuse among its employees. Said verification includes confirmation that the written program contains all of the following:

1. A prohibition against any employee using, possessing, attempting to possess, distributing, delivering, or being under the influence of a drug, or use or be under the influence of alcohol, while performing work on this project.
2. A requirement that employees performing work on this project shall submit to random, reasonable suspicion, and post-accident drug and alcohol testing and to drug and alcohol testing before commencing work on this project, except that testing of an employee before commencing work on this project is not required if the employee has been participating in a random testing program during the ninety (90) days preceding the date on which the employee commences work on this project.
3. A procedure for notifying an employee who tests positive or who refuses to submit to drug or alcohol testing that he/she may not perform work on this project or have access to this project until he/she has submitted to the required drug or alcohol testing and does not test positive.

Rock County is not responsible for the cost of developing, implementing or enforcing this required substance abuse prevention program in any way; nor is it responsible for the cost of drug and alcohol testing any employee. Each employer shall be responsible for said costs.

CONTRACT REQUIREMENTS

CONTRACT

The documents that will form the contract include the "Invitation to Bid", any attachments or addendum and the successful respondent's "Bid".

APPLICABLE LAW

All contracts are governed under the laws of the State of Wisconsin and are made at Rock County, Wisconsin, and venue for any legal action to enforce the terms of the agreement will be in Rock County Circuit Court.

COMPLIANCE WITH LAWS

The Contractor shall give all notices required by and shall otherwise comply with all applicable laws, ordinances and codes and shall, at his own expense, secure and pay the fees and charges for all permits required for the performance of the contract. All materials furnished and work done is to comply with all local, state and federal laws and regulations.

TERMINATION FOR DEFAULT

The contract may be terminated by Rock County, in whole or in part, in writing, whenever the County determines that the Contractor has failed to meet performance requirements of the Contract.

TERMINATION FOR CONVENIENCE

Rock County reserves the right to terminate the Contract, in whole or in part, by giving the Contractor written notice of at least thirty (30) days prior to the effective date of the termination. Upon receipt of termination from Rock County, the Contractor shall only provide those services specifically approved or directed by Rock County. All other rights and duties of the parties under the Contract shall continue during such notice period.

CANCELLATION

Failure to maintain the required certificates of insurance, permits, licenses and bonds will be cause for contract termination. If the Contractor fails to maintain and keep in force the required insurance, Rock County shall have the right to cancel and terminate the contract without notice.

Rock County reserves the right to cancel a purchasing contract in whole or in part without penalty due to the non-appropriation of funds or for failure of the contractor to comply with terms, conditions, and specifications of the contract. Any dispute arising as to quality and quantity is subject to arbitration as provided in Chapter 788, Wisconsin Statutes.

FORCE MAJEURE

Neither party to this agreement shall be liable to the other for any cost or damages if the failure to perform the Contract arises out of causes beyond the control and without the fault or negligence of the parties. Such causes may include, but are not restricted to, acts of God, fires, quarantine restriction, strikes and freight embargoes. In all cases, the failure to perform must be totally beyond the control and without fault or negligence of the party.

PERMITS, LICENSES AND FEES

The selected vendor shall be responsible for obtaining all permits, licenses, certifications etc. required by Federal, State, County and Municipal laws, regulations, codes and ordinance for the performance of the work required in these specifications and to conform with the requirements of said legislation.

PATENT FEES, ROYALTIES AND LICENSES

By accepting a contract or purchase order from Rock County, the vendor or contractor guarantees that the sale or use of the items or goods being provided will not infringe any United States patent, and covenants that it will at its own expense defend every suit which may be brought against Rock County, (provided that such party is promptly notified of such suit, and all papers therein are delivered to it) for any alleged infringement of any patent by reason of the sale or use of such article or articles, and agrees that it will pay all costs, damages and profits recoverable in such suit. The party selling to Rock County guarantees that the items or goods being provided were manufactured in accordance with applicable federal labor laws.

PUBLIC ENTITIES CRIMES

A person or affiliate that has been convicted of a public entity crime is not allowed to submit a Bid for this contract.

PUBLIC RELATIONS IMAGE

Selected vendor's personnel shall at all times handle complaints and any public contact with due regard to the County's relationship with the public. Any personnel in the employ of the selected vendor involved in the execution of work that is deemed to be conducting themselves in an unacceptable manner shall be removed from the contract at the request of Rock County.

PUBLICITY RELEASES

Contractor agrees not to refer to award of this contract in commercial advertising in such a manner as to state or imply that the products or services provided are endorsed or preferred by Rock County. The contractor shall not have the right to include the County's name in its published list of customers without prior approval of Rock County. The contractor further agrees not to publish or cite in any form, any comments or quotes from County staff.

ASSIGNMENT & SUBCONTRACTING

The selected Contractor will not be permitted to sublet, sell, transfer, assign or otherwise dispose of the contract or any portion therein, or its right, title or interest in, to any person, firm or corporation without the written consent of Rock County.

VENDOR'S RELATIONSHIP TO ROCK COUNTY

It is expressly agreed and understood that the successful vendor is in all respects an Independent Contractor as to the work, and the vendor is in no respect an agent, servant or employee of Rock County. The contract will specify the work to be done by the vendor, but the method utilized to accomplish the work shall be the responsibility of the vendor.

DEFICIENCIES

In the event that Rock County determines that there are deficiencies in the service work provided by the vendor under the contract, Rock County shall notify the vendor in writing as to the precise nature of any such deficiencies. Within ten (10) working days of receipt of such notice, vendor shall take responsible steps to correct any deficiencies.

GUARANTEED DELIVERY

Failure of the contractor to adhere to the delivery schedule that is specified or to promptly replace rejected materials renders the contractor liable for all costs in excess of contract price if alternate procurement is necessary. Excess costs include administrative costs.

WORK CHANGES

Rock County reserves the right to order work changes in the nature of additions, deletions or modifications without invalidating the Contract.

WORK SITE DAMAGE

Any damage, including damage to finished surfaces, resulting from the performance of this contract shall be repaired to Rock County's satisfaction at the Contractor's expense.

RECORDS

The Contractor shall maintain accurate and complete records. All books and records pertaining to the performance of the contract shall be made available at any time during the contract and for three years following the expiration of said contract to the Rock County Finance Department, Purchasing Department or any independent auditing firm acting at the direction of Rock County.

ROCK COUNTY, WISCONSIN

PURCHASING DIVISION
FINANCIAL SERVICES



**#2023-06
FAIRGROUNDS ROOF REPLACEMENT
ROOF REPLACEMENT
1301 CRAIG AVENUE
JANESVILLE, WI**

for

**FACILITIES
MANAGEMENT
ROCK COUNTY,
WISCONSIN**

BID FORM

**TO: Sherry Oja, Finance Director
Rock County Courthouse
51 South Main Street
Janesville WI 53545**

BID FROM:

Firm Name: _____

Address: _____

Phone/Fax: _____

BID PRICES

BASE BID: (Roof Replacement).....\$ _____

dollars

CONSTRUCTION ALLOWANCE: (Funding of Unit Price Items).....\$ 15,000.00

Total Bid (Base Bid + Allowance) \$ _____

UNIT PRICING

Indicate cost per unit listed for each item

- 1. Replace existing tongue & groove wood plank roof deck, matching existing type, size, style, and installation methods (per sq. ft.) \$ _____
- 2. Replace plywood fascia, matching existing (per lineal foot) \$ _____
- 3. Replace 2X2 wood nailers behind fascia, fastened to structural steel with TEK screws (per lineal foot) \$ _____

TIME & MATERIAL RATE

- 1. For repair of latent conditions or additional work:
 - Rofer - Time (per man-hour) \$ _____
 - Material (Contractor cost) plus _____ %

CONSTRUCTION SCHEDULE

- 1. The Undersigned agrees to commence the Work in _____ Calendar days after Contract Award and to complete the Work in _____ calendar days thereafter. The undersigned acknowledges the following schedule requirements:
 - a. The work is to be completed by October 31, 2023.
 - b. No work may occur between June 16th and August 5th, as the site will not be accessible during that time. Work must be completed before or after that time window.

CERTIFICATION

- 2. The Undersigned acknowledges receipt of:
 - a. The Project Manual and drawings for the above-referenced Project.
 - b. Addenda numbered _____, _____, and _____.
- 3. The Undersigned agrees:
 - a. To hold this Bid open for 45 days after the Bid due date.
 - b. To enter into and execute a Contract if awarded on the basis of the Bid and to furnish all insurance required in the Bidding Documents.
 - c. To accomplish the Work in accordance with the Contract Documents.
- 4. The Undersigned acknowledges and agrees that the Owner reserves the right to reject any or all bids and to place the Contract wherever and with whomever it may deem advisable.
- 5. The Undersigned attests, having carefully examined the Drawings, Specifications, Commercial Terms and Conditions and all Addenda thereto and other Contract Documents and having familiarized themselves with all existing conditions affecting this proposed Project. Also, having familiarized themselves with material availability, Federal, State and Local Laws, Ordinances, rules and regulations affecting performance of the work, does hereby propose to furnish all labor, mechanics, supervision, tools, material, equipment, transportation, services and all incidentals necessary to complete said work.

SUBMITTALS

- 1. The Undersigned submits, enclosed with this Bid Form:
 - a. A listing of subcontractors, if any, to be used on this project.

SIGNATURES

Authorized signature, in affirmation of the statements and Bid prices on the BID FORM:

Contractor's State License Registration Number:

No. _____

In State of _____

(Firm Name)

(Address)

(City, State, Zip)

(Authorized Signature)

(Title)

(Name Printed or Typed)

(Date)

Corporation Information (if applicable)

Partnership Information (if applicable)

(Corporation Name, if different from above)

(State of Incorporation)

(Names of the Partners)

SUBCONTRACTOR LIST

Name of Proposed Subcontractors

Class of Work

Address

END OF BID FORM

SECTION 00100

SPECIAL INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

1.01 EXAMINATION

- A. Each bidder shall visit and carefully examine the proposed work and fully acquaint themselves with conditions relating to construction and labor so that they may fully understand the facilities, difficulties, and restrictions attending the execution of the work included under the Contract.
- B. Bidders shall thoroughly examine and be familiar with the drawings, specifications and other contract documents.
- C. Should a bidder find discrepancies in or omissions from the drawings or documents, or should he be in doubt as to their meaning, they shall at once notify the Owner in writing prior to the question cut-off date and time listed in the project documents. The Owner will send written instructions in the form of an addendum to all bidders. Neither the Owner nor the Consultant will be responsible for any oral instructions.
- D. It is the responsibility of each bidder to become familiar with the site and documents; no extras will be approved for conditions that could be reasonably determined at the time of bidding.

1.02 SUBSTITUTIONS

- A. Any Bidder who wishes to propose substitute products must do so per the Owner's substitution requirements, as listed in the project documents. In addition, substitution requests shall comply with technical Section 01030 – "Alternates, Allowances and Substitutions" and individual product specification sections.

1.03 BASIS OF THE BID

- A. The Bidder's Bid Price shall be based on the complete Work, as described in the Bidding Documents, including all costs incidental to the Work, unless specifically indicated otherwise.
- B. The Bidder shall base his Bid Price on a completion date as submitted on the Bid Form. The Owner emphasizes that time is of the essence and may include, in the Contract resulting from acceptance of this bid, penalties for non-completion based on the project time-frame established.

1.04 SPECIFICATION TECHNIQUES

- A. Format:
 - 1. These specifications are written in the imperative and streamlined form and are directed to the Contractor unless specifically noted otherwise.
 - 2. The words "shall be" shall be inferred where a colon (:) is used within phrases or sentences.
- B. Definitions:
 - 1. The word "furnish" shall mean to purchase, supply, and deliver to the project site, elevation, and location, those materials and/or services which are necessary for the completion of the Work.
 - 2. The word "install" shall mean to place and integrate materials into position for their designed use.
 - 3. The word "provide" shall mean furnish and install.

4. The word "manufacturer" shall mean the manufacturer or private-labeler of the material, which are to be integrated into the Work.

PART 2 - PRODUCTS

- A. Not Used.

PART 3 - EXECUTION

- A. Not Used.

END OF SECTION

SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.01 PROJECT OVERVIEW

- A. The Work consists of roof membrane replacement at the Rock County Fairgrounds Grandstands in Janesville, Wisconsin for Rock County, using fully-adhered EPDM single-ply roofing.
- B. Schedule
 - 1. The work is to be completed by October 31, 2023.
 - 2. *Note: no work may occur between June 16th and August 5th, as the site will not be accessible during that time. Work must be completed before or after that time window.
- C. The specification is based on **Carlisle, Holcim Elevate (formerly Firestone), or Mule-Hide 60-mil EPDM roof system with a ten (10) year warranty**. Contractor's wishing to use a system from another roof system manufacturer must gain prior approval, per the specified substitution request requirements.
- D. The Work includes:
 - 1. Replacement of existing rotted wood components (decking, fascia, wood nailers), on an as needed basis. This work shall be accomplished on a unit price basis. Contractor shall submit unit pricing for these components, as listed on the bid form. Base bid shall not include any rotted wood replacement.
 - 2. Related sheet metal and carpentry work, as indicated within the Construction Drawings, using 24 gauge prefinished galvanized sheet metal.
 - a. Install new sheet metal fascia cladding over the existing wood fascia.
 - b. Install new sheet metal drip edge along all perimeters.
 - c. Install new box gutter and downspouts, matching existing locations.
- E. Asbestos Containing Roof Materials (ACRM's) are present within the existing roof membrane and flashings. Removal of these components must be done by Contractor's employees certified to remove/handle regulated materials. Contractor shall be responsible for following all applicable regulations when handling regulated materials.
- F. The Owner will not be responsible for any work associated with this project.

PART 2 - PRODUCTS

2.01 SYSTEM COMPONENTS

- A. Fully-adhered EPDM single-ply roof system:
 - 1. ¼" gypsum cover board
 - a. Mechanical fastening plates and screws.
 - 2. 60-mil unreinforced EPDM single-ply roof membrane.
 - 3. Membrane bonding adhesive.
- B. Roof flashings:
 - 1. Cured EPDM single-ply membrane (base flashings).
 - 2. Uncured EPDM single-ply membrane (details - corners, flanges, etc.).
 - 3. Prefabricated EPDM boot flashings (pipe flashings).
 - 4. Membrane cleaner and splice tape.
 - 5. Membrane splice and bonding adhesives.

- C. Miscellaneous:
 - 1. Membrane adhesives and sealants.
 - 2. Membrane fastening plates and screws.
- D. 24 gauge, prefinished, galvanized, shop fabricated sheet metal.
 - 1. Drip edge, fascia, gutters, and downspouts, as shown in the Construction Drawings.
- E. Miscellaneous fasteners and sealants.

2.02 COMPONENTS SUPPLIED BY OWNER

- A. None.

PART 3 - EXECUTION

3.01 WORK PERFORMED BY CONTRACTOR

- A. Remove the existing built-up roof system down to the existing wood plank roof deck.
- B. Clean the exposed decking of all debris. Inspect existing decking and perimeter wood components (plywood fascia and wood nailers) and replace any wet or damaged boards. Notify Consultant of any wet/damaged components found, prior to replacement, keeping track of quantities on a day-to-day basis.
- C. Install the specified cover board and mechanically fasten to the wood substrate.
- D. Adhere the EPDM single-ply roof membrane to the completed cover board in a continuous and uniform application of membrane bonding adhesive.
- E. Thoroughly clean all membrane and flashing laps; join membrane laps with splice tape. Thoroughly inspect all laps daily after installation for signs of improper bonding. Apply lap sealant to all seams on the same day as completion.
- F. All perimeters and projections are to be constructed and flashed in strict accordance with the Construction Drawings provided.

3.02 INCLUSIONS

- A. The Contractor shall include, in his bid, any and all costs incurred in complying with the intent of the Construction Drawings.

END OF SECTION

SECTION 01025

APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section describes the procedures and submittal requirements regarding Change Orders and Application for Payment requests to the Owner.

1.02 PROGRESS PAYMENTS

- A. Unit Pricing:
1. The Unit Pricing submitted by the Contractor shall be considered fixed and inclusive of its purchase, installation, overhead expenses and profit.
 2. Units of measurement shall be as described on the Bid Form:
 - a. Dollars per square foot.
 - b. Dollars per lineal foot.
 - c. Dollars per unit.
 3. The Contractor shall obtain written approval, on the Unit Pricing forms provided by or acceptable to the Consultant, by signature of the Consultant or an authorized on-site representative of the Owner, for each day's quantity of completed work affected by unit pricing.
 4. The Contractor shall accumulate the completed Unit Pricing forms and submit them to the Consultant, on a weekly basis, in conjunction with a completed Change Order form totaling the cost of the approved Unit Pricing.
 5. In the event that proper approval of Unit Pricing is not obtained, the Owner reserves the right to reject the Contractor's measurement of Unit Pricing work-in-place, and to have the Work measured by the Consultant, or an independent surveyor acceptable to both the Owner and Contractor, at the Contractor's expense.
 6. Unit Pricing is intended to be used for small-scale areas of extra work. In the event that the scope of the work covered by the unit pricing escalates, the Owner reserves the right to use the Contractor's time and materials (T&M) rate or negotiate a lump sum price in lieu of the Unit Pricing.
- B. Time and materials (T&M) pricing:
1. The Time & Material Rate submitted by the Contractor shall be considered fixed and inclusive of overhead and profit.
 2. Repair of latent defects or the execution of additional work for which unit prices were not submitted:
 - a. Dollars, per man-hour, for labor.
 - b. Percentage mark-up over purchase price for materials furnished.
- C. Change Orders:
1. The Contractor shall be responsible for initiating the request for Change Order, on the forms provided by or acceptable to the Consultant, to include:
 - a. A description of the approved change in the Work, within one (1) week of initiation.
 2. The Consultant will review the Change Order requests and forward them with his recommendation to the Owner; copies approved by the Consultant and Owner will be returned to the Contractor.
 3. The Contractor shall submit the approved Change Order forms in conjunction with an Application for Payment form, including the total of the approved Change Orders.
 4. Change Orders shall be considered valid only if:
 - a. Submitted in writing on the proper Change Order form.

b. Approved by signatures of both the Consultant and the Owner.

D. Application for Payment:

1. The Contractor shall submit:
 - a. Completed Application for Payment, on standard AIA formats or on IRS forms, in triplicate.
 - b. Contractor's original invoice.
 - c. Subcontractor's material and/or labor Waivers of Lien, where applicable, to match the amount requested.
 - d. Written justification for payment of materials not in-place by means of supplier invoices, bills of lading, Waivers of Lien, etc.
2. The Contractor shall submit Application for Payment, on a periodic basis or as determined in the Agreement, to:

**Industrial Roofing Services, Inc.
13000 West Silver Spring Drive
Butler, WI 53007**

3. The Consultant shall review the Application for Payment and either:
 - a. Approve the requested amount as a representation that the Work has progressed to the point indicated and, that to the best of his knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents, or;
 - b. Revise the amount requested to an amount for which he is able to make such representation to the Owner.
 - c. Notify the contractor in writing of the applications rejection due to error and/or incompleteness
4. Payments will be reviewed, approved, and submitted to the Owner with the Consultants recommendations on a timely basis.
5. A retainage of five percent (5%) of the requested amount shall be withheld on each progress payment. The Contractor's invoice shall match the amount requested, less the retainage.

PART 2 - PRODUCTS

A. Not Used.

PART 3 - EXECUTION

A. Not Used.

END OF SECTION

SECTION 01030

ALTERNATES, ALLOWANCES AND SUBSTITUTIONS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section identifies each voluntary and/or mandatory Alternate, by number, and describes the basic changes to be incorporated into the Work; only if that Alternate is made a part of the Work by acceptance by the Owner in the Agreement.
 - 1. A Mandatory Alternate Bid shall be in addition to the Base Bid. It may contain some or all aspects of the Base Bid, except those changes specifically described herein.
 - 2. An Alternate Bid shall be in lieu of the Base Bid. It shall contain all aspects of the Base Bid, except those changes specifically described herein.
 - 3. An Alternate Add or Alternate Deduct, as described herein, shall add work to, or deduct work from, the Base Bid.
- B. This section also includes the Contractor's options in selecting products or requesting the acceptance of substitute products.
- C. This section also specifies Allowances – monetary amounts (or materials) to be included in the Contractor's bid prices – which will be used to cover change orders, unit pricing, deteriorated material replacement and/or other intangibles during the course of the Work.

1.02 RELATED REQUIREMENTS

- A. Bidding Documents: Method of quotation for each Alternate, and the basis of the Owner's acceptance of Alternates.
- B. Referenced sections of these specifications, or drawing details, which stipulate the products and methods necessary to achieve the Work for each Alternate, as described below.
- C. Coordination of related work and modification of surrounding work of the Base Bid, as required to properly integrate the work of each Alternate, to provide the Work as required by the Contract Documents.

1.03 DESCRIPTION OF ALTERNATES

- A. None.

1.04 PRODUCT OPTIONS AND SUBSTITUTIONS

- A. Contractor's product options:
 - 1. If products are specified only by reference standard, any product which meets that standard, by any manufacturer, shall be used.
 - 2. If several products are specified by name or manufacturer, any of the listed products may be used.
 - 3. If only one product is specified by name or manufacturer, that product shall be used, or the Contractor shall submit a request for substitution, as specified below, for a product that meets or exceeds the quality standards of the listed product.
 - 4. If product list is followed by "Approved equal", the Contractor may use any of the listed products or shall submit his "or equal" for consideration, following the substitution procedure, as specified below.

- B. Substitutions:
1. During the Bidding process, the Owner may consider written requests from Bidders for substitute products in place of those specified. If the Owner deems the substitute product to be worthy of approval, it will be incorporated as such into an Addendum to all Bidders. Requests for substitutions shall include data as listed below and must be submitted by the listed question cut-off date.
 2. Submit substitution requests, supported with complete data, drawings and/or appropriate samples as necessary to show compliance with the intent of the Contract Documents, including:
 - a. Product description, performance, and test data, and applicable reference standards.
 - b. If applicable, a letter from a substitute manufacturer that indicates the following:
 - 1) The manufacturer has reviewed and approved the specifications and drawings, as they relate to the use of their products.
 - 2) Manufacturer confirms the specified system (including requirements of the drawings, installation methods specified, and other products) is acceptable to the manufacturer.
 - 3) Upon installation of the specified system, by an approved applicator, the manufacturer will issue the specified warranty.
 - c. Name, address, date of installation and Owner contact of similar projects on which the product was used.
 - d. Changes required in other elements of the Work as a result of the incorporation of the substitute product.
 - e. Effect on the anticipated construction schedule, if any.
- C. Contractor's representation: a request for substitution constitutes a representation that the Contractor:
1. Has investigated and determined that the proposed substitute product is equal or superior, in all respects, to the specified product.
 2. Will provide the same warranty as specified if substitute products are utilized.
 3. Will coordinate the incorporation of the proposed substitution in the Work
 4. Will modify other portions of the Work, as may be required, to complete the project in accordance with the intent of the Contract Documents.
 5. Waive all future claims for added costs to the Contract, over and above those approved by the Owner that may be caused by use of the substitute product.
- D. Substitutions will not be considered if:
1. They are indicated or implied on shop drawings or product data submittals, except as described above.
 2. The substitute product is considered, in the opinion of the Consultant, to be outside of the general classifications of the specified product.
 3. Approval of the substitution would require substantial revisions to the Contract Documents.
- E. Contractor shall not order or install substitute products without Written Notice of Acceptance of the request for substitution by the Consultant and the Owner. Submission of the Substitution Request Form does not in any way constitute approval. If the substitution is not approved, the rejection shall be considered final and the Contractor shall furnish a specified product.

1.05 ALLOWANCES

- A. Contractor shall add a lump sum amount of **fifteen thousand dollars (\$15,000.00)** to their base bid amounts for the funding of Unit Price Work.

- B. Use of the allowance is restricted to direction of the Consultant for the Owner's purposes and only authorized by Signed Change Orders or Unit Pricing Approvals that indicate amounts to be charged to the allowance.
- C. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

PART 2 - PRODUCTS

- A. Not Used.

PART 3 - EXECUTION

- A. Not Used.

END OF SECTION

SECTION 01200

PROJECT MEETINGS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section provides information regarding the Consultant's scheduled project meetings.

1.02 PRE-BID MEETING

- A. If applicable, a pre-bid meeting will be held at the time designated in the "Invitation to Bid."
- B. Representatives of all prospective Bidders shall meet with the Consultant to review the existing conditions on the project site.
- C. The Consultant will, as a minimum, address the following items at the pre-bid meeting:
 - 1. Introduction of key project personnel;
 - 2. The general project scope, including roof walkover;
 - 3. The requirements of Section 00100 – "Instructions to Bidders";
 - 4. The bid(s) to be included;
 - 5. The Bid due date;
 - 6. The Owner's intended project construction schedule;
 - 7. Required project warranties;
 - 8. Presence of regulated materials and any special requirements;
 - 9. Anticipated construction facilities:
 - a. Use of the site and restrictions, if any;
 - b. Temporary services and controls.

1.03 PRE-CONSTRUCTION CONFERENCE

- A. Within ten (10) days after Consultants receipt and approval of required project submittals Contractor shall provide Consultant with written notice of his intent to start the work.
- B. Within ten (10) days after receipt of Contractors written notice of his intent to start the work Consultant will schedule a formal pre-construction conference to be held at the project site, at a time designated by the Consultant.
- C. Representatives of the Contractor and his subcontractors, including the project superintendent and foreman, shall attend the pre-construction conference with the Consultant and a representative of the Owner.
- D. The Consultant will, at a minimum, address the following items at the pre-construction meeting:
 - 1. Designation of key personnel and their duties;
 - 2. The channels for project communication;
 - 3. Review of the Project Scope of Work;
 - 4. The anticipated project construction schedule, showing timeframe for the start and completion of each portion of the Work;
 - 5. Review of the material list (Contractor shall provide an updated list of changes that were made from initial submittal);
 - 6. Review of sequencing for critical areas of the Work;
 - 7. The requirements for approving and processing of Unit Pricing and Change Orders;
 - 8. Job site conditions and requirements:
 - a. Use of site and restrictions;
 - b. Temporary services and controls;
 - c. Existing facilities and maintenance of operation;

- d. Daily completion procedures, such as night seals;
- e. Emergency weather-seal protections;
- 9. Notification procedures;
- 10. Expectations of the Owner and IRS;
- 11. Quality control of new roofing installation.

PART 2 - PRODUCTS

- A. Not Used.

PART 3 - EXECUTION

- A. Not Used.

END OF SECTION

SECTION 01340

SUBMITTALS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section provides requirements for project submittals and guidelines for submittals, by the Contractor or his Subcontractor, of shop drawings and other submittals as requested in the Project Documents.

1.02 SUBMISSION REQUIREMENTS

- A. Submittals listed below shall be delivered to the Consultant as soon as possible after Contract Award, but no later than ten (10) days prior to Contractor's intent to start work, and/or a minimum of five (5) days before approval is needed to order materials.
- B. Accompany submittals with a transmittal letter, containing:
1. Date.
 2. Project title and IRS Job number.
 3. Contractor's name and address.
 4. Notification of deviations from Contract Documents, if any.
- C. Required Submittal items:
1. Insurance Certificate: Per Owner's insurance requirements, with the Consultant (and any other entities specified) named as Additional Insureds.
 2. Performance and Payment Bonds: If required, provide an original, sealed copy for the Owner.
 3. Materials: **List** of major products proposed for use, with the name of manufacturer, trade name or model number of product or materials (final list may be provided at the pre-construction meeting if changing between specified products). Submit product data sheets, printed information, installation instructions, catalog cuts, or material color charts.
 4. Safety Data Sheets: Provide copies of SDS for each product that will be brought on-site.
 5. Project Schedule: Provide a breakdown of the project schedule timetable by **each major portion** of the work. As a minimum, include start and completion dates for each required task.
 6. Schedule of Values: Provide a breakdown of the project cost by **each major portion** of the Work such as mobilization, tear-off/temporary roof, insulation/membrane, flashings, sheet metal, etc. **DO NOT** list only roofing material and roofing labor.
 7. Sheet Metal Color Charts: Original, standard color charts, for selection by the Owner. This selection may not be made during the submittal approval process.
 8. Manufacturer's Certification: Submit a letter from the manufacturer stating their intent to warrant the project, as specified, including certification of the Contractor's standing as a licensed applicator of the specified roof system.
 9. Warranty: Submit a sample copy of the applicable manufacturer's warranty as well as a copy of the completed application for the warranty.
 10. Project Contacts: Provide all necessary contact numbers (cellular, pager, etc.) for key personnel involved in the project. Include an after-hours contact name and home telephone number in case of emergency. Also provide subcontractors' names, addresses, contact names, and phone/fax numbers, if applicable.
 11. Building Permit: Provide a copy of building permit. (Contractor is responsible for obtaining, and paying for, any required permits)

1.03 CONTRACTOR RESPONSIBILITIES

- A. The Contractor shall review product data and samples prior to submission. The Contractor shall initial, sign, or stamp the submittals to certify his review and acceptance.
- B. Verification of existing field measurements and conditions is the SOLE responsibility of the Contractor.
- C. The Contractor's responsibility for errors and omissions in submittals is not relieved by the Consultant's review or acceptance of submittals.
- D. Clearly indicate, in the submittals, any deviations from the requirements of the Project Documents caused by acceptance of substitutions, negotiations with the Owner after the Bid, etc. Any changes to the Project Documents must be confirmed by written Change Order.
- E. The Contractor shall not begin work prior to receipt of the approved submittals from the Consultant.

1.04 DISTRIBUTION OF SUBMITTALS

- A. The Consultant will retain three (3) copies of approved or approved-as-noted submittals, two for IRS office use, and one for the Owner, and will return the remaining copies to the Contractor.
- B. The Contractor shall be responsible for distributing submittals which carry the Consultant's approval, as required for construction or fabrication, to the Project Superintendent, Subcontractors, and material suppliers or distributors.

PART 2 - PRODUCTS

- A. Not Used.

PART 3 - EXECUTION

- A. Not Used.

END OF SECTION

SECTION 01400 QUALITY CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section provides requirements for the standards of quality for materials and workmanship for this project.

1.02 GENERAL

- A. The Contractor shall maintain quality control over his employees, suppliers, manufacturer's products, services, and site conditions to produce work of specified quality.

1.03 WORKMANSHIP

- A. Comply with recognized industry standards, except where specifications indicate more rigid standards or more precise workmanship.
- B. Perform the Work with personnel qualified to produce workmanship of specified quality.

1.04 APPLICATION QUALITY CONTROL

- A. The Contractor shall be experienced in all aspects of the type of work being performed.
- B. The Contractor shall be approved, by the roof system manufacturer, to install the specified roof system prior to the commencement of the Work. The Contractor shall also be certified to procure the specified warranty.
- C. The Contractor's foreman shall, at all times, have a complete set of Project Documents, including specifications, drawings, MSDS sheets and approved submittals for his use and reference, on the project site. The foreman shall produce these Project Documents upon request of either the Owner or the Consultant. Failure to do so will result in a violation of Item 1.07 of this Section.

1.05 MANUFACTURER'S FIELD SERVICES

- A. The roof system manufacturer shall make available, upon request, qualified personnel to observe field conditions, conditions of surfaces and installation and quality of workmanship.
- B. The roof system manufacturer shall make qualified personnel available to make necessary recommendations during the course of the project, and to perform a final review of the Work if requested.
- C. The manufacturer's representative shall submit a copy of his written report to the Consultant, listing observations and recommendations.

1.06 CONSTRUCTION OBSERVATION

- A. Construction observation shall be conducted by the Consultant on a periodic basis, as determined by agreement with the Owner. If the Contractor is cited for non-compliance with the specifications during the course of a site visit, all parties shall be notified with a copy of the observation report.

- B. In the event that the Contractor is cited for the same non-compliance item twice, or any three items total, the Owner may employ the Consultant to provide more frequent observation or full-time observation, to ensure compliance with the Project Documents. The cost of these additional visits may be deducted, in whole or in part, from the Contractor's final contract amount.

PART 2 - PRODUCTS

- A. Not Used.

PART 3 - EXECUTION

- A. Not Used.

END OF SECTION

SECTION 01500

SITE CONDITIONS AND CONTROLS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section provides requirements for the Contractor's operations at the project site, including the use of existing facilities and utilities, delivery and storage of materials and equipment and controls affecting work operations.

1.02 SECURITY AND ACCESS

- A. Security: follow the Owner's procedures and requirements, as established during the pre-construction conference.
- B. Maintenance of access and operations:
 - 1. During the performance of the Work, the Owner shall continue to perform his normal operations in the building. The Contractor shall maintain access to Owner-occupied areas at all times.
 - 2. Schedule demolition and roofing work with the Owner in such a manner as to allow his normal operations to continue without interruption.
- C. Maintenance of existing services:
 - 1. The Contractor shall, during the performance of the Work, not adversely affect the temperature and humidity of the building interior; dust and debris shall be controlled to prevent interference with normal operations.
 - 2. Notify the Owner a minimum of three (3) days prior to each required interruption of mechanical or electrical services in the building. Such interruptions shall occur only when, and for the length of time, approved by the Owner.
- D. Building access:
 - 1. Access to the building's interior shall be restricted to investigating leaks and performing portions of the Work which requires such interior access. The Contractor shall not have access to the building's interior during non-business hours unless previously arranged with the Owner.
 - 2. All-access to the project site shall be by way of exterior means provided by the Contractor.
 - 3. Restrict construction traffic over adjacent areas as designated by the Owner during the pre-construction conference.

1.03 MATERIAL STORAGE AND HANDLING

- A. Store materials on-site where specified in Section 01600 - "Materials and Equipment." Do not use any portion of the building interior for storage, unless specifically approved by the Owner.
- B. Stored materials shall be available for review by the Owner or Consultant at all times.
- C. Handle all materials properly and in original cartons or containers to prevent damage. Provide for all necessary rigging of materials and equipment supplied to the project site.

1.04 SANITARY FACILITIES

- A. The Contractor shall provide adequate, temporary chemical toilets for use by his employees. The toilets shall be in place at the project site when the Work is commenced.

- B. Upon completion of the Work, remove these facilities and all traces thereof.

1.05 TEMPORARY WATER

- A. The Contractor shall make arrangements with the Owner for water as required during the performance of the Work.
- B. The Owner shall be responsible for the cost of the water supply.
- C. The Contractor shall be responsible for providing hoses necessary for conveyance.

1.06 TEMPORARY ELECTRICAL POWER

- A. The Contractor shall make arrangements for electrical service, as necessary for the completion of the Work, as established during the pre-construction conference.
- B. In the event that the Owner agrees to provide access to electrical service, he shall pay all energy charges for power and/or lighting used by the Contractor.

1.07 ENVIRONMENTAL CONDITIONS

- A. Do not work in rain or snow, or in the presence of visible precipitation.
- B. Do not install materials marked "Keep from Freezing" when daily temperatures are predicted to fall below 40°F.
- C. Do not perform masonry work unless the temperature is above 35°F and rising. Make provisions to protect masonry work from freezing for a period of forty-eight (48) hours after completion. Remove any masonry work that has been exposed to freezing within forty-eight (48) hours of completion.

1.08 DEBRIS REMOVAL

- A. Remove debris promptly from the roof each day. Do not allow piled debris to accumulate.
- B. All removed material, unless specifically noted for retention by the Owner, becomes the property of the Contractor.
- C. Do not allow debris to enter roof drains, storm sewers, catch basins, etc.
- D. Provide at the site, prior to commencing removal of debris, a dumpster or dump truck to be located adjacent to the building where directed by the Owner.
- E. Protect the building surfaces at set-up and debris removal areas. Take all precautions necessary to prevent the scattering of roofing debris during removal operations.
- F. Remove dumpster or dump truck from the premises when full and dispose of at approved dumping or refuse area.
- G. Upon job completion, dumpster or dump truck and set-up area protection shall be removed from premises. All spilled or scattered debris shall be cleaned up immediately.

1.09 PARKING FACILITIES

- A. The Owner shall provide vehicle parking assignments and/or restrictions for the Contractor to the extent established during the pre-construction conference.

1.10 LEAK (WATER) DAMAGE CONTROL

- A. In the event of rain during the performance of the Work, make roof system watertight and immediately inspect the interior of the building for leaks. The Contractor shall continue to check on the watertight status of the roof system on a 24-hour basis.
- B. Coordinate procedures with the Owner for access to the building during non-business hours for emergency work.
- C. If leaks are discovered during rains. Immediately notify the Owner of the leak condition and perform emergency repairs on the roof system to stop leaks.

1.11 CLEANING

- A. The Contractor shall remove all spillage, overspray, or collections of dust or debris, and repair any damage inflicted on Owner-occupied spaces during the course of the Work.
- B. As soon as work on a roof area is complete, clean up all surfaces, remove equipment, materials, and debris, and restore to a condition suitable for use by the Owner as quickly as possible.

PART 2 - PRODUCTS

- A. Not Used.

PART 3 - EXECUTION

- A. Not Used.

END OF SECTION

SECTION 01600

MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section includes general requirements for delivery, storage, and handling of products to be used in the Work.

1.02 GENERAL

- A. Materials to be incorporated into the Work:
 - 1. Shall conform to applicable specifications and standards.
 - 2. Shall comply with the size, make, type and quality specified or shall be substitute products as specifically approved, in writing, by the Consultant.
 - 3. Fabricated products:
 - a. Fabricate and assemble in accordance with recognized industry standards.
 - b. Shall conform to the dimensions and configuration shown or specified or in accordance with an approved shop drawing submittals.
- B. Materials shall not be used for purposes other than those for which they are designed unless otherwise specified.

1.03 REUSE OF EXISTING MATERIALS

- A. Except as specifically indicated in the Construction Drawings or in Section 01010 - "Summary of Work," materials and equipment removed from the existing construction shall not be utilized in the completed Work.
- B. Where materials and equipment are specifically indicated to be reused in the Work:
 - 1. Use special care in removal, handling, storage, and reinstallation, to assure adequate and proper function in the completed Work.
 - 2. The Contractor shall be responsible for transportation, storage, and handling of products which require off-site storage, restoration or renovation.

1.04 MANUFACTURER'S INSTRUCTIONS

- A. Where Project Documents require that the installation of work shall comply with the manufacturer's printed instructions, obtain and distribute copies of those instructions to all parties involved in the installation, including two copies to the Consultant.
 - 1. Maintain one set of complete instructions at the project site until completion of the work.
 - 2. Include copies of the printed instructions with the appropriate Product Data submittal.
- B. Handle, install, connect, clean, condition and adjust products in strict accordance with such instructions, and in conformity with specified requirements.
 - 1. Should existing conditions or specified requirements conflict, in any way, with the manufacturer's instructions, request clarification from the Consultant. Failure to notify the Consultant shall be grounds for rejection of the completed work.
 - 2. Do not proceed with work without clear instructions.

1.05 TRANSPORTATION AND HANDLING

- A. Arrange for delivery of materials in accordance with construction schedules; coordinate to avoid conflict with the sequencing of the Work and conditions at the project site.
 - 1. When being transported to the project site by the Contractor, cover and protect materials in transit against the entrance of dirt and/or weather damage.
 - 2. Deliver materials in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 - 3. Immediately upon delivery, inspect shipments to assure compliance with requirements of the Project Documents and approved submittals, and to assure that materials are properly protected and undamaged.
- B. Handle all materials properly and in original cartons or containers to prevent damage.
- C. Provide equipment and personnel to handle materials using methods necessary to prevent soiling or damage to products or packaging.

1.06 STORAGE OF MATERIALS

- A. Stored materials shall be available for review by the Owner or Consultant at all times.
- B. Store rolled goods on ends only. Discard rolls which have been flattened, creased, or otherwise damaged.
- C. Do not use any portion of the building interior for storage, unless specifically approved by the Owner.
 - 1. Disperse materials on the rooftop to avoid concentrated loading of the structure.
 - 2. Do not place materials on newly completed roofing or on areas of roofing not included in the Work.
- D. Stack insulation and roll goods on pallets; neatly stack the wood on dunnage. Do not stack pallets.
- E. Store pallets of the new steel roof deck with one end elevated to provide drainage.
- F. Materials which, in the judgment of the Consultant, have been damaged, contaminated or improperly stored shall be immediately removed from the project site and replaced with new materials.

PART 2 - PRODUCTS

- A. Not Used.

PART 3 - EXECUTION

- A. Not Used.

END OF SECTION

SECTION 01700

CONTRACT CLOSE-OUT AND WARRANTIES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section includes requirements for specific administrative procedures, close-out submittals, warranties and other forms to be used at the final completion of the Work.

1.02 CLOSE-OUT PROCEDURES

- A. When the Contractor considers the Work complete, he shall submit **Written Notice** to the Consultant that:
1. He has reviewed the Project Documents and inspected the project for compliance with them;
 2. He certifies that the Work has been completed in accordance with the Project Documents; and
 3. He certifies that the project is complete, to his satisfaction, and is ready for the Final Review.
- B. The Consultant will perform the Final Review after receipt of the Contractor's **Written Notice** of project completion.
1. If the Consultant considers the Work to be complete and in accordance with the requirements of the Project Documents he shall notify the Contractor to produce the Contract Close-out submittals, as described below.
 2. If the Consultant considers the Work to be incomplete or not in accordance with the requirements of Project Documents:
 - a. He shall notify the Contractor, in writing, of the deficiencies.
 - b. The Contractor shall take immediate steps to remedy the identified deficiencies, and shall make the Work ready for re-review.
 - c. The Contractor shall submit a second **Written Notice** to the Consultant confirming that the identified deficiencies have been remedied.
 - d. The Consultant shall review the Work and, if complete, shall notify the Contractor to produce the Contract Close-out Submittals.
 3. Should the Consultant be required to perform a third review of the Work due to the failure of the Contractor to correct previously-identified deficiencies, the Owner may retain, from money due to the Contractor, such amount as necessary to compensate the Consultant for additional visits.

1.03 FINAL CLEANING

- A. Perform project clean-up prior to the Final Review:
1. Clean roof surface, gutters, downspouts, and drainage system free from foreign matter and debris.
 2. Remove all grease, mastics, adhesives, bitumen or other foreign materials from sight-exposed exterior surfaces of the building.
 3. Repair, patch and touch up marred surfaces to match adjacent finishes.
 4. Remove all waste and surplus material, rubbish, and construction facilities from the project site.
 5. Repair the grounds and landscaping in accordance with Section 02900 - "Grounds Repair."
 6. Prior to leaving the project site, conduct a thorough review of the roof surface and all sight-exposed exterior surfaces in work areas, to verify that the entire Work is clean.

1.04 CLOSE-OUT SUBMITTALS AND WARRANTIES

- A. Guarantees, Warranties, and Bonds:
1. The Contractor shall, upon project completion provide the following original warranty documents to the Consultant for the delivery to the Owner:
 - a. After the Consultant's acceptance, the Contractor shall deliver to the Consultant each manufacturer warranty required by individual Sections of the Project Specifications, to be effective once complete payment has been received by both the Contractor and material suppliers.
 - b. Contractors two (2) year workmanship warranty for labor and materials.
- B. Certification:
1. Lien Waivers: The Contractor shall submit final Waivers of Lien including those from subcontractors, material suppliers, or any other parties that may have lien rights against the property of the Owner, including a list of those parties. All waivers of lien shall be verified and duly executed before submittal.
- C. Final Application for Payment:
1. The Contractor shall submit a final Application for Payment form showing the remaining amount due.

1.05 CONTRACT CLOSE-OUT PACKAGE

- A. The Contractor shall submit the Contract Close-out package to IRS Corporate Office in accordance with these requirements. The Consultant shall review the Contract Close-out Package for accuracy and completeness.
1. Contract Close-out Packages that are accurate, complete and in proper form shall be approved by Consultant and submitted to Owner on a timely basis.
 2. Contract Close-out Packages that are not accurate, complete and in proper form, Consultant shall notify Contractor of its rejection and cause the Package to be set aside for forty-five (45) days, after which time Consultant shall again review corrected Contract Close-out Package if received and if correct, shall approve final payment and submit them to the Owner on a timely basis.

IRS CORPORATE OFFICE
Industrial Roofing Services, Inc.
13000 West Silver Spring Drive
Butler, Wisconsin 53007

PART 2 - PRODUCTS

- A. Not Used.

PART 3 - EXECUTION

- A. Not Used.

END OF SECTION

SECTION 02900

GROUNDS REPAIR

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section covers the removal, and replacement with like materials, of lawns, plantings, and pavement damaged by the Contractor during the performance of the Work.
- B. The cost of all repairs covered under this section shall be the **sole** responsibility of the Contractor. If the Contractor fails to make repairs to the Owner's satisfaction, the Owner reserves the right to retain, from money due to the Contractor, such amount as necessary to repair the grounds to their previous condition.

1.02 REQUIREMENTS

- A. Verify, with the Owner, at the pre-construction meeting, as to whether re-seeding will be acceptable for the repair of lawn areas; if not, areas shall be resodded.
- B. All plants and planting materials shall meet "Horticultural Standards" for number one grade nursery stock as adopted by the American Association of Nurserymen.
- C. All plants and planting materials shall meet or exceed applicable regulatory requirements and inspections for plant disease and insect control.

1.03 WORK SEQUENCING

- A. Do not proceed with permanent replacements until after the Contractor has cleaned and vacated the project site.
- B. Replacement plantings and/or sod:
 - 1. Place plantings and/or sod within forty-eight (48) hours of cutting; protect and maintain during transit and storage on the site to prevent dry-out.
 - 2. All plantings and/or sod remaining unplaced on the site longer than forty-eight (48) hours, as well as any yellowing or otherwise discolored plantings and/or sod, shall be discarded.

1.04 WARRANTY

- A. The Contractor shall maintain and warrant all work performed under this section for a period of ninety (90) days from the date of its completion. The Contractor shall be responsible for the correction of unsatisfactory landscaping materials or workmanship and shall repair such defects promptly upon notice, at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 ACCEPTABLE LAWN REPAIR PRODUCTS

- A. Provide topsoil which is:
 - 1. Natural, friable, and characteristic of soil on the project site;
 - 2. Not extremely acidic nor alkaline, nor containing toxic substances;
 - 3. Free from the subsoil, clay lumps, stones, roots, debris or other foreign objects;
 - 4. Contains 1/3, by volume, soil amendment - organic material, fortified with organic nitrogen.

- B. Provide fertilizer which is:
 - 1. Commercially-balanced 11-8-4 composition.
 - 2. Free-flowing to allow for mechanical spreading.

- C. Provide grass seed, if acceptable, which is:
 - 1. Free from noxious weeds, and recleaned;
 - 2. Grade A recent crop seed;
 - 3. Treated with appropriate fungicide at the time of mixing;
 - 4. In proportion, by weight:
 - a. Kentucky Bluegrass – 35%
 - b. Red Fescue – 20%
 - c. Hard Fescue – 20%
 - d. Improved Fine Perennial Ryegrass – 25%
 - 5. Covered with clean and weed-free straw mulch.

- D. Provide sod, if grass seed is not acceptable, which is:
 - 1. Well established, containing dense root systems;
 - 2. Exhibiting vigorous, healthy root growth;
 - 3. Free of noxious weeds, objectionable grasses, grubs, diseases or injurious insects.

2.02 ACCEPTABLE PLANTING REPAIR PRODUCTS

- A. Provide trees and/or plants which are:
 - 1. Of the same species and size of growth to match those being replaced;
 - 2. Well established, containing dense root systems;
 - 3. Exhibiting vigorous, healthy root growth;
 - 4. Free of grubs, diseases or injurious insects.

- B. Provide planting bed cover consisting of:
 - 1. Ground mulch chips;
 - 2. Shredded bark.

2.03 VEHICLE & PEDESTRIAN PAVEMENTS

- A. Asphalt pavement:
 - 1. Base course aggregate:
 - a. Crushed limestone (traffic-bond) or crushed concrete, containing no pieces over three-quarter (3/4) inch in greatest dimension, for base courses less than four (4) inches thick.
 - b. Crushed limestone, containing no pieces over one and one-half (1-1/2) inches in greatest dimension, for base courses over four (4) inches thick.
 - 2. Paving asphalt:
 - a. Shall comply with applicable sections of the State Highway Specifications for binder and surface-grade paving asphalt mixes.
 - b. Shall be hot, plant-mixed asphalt paving material; temperature shall be 290-320°F when leaving the plant and 280°F, minimum, at time of placement.

- B. Concrete pavement: Compressive strength shall achieve a minimum of 4000 psi in twenty-eight (28) days. Mix concrete materials in accordance with ASTM C94, to comply with the following:
 - 1. Slump: three (3) inches, plus one (1) inch or minus one-half (1/2) inch.
 - 2. Air entrainment: Maximum five percent (5%) at time of placement.
 - 3. Maximum aggregate size: 3/4 inch.
 - 4. Minimum cement content: 440 lbs./cu. yd.
 - 5. Maximum fly ash content: 100 lbs./cu. yd.
 - 6. Maximum water-to-cementitious material ratio (W/C): 0.55.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine the project site and verify satisfactory conditions for performance of the work.
- B. Notify the Owner and Consultant of pre-existing defects or conditions which may interfere with the requirements of this section. Absence of notice will constitute the Contractor's acceptance of the site.
- C. Verify the existence and location of underground utilities, water and gas lines, fire sprinkler systems, pavement heating devices, and lawn sprinkling systems.

3.02 PREPARATION

- A. Provide protection of existing adjacent trees, plantings, lawns and pavement prior to commencing repairs.
- B. Lawn replacement areas:
 - 1. Fill ruts and depressions with topsoil. Work the soil to a depth of not less than three (3) inches with a rototiller.
 - 2. Remove stones, debris, and foreign objects larger than one (1) inch in diameter from the lawn repair area prior to seeding or sodding.
 - 3. Grade the repair area, thoroughly remove ridges and depressions, and make the area a smooth, continuous, firm plane that ensures proper drainage.
- C. Planting replacement areas:
 - 1. Remove existing damaged trees, plants or ground cover. Remove large root systems, stones, debris, of foreign objects larger than one (1) inch in diameter from the area prior to installation of new plantings.
 - 2. Remove the topsoil, to a depth of not less than three (3) inches, from an area not less than three (3) times the width of the root ball of the new planting.
 - 3. Dig a hole in the center of the prepared area:
 - a. For a one (1) gallon plant container, twelve (12) inches wide and deep.
 - b. For a five (5) gallon plant container, twenty (20) inches wide and deep.
 - c. For a fifteen (15) gallon plant container, thirty (30) inches wide and deep.
 - d. For larger trees, 1-1/2 times the root ball diameter wide and deep.

3.03 LAWN REPLACEMENT - SEEDING

- A. When preparations are complete, seed the repair area:
 - 1. Sow the grass seed over the area with a mechanical seeder at the rate of five (5) pounds per thousand (1,000) square feet.
 - 2. Promptly after seeding, water until the soil is saturated to a depth of two (2) inches; apply water slowly to prevent erosion of the seed bed.
 - 3. Apply the specified fertilizer at the rate of twenty (20) pounds per thousand (1,000) square feet; rake lightly into the soil.
 - 4. Cover the repair area with chopped straw mulch approximately 1/2-inch thick.
 - 5. Make arrangements to keep the seed beds moist throughout the germination process.

3.04 LAWN REPLACEMENT - SODDING

- A. When preparations are complete, install sod:
1. Fit sod pieces tightly together so that no joint is visible, with alternate courses staggered. Compact sod to eliminate all air pockets, provide a true and even surface, and ensure knitting without displacement of sod or deformation of the surface of sodded areas.
 2. Fill cracks between sod pieces with screened topsoil following compaction.
 3. Excess soil shall be worked into the grass surface.
 4. Bury edges of sod pieces flush with adjacent soil.
 5. After the sod has been placed, water with a fine spray until the soil is saturated to a depth of two (2) inches.
 6. Make arrangements to keep the sod moist until it is rooted in place.

3.05 TREE, PLANT AND GROUND COVER REPLACEMENT

- A. When preparations are complete, install planting:
1. Fill the bottom of the hole with a backfill mixture, consisting of three (3) parts soil (removed from the hole) and one (1) part soil amendment, to support the root ball so that the top of the ball is just above or equal to the existing grade for drainage.
 2. Place the root ball of the planting into the hole and adjust for height and position of the planting. Work excess soil to the sides for support of the root ball.
 3. Fill the remaining area of the hole with backfill mixture around the root ball; tamp firmly to eliminate all air pockets. When the hole is 2/3 full, thoroughly water the plant to saturate the soil.
 4. Fill the remainder of the area with topsoil and tamp into place until the surface is slightly sloping to the edge of the surrounding area.
 5. Remove excess soil from the area.
 6. Stake trees over four (4) feet high with a minimum of two (2) stakes and ties. Drive stakes a minimum of twelve (12) inches deep; provide protection for the trunk at the tree-tie location.
 7. Apply the specified planting bed cover to a minimum depth of two (2) inches, evenly spread over the entire area.
 8. Water with a fine spray to ensure that the soil is thoroughly saturated.
 9. Make arrangements to water the planting regularly until it is rooted in place.

3.06 PAVEMENT REPLACEMENT

- A. Removal and subgrade preparation:
1. Remove damaged areas of paving, as well as areas of unsound pavement and areas heavily stained with grease and oil.
 2. Cut edges to a straight, vertical edge of 1/2-inch or more, by means of mechanical sawing. Excavate a minimum of six (6) inches below the existing, surrounding pavement surface, or as necessary to reach sound base material.
 3. Provide new aggregate subbase as required to fill within three (3) inches of existing, surrounding asphalt pavement surface or to within four (4) or six (6) inches of existing, surrounding concrete pavement surface, depending on slab thickness. Compact aggregate subbase to 95% density.
- B. Asphalt paving replacement:
1. Place the new asphalt paving material in two lifts:
 - a. The first lift shall be 1-3/4 inches, after compaction, binder-grade asphalt.
 - b. The second lift shall be 1-1/4 inches, after compaction, surface-grade asphalt.
 2. Spread material in a manner which requires minimal handling.
 3. After the material is placed, to the proper depth, roll until the surface is hard, smooth, unyielding, and true to the specified thickness and elevation of the existing, surrounding asphalt pavement.
 4. Roll surface layer in at least two directions until no roller marks are visible.

5. Finish paving surface shall be free from “birdbaths,” with no variations of more than 1/8-inch in six (6) feet.
 6. Seal the interface of the existing pavement with hot rubberized crack filler to prevent water infiltration.
- C. Concrete paving replacement:
1. Place wooden forms where necessary, staked into the ground, to provide straight and true edges for new pavement.
 2. Dampen the subgrade material before placing concrete.
 3. Pour concrete over the prepared subgrade. Tamp the freshly-placed concrete, using a heavy tamper, until at least 3/8-inch of mortar is brought to the surface.
 4. Trowel surface and screed with a straightedge until depressions and irregularities are worked out and the surface is true to specified thickness and elevation of the existing, surrounding concrete pavement.
 5. Float surface to a compact, smooth surface.
 6. When the concrete has set sufficiently, provide a non-slip, “broomed” surface finish.

END OF SECTION

SECTION 07531

ADHERED ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section Includes:
 - 1. Adhered EPDM membrane roofing system.
 - 2. Roof cover board.
 - 3. Flashings.

1.03 REFERENCES

- A. American Society of Civil Engineers (ASCE) – ASCE 7 – Minimum Loads for Buildings and Other Structures, Current Revision.
- B. ANSI/SPRI WD-1 “Wind Design Standard for Roofing Assemblies”.
- C. ASTM International (ASTM):
 - 1. ASTM C 208 - Standard Specification for Cellulosic Fiber Insulating Board.
 - 2. ASTM C 578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
 - 3. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 - 4. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
 - 5. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
 - 6. ASTM D 624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
 - 7. ASTM D 816 - Standard Test Methods for Rubber Cements
 - 8. ASTM D 4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
 - 9. ASTM D 4637 - Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane.
 - 10. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.
- D. International Code Council (ICC):
 - 1. International Building Code (IBC).
- E. National Roofing Contractors Association (NRCA) - Low Slope Roofing and Waterproofing Manual, Current Edition.
- F. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- G. Underwriters Laboratories (UL):
 - 1. TGFU R1306 - "Roofing Systems and Materials Guide".
 - 2. UL-790 - Standard Test Method for Fire Tests of Roof Coverings.

1.04 DEFINITIONS

- A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section

1.05 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.
- C. Roofing System Design: Provide membrane roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE/SEI 7.

1.06 SUBMITTALS

- A. Product Data: For each type of product indicated including sheet membrane, elastic flashing, joint cover sheet, and joint and temperature range for application of membrane insulation, surfacing and fasteners.
- B. Qualification Data: For qualified Installer and manufacturer.
- C. Manufacturer Certificate: Signed by roofing manufacturer certifying that membrane roofing system complies with requirements specified in Section 01700 "Contract Closeout and Warranties".
 - 1. Submit evidence of complying with performance requirements.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.
- E. Maintenance Data: For membrane roofing system to include in maintenance manuals.
- F. Manufacturer's Instructions: Inspection, preparation and installation instructions.
- G. Warranties: Sample of warranty(s).

1.07 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for membrane roofing system identical to that used for this Project.
 - 1. Company specializing in manufacturing the products specified in this section with a minimum of 10 years of documented experience.
- B. Installer Qualifications:
 - 1. The installer shall be a firm that is approved, authorized, or licensed by the specified membrane roofing system manufacturer to install the manufacturer's product and that is eligible to receive the specified manufacturer's warranty. The installer shall be the firm submitting the bid form.
 - 2. The company shall be a firm that specializes in performing the work of this section with a minimum of 10 years' experience performing this work.
 - 3. The installer shall submit a copy of certification confirming the bidder's standing as a licensed applicator for the specified manufacturer and their eligibility to receive the

specified warranty.

- C. Perform work in accordance with NRCA Roofing and Waterproofing Manual and manufacturer's printed instructions.
 - 1. Maintain 1 copy on site.
- D. Source Limitations: Obtain all components including roof insulation fasteners for membrane roofing system from same manufacturer as membrane roofing or approved by membrane roofing manufacturer.
- E. Exterior Fire-Test Exposure: ASTM E 108, Class A for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.
- F. Pre-installation Roofing Conference: Conduct conference at Project site.
 - 1. Meet with Owner, Consultant, Owner's insurer if applicable, testing and inspecting agency representative, roofing installer, roofing system manufacturer's representative, deck installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 - 5. Review structural loading limitations of roof deck during and after roofing.
 - 6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
 - 7. Review governing regulations and requirements for insurance and certificates if applicable.
 - 8. Review temporary protection requirements for roofing system during and after installation.
 - 9. Review roof observation and repair procedures after roofing installation.

1.08 DELIVERY, STORAGE, AND HANDLING

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

1.09 PROJECT 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.
- B. Coordination: Coordinate the work with installation of associated counter flashings installed by other sections as the work of this section proceeds.

1.10 FIELD CONDITIONS

- A. Field verify locations and dimensions of items critical to the design, fit or assembly of the work of this section. Complete field dimension prior to fabrication of components. Verify field measurements are as indicated in shop drawings.

1.11 WARRANTY

- A. Special Warranty: Manufacturer's standard or customized form, without monetary limitation, in which manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within specified warranty period.
 - 1. Special warranty includes membrane roofing, base flashings, roof insulation, fasteners, cover boards, substrate board, roofing accessories, and other components of membrane roofing system, including workmanship of installation.
 - 2. Warranty Period: **Ten (10) 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 Work of this Section, including all components of membrane roofing system such as membrane roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, roof pavers, and walkway products, for the following warranty period:
 - 1. Warranty Period: **Two (2) Years** from date of Substantial Completion.
 - 2. Correct work within a two year period after the Date of Substantial Completion.

PART 2 - PRODUCTS

2.01 EPDM MEMBRANE ROOFING

- A. EPDM: ASTM D 4637, Type I, non-reinforced, uniform, flexible EPDM sheet.
 - 1. Acceptable manufacturers:
 - a. Carlisle SynTec Incorporated.
 - b. Holcim Elevate (formerly Firestone Building Products)
 - c. Mule-Hide Products
 - 2. Thickness: 60 mils nominal.
 - 3. Type: Low Slope Fire Retardant
 - 4. Exposed Face Color: Black.

2.02 AUXILIARY MEMBRANE ROOFING MATERIALS

- A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
 - 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction or building owner's preference.
 - 2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - a. Plastic Foam Adhesives: 50 g/L.
 - b. Gypsum Board and Panel Adhesives: 50 g/L.
 - c. Multipurpose Construction Adhesives: 70 g/L.

- d. Fiberglass Adhesives: 80 g/L.
 - e. Contact Adhesive: 80 g/L.
 - f. Single-Ply Roof Membrane Sealants: 450 g/L.
 - g. Nonmembrane Roof Sealants: 300 g/L.
 - h. Sealant Primers for Nonporous Substrates: 250 g/L.
 - i. Sealant Primers for Porous Substrates: 775 g/L.
 - j. Other Adhesives and Sealants: 250 g/L.
- B. Sheet Flashing: 60-mil thick EPDM, partially cured or cured, according to application.
 - C. Bonding Adhesive: Manufacturer's standard, solvent or water based as required by Owner.
 - D. Seaming Material: Manufacturer's standard, synthetic-rubber polymer primer and 3-inch- (75-mm-) wide minimum, butyl splice tape with release film.
 - E. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.
 - F. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.
 - G. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet 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.

2.03 COVER BOARD

- A. General: Preformed boards manufactured or approved by EPDM membrane roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.
- B. Acceptable products:
 - 1. Gypsum fiber roof board.
 - a. Acceptable products:
 - 1) Dens Deck Prime, by Georgia-Pacific Corporation
 - 2) Securock, by USG
 - 3) Or preapproved equal
 - b. Thickness: ¼"

2.04 COVER BOARD ACCESSORIES

- A. General: Furnish accessories recommended by insulation manufacturer for intended use and compatibility with membrane roofing.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion resistance provisions in FM Approvals 4470, designed for fastening cover boards to substrate, and acceptable to roofing system manufacturer.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 - 1. Verify that roof openings and penetrations are in place and curbs are set and braced and that 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 those nailers match thicknesses of insulation.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing 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. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.03 COVER BOARD INSTALLATION

- A. Coordinate installing membrane roofing system components so cover board is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with membrane roofing system and cover board manufacturer's written instructions for installing cover board.
- C. Install insulation with long joints of cover board in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards.
 - 1. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
- D. Mechanically Fastened Cover Board: Mechanically fasten units over substrate in accordance with ASCE/SEI Standard 7-05 and per manufacturer's requirements.

3.04 ADHERED MEMBRANE ROOFING INSTALLATION

- A. Place membrane without stretching over the acceptable substrate, and allow to relax a minimum of 30 minutes before bonding.
- B. Start installation of membrane roofing in presence of roofing system manufacturer's technical personnel.
- C. Accurately align membrane roofing, without stretching, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. After making sure the sheet is placed in its final position, fold it back evenly onto itself so as to expose the underside. (Note: The sheet fold should lay smooth so as to minimize the formation of wrinkles during and after installation.)
- E. Sweep the mating surface of the membrane with a stiff broom to remove excess dusting agent (if any) or other contaminants from the mating surface.
- F. Apply bonding adhesive at about the same time to both the exposed underside of the sheet and the substrate to which it will be adhered so as to allow approximately the same drying time. Apply bonding adhesive evenly so as to avoid globs.
- G. Apply bonding adhesive and roll the adhesive on to the mating surfaces or spray on bonding adhesive and then roll out with a solvent resistant paint roller.
- H. Care must be taken not to apply bonding adhesive over an area that is to be later cleaned and spliced to another sheet or flashing.

- I. Apply bonding adhesive in accordance with manufacturer's specifications. Coverage rate will differ with variance of substrates and climatic conditions.
- J. Allow bonding adhesive to flash off until tacky. Touch the bonding adhesive surface with a clean, dry finger to be certain that the adhesive does not stick or string. As you are touching the adhesive, pushing straight down to check for stringing, also push forward on the adhesive at an angle to ensure that the adhesive is ready throughout its thickness. If either motion exposes wet or stringy adhesive when the finger is lifted, then it is not ready for mating. Flash off times will vary depending on ambient air conditions.
- K. Starting at the fold, roll the previously coated portion of the sheet into the coated substrate slowly and evenly so as to minimize wrinkles.
- L. To ensure proper contact, compress the bonded half of the sheet to the substrate with a stiff push broom.
- M. Fold the unadhered half of the membrane sheet back onto itself, and repeat the bonding procedure to complete the bonding of the sheet.
- N. Apply membrane roofing with side laps shingled with slope of deck where possible.
- O. Seam Installation (Tape): Clean both faces of splice areas, apply splice primer as required, and firmly roll side and end laps of overlapping membrane roofing according to manufacturer's written instructions to ensure a watertight seam installation.
- P. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.

3.05 FIELD QUALITY CONTROL

- A. Testing: Owner may engage a qualified independent testing agency to perform inspections.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
- C. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.
- D. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.06 PROTECTION AND CLEANING

- A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Consultant and Owner.
- B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements, repair substrates and repair or reinstall membrane 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.

3.07 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS <Insert name> of <Insert address>, 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.>
 4. Address: <Insert address.>
 5. Area of Work: <Insert information.>
 6. Acceptance Date: <Insert date.>
 7. Warranty Period: Two (2) Years.
 8. Expiration Date: <Insert 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 he will, at his 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 55mph;
 - 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 <Insert day> day of<Insert month>, <Insert year>.
1. Authorized Signature: <Insert signature>
 2. Printed Name: <Insert name>
 3. Title:
 4. Date of Signature

END OF SECTION

SECTION 07620

SHEET METAL FLASHING AND TRIM

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section Includes:
 - 1. Formed roof flashing and trim.

1.03 PERFORMANCE REQUIREMENTS

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.
- B. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- C. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

1.04 QUALITY ASSURANCE

- A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.
- B. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Section 01200 "Project Meetings."
 - 1. Meet with Owner, Consultant, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of other building components.
 - 2. Review methods and procedures related to sheet metal flashing and trim.
 - 3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
 - 4. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.

- B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

1.06 COORDINATION

- A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.
- B. Where sheet metal flashings are incorporated into other building systems, installation shall commence concurrently with the installation of such building components to prevent delays.
- C. Where sheet metal flashings are designed to provide counter flashing, installation shall commence after the installation of other building components has been completed in accordance with the specifications.

1.07 SEQUENCING AND SCHEDULING

- A. Owner will occupy portions of building immediately adjacent to work area. Conduct activities so Owner's operations will not be disrupted. Provide not less than 48 hours' notice to Owner of activities that will affect Owner's operations.

PART 2 – PRODUCTS

2.01 SHEET METALS

- A. Prefinished galvanized: AISA-G90 Extra Smooth, minimum spangle, tension leveled, hot-dipped galvanized steel conforming to ASTM A653:
 - 1. Finish shall consist of primer on both sides, minimum 0.25-mil thickness, followed by a 70% Kynar 500® resin premium fluoropolymer (PVDF) coating on one side to achieve a 1.0 mil (+/- 0.1-mil) dry-film thickness.
 - a. Manufacturer's standard color which will be selected by the Owner.
- B. Galvanized steel sheet: AISA-G90 Extra Smooth, minimum spangle, tension leveled, hot-dipped galvanized steel conforming to ASTM A653.
- C. Termination bar:
 - 1. Extruded aluminum compression bar, 0.100-inch minimum thickness and 1-1/4 inch width, with caulking cup.

2.02 UNDERLAYMENT MATERIALS/CONCEALED FLASHING

- A. ASTM D 4637, Type I, non-reinforced, uniform, flexible EPDM sheet

2.03 FASTENERS

- A. Unless specified otherwise in the Construction Drawings or elsewhere in the project specifications, sheet metal fasteners shall comply with this section.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads:
 - 1. Exposed Screw Fasteners: Heads matching color of sheet metal by means of plastic caps or factory-applied coating. Use only where concealed fasteners cannot be used.

- a. Sheet Metal to Sheet Metal: Self Drilling, self-tapping, gasketed #10 Hex Washer Head sheet metal screw. Length as required for application, but no less than three threads pitches into metal.
 - b. Sheet Metal to Wood: Gasketed Hex Washer Head wood screw. Size and length as required for application but no less than #10 size and 1 inch in length.
 - c. Sheet Metal to masonry: Corrosion resistant pre-drilled gasketed masonry screws with hex washer head, minimum 3/16" thickness; length to provide embedment as required by fastener manufacturer.
2. Concealed Screw Fasteners:
- a. Sheet Metal to Sheet Metal: #10 Self Drilling, self-tapping, Phillips Pan Head sheet metal screw. Length as required for application, but no less than three threads pitches into metal.
 - b. Sheet Metal to Wood: #10 Phillips Pan Head Wood Screw. Size and length as required for application, but no less than #10 size and 1 inch in length.
 - c. Sheet Metal to masonry: Corrosion resistant pre-drilled masonry screws with hex washer head, minimum 3/16" thickness; length to provide embedment as required by fastener manufacturer.
3. Nails: for use where roof edge flashing, cleats, and other flashings are fastened to wood substrate and whose nailing flanges are covered by roof materials or finish metal.
- a. Standard round wire; minimum 12 gauge shank, smooth, barbed or deformed shank, with heads 3/8 inch (9mm) in diameter.
 - b. Length: 1.25-inches
- C. General fastener requirements (unless otherwise noted):
1. Fastener types for given metal types:
 - a. Galvanized or Prepainted, Metallic-Coated Steel: Use stainless-steel fasteners.
 - b. Aluminum: Use aluminum or stainless-steel fasteners.
 - c. Stainless Steel: Use stainless-steel fasteners.
- D. Blind Fasteners: High-strength aluminum, galvanized or stainless-steel rivets.

2.04 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.
- B. Elastomeric Sealant
1. Polyurethane, ASTM C 920, Grade NS, Class 25, Type S.

2.05 FABRICATION, GENERAL

- A. General:
1. Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.
 2. All finish flashings, where applicable, must be fully engaged and continuously crimped onto the underlying cleat.
 3. All points where the sheet metal flashing ends or transitions into a different flashing detail shall be flashed with a field-formed sheet metal closure. The use of mastic or excessive caulking shall not be acceptable.
- B. 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.

- C. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
- D. Sealed Joints: Form nonexpanding but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.
- E. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with elastomeric sealant concealed within joints.
- F. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.
- G. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
 - 1. Thickness: Unless specified otherwise, as recommended by SMACNA's "Architectural Sheet Metal Manual" but not less than thickness of metal being secured.

2.06 ROOF SHEET METAL FABRICATIONS

- A. Drip Edge:
 - 1. Fabricate in minimum 96-inch (2400-mm) long, but not exceeding 10-foot (3-m) long, sections.
 - 2. Dimensions:
 - a. Fabricate to the profile shown in the Construction Drawings.
 - b. Nailing flange minimum length 3"
 - 3. Fabricate from the following material:
 - a. Prefinished Galvanized: 24 gauge; 0.0239 inch (0.607 mm) thick
 - 4. Joint Style:
 - a. Lap 2-inches (50-mm).
 - 1) At lap, notch the bottom hem of one section 2-inches to accommodate the adjacent section.
 - 2) Apply a continuous bead of sealant between lapped sections.
 - 3) Hook the overlying sheet metal flashing onto the adjacent sheet metal flashing section; creating a 2-inch minimum lap.
- B. Cleats:
 - 1. Fabricate in minimum 96-inch (2400-mm) long, but not exceeding 10-foot (3-m) long, sections.
 - 2. Dimensions:
 - a. Fabricate to the profile shown in the Construction Drawings.
 - 3. Fabricate from the following material:
 - a. Galvanized: 22 gauge; 0.0309 (0.784 mm) thick
 - 4. Joint Style:
 - a. Butt, with 1/2" gap between sections.
- C. Shop-Fabricated Gutters:
 - 1. Fabricate in minimum 96-inch (2400-mm) long, but not exceeding 10-foot (3-m) long, sections.
 - 2. Fabricate to dimensions shown on the Construction Drawings and/or as follows:
 - a. Shall be either high-back or low-back style as indicated on the Construction Drawings.
 - b. Depth and width shall match existing, and shall have a 3:4 depth (face)-to-width ratio; minimum width is 4-inches.
 - c. Front edge of the gutter shall be a minimum of 1-inch lower than the back leg/apron to allow overflow.

- d. Front face shall be hemmed 1-inch, minimum, to provide strength to the gutter and for attachment of the gutter straps/spreaders/concealed hangers.
 3. Fabricate from the following material:
 - a. Prefinished Galvanized: 24 gauge; 0.0239 inch (0.607 mm) thick
 4. Accessories:
 - a. Fabricate gutter straps 1-1/2 inches wide from 16 gauge galvanized steel.
 - b. Shop-fabricate sections with corners, end closures or expansion joint closures using the applicable solid joint procedure described below.
 - c. Fabricate downspout outlets to extend 3-inches below gutter.
 5. Joint Style:
 - a. Solid joints:
 - 1) Lap sheet metal sections 2-inches, minimum.
 - 2) Install butyl tape caulk between sections.
 - 3) Fasten with pop-rivets on 2-inch maximum centers.
- B. Downspouts:
1. Fabricate from the following material:
 - a. Prefinished Galvanized: 24 gauge; 0.0239 inch (0.607 mm) thick
 2. Fabricate or roll-form:
 - a. Dimension: minimum 3"x4"
 - b. Style:
 - 1) Rectangular
 3. Fabricate solid elbow units to extend 6-inches minimum, in each direction, measured from the center of the joint.
 4. Joint style:
 - a. Solid joints:
 - 1) Lap sheet metal sections 2-inches, minimum.
 - 2) Install butyl tape caulk between sections.
 - 3) Fasten with pop-rivets on 2-inch maximum centers.
- C. Fascia Cladding:
1. Fabricate in minimum 96-inch (2400-mm) long, but not exceeding 10-foot (3-m) long, sections.
 2. Dimensions
 - a. Fabricate to the profile shown in the Construction Drawings.
 3. Fabricate from the following material:
 - a. Prefinished Galvanized: 24 gauge; 0.0239 inch (0.607 mm) thick
 4. Joint Style:
 - a. Lap sheet metal sections 2-inches, minimum.
 - b. At lap, notch the bottom hem of one section 2-inches back from the end, to accommodate the adjacent section.
 - c. Apply a continuous bead of sealant between lapped sections.
 - d. Hook the overlying sheet metal flashing onto the adjacent sheet metal flashing section; creating a 2-inch minimum lap.

2.07 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize

contrast.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, to verify actual locations, dimensions and other conditions affecting performance of work:
 - 1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system:
 - 1. Torch cutting of sheet metal flashing and trim is not permitted.
- B. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
- C. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and elastomeric sealant.
- D. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- E. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with elastomeric sealant concealed within joints.
- F. Seal joints with elastomeric sealant as required for watertight construction.
 - 1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement either way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).

3.03 FABRICATED ROOF FLASHING INSTALLATION

- A. General: Install sheet metal roof flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.
- B. Drip edge:
 - 1. Set sections in continuous bead of water cut-off mastic on roof membrane.
 - 2. Fasten nailing flange with two (2) rows of roofing nails 6-inches on center; staggered.

- C. Cleats:
 - 1. Install sections in straight lines and fasten to substrate:
 - a. When cleat is fabricated with one nailing flange, fasten with two (2) rows 6-inches on center, staggered, with roofing nails.
 - b. Where cleat has both a vertical and horizontal flange, fasten both flanges at 6-inches on center with roofing nails.

- D. Shop fabricated gutters
 - 1. At installation, join main sections using the applicable solid joint procedure described above. In addition,:
 - a. Install with expansion joints to create gutter segments sixty feet (60'-0") in length, maximum, with no more than forty feet (40'-0") between the downspout and the gutter end or expansion joint.
 - b. Hang gutter segments with a positive slope-to-drain between the gutter end or expansion joint and the downspout outlet(s).
 - c. Install gutter straps at 24-inches on center.
 - 1) Predrill and rivet to outer flange with ¼-inch stainless steel rivets.
 - 2) Fasten to nailer through back leg of gutter with hex head stainless steel weathertite, washered, EPDM gasketed wood screws.
 - d. Where required, cut openings and join downspout outlets to bottom of gutter using the applicable solid joint procedure described above.

- E. Downspouts
 - 1. At installation, join sections using the lapped joint procedure described above.
 - 2. Secure downspouts to wall at 10'-0" on center maximum with straps per approved shop drawings or submittals.
 - 3. Install corners and lengths as needed to ensure downspouts follows the profile of the exterior of the building and/or matches existing downspouts location/direction.

- F. Fascia Cladding
 - 1. Coordinate installation with installation of other roofing materials.
 - 2. Interlock bottom edge with continuous cleat, where applicable. Ensure bottom hem is fully crimped onto bottom edge of cleat.
 - 3. Fasten top edge at 24-inches on center with roofing nails.

3.04 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.
- E. Repair of deficiencies:
 - 1. Installation or details noted as deficient during Final Review must be repaired and corrected by Contractor, and made ready for review, within five (5) working days.

END OF SECTION