

RIVERVIEW GARDENS

SCHOOL DISTRICT

1370 Northumberland – St. Louis, Missouri 63137
Telephone: 314-869-2505 ☎ Fax: 314-388-6001

Note: The Riverview Gardens School District will not accept any bids which are received after the published bid opening time and date indicated below and will not be responsible for any bids mailed or delivered to any address other than those above. No exceptions!

FORMAL BID PROPOSAL BID OPENING SCHEDULE

BID NUMBER: RFP 268

BID TITLE: Roof Replacement/Tuckpointing at FCRC

MANDATORY BID CONFERENCE: August 17, 2022 at 10:00 a.m.,
Riverview Gardens High School 1218 Shepley Drive, St. Louis,
MO 63137

BID OPENING DATE: September 1, 2022

BID OPENING TIME: 2:00 p.m. CST

VENDOR NAME: _____

MAILING ADDRESS: _____

VENDOR TELEPHONE NO.: _____

VENDOR FAX NO.: _____

VENDOR E-MAIL ADDRESS _____

All items contained in this bid shall be as specified or RGSD approved equal. For any item(s) proposed which is other than as specified, a complete and detailed cut and description for each item(s) must accompany the bid, if the item(s) is to be considered. Please carefully read each section of this bid.

I/WE UNDERSTAND AND AGREE THAT NEITHER THE AWARD OF THIS BID TO ME/US BY THE DISTRICT'S BOARD OF TRUSTEES NOR RECEIPT BY ME/US OF A NOTICE OF ACCEPTANCE

OF THIS BID SHALL CONSTITUTE THE MAKING OF A CONTRACT BETWEEN RGSD AND ME/US, WHICH SHALL BE CONDITIONED UPON THE EXECUTION BY BOTH RGSD AND ME/US OF A FORMAL, WRITTEN AGREEMENT.

PLEASE SUBMIT ORIGINAL BID DOCUMENTS AND THREE COPIES.

PROPOSAL FORM

**Board of Trustees
Riverview Gardens School District
St. Louis, Missouri**

Ladies and Gentlemen:

I/We, propose to furnish and deliver all items and/or to perform all services according to all sections of this bid document (Proposal Form, Instructions and Conditions, detailed written Specifications, and Addenda if applicable) and in the quantities at the indicated prices, as called for in the document(s). All quantities indicated have been checked very closely, and both unit price and total price (where requested) have been submitted with the understanding that we shall be responsible for making complete and satisfactory delivery accordingly, within the timeframe agenda (if applicable).

All items contained in this bid shall be as specified or RGSD approved equal. For any item(s) proposed which is other than as specified, a complete and detailed cut and description for each item(s) must accompany the bid, if the item(s) is to be considered. Please carefully read each section of this bid.

I/WE UNDERSTAND AND AGREE THAT NEITHER THE AWARD OF THIS BID TO ME/US BY THE DISTRICT'S BOARD OF TRUSTEES NOR RECEIPT BY ME/US OF A NOTICE OF ACCEPTANCE OF THIS BID SHALL CONSTITUTE THE MAKING OF A CONTRACT BETWEEN RGSD AND ME/US, WHICH SHALL BE CONDITIONED UPON THE EXECUTION BY BOTH RGSD AND ME/US OF A FORMAL, WRITTEN AGREEMENT.

Respectfully submitted,

COMPANY _____

ADDRESS _____

PHONE _____

FAX _____

E-MAIL ADDRESS _____

SIGNED _____

WRITE OUT
SIGNATURE _____

TITLE _____

DATE _____

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CIRCLE THE OPERATING STATUS OF YOUR BUSINESS AS INDICATED BELOW:

MINORITY OWNED WOMAN OWNED NON-MINORITY

REQUEST TO ADD VENDOR (Substitute Form W-9)

To be completed by RGSD School/Location:

Location Requesting Vendor Addition ___ Multiple locations within District _____

To Be Completed by Vendor: Please complete all sections and return with submitted proposal.

Will your company accept purchase orders? ___ Yes ___ No

Will your company accept purchasing/credit card? ___ MC/Visa ___ American Express

Note: An original RGSD purchase order is required for all material purchases. Do not accept any order without an original RGSD purchase order.

Product Line _____

PARENT COMPANY NAME: _____

D/B/A NAME: _____

Order Address: _____

City: _____ State: _____ Zip: _____

Physical Address: _____

City: _____ State: _____ Zip: _____

Contact Person: _____

REMITTANCE ADDRESS:

Vendor Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: (____) _____ Fax (____) _____

Email Address: _____

Federal Tax ID/Social Security #: _____

Select One

Minority Code: ___ Woman & Minority ___ Minority

 ___ Non-Minority ___ Woman

Select One

Type of Entity ___ Individual/Sole Proprietor ___ Corporation

 ___ Partnership ___ Other _____

******RGSD accepts no responsibility for orders filled without a valid purchase order.**

Submitted By: Signature

Date

FOR INTERNAL USE ONLY

Vendor Number: _____

1099: ____ Yes ____ No

Completed By: _____

Date: _____

FEDERAL WORK AUTHORIZATION PROGRAM (“E-VERIFY”)

Pursuant to Missouri Revised Statute 285.530, all business entities awarded any contract in excess of five thousand dollars (\$5,000) with a Missouri public school district must, as a condition to the award of any such contract, be enrolled and participate in a federal work authorization program with respect to the employees working in connection with the contracted services being provided, or to be provided, to the Riverview Gardens School District (to the extent allowed by E-Verify). In addition, the business entity must affirm the same through sworn affidavit and provision of documentation. In addition, the business entity must sign an affidavit that it does not knowingly employ any person who is an unauthorized alien in connection with the services being provided, or to be provided, to the Riverview Gardens School District (the District).

Accordingly, your company:

- a) agrees to have an authorized person execute the attached “Federal Work Authorization Program Affidavit” attached hereto as Exhibit A and deliver the same to the District prior to or contemporaneously with the execution of its contract with the District;
- b) affirms it is enrolled in the “E-Verify” (formerly known as “Basic Pilot”) work authorization program of the United States, and are participating in E-Verify with respect to your employees working in connection with the services being provided (to the extent allowed by E-Verify), or to be provided, by your company to the District;
- c) affirms that it is not knowingly employing any person who is an unauthorized alien in connection with the services being provided, or to be provided, by your company to the District;
- d) affirms you will notify the District if you cease participation in E-Verify, or if there is any action, claim or complaint made against you alleging any violation of Missouri Revised Statute 285.530, or any regulations issued thereto;
- e) agrees to provide documentation of your participation in E-Verify to the District prior to or contemporaneously with the execution of its contract with the District (or at any time thereafter upon request by the District), by providing to the District an E-Verify screen print-out (or equivalent documentation) confirming your participation in E-Verify;
- f) agrees to comply with any state or federal regulations or rules that may be issued subsequent to this addendum that relate to Missouri Revised Statute 285.530; and
- g) agrees that any failure by your company to abide by the requirements a) through f) above will be considered a material breach of your contract with the District.

By: _____
(Signature)

Printed Name and Title: _____

For and on behalf of: _____
(Company name)

EXHIBIT A

FEDERAL WORK AUTHORIZATION PROGRAM AFFIDAVIT

I, _____, being of legal age and having been duly sworn upon my oath, state the following facts are true:

1. I am more than twenty-one years of age; and have first-hand knowledge of the matters set forth herein.
2. I am employed by _____ (hereinafter "Company") and have authority to issue this affidavit on its behalf.
3. Company is enrolled in and participating in the United States E-Verify (formerly known as "Basic Pilot") federal work authorization program with respect to Company's employees working in connection with the services Company is providing to, or will provide to, the District, to the extent allowed by E-Verify.
4. Company does not knowingly employ any person who is an unauthorized alien in connection with the Services Company is providing to, or will provide to, the District.

FURTHER AFFIANT SAYETH NOT.

By: _____
(Individual signature)

For _____
(Company name)

Title: _____

Subscribed and sworn to before me on this ____ day of _____, 200__.

NOTARY PUBLIC

My commission expires

The Special Administrative Board of the Riverview Gardens School District (hereafter referred to as "RGSD") is soliciting sealed, written formal bid proposals from qualified vendors (hereafter referred to as "Vendor") for the purchase of furniture, equipment, supplies, materials, labor or services as outlined in the following specifications. Sealed bids shall be received by RGSD, in the Business Office of the Riverview Gardens School District, 1370 Northumberland, St. Louis, Missouri- 63137, until the time specified on the Bid Opening Schedule (front page of the formal bid document), at which time all bids shall be publicly opened and read aloud. Neither dating of the bid form nor placing the bid in the mail by this date shall meet legal requirements; the formal bid document must be **received in the Business Office** of the Riverview Gardens School District on or before the date and time stated.

RGSD reserves the right to reject any and all bids received and to waive any and all informalities. Vendors are encouraged to very carefully read all sections of this bid document prior to submitting a bid proposal.

It is the basic philosophy of RGSD to extend to all responsible Vendors equal consideration and the assurance of unbiased judgment in determining whether their product or service meets specifications and the educational needs of the school district. RGSD shall fairly evaluate all formal bid proposals submitted and base all decisions on the "lowest and best" bid concept, purchasing only those products and/or services which meet the specifications as written. All decisions rendered shall strive to achieve the greatest value from every tax dollar expended. RGSD shall make no discrimination based on race, color, creed, religion, or national origin, in either the product evaluation process or in transacting business with Vendors or Vendor representatives.

The advertising and publishing of this formal bid has met all legal requirements of the Missouri State statute and policies of the RGSD Board of Education, hence the requirement to offer public notice of the intent of RGSD to solicit bids via this bid document has been satisfied.

This document is to serve as an invitation to all qualified vendors to extend to RGSD, an offer, for the sale of all products and/or services specified herein. It is the purpose of this bid document to clearly define "open" and "competitive" product or service bid specifications. All items on this bid are to be **as specified or RGSD approved equal**.

Addenda: Vendor shall acknowledge the receipt of all addenda which were issued during the course of this formal bid. If specified in the text of the addenda, in addition to acknowledging receipt of the addenda below, the addenda may require additional information required for the bid (e.g., pricing), in which case the Addenda shall not only be acknowledged below but shall be completed and attached to the bid at the time the bid proposal is submitted. Receipt of the following Addenda issued during the course of this formal bid is hereby acknowledged:

Addendum Number		Date	
Addendum Number		Date	
Addendum Number		Date	

It is acknowledged that this formal bid proposal consists of the following sections: **PROPOSAL FORM, INSTRUCTIONS AND CONDITIONS, SPECIFICATIONS** and any **ADDENDA** (if applicable). The detailed specifications section may include blueprints, drawings, or other documents which shall be deemed to be a part of these written specifications. I/We understand that each form is to be signed as required in the specifications, and unless this has been done, the bid proposal may be considered incomplete and therefore rejected. Likewise, it is understood that the submission of all documents called for in the detailed specifications shall be submitted as defined in the specifications, and that failure to do so may result in rejection of the bid in part or in total. I/We, the undersigned, do hereby understand and accept all sections of this bid document and all addenda (if applicable) under which this quotation is being submitted and agree to perform in compliance with the specification requirements as set forth herewith.

I/We further agree that RGSD reserves the right to award the order, if awarded, within forty-five (45) calendar days from the date of the bid opening, unless otherwise indicated in the written specifications which follow. Consequently, I/We agree not to request permission to withdraw the quotation after bids have been publicly opened for this period of time. Having carefully examined all elements of the specifications and addenda, I/we propose to furnish all furniture, equipment, supplies, materials, labor or services required according to the written bid specifications in connection with this bid and do hereby submit the following formal bid proposal, for the total amounts indicated on the proposal form pages, where requested in the bid document.

The individual signing this Bid Proposal shall be a responsible officer of the company and shall be authorized to sign on behalf of the company.

**** End Proposal Form Section of This Bid Document ****

INSTRUCTIONS AND CONDITIONS

Preparation of Bid Proposals

Vendors should adhere to all of the instructions and conditions as contained in this section of the bid as well as all other sections of these bid specifications; failure to do so may result in rejection of the bid.

All bid proposals must be completed in ink or typewritten; all bids must be manually signed. No erasures shall be permitted; mistakes may be crossed out and corrections inserted adjacent. All corrections (including "white-out") must be initialed in ink by the person signing the bid proposal. The proposal must be signed with the firm or corporate name and by a responsible officer or employee of the firm. Vendor is to acknowledge receipt of any and all addenda (if any) re bid specifications and/or drawings which are published for this bid. All addenda shall be acknowledged as outlined in the Proposal Form section of this bid document.

Vendors should respond by using the proposal form and all other sections of this bid document without alterations, where information is requested. For every item proposed, the "Unit Price," "Total Price," (where requested), and "Quoting On" lines must be completed. All information concerning warranties, delivery dates, etc., where requested, must be completed by the Vendor; all "checklists" must be completed and submitted with the bid, if required in the specifications.

Pages on which there are no items being quoted by the Vendor, may be detached, and only those pages which contain a quoted item(s), along with the signed proposal form (both pages of the proposal form) and all other documents stated in the detailed specifications need be returned. On pages in which there are both items being quoted and items for which a price quotation is not being offered, the Vendor shall indicate "No Bid" on the "Total Price" line for all items not being offered for bid.

Prices must be stated in units specified hereon; i.e., in the units of measure indicated (per each, or dozen, case, etc.). RGSD shall not be responsible for pricing which does not conform to the unit of measure indicated, and likewise RGSD has no authority to amend a unit price once submitted even if the error is obvious. Pricing must be stated in U.S. dollars and cents and shall be offered in a known amount; i.e., a bid which simply states "My bid is \$1.00 lower than the lowest bid received" shall not constitute a legal bid proposal.

Submission of Bid Proposals

Bids, once completed, should be placed in an opaque envelope with the Vendor name and bid number as they appear on the proposal form written on the envelope, in order that the bid may be accurately registered upon receipt. A responsible official who is a legal representative of the Vendor must sign the attached proposal form, in order for the bid to be valid and acceptable. A bid which is not signed is not binding on the part of the Vendor and therefore does not constitute an informality which may be waived by RGSD. Should a return label not be included with the bid document, address the outside of the envelope as follows:

IF MAILED	IF DELIVERED
Riverview Gardens School District	Riverview Gardens School District
Finance Office	Finance Office
Attention: Dr. Lavon Singleton	Attention: Dr. Lavon Singleton
Chief Financial Officer	Chief Financial Officer
1370 Northumberland Drive	1370 Northumberland Drive
St. Louis, MO 63137	St. Louis, MO 63137

In addition, the following information should be indicated on the outside of the bid envelope: (a) Vendor Name and Address and (b) Bid Name and Number and Bid Opening Date, as listed on the Bid Opening Schedule. If a bid is opened prematurely because of failure to adhere to this requirement, the bid will be rejected.

If the District's Business Office is closed for any reason, including but not limited to inclement weather, an emergency situation or any other act of nature, which closure prevents the opening of bids at the previously advertised date and time, all bids received shall be publicly opened and read aloud on the next work day that the District's Business Office shall be open for business at the previously advertised time. The new date and time of bid opening, as determined in accordance with this paragraph, shall not be advertised, and all Vendors, upon submission of a bid proposal, shall be deemed to have knowledge of and shall have agreed to the provisions of this paragraph. In such event, bids shall be received by the District until the new date and time of the bid opening as set forth herein. RGSD shall not be held responsible for the receipt of any bids the delivery of which was attempted and failed due to the closure of the Business Office. Each Vendor shall be required to ensure the delivery and receipt of its bid by RGSD's Business Office prior to the date and time of bid opening.

EVALUATION CRITERIA, PROCESS AND CONTRACT AWARD EVALUATION CRITERIA

The following criteria will be used with the weighted values below to evaluate each proposal received. The District reserves the right to request clarification to the proposal in order to evaluate all proposals:

Criteria	Value
Total price and effectiveness of proposal	30
Overall Proposal	5
Prior working relationship with the district	15
Vendor's experience and demonstrated expertise	30
M/WBE Participation	20
Total Points Possible	100

Modification and Withdrawal of Bids and Late Bids

Bid proposals should be verified before submission for accuracy and correctness, since RGSD shall not be responsible for any errors for which the Vendor is responsible. Bids may be modified or withdrawn by written notice or in person from the Vendor, if received in the Business Office prior to the time set forth in the Bid Opening Schedule; no telephone oral withdrawals shall be accepted. Notations written by the vendor on the outside of the bid envelope stating that an amount is to be "added" or "deducted" from the pricing structure submitted on the bid document sealed inside the envelope shall not be deemed permissible; all such notations shall be ignored relative to pricing submitted by the vendor. The pricing submitted on the form(s) provided by RGSD shall be deemed to constitute the legal pricing offered by the vendor and it is that pricing which shall prevail and for which the vendor shall be accountable.

NO bids may be accepted, modified or withdrawn which are received in the Business Office, after the time set for the opening of bids. NO EXCEPTIONS! Any and all bids received after the bid opening time and date indicated on the Bid Opening Schedule shall be refused and marked "Late Bid" and returned to the Vendor, unopened. No formal bid proposals may be "faxed" and no telegraphic modifications may be made to any bid proposal once received by RGSD; all changes shall be made prior to the bid opening **on the document** submitted to RGSD.

Acceptance and Award of Bid Proposals

The Vendor's bid proposal, once submitted and accepted as a valid bid by RGSD, shall be deemed by both parties to constitute a legal and binding offer on the part of the Vendor to sell to RGSD as per the terms of the bid specifications, all products and/or services contained therein. Bid proposals are subject to acceptance by RGSD at any time within forty-five (45) calendar days following the bid opening date. Consequently, all price quotations shall be effective for a minimum of forty-five (45) calendar days and a maximum period as indicated in the specifications. All bids must be valid for the effective dates stated in the specification, if applicable.

Award of contract shall be made to the responsible Vendor whose bid, conforming to the specifications, is deemed to be the most advantageous to RGSD, price and all other factors considered. The Vendor acknowledges the right of RGSD to reject the bid, in part or in total, if the Vendor fails to submit the data required in the specifications, or if the bid is in any way incomplete or irregular. Under no circumstances may a Vendor deliver, install, or perform any service as specified in these specifications without written authorization from RGSD (i.e., a duly issued purchase order or signed contract). All formal bid proposals shall be approved by the Board of Trustees prior to the award of the bid.

The Vendor shall be issued a purchase order document, which shall be deemed acceptance of the bid proposal offer made by the Vendor, for all items and/or services approved by the Board of Trustees and awarded as a result of this bid. However, if in the opinion of RGSD a contract document is required to authorize the award of the bid, Vendor agrees to sign and execute all such contract documents as required in the written specifications. NOTE: if Vendor policy requires that RGSD sign Vendor contract documents, a sample of all such documents shall be included with the bid proposal and shall become a part of the Vendor's bid proposal.

No Response to Bid Quotation

Due to the ever-increasing postal rates, it is necessary to remove the names of Vendors from bid mailing lists which do not respond in writing to formal bid proposals which are mailed to them. Henceforth, it shall be interpreted that a Vendor no longer wishes to remain on the bid mailing list for any bid, unless the Vendor offers a bid proposal or returns the cover sheet of the bid marked "NO BID - Please Leave Name on Active Bid Mailing List." Likewise, for the Board's information, please indicate on a sheet of your company's letterhead, the reason(s) why your company is not submitting a bid proposal in response to these specifications at this time. Failure to respond at all to an offer to bid shall result in the removal from the bid mailing list. It shall be the responsibility of the Vendor to notify RGSD in writing if the Vendor relocates or if there is a change of address.

Rejection of Bid Proposals

RGSD reserves the exclusive right to reject the bid of any Vendor in part or total for reasons deemed appropriate, such as a documented past experience(s) in which the Vendor failed to perform according to stated specifications once awarded the bid, suspicious financial responsibility of the Vendor, instances in which Vendor offered references were checked with resulting negative connotations, etc. RGSD reserves the right to accept the "lowest and best" bid, which in their judgment, assures RGSD the product(s) or service(s) having the best performance and the highest level of function, quality and value. Any Vendor which does not indicate on the "Quoting On" line for each item on which a

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quotation is submitted, exactly what is being offered, may expect that item to be rejected, due to the fact that what is being offered cannot be clearly identified and compared to what is specified.

Approved Equal

It is the intent of this document to clearly define "open" and competitive product or service bid specifications. All items on this bid are to be as specified or RGSD approved equal; RGSD shall reserve the exclusive right to determine products and or services which are approved as equal to those specified herein. Reference in these specifications to and the use of the name and model number of any article, product, material or item of furniture and equipment by proprietary name, manufacturer or manufacturer's model or catalog number in describing an item, is intended to establish a standard of type, quality and design, and is therefore not intended to limit competition. Vendors may submit bid proposals for products which are of a different manufacturer and model number from that which is specified, provided the herein procedure is adhered to exactly. However vendors are encouraged to offer products of those manufacturers and model numbers specified, if at all possible.

For any item(s) which is proposed, which is other than as specified (brand name and number), it is the responsibility of the Vendor to submit, with the bid proposal, a manufacturer's published detailed cut and description, catalog, or other descriptive document, explaining in detail, exactly what is being proposed. Likewise, any support literature for any item(s) proposed which is other than as specified (manufacturer and model number), shall be clearly labeled as to the **Vendor's Name**, the **Item Number** as appears in the specifications and the **Item Name**. It shall be the responsibility of the Vendor to insure that a detailed, technical description is provided for all items which shall allow for an accurate comparison to the item specified. All such support documentation shall be submitted with the bid proposal and shall be organized in one of the following manners:

- (a) Bound Volume of Pages - for each item, a picture and detailed product specification (for the exact manufacturer and model number proposed) shall be pasted on an 8 1/2" X 11" sheet of paper and bound in a cover with the Vendor's Name on the outside of the cover. The item number and item name as listed in the bid specifications shall be indicated at the top of each page. The support literature shall be organized in a bound volume in order by item number. Preferably, only one item shall be placed on each page.
- (b) Published Catalog - it shall be permissible to submit with the bid, a general or manufacturer's product catalog clearly indicating the detailed product information concerning the proposed product; however, if this method is utilized, it shall be the responsibility of the Vendor to place beside the product manufacturer and model number on the "Quoting On" line the correct **page number** in the catalog which is submitted, on which the product may be found. RGSD shall not research catalog table of contents or indexes attempting to locate items which are offered on this bid.

In addition it shall be the responsibility of the Vendor to clearly define any deviations that exist from specifications, if any, between what is proposed and what is specified, for each item offered, which is other than as specified. All such information relating to product deviations may be placed in the bid proposal either on the page below the item specification or on a separate sheet. If a separate sheet is utilized, the page shall be entitled "Proposed Product Deviations" and each item shall be clearly labeled as to number and name as they appear in the specifications. Failure to provide such documenting evidence to support any such item offered and/or any significant product deviations may result in rejection of the item(s) involved.

Pre-Bid Approval of Items

Preference shall be given to those manufacturers and models which have been granted pre-bid approval based on past performance. Vendors are encouraged to request approval of their brands and models for each item(s) which are to be offered via bid in the future, in order to meet specifications as listed on this bid. All such requests shall be made in writing to the Chief Financial Officer. After the bid has been published, all decisions as to product approved equals shall be made following the bid opening. Where applicable, for the products and/or services to be provided in the specifications, preference shall be granted to those Vendors which offer local sales and service, parts inventories, user training orientation, etc. In the case of "tie bids", all factors being equal, the local vendor shall be recommended to the Board of Trustees for approval.

Net Prices

In all cases, prices quoted are to be net including all applicable discounts. A separate price shall be offered for each item and not in combination with other items (unless the grouping of items is otherwise allowed as defined in the specifications). Unit price shall prevail in case of a conflict between unit and total price (extension); written price shall

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prevail in case of a conflict between written and enumerated pricing. Vendors are instructed to round off all unit pricing and extensions to the nearest whole cent; i.e., round the pricing to **two** places to the right of the decimal point only. The RGSD mainframe computer database is designed to accept only pricing which is stated in this manner. All items for which pricing is submitted which is other than two places to the right of the decimal shall be accepted; however, all digits beyond a whole cent (more than two places to the right of the decimal) shall be ignored in the bid analysis process and the unit price indicated on the purchase order shall be to the nearest whole cent for each item involved.

Freight

The Vendor agrees to deliver all items prepaid (F.O.B. DESTINATION), to an inside point or points of receipt within the District. If multiple delivery sites are required for items in the bid, either the total number of or the exact address of all such sites shall be indicated in the specifications section of the bid document. All costs for delivery, drayage or freight, for the packing or unpacking, loading and unloading of said articles, are to be borne by the Vendor, and should be included in the unit price.

Taxes

Vendor pricing shall not include any taxes (unless specified), since RGSD is tax exempt there from. Federal Excise Tax Exemption Certificates shall be executed when required upon request by the Vendor.

Grouping of Items

As stated above, no grouping of items shall be allowed unless otherwise defined in the detailed specifications. Most items are to be offered for bid on an "individual" basis and shall be awarded accordingly. However, certain circumstances may arise in which it is to the advantage of RGSD to group items offered for bid. In certain instances, for the purpose of continuity and to insure product compatibility and design, and to minimize the freight costs involved, similar items may be grouped in the specifications and therefore shall constitute a single unit for bid purposes. All items in each such grouping shall be purchased from one Vendor. In order to be eligible for consideration for award of the bid for any group of items, a price quotation must be offered for ALL items in the grouping and a total price given for all items included in the grouping; award of the bid shall be made following careful analysis of the "lowest and best" bid offered for the entire group of items. Failure to offer a quotation for all items in a group may constitute a "No Bid" for the entire group of items.

Payment and Invoicing

Unless otherwise indicated in the detailed specifications of this bid document, it is mutually understood that RGSD shall make remittance in a **single lump sum** payment **following satisfactory delivery of all items** listed on the purchase order or following satisfactory performance (final inspection) of all services as specified in the contract. RGSD remits by "completed purchase order" only; remittance shall not be made upon receipt of partial shipments or performance, or the receipt of invoicing for same, but only after all items included on the purchase order or contained in the contract are delivered and/or satisfied. Payments are remitted once and/or twice per month after approval by the Board of Education.

Consequently, vendors agree to submit a single itemized invoice (original and duplicate) to RGSD, Business Office, 1370 Northumberland, St. Louis, Missouri, 63137, following the delivery of all items and/or services as indicated on the purchase order or contract. Multiple invoice documents (numbers) for the same purchase order or contract shall not be acceptable; following satisfactory delivery of ALL items and/or performance of ALL services indicated on the purchase order, only one invoice shall be submitted per purchase order or per contract, which shall be for all items and/or services contained on the order or in the contract. Following satisfactory invoicing as defined above and after receipt of all items on the purchase order and/or full performance of all services specified, payment shall be made in full to the Vendor within forty-five (45) calendar days from either the date of delivery or the receipt of satisfactory invoicing, as specified above, (in the Business Office), for the complete order or contract, whichever occurs last.

Delivery Instructions

Information containing product delivery instructions for each item specified, shall be so indicated in the specifications. The specifications shall indicate if delivery is to be made to one central location or to multiple locations within the school district. Vendor agrees to adhere to delivery date schedules, as requested in the specifications.

Default and Delays

Upon failure of the Vendor to deliver all of the items ordered or to render service, within the time set or allowed, the successful Vendor shall be considered in default, in which case RGSD reserves the right to terminate the purchase order or contract and to purchase similar supplies, services, or furniture and equipment, on the open market or secure

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the manufacture, delivery, and installation thereof by contract or otherwise. The Vendor shall be charged with any cost occasioned by RGSD whether said cost is the same as originally accepted or any excess cost.

Damage to School Property

Any damage or loss to RGSD property as a result of any action by the Vendor in the delivery, execution or performance of any item or service stated in these specifications, shall be repaired or replaced to the satisfaction of designated RGSD personnel, at the Vendor's cost, within a reasonable time.

Assemble and Set In Place

It shall be the Vendor's responsibility to furnish, deliver, unload from the delivery vehicle, completely assemble, and set in place and where specified to completely install and make ready for operation to the satisfaction of RGSD all items offered for bid in these specifications. All Vendor personnel shall be legally licensed and fully qualified in the performance of the various areas of installation expertise. Items requiring unpacking shall be unpacked, assembled and set in place by the successful Vendor, at Vendor expense, as directed by the designated representative of RGSD. Where specified, all items shall be furnished, delivered, set in place, and made ready for operation, by the Vendor at Vendor's expense.

Removal of Debris

Where applicable, Vendor owned materials and equipment may be stored on the job site but the contractor shall maintain full responsibility for the stored items and full responsibility for any acts of vandalism or damage to RGSD owned property as a result of the vandalism. Any materials of a flammable nature must be stored at least 50' from the nearest building. Vendor must maintain the premises free from accumulations of waste, debris and rubbish caused by the execution of the contract, as a result of this bid. Upon completion of all work, crates, boxes, and packing material shall be removed from the point of work or delivery by the Vendor, at Vendor expense, and the premises are to be left free of debris.

Complying With Specifications

All material furnished must be in conformity with the specifications and shall be subject to inspection and approval by RGSD following delivery. The right is reserved to reject and return at the risk and expense of the Vendor such portion or the entirety of any shipment which may be deemed defective or fail to comply with specifications. If rejected, it shall be held for disposition at the expense and risk of the Vendor. Vendors shall be required to replace that defective portion or the entire order according to specifications without additional cost to RGSD. Any items which may be lost or damaged in transit from the manufacturer to RGSD shall be replaced or restored to the original good condition by the Vendor at no cost to RGSD, to the satisfaction of RGSD.

If required in the detailed specifications, each Vendor and subcontractor(s), together, should visit the site and take such other steps as may be necessary to ascertain the nature and location of the work to be performed, and the general and local conditions which could affect the work or the cost thereof. All visits to the sites shall be made at the Vendor's expense.

Guarantee

Each Vendor, by presenting a bid under these specifications, binds himself to make positive that all goods are fully up to the standards set by the specifications. Should it be discovered within a reasonable period of time from the date of purchase order or contract that such goods or services are not up to standard, RGSD shall have the right to have such goods or services replaced by others conforming to the standard requirements and the entire expense be borne by the Vendor. The Vendor shall agree to guarantee and warrant all equipment provided as a result of this bid for a period equal to the stated guaranty/warranty in the specifications. All such warranties shall provide the coverage as indicated in the specifications.

Samples

RGSD reserves the right to request of any Vendor offering a product for sale via this bid an exact sample for evaluation for any product proposed. Vendor agrees to submit requested sample(s) within ten (10) calendar days from notification of the sample request. Should the Vendor not adhere to this sampling procedure, the item(s) in question may be rejected on these grounds. Samples must be furnished upon request only, free of expense to RGSD and if not destroyed by tests, shall be returned at the Vendor's expense upon request. Samples are to be submitted to the Business Office to the attention of the Chief Financial Officer, 1370 Northumberland, and St. Louis, Missouri, 63137.

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Samples are to represent exactly what the Vendor actually proposes to furnish. Samples shall be properly identified as to bid number, bid date, name of Vendor, and item number as it appears on the bid. Once the bid is awarded, RGSD reserves the right to subject actual shipment samples to randomized testing. In cases when a sample is sent to testing laboratory for analysis in light of specifications, and the tests results indicate that the sample does not comply with specifications, the cost of the test shall be charged to the Vendor submitting the failing sample. The right is reserved to keep the successful Vendor's sample for comparison with actual shipment. Said sample may be returned to the Vendor or accepted as delivery according to order.

Compliance with Laws

If required due to the nature of the specifications contained herein, the Vendor shall give all notices, pay all fees, and comply with all local city, state, and federal laws, codes, ordinances, rules and regulations bearing on the successful conclusion of an order for supplies, services, or equipment. Vendor is to secure and pay for all permits, governmental fees, licenses and assessments necessary to perform all work as outlined in the specifications. The Vendor shall comply with all fire, safety and security regulations.

Insurance

It shall be the responsibility of the Vendor, once awarded the contract, to procure and maintain at Vendor expense, any insurance coverage equal in coverage to the minimum requirements applicable to the nature and scope of the project as set forth in these specifications. Vendor shall insure the delivery of all products delivered as a result of this bid until such time as all products are received by RGSD, inspected and approved.

Liability and Relationship of Parties

The Vendor shall, and hereby does, indemnify and hold harmless RGSD from any and all claims, suits, actions, judgments, settlements, damages, awards, costs and expenses of any kind or nature whatsoever arising from or out of any assertion or complaint by a third party or parties of any injury or damage resulting from the performance of this agreement by Vendor. Without limiting the generality of the foregoing sentence, as relates to this bid document and any succeeding document(s) as a result of this formal bid, the Vendor (which shall include the vendor of award, the product manufacturer whom the Vendor represents, any subcontractor(s) of either, or any other party acting as an agent of the Vendor or manufacturer) shall hold RGSD, it's officers, agents, servants, and employees harmless from liability of any nature or kind whatsoever against the publisher or author, manufacturer or agent for the use by RGSD of any copyrighted or copyrighted composition, secret process, patented or unpatented invention, article, environment-sensitive material, or appliance furnished or used under this bid proposal.

Any architects, consulting engineers, or other defined agents acting in behalf of RGSD with regard to this formal bid, shall be deemed to be extensions of RGSD and therefore all terms and conditions in this bid document shall equally apply to said third parties just as they do to RGSD. Neither this bid nor any succeeding document(s) as a result of this formal bid, shall constitute nor create a partnership or joint venture between RGSD (or any agent acting in behalf of RGSD) and the Vendor, nor does it create a business relationship between the parties other than that specifically provided for by the terms of this agreement.

Non-Mentioned Items

Any standard manufacturer's parts, components, other equipment or related accessories not specifically mentioned by name or included in these specifications but which are normally a part of the equipment and furnishings necessary to complete the installation or insure the performance of the item, which are normally advertised and sold as a part of the "total product", shall be deemed to be included in the bid and shall therefore be furnished by the Vendor under the framework of this bid, at no additional cost to RGSD.

RGSD Responsibilities

With regard to installation as per these specifications, it shall be the responsibility of RGSD to provide all electrical, gas and water services (stub outs) to the products as required and in compliance with the manufacturer's product specifications. Floor drains shall be provided by RGSD. However, any and all product connections required to interface the product with electrical, gas, water and drain facilities, whether indicated on attached project plans, drawings and specifications, including all addenda issued pursuant to this bid, shall be solely the responsibility of the Vendor. RGSD shall allow Vendor access to any facilities involved in these specifications during normal business hours in compliance with RGSD's approved schedule. Upon written request from a Vendor, RGSD may consider special work hours if required to complete a delivery or a project with an impending deadline. Likewise, if applicable, upon written request

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from the Vendor, RGSD shall allow Vendor access to any project plans, blueprints or other detailed specifications which may not be included within this bid document, but which could reasonably be expected to have a bearing on the bid proposal. All such written requests shall be forwarded to the Business Office to the attention of the Chief Financial Officer.

Product Colors, Finishes and Color Combinations

Where applicable and indicated in the specifications, color selection of all product finishes and furnishings which have been pre-selected by RGSD, shall be adhered to as closely as possible by the Vendor. There are situations in which it is very important to RGSD that all of the products included in the bid or various sections of the bid, be color coordinated in order that a pleasing decorative atmosphere conducive to instruction be established. It shall be the responsibility of the Vendor to submit as a part of the bid, where required in the specifications, proposed manufacturer's color samples for all items offered for which a specific color is indicated. Failure to do so may result in rejection of any and all items involved in that section.

Adjustments in the Quantities to Be Purchased

All quantities indicated in this bid are projected based on an established need and are stated in "good faith" by RGSD and represent the known quantities which shall be purchased via this bid; however, in order to insure budgetary compliance, a situation may arise in which the quantities indicated for one or more items listed for bid may have to be amended.

Deletions - All quantities listed in these specifications are subject to adjustment; RGSD shall reserve the right to delete any and all items entirely and/or to reduce quantities in number prior to issuing a purchase order at the unit price(s) quoted in the Vendor's bid.

Additions - If an "additions" clause is to be implemented with reference to the quantities to be purchased as a result of this bid, it will appear in the detailed specifications section of this document. If there is no reference to the purchase of additional quantities the quantities to be purchased shall be as published herein.

Follow-Up Services

The Vendor shall agree to provide to RGSD as part of this bid, at no additional cost, all required user orientation as to the proper use and care for all equipment sold as a result of this bid.

Ambiguities

Should questions arise or ambiguities exist regarding any part of parts of the specifications as published, the Vendor shall notify the Chief Financial Officer, (314) 869-2505, at least five (5) calendar days prior to the published bid opening date, in order that a written clarification (addendum) from the Business Office can be made known to all Vendors participating in the bid. No addendum concerning clarification of published specifications shall be issued following five (5) calendar days prior to the published bid opening date, unless it is to extend the bid opening date. Interpretation of and subsequent modifications to these specifications shall be made by addenda only; RGSD shall not be responsible for any interpretation of the documents other than as set forth in these specifications or in RGSD authorized written and published addenda. Should ambiguities exist between this section of the bid (Instructions and Conditions), and the stated specifications which follow, the specifications shall prevail and shall be taken to be the correct interpretation for this bid.

Exceptions to These Instructions and Conditions and/or Specifications

The Vendor, when through a voluntary and independent action, places the signature on the proposal form, fully agrees to accept and comply with all instructions and conditions and all other requirements defined in the detailed specifications and outlined in all other documents pertaining to the bid document. Should any Vendor take exception with any part(s) of these instructions and conditions, or any part(s) of the specifications which follow, it is the responsibility of the Vendor to so acknowledge such differences in detail on a separate sheet(s), and attach and submit said sheet(s) with the bid; all such exceptions shall become a part of this bid.

DOCUMENTATION OF SURETY

A performance bond will be required from the successful contractor on this project, and consequently, all bidders shall submit, with their bid, a Bid Bond or Certified Check made payable to the school district, in the amount of 5% of the Base Bid shall accompany the Bid Package on October 21, 2021 2:00 p.m., as a guarantee that the bidder, if awarded the Contract, will furnish a 100% Performance and Payment Bond; execute the Contract; and proceed with the work. Upon failure to do so, he shall forfeit

the deposit or amount of the Bid Bond as liquidated damages, and no mistakes or errors on the part of the Bidder shall excuse the Bidder or entitle him to a return of the deposit or Bid Bond.

The bonds must be written by a Corporate Surety Company that is acceptable to the District and that meets the following minimum standards

- Licensed pursuant to the Missouri Insurance Code
- Listed on the United States Department of the Treasury's Listing of Approved Sureties (Dept. Circular 570) in the amount of \$5,000,000.
- The Bid Bond shall be valid for one hundred twenty (120) days following the deadline for submission of proposals.
- The Bid Bond must be accompanied by an original signed and notarized Power of-Attorney bearing the seal of the issuing surety company and reflecting that the signatory to the bond is a designated Attorney-in-Fact.
- All bonds must be written by an insurance company that is rated in the A.M. Best key Rating Guide – Property & Casualty with a policy holder's rating of "A-" or better and a Financial size category of Class VII or larger.

Prevailing Wage Statement

****Must be returned with RFP Response and be included as component of response**

All services offered in response to this solicitation shall be performed by employees receiving the prevailing wage rate and working under conditions prevalent in the locality where the contract is to be performed. Any respondent whose employees receive less than such prevailing wage rate, or work under less favorable conditions than those prevalent in the locality, shall not be considered to be a responsive bidder.

By affixing an authorized signature below, the vendor certifies compliance with the above prevailing wage requirements. Failure to sign this provision may result in your offer being considered non-responsive to this solicitation.

Signed: _____

Authorized Signature

Printed Name

Vendor Name

Date: _____

BID PROPOSAL FORM

(Contract Title and Bid Number, if applicable)

(Description of goods/services being bid)

The undersigned proposes to furnish and deliver the above goods/services pursuant to the bid specification and made part hereof:

Amount in words

\$ _____ Amount in numbers

Company Name
#

Federal I.D. # or Social Security

Address

Signature of Authorized Agent

Print Name

Title: _____

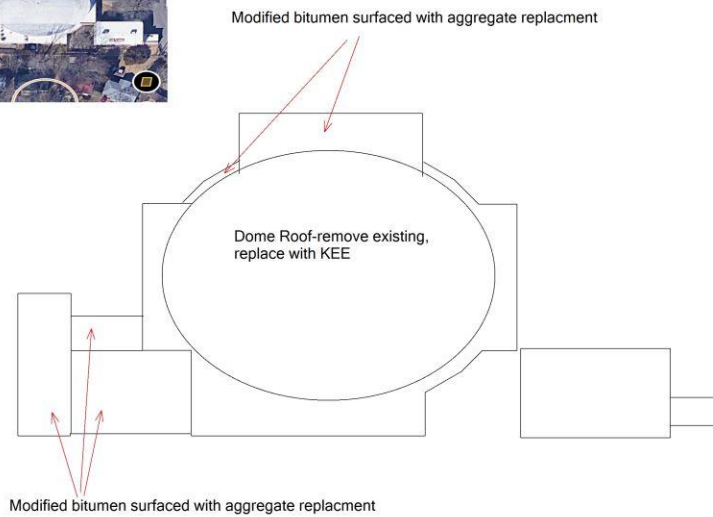
Telephone Number

Date

Fax Number

E-mail address

Scope of Services



NOTES



Customer	RGSD - FCRC	
DWG. By	LF	
Date	JULY 2022	Scale NTS

SECTION 075216.13 - SBS MODIFIED BITUMINOUS MEMBRANE ROOFING, COLD-APPLIED

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cold-applied built-up asphalt roofing system on metal deck, including but not limited to:
 - a. Supply all labor, transportation, material, apparatus, tools, and permits necessary for replacement of existing roof system. Contractor shall verify roof construction and square feet. Refer to roof plan drawing for roof area locations.
 - b. Complete removal of existing wet insulation including but not limited to membrane, flashings, metal flashings, and insulation down to the underlying roof decking. Insulation determined to be dry will be left in place with the membrane. Slice the membrane prior to installation of new roofing.

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- c. Roof insulation.
 - 1) Install a 1.5 inch layer and a 2 inch layer to the substrate, mechanically fasten 1 fastener every 2 square feet.
 - 2) Install ½ inch layer of Securock insulation board mechanically fastened to the substrate.
 - 3) Adhere coverboard in low rise foam insulation adhesive.
- d. Roof membrane and membrane base flashings and accessories.
 - 1) Install two base ply sheets and modified bitumen surfacing sheet.
 - a) All roofing plies to be adhered in a continuous application of manufacturer recommended cold adhesive.
 - 2) Flashing: Install two (2) base plies stripping plies to all metal flanges. Extend the first ply 4 inches past the flange. Extend the second ply 6 inches past the flange.
 - 3) Flashing: Adhere base flashing backer sheet and base flashing to wall and curb surfaces using manufacturers recommended adhesive. Terminate the top of the base flashing with termination bar, mechanically fastened 6” to 8” on center. Termination receiver shall be sealed with a neatly tooled bead of polyurethane sealant. Bottom of the base flashing to be 3-coursed using manufacturers recommended mastic and reinforcement membrane.
- e. Roof surfacing consisting of cold adhesive flood coat, recommended by the manufacturer and aggregate.
 - 1) Apply adhesive at manufacturers recommended rate and immediately broadcast aggregate into flood coat.
- f. Install all sheet metal details per specification and SMACNA requirements and standards. Install slip metal at coping locations.

B. Alternates: Refer to Division 01 Section "Alternates" for description of Work in this Section affected by alternates.

C. Allowances: Refer to Division 01 Section "Allowances" for description of Work in this Section affected by allowances.

D. Unit Prices: Refer to Division 01 Section "Unit Prices" for description of Work in this Section affected by unit prices.

1.2 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D1079 "Standard Terminology Relating to Roofing and Waterproofing" and glossary in applicable edition of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" for definition of terms related to roofing work in this Section.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Roofing Conference: Conduct conference at Project site

- 1. Meet with Owner, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and

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installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.

2. Review drawings and specifications.
3. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
4. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
5. Examine substrate conditions and finishes for compliance with requirements, including flatness and fastening.
6. Review structural loading limitations of roof deck during and after roofing.
7. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
8. Review governing regulations and requirements for insurance and certificates if applicable.
9. Review temporary protection requirements for roofing system during and after installation.
10. Review roof observation and repair procedures after roofing installation.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work. Provide roof plan showing orientation and types of roof deck, orientation of membrane roofing, and fastening spacings and patterns for mechanically fastened components.
 1. Base flashings and built-up terminations.
 - a. Indicate details meet requirements of NRCA and FMG required by this Section.
 2. Tapered insulation, including slopes.
 3. Crickets, saddles, and tapered edge strips, including slopes.
 4. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
 5. Membrane fastening or adhesion requirements.
- C. Samples for Verification: For the following products:
 1. Sheet roofing materials, of color specified for exposed material.
 2. 1 lb. (0.5 kg) of aggregate surfacing material in gradation and color indicated.

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3. Walkway materials.

D. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

1.5 INFORMATIONAL SUBMITTALS

A. Contractor's Product Certificate: Submit notarized certificate, indicating products intended for Work of this Section, including product names and numbers and manufacturers' names, with statement indicating that products to be provided meet the requirements of the Contract Documents.

B. Qualification Data: For Installer, Manufacturer, and Roofing Inspector.

1. Include letter from Manufacturer written for this Project indicating approval of Installer.

C. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

1. Submit evidence of compliance with performance requirements.

a. Include: UL listing certificate.

2. Product Compatibility: Indicate manufacturer has verified compatibility of roofing system components, including but not limited to: Roofing membrane, flashing sheets, adhesives and sealants.

D. Warranties: Unexecuted sample copies of special warranties.

E. Field Quality Control Reports: Reports of Roofing Inspector. Include weather conditions, description of work performed, tests performed, defective work observed, and corrective actions required and carried out.

1. Submit reports within 48 hours after inspection.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: To include in maintenance manuals.

B. Warranties: Executed copies of warranties.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of five years' experience installing products comparable to those specified, able to communicate verbally with Contractor, and employees, and qualified by the manufacturer to install manufacturer's product and furnish warranty of type specified.

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- B. **Manufacturer Qualifications:** Approved manufacturer with UL listed roofing systems comparable to those specified for this Project, with minimum five years' experience in manufacture of comparable products in successful use in similar applications, and able to furnish warranty with provisions matching specified requirements.
 - 1. **Approval of Other Manufacturers and Comparable Products:** Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
 - a. Product data, including certified independent test data indicating compliance with requirements.
 - b. Samples of each component.
 - c. Sample submittal from similar project.
 - d. Project references: Minimum of five installations of specified products not less than five years old, with Owner contact information.
 - e. Sample warranty.
 - 2. Substitutions following award of contract are not allowed except as stipulated in Division 01 General Requirements.
 - 3. Approved manufacturers must meet separate requirements of Submittals Article.
- C. **Roofing Inspector Qualifications:** A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:
 - 1. An authorized full-time technical employee of the manufacturer.
 - 2. An independent party certified as a Registered Roof Observer by the International Institute of Building Enclosure Consultants (formerly the Roof Consultants Institute) retained by the Contractor or the Manufacturer and approved by the Manufacturer.
- D. **Manufacturer's Installation Instructions:** Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products.

1.8 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.

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- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.9 PROJECT / FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 - 1. Provide tie-offs at end of each day's work to cover exposed roofing and insulation with a course of roofing sheet securely in place with joints and edges sealed.
 - 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
 - 3. Remove temporary plugs from roof drains at end of each day.
 - 4. Remove and discard temporary seals before beginning work on adjoining roofing.

1.10 WARRANTY

- A. Manufacturer's Warranty: Roof System Manufacturer's standard form in which Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within warranty period, as follows.
 - 1. Form of Warranty: Manufacturer's standard warranty form.
 - 2. Scope of Warranty: Work of this Section and including sheet metal details and termination details installed by the roof system Installer and approved by the Roof System Manufacturer.
 - 3. Warranty Period: 20 years from date of completion.

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- B. Manufacturer Inspection Services: By manufacturer's technical representative, to report maintenance responsibilities to Owner necessary for preservation of Owner's warranty rights. The cost of manufacturer's inspections is included in the Contract Sum.
 - 1. Inspections to occur in following years: 2, 5, 10, 15 following completion.
- C. Installer Warranty: Installer's warranty signed by Installer, as follows.
 - 1. Form of Warranty: Form acceptable to Roofing Manufacturer and Owner.
 - 2. Scope of Warranty: Work of this Section.
 - 3. Warranty Period: 2 years from date of completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: The roof system specified in this Section is based upon products of Tremco CPG Inc, Beachwood, OH, (800) 562-2728, www.tremcoroofing.com that are named in other Part 2 articles. Provide specified products or comparable products of one of the following.
 - 1. Manufacturers of comparable products: Approved by Owner prior to bid.
- B. Source Limitations: Obtain components for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

2.2 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.
 - 1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
 - 2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D3746/D3746M, ASTM D4272/D4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.
- B. Flashings and Fastening: Provide base flashings, perimeter flashings, detail flashings and component materials and installation techniques that comply with requirements and recommendations of the following:
 - 1. NRCA Roofing Manual (Sixth Edition) for construction details and recommendations.
 - 2. SMACNA Architectural Sheet Metal Manual (Seventh Edition) for construction details.
 - 3. Comply with requirements of Division 07 Section "Sheet Metal Flashing and Trim".

- C. 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.

2.3 MATERIALS, GENERAL

- A. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.

2.4 ROOFING MEMBRANE MATERIALS

A. SBS Modified Bituminous Membrane Smooth-Surfaced Sheets:

- 1. SBS-modified asphalt coated composite polyester / fiberglass/fiberglass mat reinforced high tensile strength base sheet, ASTM D4601 Type II.
 - a. Basis of design product: Tremco, BURmastic Composite Ply HT.
 - b. Tensile Strength at 77 deg. F (25 deg. C), minimum, ASTM D5147: Machine direction, 165 lbf/in (725 N); Cross machine direction, 150 lbf/in (660 N).
 - c. Tear Strength at 77 deg. F (25 deg. C), minimum, ASTM D5147: Machine direction, 260 lbf (1150 N); Cross machine direction, 230 lbf (1120 N).
 - d. Thickness, minimum, ASTM D5147: 0.060 inch (1.5 mm).

B. SBS Modified Bituminous Membrane Granular-Surfaced Cap Sheet:

- 1. SBS-modified asphalt-coated glass-fiber-reinforced sheet, granular surfaced, ASTM D6163 Type I Grade G.
 - a. Basis of design product: Tremco, POWERply Standard FR.
 - b. Exterior Fire-Test Exposure, ASTM E108: Class A.
 - c. Tensile Strength at 77 deg. F (25 deg. C), minimum, ASTM D5147: Machine direction 80 lbf/in (14 kN/m); Cross machine direction 75 lbf/in (13 kN/m).
 - d. Tear Strength at 77 deg. F (25 deg. C), minimum, ASTM D5147: Machine direction, 100 lbf (460 N); Cross machine direction 108 lbf (480 N).
 - e. Elongation at 77 deg. F (25 deg. C), minimum, ASTM D5147: Machine direction 7 percent; Cross machine direction 8 percent.
 - f. Low Temperature Flex, maximum, ASTM D5147: -15 deg. F (-26 deg. C).
 - g. Thickness, minimum, ASTM D5147: 0.120 inch (3.0 mm).

C. Flashing Backer Sheet:

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1. SBS-modified asphalt coated composite polyester / fiberglass/fiberglass mat reinforced high tensile strength base sheet, ASTM D4601 Type II.
 - a. Basis of design product: Tremco, BURmastic Composite Ply HT.
 - b. Tensile Strength at 77 deg. F (25 deg. C), minimum, ASTM D5147: Machine direction, 165 lbf/in (725 N); Cross machine direction, 150 lbf/in (660 N).
 - c. Tear Strength at 77 deg. F (25 deg. C), minimum, ASTM D5147: Machine direction, 260 lbf (1150 N); Cross machine direction, 230 lbf (1120 N).
 - d. Thickness, minimum, ASTM D5147: 0.060 inch (1.5 mm).

D. Flashing Sheet:

1. Flashing Sheet: Same as cap sheet.
 - a. Basis of design product: Flashing Sheet: Same as cap sheet.
 - b. Color: White.

E. Detail Fabric:

1. Woven Glass Fiber Mesh, Vinyl-Coated: Non-shrinking, non-rotting, vinyl-coated woven glass mesh for reinforcing flashing seams, membrane laps, and other roof system detailing.
 - a. Basis of design product: Tremco, BURmesh.
 - b. Tensile strength, 70 deg. F, min ASTM D146: Warp, 65 lbf/in (285 N); fill, 75 lbf/in (310 N).
 - c. Color: Aqua green.

2.5 COLD-APPLIED ADHESIVE MATERIALS

- A. General: Adhesive and sealant materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane.
 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. Modified Bituminous Interply and Cap Sheet Adhesive:
 1. Cold-applied roofing adhesive and surfacer, one-part, formulated for compatibility and use with specified roofing membranes and flashings.
 - a. Basis of design product: Tremco, POWERply Standard Cold Adhesive.
 - b. Volatile Organic Compounds (VOC), maximum, ASTM D6511: 250 g/L.

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- c. Nonvolatile Content, minimum, ASTM D6511: 72 percent.
- d. Flash Point, minimum, ASTM D93: 100 deg F (38 deg C).

C. Flashing Backer Sheet Adhesive:

- 1. Roof Cement, Asphalt-Based: ASTM D4586, Type II, Class I, fibrated roof cement formulated for use in installation and repair of asphalt ply and modified bitumen roofing plies and flashings; UL-classified for fire resistance.
 - a. Basis of design product: Tremco, ELS.
 - b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 190 g/L.
 - c. Non-Volatile Matter, ASTM D4586: 85 percent.
 - d. Resistance to sag ASTM D4586: 1/8 in. (3 mm).

D. Flashing Sheet Adhesive: and Flashing Backer

- 1. Roof Cement, Asphalt-Based: ASTM D4586, Type II, Class I, fibrated roof cement formulated for use in installation and repair of asphalt ply and modified bitumen roofing plies and flashings; UL-classified for fire resistance.
 - a. Basis of design product: Tremco, ELS.
 - b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 190 g/L.
 - c. Non-Volatile Matter, ASTM D4586: 85 percent.
 - d. Resistance to sag ASTM D4586: 1/8 in. (3 mm).

E. Asphalt Primer:

- 1. Asphalt primer, water-based, polymer modified.
 - a. Basis of design product: Tremco, TREMprime WB.
 - b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 2 g/L.
 - c. Color: Brown/black.

2.6 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane.
- B. Asphalt Roofing Cement / Mastic:

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1. Roof Cement, Asphalt-Based: ASTM D4586, Type II, Class I, fibrated roof cement formulated for use in installation and repair of asphalt ply and modified bitumen roofing plies and flashings; UL-classified for fire resistance.
 - a. Basis of design product: Tremco, ELS.
 - b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 190 g/L.
 - c. Non-Volatile Matter, ASTM D4586: 85 percent.
 - d. Resistance to sag ASTM D4586: 1/8 in. (3 mm).
 - C. Joint Sealant: Elastomeric joint sealant compatible with roofing materials, with movement capability appropriate for application.
 1. Joint Sealant, Polyurethane: ASTM C920, Type S, Grade NS, Class 50 single-component moisture curing sealant, formulated for compatibility and use in dynamic and static joints; paintable.
 - a. Basis of design product: Tremco, TremSEAL Pro.
 - b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 40 g/L.
 - c. Hardness, Shore A, ASTM C661: 40.
 - d. Adhesion to Concrete, ASTM C794: 35 pli.
 - e. Tensile Strength, ASTM D412: 350 psi (2410 kPa).
 - f. Color: Closest match to substrate.
 - D. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening roofing components to substrate, tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer.
 1. Base Sheet Fasteners: twin loc fasteners and plates.
 - E. Metal Flashing Sheet: Metal flashing sheet is specified in Division 07 Section "Sheet Metal Flashing and Trim."
 - F. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.
- 2.7 ROOF INSULATION MATERIALS
- A. Roof Insulation, General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.

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1. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated, not less than two times the roof slope.

B. Roof Insulation:

1. Board Insulation, Polyisocyanurate: CFC- and HCFC- free, with recycled content glass-fiber mat facer on both major surfaces, ASTM C1289 Type II Class 1.
 - a. Basis of design product: Tremco, Trisotech Insulation.
 - b. Compressive Strength, ASTM D1621: Grade 2: 20 psi (138 kPa).
 - c. Conditioned Thermal Resistance at 75 deg. F (24 deg. C): 14.4 at 2.5 inches (50.8 mm) thick.

2.8 ROOF INSULATION ACCESSORIES

A. Insulation Cover Board:

1. Gypsum panel, cellulosic fiber reinforced, water-resistant, ASTM C1278/C1278M.
 - a. Basis of design product: Tremco/USG Securock.
 - b. Thickness: 1/4 inch (6mm).

B. Roof Insulation Adhesive:

1. Urethane adhesive, bead-applied, low-rise two-component solvent-free low odor, formulated to adhere roof insulation to substrate.
 - a. Basis of design product: Tremco, Low Rise Foam Insulation Adhesive.
 - b. Flame Spread Index, ASTM E84: 10.
 - c. Smoke Developed Index, ASTM E84: 30.
 - d. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 0 g/L.
 - e. Tensile Strength, minimum, ASTM D412: 250 psi (1720 kPa).
 - f. Peel Adhesion, minimum, ASTM D903: 17 lbf/in (2.50 kN/m).
 - g. Flexibility, 70 deg. F (39 deg. C), ASTM D816: Pass.

C. Insulation Cant Strips: ASTM C208, Type II, Grade 1, cellulosic-fiber insulation board.

D. Tapered Edge Strips: ASTM C208, Type II, Grade 1, cellulosic-fiber insulation board.

E. Substrate Joint Tape: 6- or 8-inch- (150- or 200-mm-) wide, coated, glass fiber.

2.9 SURFACING MATERIALS

A. Cold-Applied Adhesive Surfacers:

1. Cold-applied roofing adhesive and surfacer, one-part, formulated for compatibility and use with specified roofing membranes and flashings.
 - a. Basis of design product: Tremco, POWERply Standard Cold Adhesive.
 - b. Volatile Organic Compounds (VOC), maximum, ASTM D6511: 250 g/L.
 - c. Nonvolatile Content, minimum, ASTM D6511: 72 percent.
 - d. Flash Point, minimum, ASTM D93: 100 deg F (38 deg C).

B. Aggregate Surfacing Material:

1. Aggregate Stone Surfacing: Clean, dry, opaque, water-worn or crushed stone, free of sharp edges.
 - a. Basis of design product: Aggregate Stone Surfacing.
 - b. Size, ASTM D 1863: No. 6 or 67.
 - c. Aggregate application rate, average: 400 lb/100 sq ft (19.5 k/m²).

C. Aluminized Flashing Coating Material:

1. Cold-Applied Reflective Aluminum Roof Coating: ASTM D2824 Type III metallic-pigmented, fibrated asphalt-based roof coating.
 - a. Basis of design product: Tremco, Alumanation 301.
 - b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 400 g/L.
 - c. Reflectance, minimum, ASTM C1549: Initial - 0.66, 3 Yr Aged - 0.49.
 - d. Solids, percent by volume: 47.

2.10 WALKWAYS

A. Walkway Material:

1. Walkway cap sheet strips, SBS-modified asphalt sheet, granular surfaced.
 - a. Basis of design product: Same product as roof system cap sheet.
 - b. Color: Match cap sheet.

PART 3 - EXECUTION

3.1 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 cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 - 3. Existing Prepared Roof Substrate: Verify that existing insulation and substrate is sound and dry. Refer to requirements of Division 07 Section "Preparation for Re-Roofing."
 - 4. Cementitious Wood Roof Deck: Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch (1.6mm) out of plane relative to adjoining deck.
- B. Verify that insulation and substrate is sound and dry.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing 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.

3.3 INSTALLATION, GENERAL

- A. Install roofing system in accordance with manufacturer's written instructions, approved shop drawings, and Contract Documents.
- B. 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

3.4 ROOFING INSTALLATION DETAILS

- A. NRCA Installation Details: Install roofing system in accordance with applicable NRCA Manual Plates and NRCA recommendations; modify as required to comply with manufacturer's approved details and perimeter fastening requirements of FM Global references if applicable.

3.5 INSULATION INSTALLATION

- A. Comply with roofing manufacturer's written instructions for installing roof insulation.
- B. Coordinate installing membrane roofing system components, so insulation is not exposed to precipitation or left exposed at the end of the workday
- C. Cant Strips: Install and secure preformed 45-degree cant strips at junctures of built-up roofing with vertical surfaces or angle changes greater than 45 degrees.
- D. Tapered Insulation and Crickets: Install tapered insulation under area of roofing to conform to slopes indicated.
 - 1. Where crickets are indicated or required to provide positive slope to drain, make slope of crickets minimum of two times the roof slope, not less than 1/4 inch in 12 inches (1:48).
- E. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
 - 1. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
- F. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches (70 mm) or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches (150 mm) in each direction.
 - 1. Flat Insulation System on Sloped Roof Deck: Install insulation at minimum thickness as follows:
 - a. Minimum total thickness of Continuous Insulation: 3.5 inches.
 - 2. Insulation Drain Sumps: Tapered insulation sumps, not less than 2 by 2 ft. (600 by 600 mm), sloped to roof drain; sump to maximum depth of not more than 1 inch (25 mm) less than the Project-stipulated continuous insulation thickness based upon code requirements.
- G. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- H. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.
- I. Mechanically Fastened Insulation Application Method: Install each layer of insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
 - 1. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.
- J. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches (150 mm) in

each direction. Loosely butt cover boards together. Tape joints if required by roofing manufacturer.

1. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining cover in place.

3.6 COLD-APPLIED ROOFING MEMBRANE INSTALLATION, GENERAL

- A. Install roofing membrane system according to roofing system manufacturer's written instructions and applicable recommendations in NRCA's "Quality Control and Quality-assurance Guidelines for the Application of Membrane Roofing" and as follows:
 1. Number of Smooth-Surfaced SBS-Modified Asphalt Sheets: Two.
 - a. Adhering Method: Cold-adhesive applied.
 2. Granular-Surfaced SBS-Modified Asphalt Cap Sheet:
 - a. Adhering Method: Cold-adhesive applied.
- B. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.
- C. Cooperate with testing agencies engaged or required to perform services for installing roofing system.
- D. Coordinate installation of roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 1. Provide tie-offs at end of each day's work to cover exposed roofing membrane sheets and insulation with a course of coated felt set in compatible roofing cement/mastic, with joints and edges sealed.
 - a. Comply with roofing membrane manufacturer's instructions and details for waterstop/daily tie-in; utilize staggered layout and unadhered, removable "deadman" insulation boards.
 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
 3. Remove temporary plugs from roof drains at end of each day.
 4. Remove and discard temporary seals before beginning work on adjoining roofing.
- E. Substrate-Joint Penetrations: Prevent roofing asphalt and adhesives from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.

3.7 SBS-MODIFIED BITUMINOUS MEMBRANE INSTALLATION

- A. Install modified bituminous roofing membrane ply sheet(s) and cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets over and terminate beyond cants, installing as follows:
 - 1. Unroll roofing membrane sheets and allow them to relax for minimum time period required by manufacturer.
 - 2. Embed each sheet in cold-applied membrane adhesive applied at rate required by roofing manufacturer.
- B. Laps: Accurately align roofing membrane sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Install roofing membrane sheets so side and end laps shed water. Completely bond and seal laps, leaving no voids.
 - 1. Repair tears and voids in laps and lapped seams not completely sealed.
 - 2. Granular Cap Sheet Laps: Apply roofing granules to cover exuded bead at laps.

3.8 FLASHING AND STRIPPING INSTALLATION

- A. Base Flashing Installation, General: Install base flashing over cant strips and other sloped and vertical surfaces, at roof edges, and at penetrations through roof; secure to substrates according to roofing system manufacturer's written instructions, and as follows:
 - 1. Extend base flashing up walls or parapets a minimum of 12 inches (300 mm) above modified bituminous roofing and 6 inches (150 mm) onto field of built-up roofing.
 - 2. Prime substrates with primer if required by roofing system manufacturer.
- B. Backer Sheet Installation: Apply backer sheet to substrate as follows:
 - 1. Mechanically fasten backer sheet to vertical surfaces. Adhere backer sheet over modified bituminous roofing at cants in cold-applied flashing sheet adhesive.
 - 2. Adhere backer sheet to substrate in cold-applied flashing sheet adhesive.
- C. Flashing Sheet Installation: Adhere flashing sheet to substrate in cold-applied adhesive. Apply cold-applied flashing sheet adhesive to back of flashing sheet if recommended by roofing manufacturer.
 - 1. Flashing Sheet Top Termination: Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.
 - a. Seal top termination of base flashing with a metal termination bar and a continuous bead of joint sealant.
 - 2. Flashing Sheet Bottom Termination: Adhere flashing sheet to roofing membrane in continuous bed of cold-applied adhesive.

- a. Bituminous Flashing: Seal bottom termination of base flashing by adhering to roofing membrane and stripping flashing to membrane joint.
- D. Install roofing membrane cap-sheet stripping where metal flanges and edgings are set on membrane roofing according to roofing system manufacturer's written instructions.
- E. Install stripping, according to roofing manufacturer's written instructions, where metal flanges and edgings are set on modified bituminous membrane roofing.
- F. Flashing-Sheet Stripping: Install flashing-sheet stripping in a continuous coating of compatible mastic/adhesive sealer, as recommended by roofing manufacturer, and extend onto roofing membrane. Apply number of courses recommended by manufacturer.
- G. Roof Drains: Set 30 by 30 inch (760 by 760 mm) square metal flashing in bed of compatible mastic/adhesive sealer on completed roofing membrane. Cover metal flashing with roofing membrane cap sheet stripping and extend a minimum of 6 inches (150 mm) beyond edge of metal flashing onto field of roofing membrane. Clamp roofing membrane, metal flashing, and stripping into roof-drain clamping ring.
 1. Install stripping according to roofing system manufacturer's written instructions.

3.9 SURFACING AND COATING INSTALLATION

- A. Cold-Applied Coat and Aggregate Surfacing: Promptly after installing and testing roofing membrane, base flashing, and stripping, flood-coat roof surface with cold-applied adhesive surfacing adhesive applied at rate required by roofing manufacturer.
 1. While adhesive coating is fluid, cast aggregate surfacing in a uniform application at the average weight indicated in Part 2 product listing.
- B. Aluminized Coating: Coat flashing membrane surface with number of coats, thickness of application, and application method as recommended in writing by coating manufacturer.

3.10 WALKWAY INSTALLATION

- A. Walkways, General: Install walkways according to roofing manufacturer's written instructions.
 1. Install walkways at following locations:
 - a. Perimeter of each rooftop unit.
- B. Walkway Cap Sheet Strips: Install cap sheet strips, approximately 36 inches (900 mm) wide and in lengths not exceeding 10 feet (3 m), leaving a space of 6 inches (150 mm) between strips. Install roofing membrane walkway cap sheet strips over roofing membrane in cold-applied adhesive.

3.11 FIELD QUALITY CONTROL

- A. Roofing Inspector: Contractor shall engage a qualified roofing inspector to perform roof tests and inspections and to prepare test reports.

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1. Engage a qualified roofing inspector for a minimum of 3 full-time days on site to perform roof tests and inspections and to prepare start up, interim and final reports. Roofing Inspector's quality assurance inspections shall comply with criteria established in NRCA's "Quality Control and Quality-assurance Guidelines for the Application of Membrane Roofing Systems."
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation at commencement and upon completion.
 1. Notify Owner 48 hours in advance of date and time of inspection.
- C. Repair or remove and replace components of built-up roofing where test results or inspections indicate that they do not comply with specified requirements.
 1. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.12 PROTECTING AND CLEANING

- A. Protect 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 Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 075216.13

SECTION 075416 - KETONE ETHYLENE ESTER (KEE) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Supply all labor, transportation, material, apparatus, tools, and permits necessary for removal and replacement of existing dome roof system. Contractor shall verify roof construction and square feet. Refer to roof plan drawing for roof area locations.
2. Repair concrete perimeter as needed during roof removal.
3. Adhere ¼-layer of seurock insulation to the concrete deck. Increase fastening pattern by 25% 4 feet in from all perimeter edges.
4. Install Tremco 60 Mil KEE roof membrane and accessories.
 - a. Membrane to be adhered in manufacturer's recommended adhesive.
5. Install all sheet metal details per specifications and SMACNA and manufacturer requirements and standards.
6. Install new aluminum metal flashings at all metal flashing locations.

B. Alternates: Refer to Division 01 Section "Alternates" for description of Work in this Section affected by alternates.

C. Allowances: Refer to Division 01 Section "Allowances" for description of Work in this Section affected by allowances.

D. Unit Prices: Refer to Division 01 Section "Unit Prices" for description of Work in this Section affected by unit prices.

1.2 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D1079 "Standard Terminology Relating to Roofing and Waterproofing" and glossary in applicable edition of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" for definition of terms related to roofing work in this Section.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Owner's Consultant, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.

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2. Review drawings and specifications.
3. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
4. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
5. Examine substrate conditions and finishes for compliance with requirements, including flatness and fastening.
6. Review structural loading limitations of roof deck during and after roofing.
7. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
8. Review governing regulations and requirements for insurance and certificates if applicable.
9. Review temporary protection requirements for roofing system during and after installation.
10. Review roof observation and repair procedures after roofing installation.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work.
 1. Base flashings and membrane terminations.
 - a. Indicate details meet requirements of NRCA and FMG required by this Section.
 2. Tapered insulation, including slopes and crickets.
 3. Roof plan showing types and orientation of roof deck and orientation of membrane roofing and fastening spacings and patterns for mechanically fastened membrane roofing if applicable.
 4. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
- C. Samples for Verification: For the following products:
 1. Sheet roofing, of color specified, including T-shaped side and end lap seam.
 2. Walkway pads or rolls.
 3. Metal termination bars.

1.5 INFORMATIONAL SUBMITTALS

- A. Contractor's Product Certificate: Submit certificate, indicating products intended for Work of this Section, including product names and numbers and manufacturers' names, with statement indicating that products to be provided meet the requirements of the Contract Documents.
- B. Qualification Data: For Installer, Manufacturer and Roofing Inspector.
 - 1. Include letter from Manufacturer written for this Project indicating approval of Installer.
- C. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
 - 1. Submit evidence of compliance with performance requirements.
 - a. Include: UL listing certificate.
 - 2. Product Compatibility: Indicate manufacturer has verified compatibility of roofing system components, including but not limited to: Roofing membrane, flashing sheets, adhesives, and sealants.
- D. Warranties: Unexecuted sample copies of special warranties.
- E. Inspection Reports: Reports of Roofing Inspector. Include weather conditions, description of work performed, tests performed, defective work observed, and corrective actions taken to correct defective work.
 - 1. Submit reports within 48 hours after inspection.

1.6 CLOSEOUT SUBMITTALS

- A. Executed copies of warranties.
- B. Maintenance Data: To include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of five years' experience installing products comparable to those specified, able to communicate verbally with Contractor, Owner's Consultant, and employees, and qualified by the manufacturer to install manufacturer's product and furnish warranty of type specified.
- B. Manufacturer Qualifications: Approved manufacturer listed in this Section, UL listed for roofing systems comparable to that specified for this Project, with minimum five years' experience in manufacture of thermoplastic roof membrane products in successful use in similar applications.
 - 1. Approval of Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:

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- a. Product data, including certified independent test data indicating compliance with requirements.
 - b. Samples of each component.
 - c. Sample submittal from similar project.
 - d. Project references: Minimum of five installations of specified products not less than five years old, with Owner contact information.
 - e. Sample warranty.
2. Substitutions following award of contract are not allowed except as stipulated in Division 01 General Requirements.
 3. Approved manufacturers must meet separate requirements of Submittals Article.
- C. Roofing Inspector Qualifications: A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:
1. An authorized full-time technical employee of the manufacturer.
 2. An independent party certified as a Registered Roof Observer by the International Institute of Building Enclosure Consultants (formerly the Roof Consultants Institute) retained by the Contractor or the Manufacturer and approved by the Manufacturer.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site access to manufacturer's written recommendations and instructions for installation of products.

1.8 DELIVERY, STORAGE, AND HANDLING

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

- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.9 PROJECT / FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 - 1. Provide tie-offs at end of each day's work to cover exposed roofing and insulation with a course of roofing sheet securely in place with joints and edges sealed.
 - 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
 - 3. Remove temporary plugs from roof drains at end of each day.
 - 4. Remove and discard temporary seals before beginning work on adjoining roofing.

1.10 WARRANTY

- A. Manufacturer's Warranty: Roof System Manufacturer's standard form in which Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within warranty period, as follows.
 - 1. Form of Warranty: Manufacturer's standard warranty form.
 - 2. Scope of Warranty: Work of this Section and including sheet metal details and termination details installed by the roof system Installer and approved by the Roof System Manufacturer.
 - 3. Warranty Period: 20 years from date of completion.
- B. Manufacturer Inspection Services: By manufacturer's technical representative, to report maintenance responsibilities to Owner necessary for preservation of Owner's warranty rights. The cost of manufacturer's inspections is included in the Contract Sum.
 - 1. Inspections to occur in following years: 2, 5, 10, 15 following completion.
- C. Installer Warranty: Installer's warranty signed by Installer, as follows.
 - 1. Form of Warranty: Form acceptable to Roofing Manufacturer and Owner.
 - 2. Scope of Warranty: Work of this Section.
 - 3. Warranty Period: 2 years from date of completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: The roof system specified in this Section is based upon products of Tremco CPG Inc, Beachwood, OH, (800) 562-2728, www.tremcoroofing.com that are named in other Part 2 articles. Provide specified products.
 - 1. Manufacturers of comparable products: Approved by Owner or Owner's Consultant prior to bid.
- B. Source Limitations: Obtain components for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

2.2 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.
 - 1. Accelerated Weathering: Roofing system shall withstand 10,000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
 - 2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D3746/D3746M, ASTM D4272/D4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.
- B. Flashings and Fastening: Provide base flashings, perimeter flashings, detail flashings and component materials and installation techniques that comply with requirements and recommendations of the following:
 - 1. NRCA Roofing Manual (Sixth Edition) for construction details and recommendations.
 - 2. SMACNA Architectural Sheet Metal Manual (Seventh Edition) for construction details.
 - 3. Comply with requirements of Division 07 Section "Sheet Metal Flashing and Trim".
- C. Exterior Fire-Test Exposure: ASTM E108, 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.

2.3 MATERIALS, GENERAL

- A. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.

2.4 THERMOPLASTIC MEMBRANE MATERIALS

- A. KEE Roof Membrane:

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1. Thermoplastic Ketone Ethylene Ester (KEE) coated polyester fabric-reinforced sheet, ASTM D6754.
 - a. Basis of design product: Tremco, TremPly KEE Single Ply Roof Membrane.
 - b. Breaking Strength, minimum, ASTM D751: Machine direction, 500 lbf (87 kN/m); Cross machine direction, 400 lbf (70 kN/m).
 - c. Tear Strength, minimum, ASTM D751: Machine direction, 125 lbf (21 kN/m); Cross machine direction, 145 lbf (25 kN/m).
 - d. Elongation at Break, ASTM D751: 20 percent.
 - e. Dynamic Impact/Puncture Resistance, ASTM D5635: Pass.
 - f. Minimum Membrane Thickness, nominal, less backing, ASTM D751: 60 mils (1.5 mm).
 - g. Thickness over fiber, optical method: 0.014 inches.
 - h. Accelerated Weathering, ASTM G155 and ASTM G154: Not greater than 5,000 hr., no cracking or crazing.
 - i. Abrasion Resistance, ASTM D3389: Not greater than 2,000 cycles, H-18 wheel, 1,000 g load.
 - j. Color: White.
 - k. Solar Reflectance Index (SRI), ASTM E1980: 110 (White, initial), 86 (White, 3-yr aged).

- B. Sheet Flashing: Manufacturer's standard, smooth-backed, sheet flashing of same material, type, reinforcement, thickness and color as KEE roof membrane.

2.5 AUXILIARY 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.

- B. Membrane Bonding Adhesive:

1. Bonding adhesive, solvent based fast drying, VOC-compliant, for bonding KEE smooth-backed single ply membranes and flashings to substrates.
 - a. Basis of design product: Tremco, TremPly KEE LV Bonding Adhesive.
 - b. VOC, maximum, ASTM D 3960: 200 g/L.

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- C. Flashing Membrane Adhesive: Same as membrane bonding adhesive.
- D. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch (25 mm by 3 mm) thick; with anchors.
- E. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch (25 mm wide by 1.3 mm) thick, prepunched.
- F. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening components to substrate, and acceptable to membrane roofing system manufacturer.
- G. Joint Sealant: Elastomeric joint sealant compatible with roofing materials, with movement capability appropriate for application.
 - 1. Joint Sealant, Polyurethane: ASTM C920, Type S, Grade NS, Class 50 single-component moisture curing sealant, formulated for compatibility and use in dynamic and static joints; paintable.
 - a. Basis of design product: Tremco, TremSEAL Pro.
 - b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 40 g/L.
 - c. Hardness, Shore A, ASTM C661: 40.
 - d. Adhesion to Concrete, ASTM C794: 35 pli.
 - e. Tensile Strength, ASTM D412: 350 psi (2410 kPa).
 - f. Color: Closest match to substrate.
- H. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- I. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.6 ROOF INSULATION MATERIALS

- A. General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from insulation manufacturer's standard sizes, suitable for application, and of thicknesses indicated.
 - 1. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated, not less than two times the roof slope.

2.7 ROOF INSULATION ACCESSORIES

- A. Cover Board:

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1. Gypsum panel, cellulosic fiber reinforced, water-resistant, ASTM C1278/C1278M.
 - a. Basis of design product: Tremco/USG Securock.
 - b. Thickness: 1/4 inch (6mm).
- B. Roof Insulation Adhesive:
 1. Urethane adhesive, bead-applied, low-rise two-component solvent-free low odor, formulated to adhere roof insulation to substrate.
 - a. Basis of design product: Tremco, Low Rise Foam Insulation Adhesive.
 - b. Flame Spread Index, ASTM E84: 10.
 - c. Smoke Developed Index, ASTM E84: 30.
 - d. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 0 g/L.
 - e. Tensile Strength, minimum, ASTM D412: 250 psi (1720 kPa).
 - f. Peel Adhesion, minimum, ASTM D903: 17 lbf/in (2.50 kN/m).
 - g. Flexibility, 70 deg. F (39 deg. C), ASTM D816: Pass.
- C. Insulation Cant Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.
- D. Tapered Edge Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.
- E. Substrate Joint Tape: 6- or 8-inch- (150- or 200-mm-) wide, coated, glass fiber.

PART 3 - EXECUTION

3.1 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 cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 3. Concrete Roof Deck:
 - a. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D4263.
 4. Verify that existing substrate is sound and dry.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing 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.
- D. Prime surface of concrete deck with manufacturer's recommended primer at manufacturer's recommended application rate.

3.3 INSTALLATION, GENERAL

- A. Install roofing system in accordance with manufacturer's written instructions and approved details.
- B. Install wood cants, blocking, curbs, and nailers in accordance with requirements of Division 06 Section "Miscellaneous Rough Carpentry."
- C. NRCA Installation Details: Install roofing system in accordance with applicable NRCA Manual Plates and NRCA recommendations; modify as required to comply with manufacturer's approved details and perimeter fastening requirements of FM Global references if applicable.

3.4 INSULATION INSTALLATION

- A. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with membrane roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- D. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
 - 1. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
- E. Cover Boards: Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches (150 mm) in each direction. Loosely butt cover boards together.
 - 1. Secure cover boards to resist uplift pressure at corners, perimeter, and field of roof.

2. Adhere cover boards by setting in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining cover board in place.

3.5 ADHERED MEMBRANE ROOFING INSTALLATION

- A. Adhere membrane roofing over area to receive roofing and install according to membrane roofing system manufacturer's written instructions.
- B. Start installation of membrane roofing in presence of membrane roofing system manufacturer's technical personnel.
- C. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Solvent-Based Bonding Adhesive: Apply to substrate and underside of membrane roofing at rate required by manufacturer and allow adhesive to become tacky before installing membrane roofing; do not allow adhesive to fully dry. Roll membrane into adhesive. Do not apply adhesive to splice area of membrane.
- E. In addition to adhering, mechanically fasten membrane roofing securely at terminations, penetrations, and perimeter of roofing.
- F. Apply membrane roofing with side laps shingled with slope of roof deck where possible.
- G. Welded Seams: Clean seam areas, overlap membrane roofing, and hot-air weld side and end laps of membrane roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.
 1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of sheet membrane.
 2. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
 3. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.
- H. Spread sealant bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.

3.6 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

- E. Seal top termination of base flashing with a metal termination bar and a continuous bead of joint sealant.

3.7 FIELD QUALITY CONTROL

- A. Roofing Inspector: Contractor shall engage a qualified roofing inspector to perform roof tests and inspections and to prepare test reports.
 - 1. Engage a qualified roofing inspector for a minimum of 4 full-time days on site to perform roof tests and inspections and to prepare start up, interim, and final reports. Roofing Inspector's quality assurance inspections shall comply with applicable criteria established in NRCA's "Quality Control and Quality-assurance Guidelines for the Application of Membrane Roofing Systems."
- 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.

3.8 PROTECTING 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 Owner's 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.

END OF SECTION 075416