

# **PROJECT CONTRACT DOCUMENTS**

## ***ST. LOUIS PUBLIC LIBRARY***

Project #21-002265:

Buder Branch Roof Replacement

4401 Hampton Avenue  
St. Louis, MO 63139

Publication Date:  
May 5, 2021

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**REQUEST FOR PROPOSAL**

**RFP NO: 21-002265**

**Date Issued: May 5, 2021**

**SEND PROPOSALS TO:**

Rita Kirkland, Purchasing Manager  
St. Louis Public Library  
Administrative Offices  
1415 Olive Street  
St. Louis, MO 63103 **OR**  
**bids@slpl.org**

**Pre-Bid Date: May 19, 2021 @ 9:00 am**

**Due Date: June 2, 2021 @ 2:00pm**

**Purchasing Agent:** Rita Kirkland

(314)539-0313

**Contact Email Address:** [rkirkland@slpl.org](mailto:rkirkland@slpl.org)

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL**  
**LIBRARY DISTRICT DBA**  
**ST. LOUIS PUBLIC LIBRARY RFP 21-002265**  
**BUDER ROOF REPLACEMENT**

This Proposal is subject to all the terms and conditions of this Request for Proposals and any Proposer representations, as well as accompanying specifications. The signature of the Proposer indicates that Proposer understands these documents and will comply with them.

Name, Address and Contact Information of Authorized Representative of Proposer

Print Name \_\_\_\_\_

Print Title \_\_\_\_\_

Print Address \_\_\_\_\_

Print City, State, Zip \_\_\_\_\_

Print Telephone \_\_\_\_\_

Print Email \_\_\_\_\_

(Signature and Title of Authorized Representative of Proposer)

DATE

Proposer is:\_\_\_\_ individual\_\_\_\_ corporation\_\_\_\_ partnership\_\_\_\_ LLC\_\_\_\_ Other\_\_\_\_

(describe)\_\_\_\_\_

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## CONTRACT AGREEMENT SAMPLE

This Agreement made this \_\_\_ day \_\_\_\_\_ 2021, between the **Board of Directors of the City of St. Louis Municipal Library District**, hereinafter called the “**St. Louis Public Library**” located at 1415 Olive St, St Louis, MO 63103-2389, and \_\_\_\_\_, located at \_\_\_\_\_, hereinafter called the “**Contractor**”.

### **The Project: Buder Roof Replacement**

**General Description of Work:** Contractor agrees to furnish all necessary labor, material, tools, and equipment required to complete work for the St. Louis Public Library, Buder Roof Replacement in accordance with bid documents issued for Project 21-002228.

Library and Contractor agree as follows:

#### **1. Contract Documents**

1.1 The contract documents consist of this Agreement, Supplementary Conditions, Quotation Form, Specifications and Exhibits attached hereto, the Bidding documents for bid Project 21-002228, and addenda issued by the St. Louis Public Library prior to execution of this contract, the project schedule, as may be amended from time to time, and any subsequent modifications or revisions to any of the above documents.

1.2 All of the above contract documents form this contract are fully incorporated herein.

#### **2. Scope of Work**

2.1 The St. Louis Public Library employs the Contractor, as an independent Contractor, to perform the part of the work on the project as set forth in the Contract Documents.

2.2 The Contractor agrees to perform the contract work under the direction of the St. Louis Public Library, and any other specified representative of the St. Louis Public Library. The Contractor agrees to provide and pay for all labor, regardless of craft or jurisdiction, materials, tools, supplies and equipment, except as otherwise provided herein, to perform the contract work in strict conformity with the contract documents.

2.3 The contract work includes:

- (a) that shown on any of the contract documents as called for or shown on all; and
- (b) all things reasonably implied or customarily provided in the Contractor’s line of work or necessary to complete such work for inspection and approval under the contract documents. Contractor will furnish all necessary tools, equipment, scaffolding, protection, and competent supervision and shall execute all work in the best and most workman-like manner by qualified, careful, and efficient workers who shall be satisfactory to the St. Louis Public Library.

### **3. Contract Sum and Payments**

3.1 In consideration of the complete and timely performance of all contract work, the St. Louis Public Library shall pay to the Contractor the sum of \_\_\_\_\_), subject to additions, deductions and conditions as stated herein. The Library's payment terms are net 30 days.

3.2 Payments shall be made in installments as the work progresses unless Contractor is in default. By the 10<sup>th</sup> day of each month, the Contractor shall submit to the Library a written requisition for payment in approved form showing the proportionate value of the work performed and completed to date from which shall be deducted: (a) a retainage of ten (10) percent of such proportionate value, and (b) the aggregate of retainages from all prior requisitioned progress payments.

3.3 Progress payments may be withheld in whole or in such an amount as exclusively determined by Library on account of: (a) defective materials or work, (b) claims or liens, or any notice thereof, whether true or spurious, (c) any breach by Contractor of any provision or obligation of this contract, (d) a reasonable doubt that the Contract Work can be completed for the balance then unpaid, or (e) a reasonable doubt that the Contractor, for any reason, is unable to complete the Contract Work. If the foregoing causes are remedied or adjusted; Library may remedy the same for the Contractor's account.

3.4 The quantities of work performed and materials furnished as established by the Library or the Library's representative shall constitute the basis for computation of the payment to Contractor. Payments made on account of materials not incorporated in the Work, but delivered and suitably stored, shall be in accordance with the Contract Documents. Payment is not conclusive of full performance nor should payment be considered to be acceptable of defective work or improper materials.

3.5 If requested, Contractor shall submit to the Library a schedule of values of the parts of the Contract Work performed, aggregating the Contract sum and supported by such evidence as to correctness as Library may direct. The schedule shall be itemized by general areas, specific large pieces of equipment, and/or another similar method which method which shall accurately indicate the value of work performed or services rendered.

3.6 Contractor will provide an affidavit to the St. Louis Public Library showing that its labor, materials and other bills have been paid, and release or lien waivers, in form satisfactory to the St. Louis Public Library. If it appears that labor, material or other bills incurred in the performance of the contract work are not being paid, the St. Louis Public Library may take such steps it deems necessary to ensure that the payments will be utilized to pay such bills.

3.7 Final payment shall be made to Contractor after completion of contract work and acceptance by the St. Louis Public Library and that all labor (including customary fringe benefits and payments due under collective bargaining agreements) and all subcontractors and materialmen have been paid to date and are waiving their lien rights upon the final payment of a specific balance due. Final payment shall constitute a waiver of all claims by Contractor.

3.8 In the event of any breach by Contractor of this agreement, or in the event of the assertion by others of any claim or lien against the St. Louis Public Library or the St. Louis Public Library's surety (if any), which claim or lien arises out of Contractor's performance, the St. Louis Public Library may, but is not required to, retain out of any payments due to Contractor an amount sufficient to protect the St. Louis Public Library from any and all loss, damage or expense therefrom, until the claim or lien has been adjusted by the Contractor to the satisfaction of the St. Louis Public Library.

3.9 The contract price includes all applicable local, state and federal taxes, license fees and permit charges based upon or measured by the work to be done hereunder, labor to be performed, materials to be furnished, and services to be rendered. Said contract price shall not include any sales taxes because the St. Louis Public Library is a tax-exempt institution.

3.10 In order to take advantage of its sales tax exempt status and upon request, the St. Louis Public Library shall furnish to the Contractor a tax exemption certificate authorizing purchases for all materials and equipment required in conjunction with the project. The General Contractor shall furnish the certificate to all material suppliers as authorization to purchase on behalf of the St. Louis Public Library, all tangible property and materials to be incorporated into or consumed in the construction of the project and no other on a tax-exempt basis. This exemption certificate does not allow Contractor to purchase machinery, equipment or tools, used in fulfilling this contract, tax exempt.

#### **4. Prosecution of Work**

4.1 The Contractor agrees, within fifteen (15) calendar days after notification by the St. Louis Public Library, to commence in the field, at such points as the St. Louis Public Library may designate, the contract work and to continue diligently in its performance in accordance with the project schedule. Time is of the essence of this contract.

4.2 The Contractor shall promptly provide the St. Louis Public Library with scheduling information when requested. The St. Louis Public Library shall review the project schedule and may revise such schedule as necessary as the work progresses. Contractor shall comply with instructions given by the St. Louis Public Library, including any to suspend, delay or accelerate the contract work.

4.3 Contractor shall furnish the St. Louis Public Library with its list of proposed subcontractors, equipment and material suppliers, along with the description of the corresponding item of work. Contractor shall bind its subcontractors, equipment and material suppliers to the requirements set forth in this agreement, the schedule of work and the contract documents. In those instances where any subcontractor or supplier fails to submit shop drawings, product data or samples which meet the specifications, the additional cost (price increases and other costs due to delays in placing order) to furnish the specified equipment and/or material shall be borne by Contractor. Contractor shall also bear any extra cost incurred by the St. Louis Public Library due to this failure.

4.4 Contractor shall prosecute Contractor's work in a prompt and diligent manner in accordance with the schedule of work without hindering the work of any other contractor or subcontractor. If work or property of any other is hindered, delayed or damaged by Contractor, Contractor will pay for all costs and damages incurred by such other party and will cause all such damage to be corrected to the satisfaction of and without cost to the St. Louis Public Library.



4.5 Contractor shall be responsible for and will prepare for performance of Contractor's work, including without limitation thereto, shop drawings, samples and tests, field dimensions, determination of labor requirements and ordering of materials as required to meet the schedule of work. Contractor shall submit to St. Louis Public Library review and approval all shop drawings, product data, samples and tests required by the contract documents.

4.6 Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the project site during the progress of the work. The superintendent shall be satisfactory to the St. Louis Public Library and shall not be changed except with the consent of the St. Louis Public Library, unless the superintendent ceases to be in the Contractor's employ. The superintendent shall attend all coordination, scheduling, progress and safety meetings where Contractor's work is involved or as required by St. Louis Public Library. The St. Louis Public Library may, in writing, require Contractor to remove from the contract work any employees deemed by the St. Louis Public Library to be incompetent, habitually careless, grossly insubordinate or otherwise objectionable.

4.7 The St. Louis Public Library or its representatives will furnish basic control points and benchmarks, as needed. Any further layout necessary for completion of the Contract is the responsibility of Contractor. Contractor shall lay out its work from control points supplied by the St. Louis Public Library and be responsible for its accuracy and the placement of all inserts, embeddings, grounds and blockout, etc. as required to complete the work. Contractor shall be responsible for repair of such items that are improperly placed if it can be shown that original control work was accurately performed.

4.8 Contractor shall be required, as necessary, to meet with the St. Louis Public Library to review and develop a construction schedule for the project.

4.9 Contractor may be required to develop and submit to the St. Louis Public Library for their review and approval a safety program to be followed during the performance of the Contractor's work.

4.10 Contractor will be responsible for supplying its own crew with drinking water, ice, and cups.

4. 11 If the St. Louis Public Library agrees at its sole option to allow the Contractor to use St. Louis Public Library's tools or equipment, Contractor shall do so at its sole risk and shall hold the St. Louis Public Library harmless from any claims and/or expenses, including but not limited to attorney's fees and court costs, resulting from use of such tools and equipment by Contractor. The St. Louis Public Library shall be reasonably compensated by Contractor for such tools and equipment. In the event that one or more of St. Louis Public Library's personnel operate such tools or equipment for Contractor, said personnel shall be employees of Contractor for all purposes while so operating said tools or equipment, whether or not such personnel are placed on Contractor's payroll. Contractor agrees in all cases to provide proper and expert supervision to control, direct, and be responsible for all acts and omissions of such borrowed personnel. Should Contractor fail to compensate such personnel by placing them on its payroll, the St. Louis Public Library may compensate such personnel on behalf of and for the Contractor and deduct such sum from any amounts due to the Contractor.

4.12 Contractor shall furnish progress reports of Contractor's work as mutually agreed including the progress of materials or equipment to be provided under this agreement that may be in the course of preparation or manufacture.

4.13 Contractor shall maintain at the site, one copy of all drawings, specifications, addenda, approved shop drawings, change orders and modifications, in good order and marked currently to record all changes made during construction/demolition relating to its work.

4.14 If required, Contractor shall submit a final set of Record Drawings and Operating and Maintenance Manuals upon completion of the project. Receipt by the St. Louis Public Library of these materials is required prior to processing Contractor's final payment.

4.15 Contractor shall cooperate with the St. Louis Public Library and other contractors and subcontractors whose work may interfere with Contractor's work and participate in the preparation of coordinated drawings and work schedules in areas of congestion, specifically noting and advising St. Louis Public Library of any interference by other contractors or subcontractors.

4.16 Contractor shall keep the building and premises reasonably clean of debris resulting from the Contractor's work. If Contractor fails to comply with this paragraph within twenty-four (24) hours after receipt of written or verbal notice of non-compliance from the St. Louis Public Library, the St. Louis Public Library may perform such necessary clean-up and deduct the cost from any amounts due Contractor.

4.17 Contractor shall give adequate notices pertaining to the work of the Contractor to proper authorities and secure and pay for all necessary licenses, permits, governmental fees and inspections to carry out Contractor's work and shall furnish copy of said permits, licenses and inspection reports to Library prior to start of Contractor's work.

4.18 Contractor shall comply with all federal, state and local laws, rules, regulations and orders, Social Security laws and unemployment compensation laws, worker's compensation laws and safety required to maintain certified payroll records for its employees and for its subcontractor's employees in accordance with the requirements of the Davis-Bacon Act and to provide the St. Louis Public Library with said certified payroll records.

4.19 Contractor will not assign this agreement nor subcontract the whole or any part of the work to hereunder without the written consent of the St. Louis Public Library, with the exception of those subcontractors listed by the contractor and furnished to the St. Louis Public Library as provided herein.

4.20 In the case of minor repairs to newly finished interior surfaces (not covered by property insurance) the cost of said repairs for which responsibility cannot be ascertained shall be prorated to all subcontractors in proportion to manpower employed during the period when damage occurred.

4.21 Every part of Contractor's work shall be executed in strict accordance with the agreement in the most sound, workmanlike, and substantial manner. All workmanship shall be of the best of its several kinds, and all materials used in the Contractor's work shall be furnished in ample quantities to facilitate the proper and expeditious execution of the contract work, and shall be new, except such materials as may be expressly provided in the agreement to be otherwise. Every part of the Contractor's work shall be subject to review and inspection by the St. Louis Public Library as to quality and quantity, to determine that said work is in accordance with contract documents, that the specified materials and amount of materials have been utilized, and that said materials and work are consistent with the contract documents.

4.22 Contractor shall provide the St. Louis Public Library with copies of all guarantees, warranties, operation manuals, maintenance manuals, parts lists, etc. from the manufacturers of the materials and equipment used in the project.

4.23 In the event the scope of the Contractor's work includes installation of materials or equipment furnished by others, it shall be the responsibility of Contractor to examine the items so provided and thereupon handle, store, and install the items with such skill and care as to ensure a satisfactory and proper installation. Loss or damage due to acts of the contractor shall be deducted from any amounts due or to become due Contractor.

4.24 No substitutions shall be made in Contractor's work unless permitted in the contract and only then upon Contractor's first receiving all approvals required under the contract for substitutions. Contractor shall indemnify the St. Louis Public Library for any increase costs incurred by the St. Louis Public Library as a result of such substitutions, regardless whether Contractor has obtained approval thereof.

## **5. Insurance**

5.1 Prior to starting the contract work, Contractor shall procure and maintain in force, worker's compensation insurance, employer's liability insurance in full compliance with the laws of the state of Missouri, comprehensive general liability insurance with contractual coverage and automobile liability insurance, including owned, non-owned and hired automobile coverage and such other insurance, to the extent required by the contract documents for Contractor's work.

5.2 Contractor's Comprehensive General and Automobile Liability Insurance, as required by paragraph 5.1 shall be written for not less than limits of liability as follows: (a) Contractor's comprehensive general liability insurance shall insure against claims for bodily injury, death, and property damage occurring and arising out of and as a result of services, articles and materials performed or delivered hereunder on an occurrence basis with a combined single limit of one million dollars (\$1,000,000); and (b) Contractor's automobile liability insurance shall insure against claims for bodily injury, death and property damage occurring and arising out of and as a result of services performed hereunder with a combined single limit of one million dollars (\$1,000,000).

5.3 The policies of insurance shall be in such form and shall be issued by such company or companies as may be satisfactory to the St. Louis Public Library. Before commencing the work, Contractor shall furnish the St. Louis Public Library with certificates of insurance from the insuring companies which certificates shall specify the effective dates of the policies, the limits of liability thereunder, and contain a provision that the said insurance will not be cancelled except upon thirty (30) days notice in writing to St. the Louis Public Library. Contractor shall not cancel any policies of insurance required hereunder prior to completion of the work without written consent of the St. Louis Public Library.

5.4 Contractor may use a combination of general liability insurance and excess liability insurance provided the sum of these insurances at least equals the amounts listed for the general liability insurance. If excess liability insurance is used, "umbrella form" must be furnished.

5.5 The carrying of insurance shall not be deemed to release Contractor or in any way diminish its liability, by way of indemnity or otherwise, as assumed by it under this agreement. The Contractor shall furnish, at St. Louis Public Library request, satisfactory evidence of such insurance as they may be required to obtain pursuant to the contract documents.

5.6 St. Louis Public Library and Contractor waive all rights against each other, separate contractors, and all other subcontractors for damages caused by fire or other perils to the extent reimbursed by Builder's Risk or any other property insurance, except as such rights as they may have to the proceeds of such insurance.

## **6. Indemnity**

To the fullest extent permitted by law, Contractor agrees to indemnify and hold harmless, the St. Louis Public Library and all of their agents, officers and employees from and against all claims, damages, losses and expenses, including but not limited to attorney's fees and court costs, arising out of or resulting from the performance, or failure in performance, of Contractor's work and obligations as provided in the contract documents, including any extra work, and from any claim, damage, loss or expense which (1) is attributable to bodily injury, sickness, disease, death, injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by any negligent act or omission of Contractor or anyone directly or indirectly employed by it or anyone for whose acts it may be liable regardless of whether it is caused in part by a party indemnified hereunder. In any and all claims against St. Louis Public Library, or any of their agents or employees by any employee of Contractor, anyone directly or indirectly employed by it or anyone for whose acts it may be liable, the indemnification obligation under this paragraph 6 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for Contractor under Worker's Compensation acts, disability benefits acts or other employee benefit acts. The obligations of Contractor under this paragraph 6 shall not extend to the liability of the St Louis Public Library, their agents or employees, arising out of (a) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications, or (b) the giving or failure to give directions or instructions by the St Louis Public Library, their agents or employees, providing such giving or failure to give is the primary cause of the injury or damage.

## **7. Bonds**

If required by the St. Louis Public Library, the Contractor shall furnish the St. Louis Public Library, in a form satisfactory to the St. Louis Public Library, full and duly executed performance and payment bonds, underwritten by a surety or sureties satisfactory to the St. Louis Public Library, in the full amount of this agreement. The Contractor's failure to deliver satisfactory bonds within ten (10) calendar days after demand may be deemed a material breach of this agreement.

## **8. Changes**

8.1 Contractor agrees that St. Louis Public Library may add to or deduct from the amount of work covered by this agreement. Any other made in the amount of work, or any other part of this agreement, shall be by written amendment hereto, setting forth in detail the changes involved. All modifications, including price adjustments, will be mutually agreed upon by both parties. Contractor agrees to proceed with the work as changed when so ordered in writing by the St. Louis Public Library so as not to delay the progress of the work and pending any determination of the value thereof unless St. Louis Public Library first requests a proposal of cost before the change is affected. If the St. Louis Public Library requests a proposal of cost for a change, Contractor shall promptly comply with such requested price adjustment. Failure of the parties to agree to an adjustment may result in termination of this contract. Upon termination, the Contractor will be paid for all labor and material provided as of termination date. No consideration will be given for anticipated loss of revenue on the cancelled portion of the contract.

8.2 Contractor shall be paid for changes or alterations in the work the actual amount allowed therefore to the Contractor by the St. Louis Public Library. Contractor shall submit an itemized, detailed breakdown for each change proposal. The procedures for administering changes shall be set forth in the contract documents.

8.3 Contractor shall be entitled to receive no extra compensation for extra work or materials or changes of any kind regardless of whether the same was ordered by the St. Louis Public Library or any of his representatives unless a change order or written directive therefor has been issued in writing by the St. Louis Public Library. If extra work was ordered by the St. Louis Public Library and Contractor performed same but did not receive a written order therefor, Contractor shall be deemed to have waived any claim for extra compensation therefor. Contractor shall be responsible for any increased costs incurred by the other contractors and subcontractors that result from Contractor proceeding with changes without a written order therefor.

8.4 Contractor shall not be entitled to receive an overhead and profit allowance in excess of ten percent (10%) of Contractor's actual cost for any extra work ordered in writing by the St. Louis Public Library, unless otherwise agreed in writing by the St. Louis Public Library and Contractor prior to the commencement of such extra work.

8.5 For purposes of this Paragraph 8 only, the term "Library" references only the St. Louis Public Library.

## **9. Inspection & Approvals**

9.1 Contractor shall provide at its own place of business, at the places of business of its subcontractors and suppliers, and at the project, sufficient safe and proper facilities for the inspection of Contractor's work by the St. Louis Public Library, or any other authorized representative. Contractor shall notify the St. Louis Public Library when portions of its work are ready for inspection.

9.2 Contractor shall, within twenty-four (24) hours after receiving written notice from Library, proceed to take down and remove from the project all portions of its work, which the Library shall condemn as unsound or improper or in any way failing to meet the specifications and Contractor at its own expense shall make good all its work or any other work damaged by such removal and replace all removed portions of its work, or other work which cannot be repaired, with materials and workmanship meeting specifications.

9.3 In addition to any shop drawings and samples specified, Contractor shall prepare at its own expense and furnish promptly, whenever requested by the St. Louis Public Library, a sufficient number of prints of shop drawings, manufacturer's data, templates, schedules, reports or any other data that may be necessary in the opinion of the St. Louis Public Library for review and approval by the St. Louis Public Library or its representative, and for distribution among other contractors or subcontractors. Contractor shall exercise the utmost diligence in obtaining all drawings, details and information necessary to perform its work, and if at any time drawings or information necessary to perform its work have not been furnished, Contractor shall promptly inform the St. Louis Public Library.

9.4 The approval by the St. Louis Public Library or his representative of any submittals by the Contractor shall not relieve Contractor of liability for any deviations from any contract requirement unless specifically called to the St. Louis Public Library's attention, in writing, and so acknowledged by the St. Louis Public Library in writing.

9.5 Any damage prior to final acceptance and payment for the project shall be immediately corrected and rectified by Contractor at its sole expense. Inspection or supervision by the St. Louis Public Library shall not relieve Contractor of its obligations herein. Contractor shall promptly perform any and all such list work submitted to it by the St. Louis Public Library.

## **10. Termination and Termination for Conveniences**

10.1 Should Contractor fail in the opinion of the St. Louis Public Library at any time to supply a sufficient number of properly skilled workmen or sufficient materials and equipment of the proper quality, or fail in any respect or prosecute the work with promptness and diligence, or fail to correct defective work promptly or fail in the performance of any of the requirements herein, the St. Louis Public Library may, at its option, provide such labor, materials and equipment and deduct the cost thereof, together with all loss or damage occasioned thereby, from any money then due or thereafter to become due to Contractor. The St. Louis Public Library shall provide twenty-four (24) hour prior notice to Contractor except in any emergency.

10.2 If Contractor at any time shall refuse or neglect to supply sufficient properly skilled workmen, or materials or equipment of the proper quality and quantity, or fail in any respect or prosecute the work with promptness and diligence, or cause by any action or omission the stoppage or interference with the work of other contractors, or fail in the performance of any of the covenants herein contained, or be unable to meet his debts as they mature, Library may, at its option at any time after serving written two-calendar-day notice of such default, terminate Contractor's employment by delivering written notice of termination to Contractor. Thereafter, the St. Louis Public Library may take possession of the land and work of Contractor at the building site, and through itself or others provide labor, equipment and materials to prosecute Contractor's work on such terms and conditions as shall be deemed necessary, and shall deduct the cost thereof, including all charges, expenses, losses, costs, damages, and attorneys' fees, incurred as a result of Contractor's failure to perform, from any money then due or thereafter to become due to the Contractor.

10.3 If Library terminates the employment of Contractor, Contractor shall not be entitled to any further payments under this agreement until Contractor's work has been completed and accepted by the St. Louis Public Library. In the event that the unpaid balance due exceeds the St. Louis Public Library's cost of completion, the difference shall be paid to Contractor; but if such expense exceeds the balance due, Contractor agrees promptly to pay the difference to the St. Louis Public Library.

10.4 Additionally, the St. Louis Public Library shall have the right to terminate this contract, by written notice, without Contractor being at fault, for any cause or for its own convenience, and require Contractor to immediately stop work. In such event, Library shall pay Contractor for that work actually performed in an amount proportionate to this contract sum. The St. Louis Public Library shall not be liable to Contractor for any costs nor for prospective profits on work not performed.

## **11. Claims**

11.1 Any claims or disputes which may arise, including adjustments to compensation or to time of completion, shall be governed by the contract documents. Claims, disputes or other matters in question between the parties to the agreement, arising out of this agreement or the breach thereof, may be submitted to arbitration or mediation only upon the subsequent, mutual and written agreement of the parties. Absent such agreement, all claims, disputes or other matters in question between the parties to this agreement, arising out of or relating to this agreement or the breach thereof, shall be decided by resort to litigation in any court of competent jurisdiction located within the City of Saint Louis, State of Missouri.

11.2 Contractor shall carry on the contract work and maintain satisfactory progress while any claim or dispute is being resolved.

## **12. Damage to Work**

All loss or damage to Contractor's work resulting from any cause whatsoever shall be borne and sustained by Contractor and shall be solely at its risk until final acceptance by the St. Louis Public Library. Contractor shall at all times and at its expense protect all labor, materials, supplies, tools and equipment against any damage, injury, destruction, theft or loss and in no event shall the St. Louis Public Library be liable or responsible therefor, and likewise for those of its mechanics, laborers, and materialmen, for all of which Contractor shall be solely responsible. Contractor shall at its expense promptly repair or replace damage to the work of others, or to any part of the project, resulting from its activities.

## **13. Compliance with Law and Safety**

13.1 All work, labor, services and materials to be furnished by Contractor must strictly comply with all applicable federal, state or local laws, rules, regulations, statutes, ordinances and directives (hereinafter "laws") now in force or hereafter in effect. All work, labor, services or materials necessary to comply with said laws will be furnished by Contractor as part of this contract without any additional compensation. Contractor agrees to indemnify and save the St. Louis Public Library harmless from and against any and all claims, loss or expense caused directly or indirectly by its failure to fully comply herewith.

13.2 Contractor agrees that the prevention of accidents to workmen engaged in the work under the contract is solely its responsibility. Contractor shall comply with all applicable safety laws and with any safety standards established during the progress of the work by the St. Louis Public Library.

13.3 When so ordered by the St Louis Public Library, Contractor shall stop any part of the work which the St Louis Public Library deems unsafe until corrective measures satisfactory to the St. Louis Public Library have been taken. Should Contractor neglect to adopt such corrective measures, the St. Louis Public Library may do so and deduct the cost from payments due to Contractor. Contractor shall timely submit copies of all accident or injury reports to the St. Louis Public Library.

## **14. Patents**

Contractor agrees to pay all royalties and license fees and to indemnify and hold harmless the St. Louis Public Library from any and all loss, damage or expense, including attorney's fees and court costs, to which they may be put from claims or litigation for the misuse of any patented or unpatented invention or process, used or furnished by Contractor, unless required by the contract documents and not originated or prepared by Contractor.

## **15. Guarantee**

15.1 Contractor warrants to the St. Louis Public Library that all materials and equipment furnished shall be new unless specified, and that all work under this contract shall be of good quality, free from faults and defects and in conformance with the contract documents.



15.2 Contractor agrees to promptly make good, without cost to the St. Louis Public Library, any and all defects due to faulty workmanship and/or materials which may appear within the guarantee, or warranty period established in the contract documents, and if no such period be stipulated in the contract documents, then such guarantee shall be for a period of one (1) year from date of completion and acceptance of the project by the St. Louis Public Library. Contractor further agrees to execute any special guarantees as provided by the contract documents or required by law. Contractor shall require similar guarantees from all vendors and subcontractors.

15.3 Contractor shall pay for all changes to the work resulting from such defects in workmanship or materials and all expenses necessary to replace or repair the work including that damaged or disturbed by making replacements or repairs. This guarantee is in addition to all other guarantees, warranties and rights contained in the contract documents, and otherwise provided by law.

## **16. Labor Relations**

16.1 Contractor shall do whatever is necessary in the progress of its work to assure harmonious labor relations at the project and to prevent strikes or other labor disputes. Contractor shall employ only such labor as, to the St. Louis Public Library's satisfaction, will work in harmony on the job and shall not use materials or employ means which may cause strikes or other labor troubles.

16.2 Contractor shall fully comply with all labor agreements and jurisdictional decisions presently in force or subsequently executed with or by the St. Louis Public Library. Contractor's failure to so act may be deemed a material breach of this Contract.

16.3 Subcontractors shall comply with this article to the same extent as Contractor. Contractor shall include an express provision imposing such obligations on subcontractors in its subcontracts. Contractor shall indemnify the St. Louis Public Library against any liability, claim, loss, damage or expense resulting in any way, directly or indirectly, from its failure to comply with the requirements of this Section 16, including fees and costs incurred in enforcing this indemnity.

## **17. Temporary Facilities**

Contractor will furnish those temporary facilities and services required by Contractor except for those, if any, to be provided by the St. Louis Public Library as set forth in the contract documents. Storage areas, if available, will be allocated by the St. Louis Public Library for Contractor's materials and equipment during the course of the work. Locations of parking, office trailer (s), marshalling yards (s), etc. shall be submitted to and approved by the St. Louis Public Library.

## **18. Occupancy of Project**

Whenever it may be useful or necessary for the St. Louis Public Library to do so, the St. Louis Public Library shall be permitted to occupy and use any portion of the work which has been either partially or fully completed by Contractor before final inspection and acceptance thereof by the St. Louis Public Library but such use of occupation shall not relieve Contractor of its guarantee of said work and materials nor of its obligation to make good at its own expense any defect in materials and workmanship which may occur or develop prior to release from responsibility to the St. Louis Public Library.

## **19. Equal Opportunity**

19.1 The St. Louis Public Library is an equal employment opportunity employer. Contractor agrees to comply with the Fair Labor Standards Act, Fair Employment Practices Act, Equal Opportunity Act, Missouri Prevailing Wage Law, Contract Work Hours and Safety Standards Act, Copeland Anti-Kick Back Act and all other applicable federal, state and local laws pertaining to employment or labor relations including all equal employment opportunity laws and any small, disadvantaged and minority business enterprise requirements, in connection with the performance of its services pursuant to this agreement, and further agrees that this provision will be included in any contracts entered into by Contractor with any other person or entity for the performance of services in connection with this agreement. Contractor agrees to supply the St. Louis Public Library with any documentation requested by the St. Louis Public Library and to permit the St. Louis Public Library to review Contractor's records, reports and other documents as necessary to ascertain Contractor's compliance with the provisions of this subparagraph.

19.2 Contractor agrees to comply with applicable health and safety regulations, including those promulgated by EPA, OSHA and other federal, state and local agencies having jurisdiction over any project with respect to which Contractor is requested to provide services, in connection with the performance of its services pursuant to this agreement.

## **20. Inspection of Documents**

Contractor acknowledges that all of the contract documents are on file in the St. Louis Public Library's office and have been made available to Contractor for inspection and copying. Contractor represents that it has carefully examined all of such contract documents or waives such examination. Contractor represents that it has satisfied itself and has become fully acquainted with the nature and location of the work contracted for hereunder, the general and local conditions, particularly those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, utilities, roads, weather conditions, river stages or similar physical conditions, the conformation and condition of, the ground, the soil structure and subsurface conditions, obstructions, actual levels, excavating, filling in, the character and equipment of facilities needed preliminary to and during prosecution of the work, costs of materials and wage rates and all other matters which in any way might affect the work under this contract, or the cost thereof.

## **21. Contract and Interpretation**

21.1 Inconsistencies and Omissions. Should inconsistencies or omissions appear in the contract documents, it shall be the duty of the Contractor to so notify the St. Louis Public Library in writing within three (3) working days of the Contractor's discovery thereof. Upon receipt of said notice, the St. Louis Public Library shall instruct the Contractor as to the measures to be taken and the Contractor shall comply with the St. Louis Public Library's instructions.

21.2 To the extent that any inconsistencies or conflict in interpretation arise between the terms of this agreement and the contract documents, the terms of this agreement shall control and be binding on all parties hereto.

21.3 Law and Effect. This agreement shall be governed by the law of the State of Missouri.

21.4 Severability and Waiver. The partial or complete invalidity of any one or more provisions of this agreement shall not affect the validity or continuing force and effect of any other provision. The failure of either party hereto to insist, in any one or more instances, upon the performance of any of the terms, covenants or conditions of this agreement, or to exercise any right herein, shall not be construed as a waiver or relinquishment of such term, covenant, condition or right as respects further performance.

21.5 Attorney's Fees. Should either party employ an attorney to institute suit to enforce any of the provisions hereof, to protect its interest in any matter arising under this agreement, or to collect damages for the breach of the agreement or to recover on a surety bond given by a party under this agreement, the prevailing party shall be entitled to recover reasonable attorney's fees, costs, charges, and expenses expended or incurred therein.

21.6 Title. The titles given to the Articles of this Agreement are for ease of reference only and shall not be relied upon or cited for any other purpose.

## **22. Design Team Projects**

If the Contractor's work on the project is based on its design or a design in which it or subcontractors engaged by Contractors prepared or participated in the preparation of, Contractor will indemnify and hold harmless the St. Louis Public Library from any and all claims, demands, causes of action, suits, arbitration awards, actual, consequential and punitive damages, costs, expenses, fees (including attorney's fees) directly or indirectly relating to or arising out of any errors or omissions by the Contractor or subcontractors who participated in such design, including, without limitation, all direct and indirect costs and expenses incurred in changing the design of the project, including, without limitation, costs, and expenses incurred by the St. Louis Public Library, and costs and expenses incurred in modifying the design and work of the St. Louis Public Library rendered directly or indirectly incompatible as a result of such errors or omissions and in redesigning of Contractor's work affected or rendered incompatible as a consequence of such errors or omissions, all as determined by the St. Louis Public Library.

### **23. Miscellaneous**

23.1 Failure by the St. Louis Public Library in any instance to insist upon observance or performance by Contractor of any terms, conditions, of this agreement shall not be deemed a waiver by any such terms, conditions or provisions, and observance or performance thereof; no waiver shall be binding upon the St. Louis Public Library unless the same is in writing signed by the St. Louis Public Library and shall then be for the particular instance referred to in said writing only; waiver of any one breach shall not be deemed a waiver of any other breach; payment of any sum by the St. Louis Public Library to Contractor with knowledge of any breach shall not be deemed to be waiver of such breach or any other breach. The remainder of this agreement will not be voided by the invalidity of one or more of the terms of this agreement.

23.2 Contractor shall not place signs of any kind upon the project site without prior written approval of the St. Louis Public Library.

23.3 This Contractor, along with the contract documents incorporated herein, comprises the entire agreement between the parties. All prior negotiations and dealings between the parties are merged in, integrated and superseded by this contract which is binding upon and inures to the benefit of the parties and their successors, legal representatives and assigns. Notwithstanding the foregoing, Contractor shall not assign this contract, or sublet or subcontract all or any part of the work hereunder without the prior written consent of the St. Louis Public Library. All modifications of this contract must be in writing and signed by the parties hereto to be valid.

23.4 Contractor agrees to cooperate with the St. Louis Public Library in the purchase of materials, equipment or other items needed by Contractor for use in connection with the performance of services pursuant to this agreement, in order to take advantage of the St. Louis Public Library's exemption from sales tax under the pertinent law.

23.5 Neither party shall assign any rights under this agreement without the prior written consent of the other party.

23.6 Any notice or communication authorized or required hereunder shall be deemed to have been given, if hand-delivered or mailed by certified or registered mail, as follows:

**THE ST. LOUIS PUBLIC LIBRARY**

St. Louis Public Library, 1415 Olive Street, St. Louis, Missouri, 63103-2389. Attention: William Jackson

**CONTRACTOR:** \_\_\_\_\_  
\_\_\_\_\_

**24. COVID-19.** Contractor understands the novel coronavirus ("COVID-19") is an extremely contagious disease, which can lead to serious illness. Contractor is familiar with the Centers for Disease Control and Prevention ("CDC") guidelines regarding COVID-19 and understands those guidelines are subject to change. Contractor agrees to comply with such guidelines, any applicable state or local laws or regulations and advisories, as in effect from time to time, including but not limited to wearing masks and social distancing. Contractor affirms that no one on the job site has experienced any of the symptoms of COVID-19 within the last 14 days. If Contractor's onsite workers exhibit any of the symptoms of COVID-19 at any time before, during or within 30 days of working in Library facilities, Contractor will immediately notify the Library. Contractor acknowledges and understands the inherent risks associated with COVID-19 and is voluntarily assuming such risks in the execution of work as designated in the contract. Contractor agrees to release and hold harmless the Library and its employees, officers, and agents from and against all claims and liability resulting from exposure to disease-causing organisms and objects, such as COVID-19 associated with executing any work as designated in the contract.

The following exhibits are attached hereto and made part hereof:

In witness whereof, the parties hereto have executed this agreement as of the day and year first written above.

ATTEST:

\_\_\_\_\_

ST. LOUIS PUBLIC LIBRARY

By \_\_\_\_\_

Title: Chief Financial Officer

ATTEST:

\_\_\_\_\_

CONTRACTOR:

By: \_\_\_\_\_

Title:

## **SPECIAL CONDITIONS TO AGREEMENT**

### **A. Definitions**

1. Where the Agreement makes reference to Consultant, that shall mean the following -

Thomas Worley  
RMT Roofing & Waterproofing Consultants  
636-391-2185  
[tom@rmtroof.com](mailto:tom@rmtroof.com)  
410 Sovereign Court #18, Manchester, MO 63011

2. The Library shall be represented for day-to-day Project activities by \_\_\_\_\_ and \_\_\_\_\_, or his Successor. \_\_\_\_\_ contact information is below.

Alan Warfield  
314-565-0950  
[awarfield@slpl.org](mailto:awarfield@slpl.org)  
1415 Olive St., St. Louis, MO 63103

### **B. Construction Schedule**

1. Commence work upon receipt of signed Agreement. The Contractor shall provide a detailed critical path method Project schedule for approval prior to starting work and this schedule shall include tasks for shop drawing submittals, manufacturing lead times, the roof replacement work including entire contents of Project Manual STL 3804-21 Divisions 00 through 07 and associated work items, pre-testing systems and final acceptance inspections. Once the work begins, it shall continue through to completion without unreasonable delays and stoppages so as to complete the work per the Contractor's schedule, which shall not exceed one hundred twenty (120) calendar days. The entire Project schedule, including shop drawing preparation, shop drawing review (allow for a 2-week turnaround of reviewed shop drawings), material lead time and elevator renovation work shall not exceed two hundred sixty (260) calendar days.
2. The Contractor shall cooperate fully with the Library in coordinating the work and providing fully operational elevator systems by the date required. The Contractor shall maintain full crews and continue work once demolition begins until the elevators are completed and operational and accepted by the Library. The Contractor shall provide the manpower required to maintain the schedule; if the work falls behind schedule for any reason attributable to or the responsibility or risk of the Contractor, then the Contractor shall provide additional manpower and/or work additional hours as necessary to bring the Project back on schedule.
3. Along with the schedule, the Contractor shall provide a Schedule of Values that is consistent with the detailed task schedule. This Schedule of Values shall only be used for purposes of invoicing and payment for the work.

### **C. Work to be Done**

1. The Contractor shall furnish all labor, materials, tools and equipment necessary for and incidental to construction and renovation work in this Project as specified herein.
2. The work shall include everything requisite and necessary to finish the work properly in accordance with all local codes, notwithstanding that every item of labor, materials or accessories required to make the installation complete may not be specifically mentioned.

3. General Description of Work

- a. All work shall be performed as indicated in the Specifications. Work shall include everything requisite and necessary to properly finish the Project notwithstanding that every detail may not be particularly mentioned.

D. Submittals

- 1. See Division 01 – Section 01330 – Submittal Procedures.

E. Use of Premises

- 1. The Contractor shall carry out his work in such a manner that it will not interfere with normal activities at the building included in this Contract. Contractor's operations, including storage of materials, shall be confined to areas designated by the Library's Representative. The Contractor shall not unreasonably encumber the premises with his equipment or materials. All rubbish, debris and other refuse resulting from work operations shall be properly disposed of on a daily basis. At the end of the Project, a thorough cleaning shall be performed by the Contractor that restores all work areas to pre-Project conditions that are satisfactory to the Library's Representative and the Roofing Consultant.
- 2. All workers are to enter and exit the building using the entrance(s) identified by the Library.
- 3. Storage of material at building site is very limited and will be discussed at the scheduled pre-proposal conference. The Contractor shall expect the majority of the material to be brought on site when needed and that materials shall be staged off site at the Contractor's cost. The Library will pay for materials delivered to the Contractor's warehouse or warehouse space leased by the Contractor, assuming Contractor provides proper proof of shipment delivery and proper segregated storage (bill of lading, photographs, etc.). Contractor is responsible for all warehousing fees, when applicable.
- 4. Parking spaces for Contractor's workers will be made available at the Project site as designated by the Library's Representative.
- 5. Contractors are responsible for clean up of all dust, debris and trash in common areas on a daily basis during construction procedures, using their own equipment.
- 6. Existing toilet facilities in the building will be available for use by Contractor's working men as designated by Library's Representative. Toilet facilities shall be kept clean and in a sanitary condition at all times.
- 7. Light and power required for small tool operation may be obtained without cost to the Contractor, from existing utilities as directed by Library's Representative. All temporary extensions and provisions for obtaining power shall be furnished and maintained by the Contractor, and upon completion of the work, Contractor shall remove same and replace, or repair, all damage caused by the use of these facilities.
- 8. The Contractor's personnel shall supply their own drinking water.
- 9. The Contractor shall be held responsible for protection for, but not limited to, the following, whether on Library's property, and shall replace or repair, at Contractor's expense, any damages arising during the course of construction.
  - a. existing buildings and their contents.

- b. streets, curbs, walks, sidewalks, steps, retaining walls, freight elevators, fencing, landscaping and paving.
  - c. lobby finishes or personal property located in elevator lobbies.
10. All construction materials stored and/or installed at the job site shall be adequately protected against damage from the elements, vandalism, theft and other damage inflicted during construction.
  11. The Contractor and all workers may use existing stairs for travel to and from floors. See Library's Representative for designation of which stairs may be used. The Contractor shall take all necessary precautions and perform all cleanup operations necessary to ensure the cleanliness of the stairs used by Contractor and all workmen to the satisfaction of the Library's representative.
  12. Contractor shall provide and maintain suitable containers for the removal of material and debris from the building. Contractor shall provide a dumpster at the job site for the removal of debris, location as designated by the Library's Representative. Do not empty onto ground. Contractor must remove and properly dispose of their rubbish daily from the property. Contractors are not allowed to throw their trash into the Library's 'trash container.
  13. Contractor's workmen must eat lunch outside of the building or within the work area.
  14. Work may begin at 7:00 a.m. Contractors will be denied entrance to building prior to 7:00 a.m.

F. Inspection of the Site of Work

1. Bidders shall make a visit to the work site in order to observe actual conditions and to verify information as outlined in the specifications. All Bidders shall be deemed to have knowledge of all conditions that were reasonably apparent during the Pre-Proposal Site Inspection. It shall be verified that no irregularities exist which affect execution of the work specified.

G. Working Conditions

Work shall be performed during normal working hours of the Elevator trade. Work at other hours shall be by special permission only unless otherwise specified.

H. Inspection

All work may be inspected by either the Library Representative or Elevator Consultant during the progress of the Project. The Elevator Consultant shall also serve as the Licensed QEI Inspector and shall witness all load and final acceptance testing performed by the Contractor, as required by the State. The Contractor is not responsible for the Elevator Consultant's fees for these inspections.

I. Security

The Library will continue to occupy the building during the performance of the work.

J. Product Delivery, Storage and Handling

1. Deliver material in Contractor's original unopened protective packaging.



2. Store material in original protective packaging. Prevent soiling, physical damage, or moisture damage.
3. Protect equipment and exposed finishes from damage and stains during transportation.
4. Allocate available site storage areas and coordinate their use with Purchaser and other Contractors.
5. Provide suitable temporary weather-tight storage facilities as may be required for material that will be stored in the open.

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL**  
**LIBRARY DISTRICT DBA**  
**ST. LOUIS PUBLIC LIBRARY RFP 21-002265**  
**BUDER ROOF REPLACEMENT**  
**INSTRUCTIONS TO PROPOSERS**

The St. Louis Public Library, a municipal Library district, is a political subdivision of the State of Missouri, and a body corporate with all the powers and rights of like or similar corporations.

In accordance with the St. Louis Public Library's procurement policy, Proposals will be handled so as not to permit disclosure of the identity of any Proposer or the contents of any Proposal to competing Proposers during the process of negotiation. A register of Proposals shall be prepared containing the name of each Proposer, the number of modifications received, if any, and a description sufficient to identify the item offered. The register of Proposals shall be open for public inspection only after a final contract is executed.

The right is reserved by the St. Louis Public Library to cancel the RFP or to reject in whole or in part when it is for good cause and in the best interest of the St. Louis Public Library and to waive any irregularity or informality with respect to any Proposal. The St. Louis Public Library reserves the right to split awards, make multiple awards and to reject all Proposals.

Proposers are expected to examine specifications, schedules, drawings, and all instructions. Failure to do so will be at Proposer's risk.

To preserve the integrity of the selection process, questions regarding this RFP should only be directed in writing to Rita Kirkland, [rkirkland@slpl.org](mailto:rkirkland@slpl.org). **Proposal inquiries must be submitted in writing for the St. Louis Public Library review no later than May 28, 2021 by 2:00 p.m.** to allow for the St. Louis Public Library's reply prior to Proposal submissions. Responses, when provided, will be included in an amendment.

It is the responsibility of the Proposer to deliver the Proposal and/or Proposal modification on or before the hour and date specified for the receipt of Proposals. Proposals received late will be rejected.

Proposals and modifications should be submitted in sealed envelopes addressed to Rita Kirkland, Purchasing Manager, St. Louis Public Library, Administrative Offices, 1415 Olive St., St. Louis, MO 63103. The Proposal shall show on the face of the envelope:

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL**  
**LIBRARY DISTRICT DBA**  
**ST. LOUIS PUBLIC LIBRARY RFP 21-002265**  
**BUDER ROOF REPLACEMENT**

**PROPOSALS DUE JUNE 2, 2021 @ 2:00p.m.**

**ELECTRONIC RESPONSES WILL BE ACCEPTED. SUBMISSIONS MAY BE SENT TO**  
**[bids@slpl.org](mailto:bids@slpl.org). The RFP NUMBER MUST BE SHOWN IN THE SUBJECT LINE**

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL**  
**LIBRARY DISTRICT DBA ST. LOUIS PUBLIC LIBRARY RFP 21-002265**  
**BUDER ROOF REPLACEMENT PROJECT**

**TERMS AND CONDITIONS**

In addition to the RFP requirements elsewhere in this RFP, any Proposer that may be selected to perform the services described in the RFP and to enter into a Vendor Agreement with the Library must agree to a number of general terms and conditions. If a Proposer cannot agree to any of the stated general conditions, its Proposal must clearly state the reason for any such non-compliance.

**A. Labor and Materials.** The Proposer shall provide all labor, materials and supplies for the services to be performed under this RFP.

**B. Form of Agreement.** The submission of a Proposal constitutes the agreement of any submitting Proposer that any contract to be drawn as a result of an award to the Proposer will be prepared by counsel for the Library and will be the controlling agreement. The Proposers are requested, however, to submit copies of their applicable standard contract or engagement forms for information purposes.

**C. Compliance with Laws.** In performing under a Vendor Agreement, the selected Proposer shall comply with all applicable laws, ordinances, rules, regulations, or standards of federal, state and local governments having authority or jurisdiction over the Services or performance of the Services, or any lawful orders pertaining in any way to the Services to be provided by the Library.

**D. Out of State Proposer.** It shall be a condition to a Vendor Agreement that any out-of-state Proposer that may be selected to provide the Services shall be duly registered and qualified to do business within the State of Missouri.

**E. Prime Contractor Responsibility.** Planned use of subcontractors in connection with a Vendor Agreement should be clearly explained and described in the Proposal. The use of any subcontractor in connection with the Services shall be subject to the approval of the St. Louis Public Library, and any approved subcontractor shall agree to be bound by and subject to all terms and conditions of a Vendor Agreement between the St. Louis Public Library and the selected Proposer. The Proposer as prime contractor will be responsible and must take responsibility for the performance of all Services under a Vendor Agreement whether or not subcontractors are used.

**F. Independent Contractor.** It is expressly understood and agreed that the selected Proposer shall be an independent contractor and not an employee of the St. Louis Public Library. A Vendor Agreement will not constitute, create, give rise to, or otherwise recognize joint venture, partnership, or formal business organization of any kind between the parties and the rights and obligations of the parties shall be only those expressly stated in a Vendor Agreement. The Proposer represents and warrants that no persons supplied by it in the performance of a Vendor Agreement are employees of the St. Louis Public Library and further agrees that no rights of the Library's retirement or personnel rules accrue to such persons. The Proposer shall have complete responsibility for all salaries, wages, bonuses, retirement, withholdings, worker's compensation and insurance, unemployment compensation, other benefits and taxes and premiums, appurtenant thereto concerning all employees and personnel provided by

Proposer in the performance of the Services under a Vendor Agreement and shall indemnify and hold the St. Louis Public Library harmless with respect thereto.

**G. Indemnification.** Proposer shall defend, indemnify and hold harmless the St. Louis Public Library and its directors, officers, employees, representatives, agents contractors, subcontractors, licensees and successors and assigns from and against any and all claims, demands, penalties, liens, losses, fines, liabilities, damages, interest, costs, or expenses (including without limitation reasonable attorneys' fees and court costs), whether or not involving a third party claim, arising out of or in connection with: (a) the acts, error, omissions conduct, or operations of Proposer, provided that any such claim, damage, loss, or expense is caused or is claimed or alleged to have been caused, in whole or in part, by any negligent act, whether active or passive, error, omission, conduct, or operation of any negligent act, whether active or passive, error, omissions conduct, or operation of Proposer, or any subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable; or (b) any breach of any of the representations, warranties, covenants, obligations, or duties contained in a Vendor Agreement; or (c) any violation of any applicable federal, state or local laws, rules or regulations. The indemnification obligations hereunder shall not be limited by reason of the enumeration of any insurance coverage required under a Vendor Agreement.

**H. Required Insurance Coverage.** Proposer shall secure, pay for and maintain the following insurance policies in full force and effect throughout the term of a Vendor Agreement, which policies shall protect against any loss or claim arising from or relating to a Vendor Agreement, the Services and activities, or presence at the St. Louis Public Library facilities, and any act or omission of Proposer or its employees and/or agents or subcontractors in connection with the Services provided under a Vendor Agreement, and shall cover the contractual indemnification liability assumed by the Proposer or pursuant to a Vendor Agreement.

1. Commercial General Liability Insurance with limits of not less than One Million Dollars (\$1,000,000) per occurrence for bodily injury (including death), personal injury, special form property damage, fire legal liability, contractual liability, independent contractors, errors and omissions, and products and completed operations, and Two Million Dollars (\$2,000,000) general aggregate. The policy shall be written on an occurrence basis. The policy shall also not have exclusions for any of Proposer's activities at Central Library. Any deductible shall be at Proposer's expense.
2. Business, automobile coverage, including coverage for owned, leased, and hired vehicles, which shall include vehicle and property (cargo) damage, and bodily injury, in an amount not less than One Million Dollars (\$1,000,000.00).
3. Worker's Compensation insurance, affording coverage in accordance with the applicable state laws covering all of Proposer's employees, and Employer's Liability coverage in accordance with the applicable state laws but no less than Five Hundred Thousand Dollars (\$500,000) each accident, Five Hundred Thousand Dollars (\$500,000) each employee and Five Hundred Thousand Dollars (\$500,000) policy limit;
4. Blanket employee dishonesty coverage with One Hundred Thousand Dollars (\$100,000) limit, with coverage extending to funds and/or property held by Proposer on behalf of St. Louis Public Library.

5. Property Insurance coverage for all materials, equipment, and other items owned, borrowed, or leased by Proposer shall be Proposer's responsibility. The St. Louis Public Library shall not be responsible for such materials, equipment, and other items owned, borrowed, or leased by Proposer.
6. Umbrella Liability insurance at not less than Five Million Dollars (\$5,000,000) limit for each occurrence providing for excess coverage over the limits and coverages prescribed above in Subsections I. (1), (2), (3), and (4) above, which such policy shall be written on an occurrence basis.

All insurance policies addressed in Subsections I. (1), (2), (4), and (6) above shall be endorsed to name the following as additional insured's:

City of St. Louis Municipal Library District and its directors, officers, employees, representatives, agents, contractors, licenses, and successors.

All insurance policies required hereunder: (1) shall be endorsed to state that the insurance is primary and not contributive to any other insurance available to the St. Louis Public Library; (2) shall provide for a waiver of rights of subrogation against the additional insurers on the part of the insurance carriers; (3) shall be written with insurance companies licensed to do business in the State of Missouri and rated no lower than A- in the most current edition of A.M. Best's Property-Casualty Key Rating Guide, and (4) shall provide for no less than thirty (30) days advance written notice to the St. Louis Public Library prior to cancellation, non-renewal or material modification.

All insurance policies of or on behalf of the St. Louis Public Library required in a Vendor Agreement shall contain the following language: "This insurance policy does not apply to any claim or suit which is barred by the doctrines of sovereign immunity or official immunity, but we will have the right and duty to defend any suit. No provision of this endorsement or of the policy, to which it is attached, shall constitute a waiver of our right, or the right of any of our employees in the course of their official duties, or the right of any insured, to assert a defense based on the doctrines of sovereign immunity or official immunity for any monetary amount whatsoever."

Proposer shall deliver to the St. Louis Public Library, prior to commencement of Services under a Vendor Agreement, Certificates of Insurance confirming the existence or issuance of all insurance policies required to be carried hereunder ("Certificates of Insurance"). If any such policy is not obtained, or if all Certificates of Insurance are not delivered to St. Louis Public Library by the aforementioned time, or if any such policies are canceled, the St. Louis Public Library shall have the right to terminate a Vendor Agreement immediately and/or deny Proposer access to St. Louis Public Library facilities. These insurance provisions are minimum requirements and shall not relieve Proposer of its indemnity, defense and hold harmless obligations.

I. **E-Verify.** The Proposer must agree to enroll in and participate in the E-Verify Program as required by Section 285.530 of the Missouri Revised Statutes, as amended, during the hiring process for all Employees hired after the date of a Vendor Agreement. The Proposer must agree to require its subcontractors who may perform work under a Vendor Agreement to certify to Proposer that the subcontractor does not knowingly employ or contract with an unauthorized alien and that the subcontractor has enrolled and is participating in the Verify program. The Proposer must agree to maintain this certification throughout the duration of the term of a contract with a subcontractor. The

St. Louis Public Library may terminate a resulting Vendor Agreement for default if the Proposer fails to cure a breach of these E-Verify provisions no later than thirty (30) days after being notified by the St. Louis Public Library of such breach. As a condition to entering into a Vendor Agreement, the Proposer must execute the E-Verify Affidavit, which shall be an exhibit to a Vendor Agreement. Such affidavit shall be in the form attached to this RFP as **Exhibit C**.

J. **Performance Uninterrupted**. Proposer shall perform the Services without interruption except as provided herein. The decision whether to postpone or excuse the performance of the Proposer shall be in sole discretion of the St. Louis Public Library.

K. **Communications**. The Proposer shall communicate regularly or on an agreed upon schedule with the designated St. Louis Public Library management to provide updates regarding the Services performed. The Proposer shall correct all deficiencies within forty-eight (48) hours after being notified by designated St. Louis Public Library management.

L. Proposer shall provide competent, capable, trained, experienced, and suitably qualified personnel to fulfill its obligations and provide the Services in a public St. Louis Public Library environment under a Vendor Agreement. Proposer shall supervise and coordinate the work of its employees and approved subcontractors, if any, and shall be responsible for and liable to St. Louis Public Library for the work of its employees and approved subcontractors. Any employee, representative, or approved subcontractor of Proposer who, in the opinion of the St. Louis Public Library, is unqualified, or unsuitable to perform the required services or who does not perform his or her work in a proper and skillful manner, or is disrespectful, or otherwise objectionable, shall, at the request of the St. Louis Public Library in its sole discretion, be reassigned or removed from performing any further duties related to the Services to be provided under a Vendor Agreement. In the performance of the Services under a Vendor Agreement, Proposer and its staff shall comply with the St. Louis Public Library's Policy for Appropriate Use of the Library, as may be amended from time to time.

M. **Laws & Ordinances**. Proposer shall comply with and observe all applicable federal, state and local laws, ordinances and regulations relating to its operation and Services under a Vendor Agreement at Central Library.

N. **Timing**. The successful Proposer must be ready to begin services no later than thirty (30) days after date of contract execution.

O. **Compliance with Laws**. The selected Proposer shall operate in compliance with all applicable local, state and federal laws, regulations and ordinances and in accordance with the Library's Policies and Procedures as may be amended from time to time. It is the Proposer's sole responsibility to obtain and maintain all appropriate licenses and permits for its operation in the performance of the Services.

P. **AWARD**

In accordance with the St. Louis Public Library Procurement Policy:

1. The right is reserved by the Library to cancel the RFP or to reject in whole or in part when it is for good cause and in the best interests of the Library any and all Proposals and to waive any irregularity or informality with respect to any Proposal. The Library reserves the right to split awards, make multiple awards and to reject all Proposals.

2. Discussions may be conducted with responsible Proposers who submit Proposals determined to be reasonably susceptible of being selected for award for the purpose of clarification to assure full understanding of, and conformance to, the RFP requirements. Proposers shall be accorded fair and equal treatment with respect to any opportunity for discussion and revision of Proposals and such revisions may be permitted after submissions and prior to award for the purpose of obtaining best and final offers. In conducting discussions, there shall be no disclosure of the identity of competing Proposers or of any information derived from Proposals submitted by competing Proposers.
3. Subject to the terms of this RFP, an award will be made by the Library to the responsible Proposer whose Proposal is determined in writing to be the most advantageous to the Library, taking into consideration price and the evaluation factors set forth in the RFP. No other factors or criteria shall be used in the evaluation.
4. The selected Proposer shall enter into a Vendor Agreement consistent with this RFP.

## QUOTATION FORM

ST. LOUIS PUBLIC LIBRARY  
BUDER BRANCH  
4401 Hampton Ave.  
ST. LOUIS, MISSOURI 63109

RFP # 21-002265

DATE: \_\_\_\_\_

Proposal of \_\_\_\_\_ (hereinafter called Proposer) \* a  
Corporation, Incorporated under the laws of the State of \_\_\_\_\_ ; \* a Partnership; \* an  
Individual doing business as \_\_\_\_\_.

\* Scratch out non-applicable notations.

1. The Proposer, in compliance with the St. Louis Public Library's (Library) request for proposal for the renovation of one (1) traction freight elevator in the Buder Branch located at 4401 Hampton Ave., St. Louis, Missouri 63109, having examined the Contract Documents, including all specifications, and the site for the proposed work, and being familiar with all conditions surrounding the construction of the proposed project, hereby proposes to furnish all labor, materials and supplies to replace roofing in accordance with the Contract Documents included or referenced, and to include, in addition to the cost of the work, all permits, fees and licenses related to the work.

2. The Proposer acknowledges receipt of the following addenda:

Addenda no. \_\_\_\_\_ Dated: \_\_\_\_\_

Addenda no. \_\_\_\_\_ Dated: \_\_\_\_\_

3. Base Proposal Pricing:

- a. The base proposal for work stipulated under these specifications for the renovation work described in specification sections:

\_\_\_\_\_ dollars (\$ \_\_\_\_\_).

- b. Labor Cost

Mechanic Overtime: \$ \_\_\_\_\_ per hour.

Apprentice Straight Time: \$ \_\_\_\_\_ per hour.

Apprentice Overtime: \$ \_\_\_\_\_ per hour.

- c. Extra Work

Overhead Markup: \_\_\_\_\_ %

Profit Markup: \_\_\_\_\_ %



- d. Material for Extra Work: In the space below, indicate the percentage of mark-up for materials used for extra work necessary that is outside of the Project Manual.

Material Markup for Extra Work: \_\_\_\_\_%

4. Schedule: Proposer shall provide proposed schedule with their bid. Proposer agrees to start project within \_\_\_\_\_ number of days after notice to proceed and complete project within \_\_\_\_\_ number of working days.
5. Proposer agrees to submit to the Library appropriate certificates of insurance as required.
6. The Proposer understands and agrees that their proposal shall be binding and that upon acceptance by Library, this proposal, together with the Construction Agreement, Special Conditions, Specifications and Exhibits, shall become a binding contract between Proposer (Contractor) and Library. Proposer also understands and agrees that its proposal may not be withdrawn or amended for a period of ninety (90) days following the scheduled closing time for receiving bids.
7. The Proposer agrees that the Library reserves the right to reject any or all bids and to waive any informality in the bidding.

Respectfully Submitted,

Company \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

By \_\_\_\_\_

Date \_\_\_\_\_

**NOTE: ALSO SUBMIT BID PROPOSAL SECTION 00410 OF SPECIFICATION PACKAGE STL 3808-21.**

**EXHIBIT A**

**RELATED WORK**

**SPECIFICATION PACKAGE STL3808-21**

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL**

**LIBRARY DISTRICT DBA**

**ST. LOUIS PUBLIC LIBRARY RFP 21-002265**

**BUDER ROOF REPLACEMENT**

**EXHIBIT B**

**REQUEST FOR PROPOSAL(S) SCHEDULE**

RFP Issued	05/05/21
Public Notification of RFP	05/05/21
Questions from Proposers due to Library	05/28/21 by 2:00 p.m.
Pre-Proposal Conference	05/19/21 9:00 a.m.
RFP Due	06/02/21 2:00 p.m.

**ACKNOWLEDGEMENT FORM**  
**PROPOSAL FORM**

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL**  
**LIBRARY DISTRICT DBA**  
**ST. LOUIS PUBLIC LIBRARY RFP 21-002265**  
**BUDER ROOF REPLACEMENT**

**PROPOSER ACKNOWLEDGEMENT:**

The undersigned acknowledges that I have received and thoroughly reviewed the Request for Proposals (RFP) dated MAY 05, 2021 and intend to participate in the RFP. Pursuant to notices given, the undersigned with complete understanding of the requirements and conditions shall provide all labor and materials in accordance with the requirements and conditions shall provide all labor and materials in accordance with the requirements of the RFP.

Company Name and Address:

---

By (Written Signature):

---

Printed Name & Title:

---

Email Address:

---

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL**  
**LIBRARY DISTRICT DBA**  
**ST. LOUIS PUBLIC LIBRARY RFP 21-002265**  
**BUDER ROOF REPLACEMENT**

**EXHIBIT C**

**E-VERIFY AFFIDAVIT**

Pursuant to Section 285.530 of the Missouri Revised Statutes, as amended, the Proposer entering into a contract with the St. Louis Public Library is required to enroll in and verify the work eligibility status of all its newly hired employees through the E-Verify program. The Proposer is not required to verify the work eligibility status of all its newly hired employees through the E-verify program if E-verify no longer exist.

The undersigned, on behalf of the Proposer, being first duly sworn, deposes and states that the Proposer does not knowingly employ an unauthorized alien. The undersigned further affirms that, prior to entering into its contract with the St. Louis Public Library, the undersigned Proposer will enroll in and agrees to verify the work eligibility status of all its newly hired employees through the E-Verify program.

Proposer: \_\_\_\_\_

By (Written Signature): \_\_\_\_\_

Printed Name & Title: \_\_\_\_\_

Email Address: \_\_\_\_\_

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL**  
**LIBRARY DISTRICT DBA**  
**ST. LOUIS PUBLIC LIBRARY RFP 21-002265**  
**BUDER ROOF REPLACEMENT**

**NON-COLLUSION AFFIDAVIT**

**EXHIBIT D**

Pursuant to Section 285.530 of the Missouri Revised Statutes, as amended, the Proposer entering into a contract with the St. Louis Public Library is required to enroll in and verify the work eligibility status of all its newly hired employees through the E-Verify program. The Proposer is not required to verify the work eligibility status of all its newly hired employees through the E-verify program if E-verify no longer exist.

The undersigned, on behalf of the Proposer, being first duly sworn, deposes and states that the Proposer does not knowingly employ an unauthorized alien. The undersigned further affirms that, prior to entering into its contract with the St. Louis Public Library, the undersigned Proposer will enroll in and agrees to verify the work eligibility status of all its newly hired employees through the E-Verify program.

(Proposer): \_\_\_\_\_

By (Written Signature): \_\_\_\_\_

(Printed Name): \_\_\_\_\_

(Title): \_\_\_\_\_

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL**  
**LIBRARY DISTRICT DBA**  
**ST. LOUIS PUBLIC LIBRARY RFP 21-002265**  
**BUDER ROOF REPLACEMENT**

**DIVERSITY STATEMENT OF THE BOARD OF DIRECTORS OF THE ST. LOUIS PUBLIC LIBRARY**

**Exhibit E**

WHEREAS, the St. Louis Public Library (the «Library») is a municipal library district authorized pursuant to Chapter 182 of the Missouri. Revised Statutes to, among other things, purchase, hold or lease grounds, and to occupy, lease or erect appropriate buildings for the use of the Library, and to exercise all powers and rights of political subdivisions or similar corporations; and

WHEREAS, the Board of Directors (the "Board") of the Library is vested with the power to make and adopt bylaws and regulations for its own guidance and for the governance of the Library as may be expedient and not inconsistent with State law, and

WHEREAS, the Library provides free public library services for the City of St. Louis (the City) an urban area with vast ethnic, religious, socioeconomic and cultural backgrounds; and

WHEREAS, efforts to encourage by direct contact or general solicitation persons from diverse backgrounds to contract with or become employees of the Library; to educate through seminars and workshops persons from diverse backgrounds the opportunity to contract with or become employees of the Library; to adjust or modify, when appropriate, financing, bonding, or insurance requirements for persons from diverse backgrounds to contract with or become employees of the Library; and to encourage partnering by persons from diverse backgrounds to contract with the Library will serve to further the governmental and public-interest of the Library by providing outreach to the residents of the City; and

WHEREAS, a practice of the Library of contracting with and employing persons reflecting the ethnic, religious, socioeconomic and cultural backgrounds of the citizens of the City will serve to further the governmental interest of the Library; and

WHEREAS, a practice of the Library of contracting with and employing persons of varied ethnic religious, socioeconomic and cultural backgrounds will also further the governmental purposes of the Library by serving as a model to other public and private entities, by building the public trust, by creating role models, and by facilitating the interaction of persons of different backgrounds; and

WHEREAS, the Board of Directors of the St. Louis Public Library (the "Board") determined that it is feasible, necessary and in the public interest for the Board to adopt a diversity statement to provide guidance to the Library and adopted this Diversity Statement on March 31, 1997 and

WHEREAS, the Board wishes to amend this Diversity Statement to provide for an annual review.

NOW THEREFORE, the Board of Directors of the St. Louis Public Library; does hereby resolve, determine and order as follows:

Section 1. **Findings.** The Board of Directors of the St. Louis Public Library hereby finds and determines those matters set forth in the preambles hereof as fully and completely as if set out in full in this Section 1.

Section 2. **Diversity Statement.** The Board of Directors of the Library hereby directs the officers and agents of the Library for the authorized Library purposes set forth in the preambles hereof and subject to the conditions hereinafter provided to develop and implement policies which encourage persons with diverse ethnic, religious, socioeconomic and cultural backgrounds in the City to contract with or become employed by the Library.

Section 3. **Administration.** The officers and agents of the Library are authorized and directed to (i) encourage by direct contact or general solicitation persons from diverse backgrounds to contract with or become employees of the Library; (ii) educate through seminars and workshops persons from diverse backgrounds of the opportunity to contract with or become employees of the Library; (iii) assist persons from diverse backgrounds to contract with or become employees of the Library; (iv) adjust or modify, when appropriate, financing, bonding or insurance requirements for persons from diverse backgrounds to contract with or become employees of the Library; (v) encourage partnering by persons from diverse backgrounds to contract with the Library; (vi) utilize alternative programs to facilitate participation; (vii) provide flexible provisions to account for special circumstances; (viii) maximize opportunities for persons to demonstrate any social, socioeconomic or other factors that would promote the Library's best interests; and (ix) adopt measures to minimize the impact of this policy on the rights of third parties.

Section 4. **Actions of Officers Authorized.** The officers of the Board, including the President, Vice President and Secretary of the Board, and the Executive Director shall be; and they hereby are, authorized and directed to execute all documents and take such actions as they may deem necessary or advisable in order to carry out and perform the purposes of this Resolution and to make ministerial alterations, changes or additions in any agreements, statements, instruments and other documents herein approved, authorized and confirmed which they may approve and the execution or taking of such action shall be conclusive evidence of such necessity or advisability.

Section 5. **Annual Review.** The officers of the Board are authorized and directed to report upon the administration of the Diversity Statement at the Board's regular meeting in September of each year.

Section 6. **Severability.** If any section or other part of this Resolution whether large or small, shall for any reason be held invalid, the invalidity thereof shall not affect the validity of the other provisions of this Resolution.

Section 7. **Governing law.** This Resolution shall be governed exclusively by and construed in accordance with the applicable laws of the State of Missouri.



Section 8. **Effective Date.** This Resolution shall become effective immediately upon its passage.

ADOPTED by the Board of Directors of the St. Louis Public Library this 5<sup>th</sup> day of April, 2004.



## Document 00410 - Bid Form

To: St. Louis Public Library

Projects: St. Louis Public Library  
Buder Branch  
PROJECT 21-002265

Contractor's proposal is to be emailed to St. Louis Public Library attention Rita Kirkland [rkirkland@spl.org](mailto:rkirkland@spl.org) before 2:00 pm on June 2, 2021, and copy [tom@rmtroof.com](mailto:tom@rmtroof.com) . No proposal will be accepted after the appointed date and time for submission of contractor's proposal.

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**2.0 REQUEST FOR PROPOSAL FOR:  
ST. LOUIS PUBLIC LIBRARY (BUDER BRANCH) - SECTIONS A, B & C;**

**2.1 REQUEST FOR ROOF REPLACEMENT PROPOSAL**

Pursuant to and in compliance with the Project's Bid Documents, the Project's Specification dated **May 5, 2021**, Project Notes and Requirements, and applicable addendums, Roof Plans and Details, the undersigned, having become thoroughly familiar with the terms and conditions of the Contract Documents and with local conditions affecting performance and costs of the Work at the places where the Work is to be completed, hereby proposes and agrees to furnish all labor and materials required to perform the Work within the time stated, in strict accordance with the proposed Contract Documents, we the undersigned hereby offer to enter into a Contract to perform the Work for the Total Contract Stipulated Sums at outlined below:

**2.1.1 "ROOF AREA – ROOF SECTION A:"**  
Contract Stipulated Sum of:

\_\_\_\_\_ Dollars

[Print or type in words, Bidder's Total Bid Price. Written words govern.]

(\$ \_\_\_\_\_ / **CONTRACT STIPULATED SUM**)

(Price is to include all material, labor, taxes, warranty fee, insurance, and all freight charges. Indicate below the separate price each for labor, material and required insurance for a cumulative and equal total price as indicated above).

(\$ \_\_\_\_\_ / Labor Price) (\$ \_\_\_\_\_ / Material Price)

(\$ \_\_\_\_\_ / Cost for Roofing Contractor to provide Liability Insurance as outlined in "Agreement Between Owner and Contractor."

### 2.1.2 “ROOF AREA – ROOF SECTION B:”

Contract Stipulated Sum of:

\_\_\_\_\_ Dollars

[Print or type in words, Bidder’s Total Bid Price. Written words govern.]

(\$ \_\_\_\_\_ / **CONTRACT STIPULATED SUM**)

(Price is to include all material, labor, taxes, warranty fee, insurance, and all freight charges. Indicate below the separate price each for labor, material and required insurance for a cumulative and equal total price as indicated above).

(\$ \_\_\_\_\_ / Labor Price) (\$ \_\_\_\_\_ /Material Price)

(\$ \_\_\_\_\_ / Cost for Roofing Contractor to provide Liability Insurance as outlined in “Agreement Between Owner and Contractor.”

### 2.1.3 “ROOF AREA – ROOF SECTION C:”

Contract Stipulated Sum of:

\_\_\_\_\_ Dollars

[Print or type in words, Bidder’s Total Bid Price. Written words govern.]

(\$ \_\_\_\_\_ / **CONTRACT STIPULATED SUM**)

(Price is to include all material, labor, taxes, warranty fee, insurance, and all freight charges. Indicate below the separate price each for labor, material and required insurance for a cumulative and equal total price as indicated above).

(\$ \_\_\_\_\_ / Labor Price) (\$ \_\_\_\_\_ /Material Price)

(\$ \_\_\_\_\_ / Cost for Roofing Contractor to provide Liability Insurance as outlined in “Agreement Between Owner and Contractor.”

### 2.1.4 CONTRACT TIME – LOGISTICS AND PLANNING

**“ALL ROOF AREA’S – ST. LOUIS PUBLIC LIBRARY BUDER BRANCH”: Bidder agrees to substantially complete the roofing project within \_\_\_\_\_ number of working days.** Bidder will have \_\_\_\_\_ number of crew(s); and with \_\_\_\_\_ number of persons per crew in order to complete the project on time.

**2.1.5 BIDDER PROPOSES** following Subcontractors for the Work indicated. If acceptable to by the Owner's Representative, Bidder agrees to use the named Subcontractors for duration of the Project on Work indicated, and agrees not to remove them from the Work nor replace them with others except as otherwise allowed in the Contract Documents. Insert only one (1) name for each Work item, or if Work item is not to be subcontract, insert Bidder’s name:



<u>Work Item</u>	<u>Proposed Subcontractor</u>	<u>Contract Amount</u>
2.1.5.1 Sheet Metal	_____	(\$ _____ )

2.1.5.2 Unit Costs      Unit prices shall be stated in the Contractor's proposal as to the amount to be added or deducted from the base bid as specified, including labor, materials, overhead, profit and taxes to remove and dispose of the existing and provide and install the following:

A. Lightweight Concrete Deck repair/sq.ft.      \$ \_\_\_\_\_

B. Steel deck repair/ sq.ft.      \_\_\_\_\_

C. Wood deck repair/ per 4x8 sheet.      \_\_\_\_\_

D. Rotted/deteriorated wood Replacement/bd.ft.      \$ \_\_\_\_\_

E. Labor cost for extra work/manhour      \$ \_\_\_\_\_

F. Mark-up on materials %      \$ \_\_\_\_\_

2.1.5.3 Walkway      **Thermoplastic Membrane Roofing** \_\_\_\_\_

Contractor is to supply and install Cross-Grip Walkway on the roof area(s) designated by Nestle representative. Unit is per roll.

1 roll to 4 rolls    \$ \_\_\_\_\_ ea

5 roll to 10 rolls    \$ \_\_\_\_\_ ea

**3.0 LABOR RATES BY POSITION:**

<u>POSITION:</u>	<u>HOURLY RATE (USD)</u>	<u>OVERTIME HOURLY RATE (USD)</u>	<u>SUNDAY HOURLY RATE (USD)</u>	<u>HOLIDAY HOURLY RATE (USD)</u>
3.1.1 Foreman	\$ _____	\$ _____	\$ _____	\$ _____
3.1.2 Journeyman	\$ _____	\$ _____	\$ _____	\$ _____
3.1.3 Laborer	\$ _____	\$ _____	\$ _____	\$ _____

#### 4.0 OVERHEAD AND PROFIT MARKUP:

##### 4.1.1 Contractor's Overhead and Profit Markup is limited to:

4.1.1.1 For such changes in the Work performed by Contractor's own forces, \_\_\_\_\_ percent (\_\_\_\_\_% ) of the Cost of the Work; or

4.1.1.2 For such changes in the Work performed by forces other than Contractor's own forces, \_\_\_\_\_ percent (\_\_\_\_\_% ) of the Cost of the Work.

##### 4.1.2 Subcontractor's Overhead and Profit Markup

4.1.2.1 Contractor shall limit any Subcontractor performing such changes in the Work to an Overhead and Profit Mark-up of not more than \_\_\_\_\_ percent (\_\_\_\_\_% ) of the Subcontractor's own Cost of the Work.

##### 4.1.3 Time and Material Overhead and Profit Markup is limited to:

4.1.3.1 Authorized changes to the scope of work treated on a Time & Material basis (add or deduct) by Contractors own forces to \_\_\_\_\_ percent (\_\_\_\_\_% ) above cost, materials to \_\_\_\_\_ percent (\_\_\_\_\_% ) above cost; and by subcontractors to \_\_\_\_\_ percent (\_\_\_\_\_% ) above cost.

#### 5.0 ADDENDA:

Bidder acknowledges receipt of following Addenda:

5.1	Addendum	_____	Dated:	_____
5.2	Addendum	_____	Dated:	_____
5.3	Addendum	_____	Dated:	_____

#### 6.0 CONTRACTORS SAFETY RISK MANAGEMENT REPORT:

Contractor is to submit a safety risk management report. The report is to address how the contractor is planning to execute the roofing project in regards of providing the necessary safety equipment, training, and enforcement of the safety requirements for the reroofing project. Contractor's Safety Risk Management Report shall be submitted as an integral part of this Bid Form. In addition, the following safety indicators are required.

6.1	EMR ( Experience Modifier Rate – last 3yr average)	_____
6.2	OSHA Recordable Incident Rate – last 3 years	2018 _____
		2019 _____
		2020 _____

#### 7.0 SUBMISSION OF BID

If awarded this Contract, the undersigned will execute the contract documents as provided by St. Louis Public Library within ten (10) days after Notice of Award. **It is agreed that the Roofing Contractor's Proposal is subject to St. Louis Public Library's acceptance for a period of 90 days from the project Bid Date.**



## SECTION 00800 - SUPPLEMENTAL CONDITIONS

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. Section Includes:
1. Definitions of Contract Documents
  2. Work Covered by Contract Documents
  3. Taxes
  4. Contractor use of premises
  5. Safety and Protection
- B. Related Sections including the following:  
The Contract Documents, as defined within this Section, apply to the Work of this Section and all Sections. Additional requirements and information necessary to complete the Work of this Section may be found in other documents.

#### 1.03 DEFINITIONS

- A. Whenever used in the Contract Documents, the following terms shall have the meanings indicated, which shall be acceptable to both the singular and plural thereof:
1. **ACT OF GOD:** An earthquake, cyclone, or other cataclysmic phenomenon of nature. Rain, wind, flood, or other natural phenomenon of normal intensity for the locality shall not be construed as an Act of God and no representation shall be made to the Contractor for damages to the Work resulting therefrom.
  2. **ADDENDA:** Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the Contract Documents, Drawings, and Specifications, by additions, deletions, clarifications, or corrections.
  3. **AGREEMENT:** The Contract executed by the Owner and Contractor covering the performance of the Work described in the Contract Documents.
  4. **BID:** The offer Proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  5. **BIDDER:** Any person, firm, or corporation submitting a Bid for the Work,
  6. **CHANGE ORDER:** A written amendment of the Contract between the Owner and the Contractor, authorizing an addition, deletion, or revision in the work within the general scope of the Contract Documents, or authorizing an adjustment in the contract price or contract time.
  7. **CONTRACT AMOUNT:** The total monies payable to the Contractor under the terms and conditions of these Contract Documents.
  8. **CONTRACT DOCUMENTS:** The contract, including Advertisement, Instructions to Bidders, Proposal, Contract, Bonds, Certificate of Insurance, Contractors Declaration, General Conditions, Supplemental General Conditions, Construction Specifications, Supplemental Specifications, Drawings, Addenda, Notice of Award, Notice to Proceed, Change Orders and those documents necessary for the Project.
  9. **CONTRACT TIME:** The number of calendar days stated in the Proposal for the completion of the Work.
  10. **CONTRACTOR:** The Person, Firm, or Corporation with whom the Owner has executed the Agreement.
  11. **DRAWINGS:** The part of the Contract Documents that show the characteristics and scope of the Work to be performed and which have been prepared or approved by Owner.
  12. **FIELD ORDER:** Written directives issued by the Owner's Representative as authorized by the Owner, to the Contractor. Field orders may take the form of instructions or authorizations about performance of the Work. Field orders may also be interpretations or clarifications of the Contract Documents. Field orders do not change the content, nor shall they be interpreted as a change in the Contract Documents.

13. **GOVERNING AGENCY:** Public authority (state, county, township, or other public agency), or their boards, commissions, departments, etc. which has statutory ownership or control of the referred to facility or area.
14. **GROSS PROPOSAL AMOUNT:** The total sum of all the amounts obtained by extending the Contractor's Bid Prices, time the Owner Representative Estimated Quantities; on Lump Sum Contracts, the Lump Sum Amount Bid.
15. **INCIDENTAL TO THE PROJECT:** Incidental items of Work required but not specifically listed in the Proposal and for which no separate payment will be made. The costs associated with such incidental items are to be included in the Proposal Prices Bid for Items of Work, specifically listed in the Proposal, and included in the Gross Proposal Amount.
16. **INCIDENTAL TO ITEM (AS DESIGNATED):** Incidental items of Work required but not specifically listed in the Proposal and for which no separate payment will be made. The costs associated with such Work are to be included in the Price Bid for the specific Item so designated and listed on the Proposal.
17. **NOTICE OF AWARD:** The written notice of the acceptance of the Bid from Owner to the successful Bidder.
18. **NOTICE TO PROCEED:** Written communication issued by Owner to the Contractor authorizing him to proceed with the Work and establishing the commencement date and completion date for the Work.
19. **OWNER:** A Public, quasi-public or authority, corporation, association, partnership, or individual for whom the Work is to be performed.
20. **OWNER'S REPRESENTATIVE:** A duly appointed representative of Owner delegated to assist in the administration of the Contract.
21. **PLANS:** The Drawings as prepared by Owner which will show the characteristics and scope of the Work to be performed and which are a part of the Contract Documents.
22. **PROJECT:** The undertaking to be performed as provided in the Contract Documents.
23. **PROPOSAL:** The offer of a bidder to perform the Work described in the Contract Documents when made out and submitted on the Prescribed Proposal Forms; properly signed and guaranteed.
24. **PUNCH LIST:** A list of uncompleted work given to the Contractor by the Owner Representative.
25. **SHOP DRAWINGS:** All drawings, diagrams, illustrations, brochures, schedules, and other data prepared by the Contractor, and a subcontractor, that illustrates how specific portions of the Work shall be fabricated and/or installed.
26. **SPECIFICATIONS:** A part of the Contract Documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards, and workmanship.
27. **SUBCONTRACTOR:** An individual, firm, or corporation having a direct contract with the Contractor, or with another Subcontractor, for the construction of a part of the project.
28. **SUBSTANTIAL COMPLETION DATE:** That date as certified by the Owner Representative when the construction of the Project, or a specified part thereof, is sufficiently completed in accordance with the Contract Documents, so that the Project or specified part can be utilized for the purpose for which it is intended.
29. **SUPPLIER:** Any person or organization who supplies materials or equipment for the work, including that fabricated to a special design, but who does not perform labor at the site.
30. **WORK:** All labor necessary to produce the construction required by the Contract Documents, and all materials and equipment incorporated or to be incorporated in the Project.
31. **WRITTEN NOTICE:** Any notice to any party of the Agreement relative to any part of this agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party or his authorized representative on the Work.

#### 1.04 ADEQUACY OF DRAWINGS AND SPECIFICATIONS

- A. The complete requirements of the Work to be performed under the Contract shall be set forth in Drawings and Specifications to be supplied by Owner through Owner Representative. Drawings and Specifications furnished shall be in accordance with the Contract Documents and shall be true and accurate developments thereof. All information concerning utilities shown on the Drawings were obtained using the best information available. No guarantee is given or implied that the information or the location shown is absolutely correct, or that other facilities, in addition to those shown, are not present and may be encountered.

#### 1.05 MEASUREMENTS AND DRAWINGS

- A. Drawings and/or measurements included with the Contract Documents are only for the general convenience of the Contractor. Complete responsibility for detailed dimensions lies with Contractor. Contractor shall verify all dimensions with the actual on-site conditions. Where the Work of Contractor is to join the work of another trade,



Contractor's Shop Drawing shall show the actual dimensions and the proposed method whereby its Work will join the work of those trades.

#### **1.06 DIMENSIONS**

- A. Figured dimensions on the Drawings will be used in preference to scale the Drawings. Where dimensions are not shown on the Drawings and are required for the Contractor to properly construct the work, he shall obtain such dimensions by field measurements.

#### **1.07 CONFLICTS**

- A. If there are conflicts among the Supplemental Specifications, the Drawings and/or the Detailed Specifications, the Supplemental Specifications shall govern over both the Drawings and the Detailed Specifications; and the Detailed Specifications shall govern over the Drawings.

#### **1.08 DISCREPANCIES IN DRAWINGS AND SPECIFICATIONS**

- A. Prior to submitting Contractor's quotation, any discrepancies found between the Drawings and Specifications and site conditions, or any errors or omissions in the Drawings or Specifications, the Contractor shall report in written, a minimum of five (5) days before bid submission date, to the Owner Representative the discrepancies in the drawings and /or specifications. The Owner Representative shall promptly correct such error or omission in writing prior to bid submission date. After starting Work, any work done by the Contractor after his discovery of such discrepancies, errors, or omissions shall be done at the Contractor's risk.

#### **1.09 SPECIFICATIONS BY REFERENCE**

- A. Where reference is made in the Specifications to specifications or standards of any technical society association, governmental agency, etc., it is understood and agreed that such specifications or standards are a part of the Specification as though fully repeated therein. In interpreting any specification or standard referred to, terms such as "Purchaser", "Owner," and the like shall be understood to mean the person or the organization designated as the Owner in the Contract, acting by and through its duly constituted legislative body. Terms such as "Supplier" and the like shall mean the Contractor. It is understood and agreed that the use or application of any specification or standard referred to shall not necessarily be restricted to that which may be named in the title or the specification or standard but shall be used or applied as set forth in these specifications.
- B. The Contractor shall secure copies of standards and specifications referred to herein. A copy of each specification or standard referred to is on file in the Owner Representative's Office. It is assumed that a Contractor bidding this Work shall be qualified and experienced in the type of Work involved and will have access to the specifications or standards referred to.

#### **1.10 DRAWINGS AND SPECIFICATIONS AT THE JOB SITE**

- A. One complete set of all Drawings and Specifications and other data prepared, i.e. Product SDS information, shall be maintained at the job site and shall be available to the Owner Representative at all times.

#### **1.11 OWNERSHIP OF DRAWINGS AND SPECIFICATIONS**

- A. All original or duplicate Drawings and Specifications, and other data prepared, shall remain the property of the Owner, and they shall not be reused on other work, but shall be returned to him upon completion of the work upon demand.

#### **1.12 EXAMINATION REQUIREMENTS**

- A. The referenced Owner projects are for new roof installations at the existing referenced Owner buildings which will be occupied by the owner for operations. Owner will occupy the building and site during roofing operations. It is essential that the contractor give special attention and priority to all matters concerning project safety, containment of dust and debris, exhaust of carbon monoxide, and protection of the building from water infiltration.

- B. To discover and resolve any problems, conflicts or lack of definition which might create problems with respect to performance of the work, Contractor at its own expense and prior to submitting its quotation, must familiarize itself with all applicable expense, laws, codes, statutes, rules, regulations, ordinances, and orders of all authorities having jurisdiction over the project.
- C. To discover and resolve any problems, conflicts or lack of definition which might create problems with respect to performance of the work, Contractor at its own expense and prior to submitting its quotation, shall familiarize itself by visiting the site and inspecting all existing conditions, facilities, site requirements and restrictions which may affect the performance and cost of the Work. This shall include an investigation of subsurface, substrates slopes, fastener pull out testing of the substrate, and all latent physical conditions.
- D. Contractor shall have a full understand of the Work and the existing conditions of the Project to complete the Work as outlined in the bid documents. Any discrepancies found between the Drawings and Specifications and Project site conditions, or any errors or omissions in the Drawings or Specifications, the Contractor shall report in written, a minimum of five (5) days before bid submission date, to the Owner Representative the discrepancies in the drawings and /or specifications. Neglect or failure to report any errors, physical latent conditions, or discrepancies in the Drawings and Specifications after submitting the Roofing Contractor's proposal will be the burden and financial responsibility of the Roofing Contractor to correct any problems, conflicts, or lack of definition in order to meet the Contract Agreement between Owner and the Roofing Contractor.

### **1.13 SPECIAL RESTRICTIONS AND USE REQUIREMENTS**

- A. Access to the site and roof is limited to the area designated by the Owner representative. All access to the site and to the roof shall not restrict any deliveries and emergency vehicles. In all cases, public safety is paramount. No hoisting, tear-off, power brooming, edge metal removal, or any other activity shall be conducted that may be directly above, beside or directed to the Owner's employees or to the public.
- B. Access to the roof shall be by external means only. Access to the interior of the building shall be limited to times when roofing operations require protection and or safety monitoring of the building's interior.
- C. All work shall be performed during normal work hours unless otherwise required by project safety. In all cases work times shall follow local codes.

### **1.14 CONTRACTOR'S DUTIES**

- A. Contractor is mandated to have a safety risk management plan in place before starting the roofing project. The safety risk management plan shall cover all aspects in employee safety training, safety training in using all types of job-related equipment, and enforcement of the OSHA and Owner safety requirements for the roofing project. Copy of the roofing contractor's risk management plan shall be on file with the local Owner office.
- B. Contractor shall provide all labor, materials, insurance, transportation, equipment, supervision, taxes, permits, and all other items and services necessary and reasonably incidental to the performance and proper execution of all the Work required by the Contract Documents, in compliance with Applicable Laws. After the Contract has been award, orally or in writing, no extra amounts will be allowed for any other activities, labor, materials, items, or services necessary to perform and complete all the Work, whether or not exactly described in these Specifications and the Contract Documents, as long as such activities, labor, materials, items, and services are required to accomplish Owner's desired effect and results.
- C. Prior to submission of Quotation, Contractor shall report to Owner representatives any discrepancies, inconsistencies, conflicts, errors, or omissions found in these Specifications or the other Contract Documents a minimum of five (5) days prior to bid submission date.
- D. Contractor shall identify a skilled and qualified field foreman for the project prior to the start of the project who shall be fully capable of effectively communicating (reading, speaking, comprehending) and interacting with all project management personnel. This same field foreman shall attend all project meetings including a pre-installation meeting prior to project start. Field foreman shall remain assigned to the project on a full-time basis throughout the entire roofing operation (emergencies and acts of God excepted).

- E. Contractor shall provide and maintain effective, after-hours contact list and make available to all at the pre-installation conference. Such contact information shall provide effective, 24 hour / 7 day communication in the event of weather problems or other emergencies related to the roofing operation.
- F. Contractor shall respond to after-hours emergency requests from Owner such that personnel are on the project site, in company vehicles equipped for usual emergency situations in one hour or less from time request call is placed. Contractor shall be responsible for all water removal, clean-up, and the replacement or restoration of all building components damaged as the result of in progress roofing operations and failures of same, specifically including but not limited to nightly tie-offs.
- G. Contractor's failure to effectively respond to emergency situations will result in the hiring of others to perform the work. Costs of all such work required, whether by the Owner's staff or by outside contractors, shall be borne by the project roofing contractor.
- H. Contractor is responsible for any fasteners or other components used in the course of their work that penetrate roof decks and/or in any way damage other building components. Securement fasteners, penetrating, piping, electrical and special systems conduits, electrical junction boxes, etc., are specifically included in this range of responsibility. All costs of restoring or replacing such components damaged by contractor's operations shall be borne solely by the roofing contractor.

#### **1.15 APPLICABLE LAWS**

- A. All Work covered by the Contract Documents, and all activities performed in connection with the Work, shall be performed in full compliance with all applicable laws, codes (including, without limitation, building codes), statutes, rules, regulations, ordinances, and orders of all national, state, county, and municipal public authorities, and quasi-public authorities, having or claiming to have jurisdiction over the Project.

#### **1.16 INSURANCE**

- A. Roofing contractor will obtain and keep in force during the term of this Agreement Owner's insurance requirements for Commercial General Liability Insurance, Worker's Compensation Insurance, and Business Auto Insurance. Contractor should refer to Owner contractor pre-qualification requirements for amounts and liability limits.
- B. All required insurance policies must be taken out with financially reputable insurers reasonably acceptable to Owner and licensed to do business in all jurisdictions where services are provided under this Agreement. Contractor will provide Owner with a certificate of insurance from Insurance Company, satisfactory in form and content evidencing that all the required coverages are in force and have been endorsed to provide that no policy will be canceled or materially altered without first giving Owner 30 days' prior notice.

#### **1.17 PERMITS & TAXES**

- A. Contractor shall obtain and pay for all taxes, permits, licenses, approvals, and inspection fees required by Applicable State and Federal Laws in effect as of the Quotation due date for Contractor to perform and complete all of the Work required by the Contract Documents. In addition, Contractor shall arrange, schedule, and pay for, all required final inspections by state, local, or independent certified inspecting authorities necessary for the issuances of all certificates, licenses, or other approvals relating to the completed Work.
- B. Owner shall secure, or arrange for the issuance of, any necessary permits required for related work to be performed by other trades which are not covered by Contract Documents.

#### **1.18 NOTICE TO PROCEED**

- A. Following execution of the Agreement by the Owner, a written Notice to Proceed with the Work shall be given to the Contractor. From then on, the Contractor shall begin the work regularly without interruption thereafter (unless otherwise directed in writing by Owner), with such forces as to secure the completion of the Work within the Contract Time.

### **1.19 CONTRACTOR'S RESPONSIBILITY TO NOTIFY OWNER**

- A. After receipt of the Notice to Proceed from Owner and prior to the start of construction, the Contractor shall notify Owner, when the Work is to commence. Owner shall be allowed seventy-two (72) hours, if needed, to arrange for inspection and testing of the Work.

### **1.20 CONTRACTOR'S RESPONSIBILITY TO NOTIFY GOVERNING AGENCIES**

- A. The Contractor shall notify all governing agencies and all concerned utility companies 48 hours prior to the start of construction. Additional notification shall be given by the Contractor to all the above-mentioned parties 48 hours prior to crossing, connecting to, or working in the vicinity of any right of way utility owned or controlled by any of the concerned parties.

### **1.21 SEPARATE CONTRACTS**

- A. Owner may let other contracts in connection with the Work of the Roofing Contractor to other Roofing Contractors or to other trades if the Project so requires. The Roofing Contractor shall cooperate with the other Contractors with the storage of materials and execution of their work. It shall be the Roofing Contractor's responsibility to inspect all Work by other Contractors affecting his Work and to report to Owner Representatives any irregularities that will not permit him to complete his Work in a satisfactory manner. His failure to notify the Owner Representatives of such irregularities shall indicate the Work of other Contractors has been satisfactorily completed to receive his Work.

### **1.22 SUBCONTRACTS**

- A. At the time specified by the Bidding and Contract Documents, or when requested by Owner Representatives, the Roofing Contractor shall submit in writing to Owner for the Owner's approval, the names of the Subcontractors proposed for scheduled Work. Subcontractors may not be changed except at the request, or with the approval of, Owner.
- B. The Contract Documents shall not be construed as creating any contractual relation between any Subcontractor and Owner. The Contractor shall bind every Subcontractor by the terms of the Contract Documents.

### **1.23 ORAL AGREEMENTS**

- A. No oral agreement, order, objection, claim or notice by any party shall affect or modify any of the terms or obligations contained in any of the Contract Documents, and none of the provisions of the Contract Documents shall be held to be waived or modified by reason of any act whatsoever, other than by a definitely agreed waiver or modification thereof in writing, and no evidence shall be introduced in any proceeding of any other waiver or modification. Receive agreements in writing from the Owner Representative before proceeding the modify scope of work.

### **1.24 CHANGES IN THE WORK**

- A. Owner may, as the need arises, order changes in the Work throughout additions, deletions, or modifications without invalidating the Contract. Owner reserves the right to delete or add work costing up to 30% of the original total Contract Amount without penalty or changes in the Unit Prices shown in the Proposal. Payment and time of completion affected by such changes shall be adjusted at the time of ordering such changes.

### **1.25 EXTRA WORK**

- A. New and unforeseen items of work found to be necessary, and which cannot be covered by any item or combination of items for which there is a Contract Price, shall be classed as Extra Work. The Contractor shall do such Extra Work and furnish such materials as may be required for the proper completion or construction of the whole Work contemplated, upon written notice from Owner as approved by the Owner Representative. In the absence of such written notice, no claim for Extra Work shall be considered. Extra Work shall be performed in accordance with these specifications; or special provisions shall be done in accordance with the best practice as approved by the Owner Representative. Extra Work as required in an emergency to protect life and property shall be performed by the Contractor as required.

## **1.26 TIME FOR COMPLETION**

- A. It is hereby understood and mutually agreed by and between the Contractor and Owner that the date of beginning and the time for completion as specified in the Bidding Documents are ESSENTIAL CONDITIONS of this Contract; and it is further mutually understood and agreed that the Work embraced in this Contract shall be commenced on a date to be specified in the "Notice to Proceed". The Contractor agrees that said Work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will ensure full completion, in an acceptable manner thereof, within the time specified.
- B. The Contractor affirms that the time for completion of the Work described here is a reasonable time for completion of the Work and that he has sufficient plan, equipment, and manpower to accomplish the Work within the specified time for completion. It is further agreed that TIME IS OF THE ESSENCE of each and every portion of this Contract and of Individual Specification Sections wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the Contract an additional time is allowed for the completion of any Work, the new time limit fixed by such extension shall become the essence of this Contract.

## **1.27 EXTENSION OF THE CONTRACT TIME**

- A. A delay beyond the Contractor's control, occasioned by an Act Of God, or an act or omission on the part of the Owner, or by strikes, lockouts, fire, or similar occurrences, may entitle the Contractor to an extension of time by which to complete the Work, as determined by the Owner Representative. However, the Contractor shall within five (5) days after the beginning of such delay, give written notice to Owner of the cause of said delay.

## **1.28 PRODUCTION OF WORK AND PROPERTY**

- A. Contractor shall continuously maintain adequate protection of all the Work from damage or loss and shall protect Owner and their employees, and their property from personal injury, property damage, or loss arising out of the execution of the Work. Contractor shall make good any such injury, damage, or loss except such as may be directly and wholly caused by agents, separate contractors, or employees of Owner.
- B. Contractor shall comply with requirements of Applicable Laws for erecting structurally adequate barricades, painted with appropriate graphics and warning signs to inform Project personnel and Owner's employees of possible hazards. Contractor shall also provide, in conformance with OSHA regulations and other Applicable Laws, all barricades and warning lines required identifying roof openings and other fall hazards.
- C. Contractor shall confine demolition and removal of roof debris to suitable locations as directed by Owner.
- D. Contractor shall provide and install a suitable protective covering (plastic sheeting, padding, plywood sheeting, etc.) to fully protect existing pavement finishes, and the areas around the storage, staging, and hoisting operations.
- E. Contractor shall provide portable fire extinguishers throughout the areas in which the Work is being performed, with such extinguishers placed where always accessible.
- F. Contractor shall at all times maintain the Work areas so that all portions are accessible to fire department personnel and apparatus. Fire hydrants and fire department connections to building's sprinkler systems must be kept free from obstruction at all times.
- G. Contractor shall strictly supervise any metal cutting or other operations that may result in sparks or flame. All cutting equipment shall be safely arranged, and all combustibles in the vicinity of any Work being performed shall either be removed or protected by a noncombustible cover. Cutting shall be attended by an assistant or fire watchman, who is equipped with at least one multi-purpose dry chemical fire extinguisher. The assistant or fire watchman shall maintain strict surveillance during the entire cutting operation and shall extinguish flying sparks or burning Slag. After completion of the cutting operation, the fire watchmen (a minimum of two fire watchmen) shall thoroughly search the entire area for remnants of smoldering materials a minimum of 2 hours before being released from duty. Any operations as described above shall be scheduled with and receive the prior written approval of Owner.

- H. The contractor is required to protect the building from the possibility of exhaust fumes, dust, dirt, or other latent material created, because of construction operation, from entering the air intake system. These coverings are to be removed immediately at the completion of these operations and activities throughout the project. Coordinate these activities with Owner's maintenance staff and Owner Representative.

#### **1.29 CHARACTER OF WORKERS**

- A. The Contractor shall always be responsible for the conduct and discipline of his employees and/or any subcontractors or persons employed by the subcontractors. All workers must have sufficient knowledge, skill, and experience to perform properly the Work assigned to them. Any foreman or workman employed by the Contractor or Subcontractor who, in the opinion of the Owner Representatives, does not perform his work in a skillful and safe manner, or appears to be incompetent or to act in a disorderly or intemperate manner shall, at the written request of the Owner Representative be immediately removed from the job site and shall not be employed again in any portion of the Work without the approval of the Owner Representatives.

#### **1.30 STORAGE OF MATERIALS**

- A. Contractor shall confine the storage of its materials on the Project site to those areas approved by Owner. Contractor shall not unnecessarily encumber the premises or overload any portion of any of the building with materials to a greater extent than permissible under the structural design load.
- B. Store and protect materials, including roofing membranes, cover board, and insulation from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store all materials in a dry location. Use pallets or blocking, a minimum of 4 inches in height, to support all materials from roof deck or ground. Distribute the load to stay within live load limits of the roof construction. Remove unused materials from the roof at the end of each day's work. Comply with roofing system manufacturer's written instructions for handling, storing, and protecting during installation. Any moist, wet, damaged, soiled, or unusable product shall be marked "do not use" and to be remove from the project.

**END OF SECTION 00800**



## SECTION 01100 - SUMMARY OF WORK

### PART 1 GENERAL

#### 1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. Work of the Contract comprises of the roof removal, the installation of the specified Roofing System, and all incidental Work considered necessary to fully complete the Project in a substantial and acceptable manner ready for use, occupancy, and operation by St. Louis Public Library's Buder Branch located in St. Louis, Missouri.
- B. This section is for the convenience of the Roofing Contractor only and shall not be constructed as a complete description of all work to be performed for the referenced project.
- C. The extent of the Scope of Work is indicated on the project drawings and by the requirements as described in each section of the project specifications.
- D. Prior to submission of the roofing contractor's proposal for the referenced roof areas, it will be the sole responsibility of the roofing contractor to examine and verify the work site of all existing conditions, measurements, type and thickness of existing roofing systems on each roof area, the type of substrates, locations of all roof top equipment, piping, penetrations, and roof drains, and construction of the roof area.
- E. Roofing Contractor will be responsible for scheduling a certified testing company for conducting fastener pullout testing. Fastener pullout testing shall be performed by using certified equipment and personnel. Fastener pullout testing shall comply with Single Ply Roofing Institute (SPRI) current instructions for "Standard Pullout Test Procedure." Copy of the fastener pullout test results shall be submitted to Owner's Representative and to the roofing manufacturer's technical department prior to ordering any roofing securement fastener. Based upon the fastener pullout test results, roofing contractor shall confer with the manufacturer technical department on the type of roof securement fasteners to be used for the roofing project.
- F. Contractor shall conduct a pre-construction meeting with all associated St. Louis Public Library's representatives, contractor project manager, safety coordinator, project superintendent, project foreman, Manufacturer's field technical representative, and RMT project manager. All listed representatives must be present in the meeting. The pre-construction meeting must be held within 6 days after receiving the written "Notice to Proceed" from the St. Louis Public Library's Representative. Roofing contractor must give all parties a minimum of 2 days notice prior to the pre-construction meeting.

#### 1.02 CODE COMPLIANCE

- A. The completed roof system shall meet the following requirements:
  - 1. Building Code: International Building Code 2012
  - 2. Energy Code: 2016 Illinois Energy Code
  - 3. External Fire Rating: UL Class A external fire rating

#### 1.03 FM GLOBAL COMPLIANCE

- A. The completed roof system shall meet a minimum of FM Global Class 1-90 - A - SH.
- B. At a minimum, fasteners placement, perimeter, and corner "zones" shall be as defined in FM Global Property Loss Prevention Data Sheets 1-28 and 1-29.
- C. Cover board, insulation, and membrane attachment shall be installed as defined in FM Global Loss Prevention Data Sheet 1-31.
- D. All wood nailers installations shall meet the requirements of FM Global Loss Prevention Data Sheet 1-49.

- E. All roof related sheet metal fabrication and installation shall meet the requirements of FM Global Loss Prevention Data Sheet 1-49.

#### **1.04 QUALITY ASSURANCE BY ROOFING MANUFACTURER**

- A. Roofing Manufacturing shall designate field technical employee / representative for providing quality assurance through the course of the St. Louis Public Library's roofing project.
- B. Manufacturer's Quality Control Inspection: The Manufacturer's Technical Representative shall review the on-going work a minimum of one (1) in-progress inspection every 10 working days. The Technical Representative shall:
  - 1. Communicate with the St. Louis Public Library's project manager, i.e. communicating with the St. Louis Public Library's designated project manager his presence at the St. Louis Public Library's facility before entering work area.
  - 2. Note all defects noted non-compliance with the specifications or the recommendations of the thermoplastic manufacturer should be itemized in a punch list. These items must be corrected immediately by the contractor to the satisfaction of the St. Louis Public Library's representative and RMT.
  - 3. Ensure the roofing contractor has received a copy of each In-Progress Inspection Report within two days of the inspection. The roofing contractor is to forward the St. Louis Public Library's On-Site Representative a copy of the In-Progress Inspection Report.
- C. Final Roof Inspection: The roofing contractor is to arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion of the roofing project.
  - 1. All defects noted non-compliance with the specifications, or the recommendations of the thermoplastic manufacturer should be itemized in a punch list. These items must be corrected immediately by the contractor to the satisfaction of the owner's representative and RMT.
  - 2. The roofing contractor is to forward a copy of Final Inspection Report to the St. Louis Public Library's On-site Representative within two days after date inspection(s) is performed.

#### **1.05 QUALITY ASSURANCE BY ROOFING CONTRACTOR**

- A. Roofing Contractor designated a full-time employee for providing quality assurance through the course of the St. Louis Public Library's roofing project.
- B. The Roofing Contractor's Quality Control Supervisor's responsibilities, not limited to, are:
  - 1. At the end of the workday, the Quality Control Supervisor shall inspect all installed Work, particularly roofing tie-ins, probe all membrane seams, and completed flashings to ensure watertightness of the roofing system.
  - 2. The Quality Control Supervisor shall prepare a daily report which describes each major portion of Work or operation. The Quality Control Supervisor shall confirm all the completed work has been thoroughly inspected to ensure the watertightness of the roofing system. The daily report shall include pictures of Work completed "that" day. Pictures shall be properly label for the referenced work area.
  - 3. The Quality Control Supervisor shall use a Roof Plan to indicate each day's completed Work, the sequence of Work, and with previous completed Work dates.
  - 4. All Quality Control Supervisors' daily electronic reports shall be submitted to the St. Louis Public Library's Onsite Representative at the end of the workday. Each daily report shall be properly dated and label.
  - 5. At the end of each work week, the Quality Control Supervisor shall submit a written electronic report / schedule or bar chart indicating where the "next week's" work will occur, and any information needed to be coordinate with the St. Louis Public Library's project manager, i.e. raising of equipment, required disconnects of equipment, and when applicable any supply deliveries.

## **PART 2 PRODUCTS**

**Not Used.**



## **PART 3 EXECUTION**

### **3.01 ROOF PREPARATION**

- A. Coordinate all aspects of demolition work with Owner's Representative and with all other Trades.
- B. All roof access shall be by external means only via stair tower scaffolding, or St. Louis Public Library's facility fixed stairways and or ladders between roof areas. The roofing contractor will be required to supply and install an OSHA and St. Louis Public Library's approved stair tower scaffolding to gain access to the roof, as necessary. At the top of the stair tower scaffolding, there shall be a "Fall Protection Barrier" to protect the contractor's employees as they step on the roof area. The stair tower scaffolding must be secured at the end of each day to prevent "others" from using the stair tower scaffolding. Before the use of the stair tower scaffolding each day, the roofing contractor must obtain a "height permit" from the St. Louis Public Library's project manager.
- C. Contractor must communicate the proposed starting date for reroofing the referenced roof areas to St. Louis Public Library's representatives.
- D. Prior to demolition work, verify all roof drains, soil pipes, flutes, roof equipment, steel decking and associated members, piping, electrical conduit, and other roof top equipment are secured to the building structure. Coordinate removal and securement of all unsecured roof penetrations and equipment prior to the start of the roofing installation and/or demolition.
- E. Prior to starting the roofing project, the roofing contractor shall verify the existing roof drains and drain piping are clear of debris, open and functional, that piping is properly connected and sealed to existing drain bowls.
- F. All Roof Areas: All existing roof drains, located within any of the referenced reroofing areas, are to be removed and replaced with new Josam-type roof drains. The primary drain bodies shall be installed at proper elevations for construction of insulation drains sump at slopes indicated. Contractor is to include all costs associated with the new drains, i.e. drain head assemblies, clamping rings, under deck clamping rings, strainers, clamps, collars, and all piping connections required, etc. Contractor is to verify that the new roof drains and drain lines are properly clamped into position and are in a 100% functional condition.
- G. Provide protective measures, including all OSHA and St. Louis Public Library's safety requirements, in and around the work area, and in and around the building prior to beginning the project.
- H. Roofing contractor shall conduct a daily safety inspection of all equipment, i.e. fall protection, generators, electrical cables, fire extinguishers each day. The equipment safety inspection report shall be given to the St. Louis Public Library's representative daily. Contractor shall have their safety manager to visit the project a minimum of one time each week.
- I. There will be no smoking and tobacco products on the roof or any other areas on the St. Louis Public Library's property.
- J. At all times, the contractor's employees, except for the designated quality control manager, are not allowed inside the facility.
- K. Construction weekly "Tail Gate" safety meetings and Sign-in Sheet. There will be a weekly safety meeting conducted by the roofing contractor. This requirement will be applicable for all roofing's subcontractors' employees. The roofing contractor and their subcontractors shall submit on a weekly basis a written report of the weekly safety training along with the sign-in sheet of all employees attending the meeting. The "Tail Gate" safety report shall be given to the St. Louis Public Library's Project Manager.
- L. Incident report. All "near misses" and accidents are to be immediately reported to the St. Louis Public Library's Project Manager.
- M. The roofing contractor will be limited to having two company vehicles inside the facility grounds. The company vehicles shall have the roofing company signage to identify the ownership of the vehicle. At no time may an employee bring their personal vehicle onto the facility grounds.

- N. Coordinate with the owner's representative all required temporary roofing repairs and temporary roofing system installation as required during the installation of the roofing system or as required to facilitate the installation of the specified roofing at the referenced roof areas.
- O. Roofing Contractor is to remove and properly dispose all associated existing roofing system, roofing insulation, roofing flashings from walls, curbs, scuppers, perimeter metal, drains, and roof penetrations within the designated roof areas.
- P. Roofing Contractor is to prepare substrates as required by St. Louis Public Library's for proper installation of the specified roofing system. Contractor to refer to Section 05310 and 07590 for instructions for steel deck preparation and verifications.
- Q. Roofing Contractor is to remove and dispose all designated, obsolete-roof penetrations and mechanical equipment as identified by the Owner's Representative during the pre-proposal meeting. Contractor shall verify and coordinate all roof penetrations and mechanical removal with the Owner's Representative. The contractor shall include in their bid proposal the cost for supplying and installing all materials to fill in the void in the roof substrate. Contractor shall refer to the project specification Section 07590, and the roofing details for installation of the steel decking and insulation fill as required. Contractor shall coordinate with Owner's Representative and perform all necessary service disconnects.
- R. Roofing Contractor is to remove and dispose of all existing roof related sheet metal, i.e. metal copings, gutters, downspouts, metal counter flashings, etc. unless a particular component is identified on the project drawings for reuse of the existing. Replacement shall be of the same size as existing and fabricated from a 24 gauge pre-finished Kynar coated metal as indicated in Section 07600. Color of the metal shall be approved by the St. Louis Public Library's Representative.

### **3.02 ROUGH CARPENTRY**

- A. Install new wood nailers as shown on the project drawings.
- B. Install wood nailers as curb extensions as required for the minimum curb height of 8 inches.
- C. Existing wood nailers are to remain in place and are to be re-used; provided the wood nailers are in acceptable condition for reuse. Contractor shall ensure the existing wood nailers are secured per current requirements of Factory Mutual Loss Prevention Data Sheet 1-49.
- D. Any deteriorated or unacceptable wood nailers are to be brought to the immediate attention of the designated St. Louis Public Library's USA representative.

### **3.03 DECK BOARD**

- A. Mechanically attach single layer of ½" gypsum board to the steel deck and through lightweight substrate into metal pan deck.
  - 1. Field fastener density: Eight [8] per 4'x8' board.
  - 2. Perimeter edge fastener density: Twelve [12] per 4'x8' board, 12' in from perimeter.
  - 3. Perimeter corner fastener density: Sixteen [16] per 4'x8' board, 12' in from perimeter.
  - 4. Fastener placement: ¾" minimum penetration of top flange only on metal deck.
  - 5. Flute penetration not acceptable.

### **3.04 VAPOR / AIR BARRIER**

- A. The roofing contractor shall provide and install manufacturers SA vapor barrier over the prepared substrate. Contractor to refer to Section 07540.8 for instructions for installation.

### **3.05 RIGID INSULATION**

- A. Polyisocyanurate board insulation: Closed cell polyisocyanurate foam with black glass reinforced mat laminated to faces, complying with the following additional characteristics:

1. Thickness: Installation two layers of 2.0" true thickness on section C, Installation of 1.5" base layer on section B and one layer of 1.5" true thickness on sections A.  
Installation of ¼" in 12" tapered system on section B.
  2. Size: 48 inches by 96", nominal.
    - a. Exception: Insulation to be attached using adhesive may be no larger than 48" by 48", nominal.
  3. R-Value (LTTR):
    - a. 1.0 inch Thickness: 5.56, minimum.
  4. Compressive Strength: 20 psi when tested in accordance with ASTM C 1289.
  5. Ozone Depletion Potential: Zero; made without CFC or HCFC blowing agents.
  6. Recycled Content: 19 percent post-consumer and 15 percent post-industrial, average.
- B. Contractor shall provide Type II, Class 2, Grade 2 Tapered Polyisocyanurate Insulation Shapes for saddles, crickets, tapered edge strips, sumps, and other insulation shapes where indicated or where required for sloping to drain. Fabricate to slopes indicated. Saddles, Crickets, Edge Strips, and Other Shapes:
1. Crickets between Primary Roof Drains and Primary Roof Scuppers: Tapered insulation boards fabricated to slope of 1/2-inch per 12 inches (1:24) unless otherwise indicated.
  2. Sumps for Primary Roof Drains and Primary Roof Scuppers, measuring 8 feet x 8 feet; size to be modified when drains are located next to parapet wall: Tapered insulation boards fabricated to slope of 1/4-inch per 12 inches (1:48). Provide a minimum insulation thickness at the roof drain or roof scupper of 3.0 inches.
  3. Saddle Behind (Upslope) from Curbs Measuring 18 inches and greater: Tapered insulation boards fabricated to slope of 1/2-inch per 12 inches (1:24).
  4. Saddle Behind (Upslope) from Round Penetrations Measuring 12 inches in diameter and greater: Tapered insulation boards fabricated to slope of 1/2-inch per 12 inches (1:24).
- C. Installation of the specified roof insulation shall be per Section 07540.

### **3.06 COVER BOARD**

- A. Contractor to provide and install the specified cover board as indicated in the project specifications and details. The securement of the ½ inch x 4' x 4' cover board over the specified roof insulation shall be per Section 07540.

### **3.07 ROOFING MEMBRANE AND ASSOCIATED FLASHING**

- A. Install the specified Manufacturers 60 mil membrane, as indicated in the project specifications, Section 07540.
- B. Install Manufacturers 60 mil membrane flashings, i.e. wall and curb flashings, as indicated in the project specifications and per the project drawings.

### **3.08 MISCELLANEOUS**

- A. Coordinate with the Owner's Representative the installation of any temporary roof repair or roofing, the removal or installation of any roof penetrations or equipment, i.e. pipe penetrations, equipment supports, equipment, throughout the duration of the project.
- B. Contractor will be responsible for lifting and / or any required modifications for all rooftop equipment, piping, and piping supports to facilitate the removal of the existing roofing system, and for the installation of the specified roofing system. Any other equipment requiring electrical modifications will be the responsibility of the roofing contractor.
- C. Contractor shall remove all wood support blocking and properly dispose from the job site. The roofing contractor shall provide and install, an approved, pre-manufactured pipe supports for gas piping and electrical conduits located within any of the referenced reroofing areas, on "Roof Area's A thru L. Size and spacing of the pipe / conduit supports shall be per the pipe support manufacturer's written instructions. Where wood blocking exists under refrigeration piping, new pressure treated wood blocking shall be installed under the refrigeration pipe supports.

- D. Contractor shall remove and replace any damaged concrete paver supports to match existing using like kind. All damaged concrete paver supports are to be removed and properly disposed of from the job site. The roofing contractor shall provide and install, an approved, concrete paver pipe supports for all piping located within any of the referenced reroofing areas, on the "Roof Area's A thru L." Size and spacing of the piping supports shall be in the existing locations. Where wood blocking exists under refrigeration piping, new pressure treated wood blocking shall be installed under the refrigeration pipe supports.
- E. All existing roof drains, located within any of the referenced reroofing areas, are to be replaced with new Josam-type roof drains. All drains are to be installed to match the thickness of the roofing insulation and cover board. The "donut cutting" of the insulation to form the tapered edge at the drain bowl is not acceptable. There shall be a smooth transition of the tapered insulation drain sump. The insulation shall have a minimum thickness of 3.0 inches at the top of the drain bowl.
- F. Roofing Contractor to remove the existing duct work supporting structures only, consisting of angle/round iron and pitch pans. Contractor to provide new pre-manufactured adjustable height framed duct supports manufactured by Miro Industries, Inc. Model #10-DS or an approved equal. Follow manufacturer's recommendations for spacing and sizing of supports.
- G. Roofing Contractor shall install Manufacturer's walk pad under all equipment support blocking, refrigeration pipe blocking or supports, gas piping blocking or supports, conduit piping blocking or supports and pre-manufactured pipe supports. All edges of the protection pad will be hot air welded to the field membrane.
- H. Roofing Contractor shall install at the base of each ladder, cross over ladders, and at the base of each door threshold entrance a "plywood landing," measuring 4 feet x 4 feet. The specified ½ inch Gypsum Board Prime shall be substituted with ½ inch fire-rated pressure treated plywood in the referenced areas. The plywood sheeting shall be adhered to the top layer of insulation with the specified dual component urethane adhesive. At each area where the "plywood landing" is installed, the roofing contractor shall install a 3 feet x 4 feet piece of the Manufacturer's walkway. Contractor shall refer to Section 07540 for information regarding proper installation of the walkway.
- I. The roofing contractor shall install Manufacturer's walkway along the "serviceable side" of all roof top equipment and around four sides of each roof hatch. Contractor shall refer to Section 07540 for information regarding proper installation of the walkway. Contractor is to refer to the roof plan for the locations of the continuous Cross-grip walkway.
- J. The roofing contractor shall install Manufacturers' yellow, 4 inch wide, coverstrip a highly visible membrane product; designed to draw attention to an unprotected roof perimeter (not having St. Louis Public Library's approved fall protection) and at potentially hazardous area(s) that do not comply with St. Louis Public Library's safety guidelines. During the time of the pre-bid meeting, the St. Louis Public Library's Representative shall verify unprotected roof perimeters and potentially hazardous areas on the referenced project's roof area(s).
- K. Contractor shall include in his proposal the cost for removal and re-installation of any existing lightning protection system. All lightning protection work shall be performed by a certified lightning protection company. Contractor shall monitor all the work performed by the lightning protection company.
- L. All existing metal copings, gutters, downspouts, and metal counter flashings are to be removed. Replacement shall be of the same size as existing and fabricated from a 24 gauge pre-finished Kynar metal with 22 gauge continuous cleat, as indicated in Section 07600. Color of the metal shall be approved by the St. Louis Public Library's Representative.
- M. All perimeter edge metal, pitch pans, and scuppers shall be fabricated from type of metal identified in the specifications.

### **3.09 TEMPORARY ROOFING TERMINATIONS AND PROTECTION**

- A. Prior to starting roofing project, the roofing contractor shall inspect the facility existing roof area(s) associated with the contract roofing project for any defects which could cause water or moisture vapor entries into the building during the roofing application. Any defects or concerns shall be addressed in writing to the St. Louis Public Library's representative prior to starting the roofing project. Proceeding with the roofing project indicates the roofing contractor's acceptance of the existing facility conditions.

- B. For existing roof areas where access is absolutely required for the installation of the new roofing system on another roof area, the roofing contractor shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent roof areas. A suitable temporary protective surface shall be provided for all roof areas which receive traffic during construction of the new roofing system. During the roofing project, any damage which occurs to the new or existing roofing membrane and/or system shall be removed and replaced at the contractor's expense.
- C. The roofing contractor shall provide the labor and materials required to maintain a watertight and impermeable condition at all times on the roof areas as referenced in the project's contract documents. All membrane and metal flashings shall be installed concurrently with the field membrane installation to maintain a 100% watertight condition as the work progresses each day. For freezer applications, all equipment and piping flashings, perimeter flashings, i.e. metal edge and coping, must be 100% completed and must be 100% airtight to prevent any air/water vapor infiltration into the completed roofing system each day.
- D. When an interruption or a postponement in the roofing work occurs in the installation of the roofing system, the roofing contractor shall install temporary watertight and hermetic terminations across the installed Manufacturers roofing system. The Manufacturers roofing system shall be 100% impermeable to prevent water and air/water vapor infiltration into or under the new roofing system. When work resumes, any contaminated membrane shall be removed from the work area and disposed of site. None of these materials shall be reused in the new work.
- E. During inclement weather or during a postponement in the roofing work occurs while a temporary water stops or terminations are in place, the contractor shall provide the labor and materials to monitor and ensure the temporary water stops and terminations are 100% watertight and impermeable condition.
- F. If any weather related moisture or the result of moisture caused by the condensation of water vapor are allowed to enter into the newly-completed Manufacturers Roofing System, the affected roof area(s) shall be removed and replaced at the contractor's expense.

### **3.10 PROTECTING AND CLEANING**

- A. Protect sheet membrane roofing from, not limited to the following items: dirt, grease, rust stains, roofing asphalt, scuff marks, abrasions, adhesive spills, sealant spills, membrane cuts, and any physical damages to the installed Manufacturers roofing system during the construction period.
- B. Upon completion of the Work, dispose of, away from the Site, all debris, trash, containers, fasteners, roofing remnants and scraps.
- C. **The completed "Roof" shall be washed with water and St. Louis Public Library's approved cleaner to remove all dirt, stains, adhesive and sealant spills, and any residue from roof membrane.**

### **3.11 ACCEPTANCE**

- A. Prior to demobilization, the Roofing Contractor shall schedule a final inspection meeting with the St. Louis Public Library's representative. The Roofing Contractor's Project Manager, Project Superintendent, and Project Foreman and the St. Louis Public Library's representative shall inspect the completed roofing system for any uneven cover boards, loose or improperly attached insulation or cover boards, ponding of water, un-adhered membrane and membrane flashing, membrane damage, rust stains, roofing asphalt, grease, scuff marks, cuts, abrasions, adhesive spills, and sealant spills prior to demobilization from the St. Louis Public Library's facility. Any non-compliance item shall be removed and/or repaired to the satisfaction of the St. Louis Public Library's owner representative(s).

## **END OF SECTION 01100**

## **SECTION 01330 - SUBMITTAL PROCEDURES**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Section Includes:
  - 1. Submittal procedures
  - 2. Product Data, Shop Drawings, and Samples
  - 3. Assurance/Control submittals
    - a. Certificates
    - b. Manufacturer's installation instructions
  - 4. Architect's or St. Louis Public Library's action
- B. Related Documents: The Contract Documents applies to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other documents.

#### **1.02 SUBMITTALS**

- A. Submit three copies of proposed Schedule of Submittals to St. Louis Public Library's Representative within 10 days after receipt of Notice to Proceed. List all items required submittal for review and approval by St. Louis Public Library's Representative.
- B. Submit three copies of final Schedule of Submittals to St. Louis Public Library's Representative within 10 days after receipt of proposed Schedule of Submittals review from St. Louis Public Library Representative.
- C. Submit schedule on St. Louis Public Library's Representative approved form provided by Contractor.
- D. Schedule of Submittals: Include the following.
  - 1. Indicate type of submittal, product data, shop drawing, sample, certificate, or another submittal.
- E. Coordinate Schedule of Submittals with Construction Schedule. Revise and update Schedule of Submittals when required by changes in the Construction Schedule. Provide St. Louis Public Library with an updated schedule within 5 days of date schedule revision.

#### **1.03 SUBMITTAL PROCEDURES**

- A. Transmit each submittal with AIA Form G810 or St. Louis Public Library accepted form. Submit three copies of each transmittal.
- B. Sequentially number transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier, pertinent drawing and detail number, and specification section number, as appropriate.
- D. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
- E. Schedule submittals to comply with scheduling requirements of Construction Schedule.
- F. For each submittal for review, allow 5 days excluding delivery time to and from the Contractor.
- G. Identify variations from Contract Documents and Product or system limitations, which may be detrimental to successful performance of the completed Work.



- H. Provide space for Contractor and St. Louis Public Library Representative's review stamp.
- I. Revise and resubmit, identify all changes made since previous submission.
- J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with provisions.
- K. Submittals not requested will not be recognized or processed.

#### **1.04 PRODUCT DATA**

- A. Submit of three copies which two copies will be retained by St. Louis Public Library Representative.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.

#### **1.05 SHOP DRAWINGS**

- A. Shop Drawings: Submit for review. After review, produce copies and distribute in accordance with the SUBMITTAL PROCEDURES article above.

#### **1.06 SAMPLES**

- A. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- B. Submit samples of finishes in colors selected, texture, and patterns for St. Louis Public Library's Representative selection.
- C. Include identification on each sample, with full Project information.
- D. Submit the number of samples specified in individual specification sections, one of which will be retained by the St. Louis Public Library's Representative.

#### **1.07 MANUFACTURER INSTALLATION INSTRUCTIONS**

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, to St. Louis Public Library Representative in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

#### **1.08 ST. LOUIS PUBLIC LIBRARY REPRESENTATIVE ACTION**

- A. For submittals where action and return is required or requested, St. Louis Public Library Representative will review each submittal, mark to indicate action taken, and return promptly, generally within 10 calendar days from date of receipt.
  - 1. Compliance with specified characteristics is the Contractor's responsibility.
  - 2. Submittals for information, closeout documents, record documents and other submittals for similar purposes, no action will be taken.
- B. Action Stamp: St. Louis Public Library Representative will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken.

1. "Accepted": Final Unrestricted Release. Where submittals are marked "Accepted" that part of the Work covered by the submittal may precede, provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
2. "Accepted as Noted": Final-But-Restricted Release. When submittals are marked "Accepted as Noted", that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
3. "Rejected: Submit Specified Item" or "Revise and Resubmit": Returned for Resubmittal. When submittal is marked "Rejected: Submit Specified Item", "Revise and Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
  - a. Do not permit submittals marked "Rejected: Submit Specified Item" or "Revise and Resubmit," to be used at the Project site, or elsewhere where Work is in progress.
4. "Returned - Not Required": Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Returned - Not Required".

## **PART 2 PRODUCTS**

**Not Used.**

## **PART 3 EXECUTION**

**Not Used.**

**END OF SECTION 01330**



## **SECTION 01600 - PRODUCT REQUIREMENTS**

### **PART 1 GENERAL**

#### **1.01 SUMMARY**

- A. Section Includes:
  - 1. Definitions
  - 2. Products
  - 3. Product options and substitutions
  - 4. Product transportation and delivery requirements
  - 5. Product storage and handling requirements
- B. Related Documents: The Contract Documents apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other documents.

#### **1.02 DEFINITIONS**

- A. Products: Items purchased for incorporation in Work, whether purchased for Project or taken from previously purchased stock. Term includes the terms material, equipment, system, and terms of similar intent.
- B. Named Products: Items identified by manufacturer's name, including make or model number or other designation, shown or listed in manufacturer's published product literature.
- C. Materials: Products substantially shaped, cut, worked, mixed, finished, refined, or otherwise fabricated, processed, or installed to form a part of Work.
- D. Equipment: Product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.
- E. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- F. Product Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
- G. Product Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

#### **1.03 PRODUCTS**

- A. Submit Material Safety Data Sheets (MSDS) for all materials to be used on the project as specified in Section 01330 - Submittal Procedures.

#### **1.04 PRODUCT OPTIONS AND SUBSTITUTIONS**

- A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the proposal period. Comply with requirements specified in this section.

- B. Owner's Representative will consider requests for Substitutions only within 10 days after date established in Notice to Proceed.
- C. Substitutions may be considered when a Product becomes unavailable through no fault of the Contractor.
- D. Document each request with complete data substantiating compliance of proposed Substitution of Contract Documents.
- E. A request constitutes a representation that the Contractor:
  - 1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
  - 2. Will provide the same warranty for the Substitution as for the Specified Product.
  - 3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
  - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
- F. Substitutions will not be considered when they are indicated or implied on shop drawings or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

#### **1.05 TRANSPORTATION AND PRODUCT DELIVERY REQUIREMENTS**

- A. Transport and handle Products in accordance with manufacturer's instructions, using means and methods that will prevent damage, deterioration, and loss, including theft.
- B. Schedule Product delivery to minimize long-term storage at Project site and prevent overcrowding of construction spaces.
- C. Coordinate Product delivery with installation schedule to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
- D. Deliver Products to Project site in undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
- E. Promptly inspect shipments to ensure that Products comply with project requirements, quantities are correct, Products are undamaged, and properly protected.
  - 1. For exterior storage of Products, place Product on sloped supports, above ground.
- F. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

#### **1.06 PRODUCT STORAGE AND HANDLING REQUIREMENTS**

- A. Store and protect Products in accordance with manufacturers' published instructions, with seals and labels intact and legible.

- B. Store Products subject to damage by elements above ground, under cover in weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's published instructions.
- C. For exterior storage of fabricated Products, place on sloped supports, above ground.
- D. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of Product.
- E. Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

## **PART 2        PRODUCTS**

**Not Used.**

## **PART 3        EXECUTION**

**Not Used.**

**END OF SECTION 01600**



## **SECTION 03510 –GYPSUM/LIGHTWEIGHT/LIGHTWEIGHT CONCRETE ROOF DECK REPAIR**

### **PART 1 GENERAL**

#### **1.01 SUMMARY**

- A. Work includes, but is not necessarily limited to:
  - 1. Poured Gypsum/Lightweight Roof Deck Repair including form board, reinforcing mesh, poured Gypsum/Lightweight concrete and all other items required for a complete and proper installation.
  - 2. Gypsum/Lightweight Plank Roof Deck Repair including fabricated Gypsum/Lightweight plank, grout and all other items required for a complete and proper installation.
- B. Related Documents: The Contract Documents apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other documents.
- C. Related Sections:
  - 1. Section 07590 – Preparation for Reroofing
  - 2. Section 07540 – Thermoplastic Membrane Roofing

#### **1.02 SUBMITTALS**

- A. Submittal Procedures: Procedures for submittals.
- B. Product Data: Provide and Submit Manufacturers Specification Data Sheets for all products including Formboard, Poured Gypsum/Lightweight and Wire Mesh Reinforcement.
- C. Manufacturer's Installation Instructions: Submit installation procedures and interface required with adjacent Work.
- D. Project Record Documents: Accurately record actual locations of components which are concealed from view.

#### **1.03 UNIT PRICE - MEASUREMENT AND PAYMENT**

- A. Replacement of damaged or deteriorated Gypsum/Lightweight decking:
  - 1. Basis for Measurement: By square feet
  - 2. Basis of Payment: Replace Gypsum/Lightweight Deck: Replace any Gypsum/Lightweight deck which is deteriorated, damaged or shows signs of water damage, broken formboards, delamination or excessively cracked Gypsum/Lightweight with new, poured Gypsum/Lightweight decking of the same type, thickness, and cross section to match existing.
  - 3. Contractor shall provide documentation as outlined in "Price and Payment Procedures."

#### **1.04 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing the work of this section with minimum three years' experience.
- B. Comply with National Roof Deck Contractors Association (NRDCA) Publication NRDCA 500 "Gypsum/Lightweight Roof Deck Replacement Procedures" for all repair work.
- C. Maintain one copy of each document on site.
- D. Acquire Gypsum/Lightweight Concrete from same source for all Work.

#### **1.05 DELIVERY, STORAGE AND HANDLING**

- A. Product Requirements: Transport, handle, store, and protect Products.
- B. Deliver materials to the job site in original, unopened bundles. Materials are to be stored off the ground with one end elevated to provide drainage and are to be protected from the elements with weatherproof tarps ventilated to avoid condensations. Cut plastic wrappers to encourage ventilation. Keep materials dry.

- C. Keep all materials clearly identified with all identifying marks legible. Keep all damaged material clearly identified as damaged and stored separately to prevent its inadvertent use.
- D. Do not allow installation of damaged or otherwise non-complying material.
- E. Use all necessary means to protect the materials in this section before, during, and after installation, and to protect the work and materials of all other trades.
- F. In the event of damage, immediately make all necessary repairs and replacements subject to the approval of, and at no additional cost to the Owner.
- G. Roof surfaces shall be protected from damage at all times.

## **1.06 REFERENCES**

- A. Publication NRDCA 500 “Gypsum/Lightweight Roof Deck Replacement Procedures”, as published by the National Roof Deck Contractors Association.
- B. Design Data – Poured Gypsum/Lightweight Roof Decks (GA 300-73), as published by Gypsum/Lightweight Roof Decks Foundation.
- C. ASTM C317 - Specification for Gypsum/Lightweight Concrete
- D. ASTM C1396 – Specification for Gypsum/Lightweight Board

## **1.07 FIELD CONDITIONS**

- A. Ambient Conditions: Do not install Gypsum/Lightweight products when conditions exceed those stated in the manufacturers printed literature.

## **1.08 COORDINATION**

- A. Coordinate with removal and installation of the new roofing system.

# **PART 2 PRODUCTS**

## **2.01 MATERIALS AND MANUFACTURERS**

- A. Gypsum/Lightweight Concrete or other lightweight concrete patch material:
  - 1. Unites States Gypsum/Lightweight; PYROFILL; [www.usg.com](http://www.usg.com)
  - 2. Elastizell Canada, Inc.; CELL-PATCH; [www.elastizellcanada.com](http://www.elastizellcanada.com)
  - 3. Siplast; ZONO-PATCH; [www.siplast.com](http://www.siplast.com)
- B. Permanent Formboard:
  - 1. United States Gypsum/Lightweight; SECURERCK Gypsum/Lightweight-Fiber Roof Board 5/8” thick, 6 pound density.
  - 2. Temple-Inland; GreenGlass Roof Board 5/8” thick.
  - 3. Georgia-Pacific; DENSDECK Roofboard 5/8” thick.
- C. Wire Reinforcement: KEYDECK 2160-2-1619 galvanized wire mesh; [www.keystonesteel.com/products/construction.asp](http://www.keystonesteel.com/products/construction.asp)
- D. Cross-Tees:
  - 1. Cold-Formed, Fabrication from sheet steel conforming to ASTM A525 or ASTM A568.
  - 2. Size: 30 mm (1-1/4-inches) by 13 mm (1/2-inch) by 0.6 mm (0.023-inch) thick by 600 mm (24-inches) long.
- E. Gypsum/Lightweight Deck Plank:
  - 1. Fabricated of Gypsum/Lightweight board: ASTM C1396.
  - 2. Nominal Size: full thickness to match existing construction conditions and width to match purlin span. Where possible, length should span two main purlin spans.

- a. Factory laminate from two 25 mm (1-inch) thick Gypsum/Lightweight panels with top panel edge set back along sub-purlin edge not more than 13 mm (1/2-inch).
  - b. Edge encased in water-resistant paper.
- F. Gypsum/Lightweight Deck Panels: ASTM C1396, Type "X", 16 mm (5/8-inch) thick by 600 mm (24-inches) wide by main purlin span.
- G. Grout: Gypsum/Lightweight Concrete: ASTM C317, Class A, (500 psi minimum compressive strength).
- H. Substitutions: Reference Substitution Requests.
- I. Water: Clean and not detrimental to Gypsum/Lightweight concrete.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Execution Requirements: Verification of existing conditions before starting work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.
- C. Verify sections of deck requiring replacement by visually surveying the underside of deck for sagging or water damaged, stained, or wet formboard. Look for areas of structural damage such as broken form boards, delamination of the formboard, or excessively cracked Gypsum/Lightweight concrete. Based on Survey results, mark off the top surface of the roof to denote possible areas of concern.

### **3.02 PATCHING**

- A. Remove and replace damaged, cracked, broken, or plank deck damaged beyond repair.
- B. Fill with grout and smooth any superficial surface damage to existing Gypsum/Lightweight deck.

### **3.03 REMOVAL OF EXISTING MATERIALS**

- A. Notify St. Louis Public Library Representative a minimum 24 hours prior to commencement of operations.
- B. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- C. When removing the roofing in the marked areas, install minimum 3/4 inch thickness plywood over the marked area. Each 4'x8' sheet of plywood must span over 3 bulb tees to provide a structurally safe walking surface.
- D. Protection of In-Place Conditions: Protect all adjacent property scheduled to remain. Replace or repair damaged areas at no cost to owner.
- E. Poured Deck:
  - 1. Starting with the wettest or most deteriorated Gypsum/Lightweight, remove top surface of the Gypsum/Lightweight to expose the wire mesh deck. If any of the wires are rusted through, then the entire area of Gypsum/Lightweight (including the mesh, full thickness of Gypsum/Lightweight concrete and formboard) must be replaced. Continue removing the surface of Gypsum/Lightweight in all directions down to the wire mesh until wire mesh, that has not rusted through, is found.
  - 2. Remove the existing Gypsum/Lightweight fill from inside of one complete formboard panel. Cut the wire mesh and remove both the wire mesh and formboard. Leave a minimum 3 inch length of wire mesh next to and along the bulb tee's to allow tie in to the new mesh after installing the new formboards.
- F. Plank Deck
  - 1. Starting with the wettest or most deteriorated Gypsum/Lightweight, remove existing grout along bulb tee's and lift and remove existing plank to be replaced. Continue removing Gypsum/Lightweight planks in all directions, as required.
  - 2. Completely remove the existing Gypsum/Lightweight plank and existing grout at bulb tees in preparation for installation of new planks.

### **3.04 INSTALLATION**

#### **A. Poured Deck:**

1. Replace the existing formboards with new 6 pound density Gypsum/Lightweight board sprayed on both sides with a 50/50 bleach / water solution. Install galvanized cross tees at the end of boards that do not fall on joists for support.
2. Tie new reinforcing mesh into the 3 inch wire mesh at each bulb tee. Place reinforcing mesh with 16 gauge wires at right angles to sub-purlins. Lap mesh ends at least 6 inch but do not lap sides of mesh.
3. Mix Gypsum/Lightweight of concrete patch material in accordance with manufacturers mixing instructions. Use heated water when temperature is below 40 degrees. Install slurry on flanges of bulb tees and cross tees. Keep equipment clean and avoid flash set of Gypsum/Lightweight of concrete patch.
4. Add a 2 inch wide line of slurry across the diagonals of each formboard, After the slurry and diagonal pattern has set, mix additional Gypsum/Lightweight or concrete patch material. Slowly pour the wet mix onto the new formboard and screed off to the desired thickness. Maintain a minimum pour of 2 inches above the formboard.
5. New roof operations may begin as soon as the Gypsum/Lightweight has set.

#### **B. Gypsum/Lightweight Plank Deck:**

1. Place plank on lower flanges of sub-purlins or other framing with ends and edges supported.
2. Stagger joints in adjacent courses.
3. Support end joints with cross-tees not supported by framing.
4. Cut plank to fit at ends and framed openings.
5. Provide continuous 5/8-inch minimum bearing for plank support at deck perimeter, plank ends and openings exceeding 8-inches.
6. Grout:
  - a. Mix Gypsum/Lightweight concrete thoroughly using a minimum amount of water to form a thick, pourable consistency.
  - b. Fill edge joints to slight excess with single pour at sub-purlins.
  - c. Grout end joints on single span system against steel framing.
  - d. After initial set, strike of excess to form smooth, flush joint.
  - e. Form cant strips and curbs where shown.
  - f. Fill joints at roof ridges, hips, and valleys.

### **3.05 PROTECTION**

- #### **A. Protect installed Gypsum/Lightweight deck from subsequent construction operations.**

**END OF SECTION 03510**

## SECTION 04010 - ELASTOMERIC AND NON-ELASTOMERIC SEALANT

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. General:
  - 1. Provide joints properly dimensioned to receive the approved sealant system.
  - 2. Provide joint surfaces that are clean, dry, sound and free of voids, deformations, protrusions and contaminants which may inhibit application or performance of the joint sealant.
  - 3. Section includes: Remove all existing sealants and backer rods; grind and clean joint side of any contamination; prime joint sides; provide elastomeric joint sealants, joint backer materials, and accessories needed to ensure a complete and durable weather tight seal at all locations indicated.
  - 4. Sealants shall be applied to all vertical and horizontal construction joints in the limestone panels and all brick expansion joints; all joints around window openings; all door and louvered openings; sealants shall **not** be applied to inside wall roof flashing terminations.
  - 5. Masonry contractor shall assume responsibility for providing new bell tile coping as replacements for broken bell tile coping.
  - 6. The Masonry contractor shall assume responsibility for the placement of all bell tile coping onto the top of the parapet walls.
  - 7. The Masonry contractor shall assume responsibility for sealing all bell tile coping joints with elastomeric sealant.
- B. Related work:
  - 1. Manufacturer is required to provide an adhesion peel test prior to application of sealant. Tests are to be conducted throughout the project.
  - 2. Sealant Installation:
    - a. Window/Brick Joints: Remove all existing sealant. Clean joint.
    - b. Stone Window Sills: Remove existing sealant, apply new sealant.
    - c. Glass Block/Stone Sill Joints: Remove existing sealant, install new sealant and tool smooth.
    - d. Vertical Wall Construction Joints: Remove existing sealant and grind interface joint clean and smooth. Install proper width closed cell polyethylene rope backing. Apply sealant to proper depth and tool smooth.
  - 3. Clean bases of all painted columns of rust. Prime metal and coat with epoxy paint.

#### 1.02 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.
- B. Applicator qualifications:
  - 1. Applicator (Not Contractor) shall have at least four years experience in installing materials of types specified and shall have successfully completed at least three projects of similar scope and complexity.
  - 2. Applicator shall designate a single individual as project foreman who shall be on site at all times during installation.
- C. Single source responsibility for joint sealants:
  - 1. Obtain joint sealants from single manufacturer for each different product required to ensure compatibility.
  - 2. Manufacturer shall instruct applicator in procedures for intersecting sealants.
- D. Perform work in accordance with ASTM C-1193 guidelines except where more stringent requirements are indicated or specified.



- E. Pre-construction compatibility and adhesion testing:
  - 1. Submit to joint sealant manufacturer samples of actual materials that will contact or affect their joint sealants in the Work for compatibility and adhesion testing.
- F. Pre-construction field adhesion testing:
  - 1. In jobsite field samples prior to general installation, conduct field-tests for adhesion of joint sealants to actual joint substrates using proposed joint preparation methods recommended by manufacturer.
  - 2. Conduct tests for each type of sealant and substrate.
  - 3. Locate field-test joints where inconspicuous or as approved by The Project General Contractor.
    - a. Include areas typical of those requiring removal of existing sealants and utilize methods proposed for sealant removal that have been pre-approved by the Project General Contractor.
  - 4. Test method: Use manufacturer's standard field adhesion test methods and methods proposed for joint preparation to verify proper priming and joint preparation techniques required to obtain optimum adhesion of joint sealants to joint substrate.
  - 5. Evaluate and report results of field adhesion testing.
  - 6. Do not use joint preparation methods or sealants that produce less than satisfactory adhesion to joint substrates during testing.
- G. Standard of acceptance:
  - 1. Joints installed during pre-construction field adhesion testing that are accepted by the Project General Contractor shall be retained as standard of acceptability and incorporated into Work of that area during general installation.
  - 2. At least one such standard of minimum 5 feet in length shall be established for each type of sealant and substrate.
- H. Schedule applications of waterproofing, water repellents and preservative finishes after sealant installation unless sealant manufacturer approves otherwise in writing. Ensure that installed sealant is allowed to cure sufficiently prior to subsequent applications.

### **1.03 DELIVERY, STORAGE AND HANDLING**

- A. Deliver the materials to the job site in the manufacturer's unopened containers with all labels intact and legible at time of use.
- B. Store materials in accord with manufacturer's recommendations with proper precautions to ensure fitness of material when installed.

### **1.04 SUBSTRATE CONDITIONS**

- A. General:
  - 1. Provide joints properly dimensioned to receive the approved sealant system.
  - 2. Provide joint surfaces that are clean, dry, sound and free of voids, deformations, protrusions and contaminants which may inhibit application or performance of the joint sealant.
  - 3. Where expansion joints having preformed joint fillers are scheduled to be sealed, provide a reservoir to accept the sealant such as by a molded breakaway joint cap or a removable block out.

### **1.05 WARRANTY**

- A. Deliver to the Project General Contractor signed copies of the following written warranties against adhesive and cohesive failure of the sealant and against infiltration of water and air through the sealed joint for a period of 20 years from date of completion.
  - 1. Manufacturer's 20 year standard warranty covering sealant materials;
  - 2. Applicator's 2 year standard warranty covering workmanship.

## **PART 2 - PRODUCTS**

### **2.01 GENERAL**

- A. Acceptable sealant manufacturer: Dow Corning, Inc., Midland, MI.
- B. Compatibility:
  - 1. Provide joint sealants, joint fillers and accessory joint materials that are compatible with one another and with joint substrates under project conditions.
  - 2. Install joint sealants, joint fillers and related joint materials that are non-staining to visible joint surfaces and surrounding substrate surfaces.
- C. Provide colors selected by the General Contractor from manufacturer's standard color range.

### **2.02 ELASTOMERIC SEALANTS**

- A. Sealant Type A:
  - 1. For exterior joints in vertical surfaces and non-traffic horizontal surfaces such as, but not limited to:
    - a. Control and expansion joints in cast-in-place concrete.
    - b. Joints between architectural precast concrete units.
    - c. Control and expansion joints in unit masonry.
    - d. Butt joints between metal panels.
    - e. Joints between marble and/or granite.
    - f. Joints between different materials listed above.
    - g. Perimeter joints between materials listed above and frames of doors, windows, louvers and similar openings.
    - h. Control and expansion joints in overhead surfaces.
  - 2. Provide single-component, low-modulus, neutral cure, non-sag sealant; comply with ASTM C920, Type S or M, Grade NS, Class 25.(Class 50 ~~2~~), Class 100/50
  - 3. Acceptable sealant:
    - a. Silicones
      - 1. Single Component
        - 1) Dow Corning 790
        - 2) Fire resistant
- B. Sealant Type B:
  - 1. For exterior joints in vertical and horizontal surfaces between metal window frames and pre-cast concrete tilt-up panel surfaces and between windows and metal window frames
  - 2. Acceptable products:
    - a. Dow Corning 795 Sealant

### **2.03 ACCESSORIES**

- A. Joint cleaner: Cleaner as recommended by sealant manufacturer for substrates indicated.
- B. Joint primer: As recommended by sealant manufacturer for substrates, conditions and exposures indicated.
- C. Bond breaker: Polyethylene tape or other adhesive faced tape as recommended by sealant manufacturer to prevent sealant contact where it would be detrimental to sealant performance.
- D. Joint backer: Closed cell or soft rod Polyethylene foam rod or other compatible non-waxing, non-extruding, non-staining resilient material in dimension 25 percent to 50 percent wider than joint width as recommended by sealant manufacturer for conditions and exposures indicated.
- E. Masking tape: Non-staining, non-absorbent tape product compatible with joint sealants and adjacent joint surfaces that is suitable for masking.

## **2.04 OTHER MATERIALS**

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor and approved by the sealant manufacturer as compatible, subject to review of the Project General Contractor.

## **PART 3 - EXECUTION**

### **3.01 SURFACE CONDITIONS**

- A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.
- B. Applicator shall examine the areas and conditions under which work of this Section will be performed.
  - 1. Verify conformance with manufacturer's requirements
  - 2. Report unsatisfactory conditions in writing to the Project General Contractor
  - 3. Do not proceed until unsatisfactory conditions are corrected.

### **3.02 PREPARATION**

- A. Prepare surfaces to receive sealants in accord with sealant manufacturer's instructions and recommendations except where more stringent requirements are indicated. Contaminant such as old sealant, oil, grease, etc., shall be ground out utilizing mechanical abrasion.
- B. Thoroughly clean joint surfaces using cleaners approved by sealant manufacturer whether primers are required or not.
  - 1. Remove all traces of previous sealant and joint backer by mechanical methods, such as by cutting, grinding and wire brushing, in manner not damaging to surrounding surfaces.
  - 2. Remove paints from joint surfaces except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer.
  - 3. Remove wax, oil, grease, dirt film residues, temporary protective coatings and other residues by wiping with cleaner recommended for that purpose. Use clean, white, lint-free cloths and change cloths frequently. If contaminated joints cannot be cleaned properly with solvents, mechanical abrasion must be utilized.
  - 4. Remove dust by blowing clean with oil-free, compressed air.
- C. Provide joint backer material uniformly to depth required by sealant manufacturer for proper joint design using a blunt instrument.
  - 1. Fit securely by compressing backer material 25 percent to 50 percent so no displacement occurs during tooling.
  - 2. Avoid stretching or twisting joint backer.
- D. Provide bond-breaker where indicated or recommended by sealant manufacturer, adhering strictly to the manufacturer's installation requirements.
- E. Prime joint substrates where required.
  - 1. Use and apply primer according to sealant manufacturers recommendations.
  - 2. Confine primers to sealant bond surfaces; do not allow spillage or migration onto adjoining surfaces.
- F. Taping:
  - 1. Use masking tape where required to prevent sealant or primer contact with adjoining surfaces that would be permanently stained or otherwise damaged by such contact or the cleaning methods required for removal.
  - 2. Apply tape so as not to shift readily and remove tape immediately after tooling without disturbing joint seal.

### **3.03 SEALANT INSTALLATION**

- A. Provide the approved sealant system where identified during the pre-bid, and in strict accord with the manufacturer's recommendations as approved by the Project General Contractor.
- B. Install sealants immediately after joint preparation.

- C. Mix and apply multi-component sealants in accord with manufacturer's printed instructions.
- D. Install sealants to fill joints completely from the back, without voids or entrapped air, using proven techniques, proper nozzles and sufficient force that result in sealants directly contacting and fully wetting joint surfaces.
- E. Install sealants to uniform cross-sectional shapes with depths relative to joint widths that allow optimum sealant movement capability as recommended by sealant manufacturer.
- F. Tool sealants in manner that forces sealant against back of joint, ensures firm, full contact at joint interfaces and leaves a finish that is smooth, uniform and free of ridges, wrinkles, sags, air pockets and embedded impurities.
  - 1. Dry tooling is preferred; tooling liquids that are non-staining, non-damaging to adjacent surfaces and approved by sealant manufacturer may be used if necessary when care is taken to ensure that the liquid does not contact joint surfaces before the sealant.
  - 2. Provide concave tooled joints unless otherwise indicated to provide flush tooling or recessed tooling.
  - 3. Provide recessed tooled joints where the outer face of substrate is irregular.
- G. Remove sealant from adjacent surfaces in accord with sealant and substrate manufacturer recommendations as work progresses.
- H. Protect joint sealants from contact with contaminating substances and from damages. Cut out, remove and replace contaminated or damaged sealants, immediately, so that they are without contamination or damage at time of substantial completion.

### **3.04 ADJUSTING AND CLEANING**

- A. Repair of deficiencies:
  - 1. Installations of details noted as deficient during Final inspection must be repaired and corrected by applicator, and made ready for reinspection, within five (5) working days.
- B. Clean-up:
  - 1. Immediately upon job completion, all roof surfaces, lawns, sidewalks and mobilization areas shall be cleaned of debris.

**END OF SECTION 04010**

## SECTION 05315 - STEEL DECK REPAIR / REPLACEMENT

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Work includes, but is not necessarily limited to:
  - 1. Remove existing steel decking, where deterioration has caused an unsafe environment or where otherwise specified for replacement by roof mounted equipment modifications.
  - 2. Include in base bid: **Four (4) new metal deck panels measuring 22'x 3' each. Also, include four (4) sheets of 4x4 18 gauge metal plate steel.**
  - 3. Framed openings up to 10 inches by 10 inches
- B. Related Documents: The Contract Documents, Summary of Work, apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other documents.
- C. Related Sections:
  - 1. Division 6 Section "Carpentry (for Roofing)" for wood nailers, cants, curbs, and blocking.
  - 2. Division 7 Section "Thermoplastic Membrane Roofing."

#### 1.02 REFERENCES

- A. American Iron and Steel Institute (AISI):
  - 1. Specification for the Design of Cold Formed Steel Structural Members
- B. American Society for Testing and Materials (ASTM):
  - 1. ASTM A 611 - Specification for Steel, Sheet, Carbon, Cold Rolled, Structural Quality
- C. Steel Deck Institute (SDI):
  - 1. Design Manual for Composite Decks, Form Decks, Roof Decks, (Publication No. 25).
    - a. Code of Recommended Standard Practice
    - b. Specifications and Commentary for Steel Roof Deck
  - 2. SDI Diaphragm Design Manual 1st Edition
- D. Steel Structures Painting Council (SSPC):
  - 1. SSPC-Paint 20 Type II - Zinc Rich Primers - Organic
  - 2. SSPC-Paint 25 - Red Iron Oxide, Zinc Oxide, Raw Linseed Oil, and Alkyd Primer

#### 1.03 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Replacement of damaged or deteriorated steel decking:
  - 1. Basis for Measurement: By square feet
  - 2. Basis of Payment: Replace Metal Deck: Replace any steel deck which is damaged or has scaling or flaking corrosion (rust) with new, mechanically attached decking of the same type, thickness, and cross section to match existing if damaged or corroded area covers an area larger than 24 inches square.
- B. The cleaning and coating of the steel decking having surface rust:
  - 1. Basis for Measurement: By square feet
  - 2. Basis of Payment: Prime Metal Deck: Steel decking with surface rust shall be cleaned with a stiff wire brush or with rotating steel wheel brush. The steel deck shall be cleaned of all loose rust; then coated with Owner approved rust inhibiting primer. Allow rust inhibitor to dry prior to proceeding with roofing installation.
- C. Roof Deck Repair:
  - 1. Basis for Measurement: By each – unit cost

2. Basis of Payment: Repair steel decking with deck openings less than 12 inches x 12 inches in size, G-90 galvanized sheet metal may be used for the repair, overlapping the adjacent decking 18 inches on all sides. Steel metal repair shall be fastened to existing steel deck units with side and end lap fasteners spaced 6 inches on center.

D. Roof Deck Repair:

1. Basis for Measurement: By each – unit cost
2. Basis of Payment: For openings less than 24 inches x 24 inches in size but greater than 12 inches x 12 inches, a partial steel deck panel (matching the existing steel deck profile and gage) shall be used for the repair, overlapping the adjacent decking 18 inches minimum at the end laps. Fasten the steel deck panel to the existing decking with the end and side laps fasteners spaced 6 inches on center. Should structural members be present; fasten the steel deck panel to the steel structural member as specified in FM 1-29 guidelines - 2.2.13.1.2.3.

E. Roof Deck Securement:

1. Basis for Measurement: By individual roof area
2. Basis of Payment: Contractor shall verify the existing steel decking has been secured to the steel bar joist per FM Global Lost Prevention Data Sheet 2.2.13.1.2 – “Roof Deck Securement for Wind Loads” are equal to or less than a FM 1-90 attachment. Should the roofing contractor find the steel decking does not meet the FM Roof Deck Securement Requirements, the cost for installing sufficient FM approved fasteners FM Global Lost Prevention Data Sheet 2.2.13.1.2.

#### 1.04 SUBMITTALS

A. Submittal Procedures: Procedures for submittals

1. Product Data: Deck profile characteristics and dimensions, structural properties, and finishes
2. Shop Drawings: Indicate deck plan, support locations, projections, openings and reinforcement, pertinent details, and accessories.

#### 1.05 QUALITY ASSURANCE

A. Qualifications:

1. Fabricator: Company specializing in performing the work of this section with minimum 5 years documented experience.
2. Erector: Company specializing in performing the work of this section with minimum 5 years documented experience, certified by AISC Quality Certification Program.
3. Qualifications of Installers: Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and methods needed for proper performance of the work in this section. In acceptance or rejection of the work, the Owner will make no allowance for the lack of knowledge or skill on the part of the workers.

#### 1.06 SUBMITTALS

- A. General: Comply with the provisions of Submittal Procedures.

#### 1.07 DELIVERY, STORAGE AND HANDLING

- A. Transport, handle, store, and protect Products.
- B. Deliver materials to the job site in original, unopened bundles. Materials are to be stored off the ground with one end elevated to provide drainage and are to be protected from the elements with weatherproof tarps ventilated to avoid condensations. Cut plastic wrappers to encourage ventilation. Keep materials dry.
- C. Keep all materials clearly identified with all identifying marks legible. Keep all damaged material clearly identified as damaged and stored separately to prevent its inadvertent use.

- D. Do not allow installation of damaged or otherwise non-complying material.
- E. Use all necessary means to protect the materials in this section before, during, and after installation, and to protect the work and materials of all other trades.
- F. In the event of damage, immediately make all necessary repairs and replacements subject to the approval of, and at no additional cost to the Owner.
- G. Roof surfaces shall be protected from damage at all times.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Steel decking shall be manufactured from steel with minimum yield strength of 33 ksi, 22 gage, conforming to ASTM A1008/A1008M for uncoated and painted deck and A653/A653M for galvanized deck.
- B. New steel decking shall match existing steel deck profile. Contractor shall field verify existing deck profile.
- C. Flat stock steel deck repair material, where required, shall be 18-gage, G-80 galvanized sheet metal.
- D. Bearing Plates and Angles: ASTM A 36 steel
- E. Rust Inhibitor Primer/Coating:
  - 1. Advanced Protective Products, Rust Destroyer
  - 2. Sherwin-Williams, E41 N1, Kromik Metal Primer
  - 3. Rust-Oleum, #7769, Rusty Metal Primer
- F. Touch-Up Primer for Galvanized Surfaces: SSPC 20, Type 1, inorganic
- G. Flute Closures: Closed cell foam rubber, 1 inch thick; profiled to fit tight to decking.
- H. Closure Strips, Cover Plates, and related Accessories: Fabricated of metal of same type and finish as deck.
- I. Screw Fasteners: Self-tapping fasteners for fastening steel decking to structural members.
  - 1. Product Specifications:
    - a. Diameter: #12, 1/4
    - b. Length: 1-1/4 inch
    - c. Thread Form: 12-24, 1/4-28
    - d. Head Style: #12: 5/16" HWH; 1/4: 5/16" HWH; 1/4: 3/8" HWH
    - e. Finish: Climaseal
  - 2. Approvals and Listings
    - a. Factory Mutual (J.I. 2 X 9A2 AM), ICBO 3056, ICC - ESR 1976
  - 3. Approved Manufacturer:
    - a. OMG Roofing Products - Teks 5 or ICH Traxx/5
    - b. Owner Approved Equal
- J. Side Lap Fasteners: Self drilling screws for fastening the steel deck side laps and for flat stock metal repair materials.
  - 1. Product Specifications:
    - a. Diameter: #12, 1/4
    - b. Thread Form :12-24, 1/4-28
    - c. Length: 3/4 inch
    - d. Head Style: #12: 5/16" HWH; 1/4: 5/16" HWH; 1/4: 3/8" HWH
    - e. Finish: Climaseal

2. Approvals and Listings
  - a. Factory Mutual (J.I. 2 X 9A2 AM), ICBO 3056, ICC - ESR 1976
3. Approved Manufacturer:
  - a. OMG Roofing Products - Stitch Tek 1 or ICH Traxx/1
  - b. Owner Approved Equal

## **2.02 FABRICATION**

- A. Steel Roof Deck: Minimum 22 gage sheet steel, minimum 33 ksi, 1-1/2 inch high, fluted profile to SDI WR; multiple span; lapped joints. Contractor to verify existing steel decking profile before ordering replacement steel decking. New steel roof deck is to match existing steel deck profile.
- B. Fabricate metal decking in accordance with the SDI Design Manual for Composite Decks, Form Decks, Roof Decks, and AISI, to accommodate maximum working stress of 20,000 psi and maximum span deflection of 1/240.
- C. For new drains, fabricate roof sump pan of 14 gage sheet steel, flat bottom, sloped sides, recessed 1-1/2 inches below roof deck surface, bearing flange 3 inches wide, sealed watertight.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Execution Requirements: Verification of existing conditions before starting work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.
- C. Report in writing to Owner's Representative prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.
- D. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the Owner.

### **3.02 STEEL DECK - RUST REPAIR**

- A. Perform all preparation and cleaning procedures in strict accordance with the paint manufacturer's recommendations as approved by the Owner's Representative.
- B. Surface rust areas shall be thoroughly wire brushed to remove any loose or foreign materials that would adversely affect adhesion or appearance of applied coatings. Remove oil, grease, dirt, rust, and other foreign substances from the steel decking.
- C. Materials Preparation: Carefully mix and prepare rust inhibitor materials in accordance with manufacturer's directions.
  1. Maintain containers used in mixing and application of rust inhibitor in a clean condition, free of foreign materials and residue.
  2. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
  3. Use only thinners approved by the paint manufacturer and Owner, and only within recommended limits.
- D. Rust Inhibitor Application:
  1. Apply rust inhibitor to all clean surfaces within a four hour period of the cleaning, and prior to deterioration or oxidation of the surface, and in accordance with the manufacturer's recommendations.
  2. Allow sufficient time between successive coats to permit proper drying. Do not recoat until rust inhibitor has dried to where it feels firm and does not deform or feel sticky under moderate thumb pressure.



- E. Minimum Coating Thickness: Apply materials at not less than the manufacturer's recommended spreading rate. Provide a total dry film thickness of the rust inhibitor as recommended by the manufacturer for applying the rust inhibitor to a steel decking.
- F. Completed Work: Contractor to remove, refinish, or repaint work not in compliance with specified requirements.

### **3.03 STEEL DECK REPLACEMENT**

- A. Steel roof deck shall be replaced in full-length sheet to match existing deck layout, unless otherwise stated elsewhere.
- B. Erect metal decking and connect to structure in accordance with SDI Design Manual for Composite Decks, Form Decks, and Roof Decks. Coordinate attachment sequence and procedure with placing of units.
- C. On steel support members, provide 1-1/2 inch minimum bearing. On masonry support surfaces, provide 3 inch minimum bearing.
- D. Align and level deck on supports.
- E. Provide fasteners, and side lap connectors of size, spacing, and location as indicated in accordance with SDI Design Manual for Roof Decks and per manufacturer's written instructions.
- F. Space FM Approved deck fasteners a maximum of 12 in. (305 mm) on center (every other rib) at all supports in the field of the roof.
- G. Space FM Approved deck fasteners a maximum of 6 in. (152 mm) on center (every rib) at all supports in the roof's corners and perimeters.
- H. Secure the steel deck to supporting members at each deck side lap.
- I. For overlap-type side laps, ensure securement penetrates all deck panels at the laps. Do not weld side laps on 20 gage steel decking. (0.0359 in., 0.91 mm) or thinner deck.
- J. For a Class 1-90, side laps shall be fastened together, not exceeding 36 inches on center in the field, and 30 inches on center in the perimeters and corners center-to-center between each side lap fastener, or side lap fastener and support.
- K. Fasten the deck to the structural members at each side lap, regardless of resultant fastener spacing. For overlap-style side laps, ensure fasteners penetrate all deck panels at the laps. For interlocking-style side laps, install one fastener on each side of the lap. End laps shall be a minimum of 2 inches.
- L. Ensure the fasteners do not penetrate any conduit or miscellaneous piping located at bottom of the decking.

### **3.04 STEEL DECKING REPAIR**

- A. For openings less than 12 inches x 12 inches in size, G-90 galvanized sheet metal may be used for the repair, overlapping the adjacent decking 18 inches on all sides. Steel metal repair shall be fastened to existing steel deck units with side lap fasteners spaced 6 inches on center.
- B. For openings less than 24 inches x 24 inches in size but greater than 12 inches x 12 inches, a partial steel deck panel (matching the existing steel deck profile and gage) shall be used for the repair, overlapping the adjacent decking 18 inches minimum at the end laps. Fasten the steel deck panel to the existing decking with the end and side laps fasteners spaced 6 inches on center. Should structural members be present; fasten the steel deck panel to the steel structural member as specified in FM 1-29 guidelines - 2.2.13.1.2.
- C. Install 6 inch wide sheet steel cover plates where deck changes direction. Fasten in place 12 inches on center maximum. Install sheet steel closures and angle flashings to close openings between deck and walls, columns, and openings.

### **3.05 CLEANING**

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.
- B. Upon completion of painting, clean paint spattered surfaces. Remove spattered paint by washing and scraping, using care not to scratch or damage adjacent finished surfaces.

### **3.06 FIELD QUALITY CONTROL**

- A. Quality Control: Field-testing and inspection.
- B. Inspection:
  - 1. Inspect metal decking for evidence of rust or damage.
  - 2. Inspect all securement fasteners over entire roof area for size and spacing.
  - 3. Inspect all side lap fasteners over entire roof area for type, size, and spacing of side lap fasteners.

**END OF SECTION 05315**

## **SECTION 06100 - CARPENTRY WORK (For Roofing)**

### **PART 1 - GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Roof curbs and cants; concealed wood blocking, with hardware and attachment accessories.
- B. Preservative Treated Wood (PTW).
- C. Refer to schedule at end of Section.

#### **1.02 REFERENCES**

- A. American Lumber Standards Committee (ALSC): National Design Specification for Wood Construction.
- B. American Wood Preservers Association (AWPA): AWPA Book of Standards.
- C. Product Standard of NBS (PS):
  - 1. PS 1 - Construction and Industrial Plywood
  - 2. PS 20 - American Softwood Lumber Standard

#### **1.03 QUALITY ASSURANCE**

- A. Rough Carpentry Lumber: Visible grade stamp of agency certified by National Forest Products Association (NFPA).
- B. Preservative Treatment: Confirm to applicable requirements of AWPA.

#### **1.04 UNIT PRICE - MEASUREMENT AND PAYMENT**

- A. Replacement of damaged or deteriorated perimeter and / or parapet wall wood blocking:
  - 1. Basis for Measurement: By linear foot
  - 2. Basis of Payment: Includes labor for the installation of new wood blocking, new wood blocking fasteners and associated accessories; and removal and disposal of existing materials.

#### **1.05 SUBMITTALS**

- A. Product List: Submit list of proposed Products and manufactures, including all items specified in Part 2 -- Products or otherwise required by the Work.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, finish, accessories, and locations to a minimum scale of 1-1/2 inch to one foot.
- C. Manufacturer's Certifications: Submit certification that preservative wood treatment is in accordance with applicable requirements and that preservative formulation/treater warrants PTW material for intended use.

### **PART 2 - PRODUCTS**

#### **2.01 ROUGH CARPENTRY MATERIALS**

- A. Timber, General: Hand select material at factory from lumber of species and grade indicated below for compliance with "Appearance" grade requirements of ALSC National Grading Rule; provide certificate of inspection from an accredited Agency for selected material.

1. Provide seasoned lumber with 19 percent moisture content at time of dressing and shipment, for sizes 2-inches or less in thickness.
  2. Provide lumber with 15 percent moisture content at time of dressing and shipment for, sizes 2-inches or more in thickness.
- B. Dimensioned Lumber: Graded in accordance with established grading rules; grade and species as follows:
1. Concealed Boards: WWP standard grade, any species, or SPIB No. 3 grade Southern Pine.
  2. Lumber for Miscellaneous Uses: Standard grade unless otherwise indicated.
  3. Plywood: PS 1; select sheathing grade or APA rated 5/8-inch minimum thickness, CD-X, or better in sheathing.
- C. Nails, Spikes, and Staples: Galvanized; size and type to suit application.
- D. Bolts, Nuts, Washers, Lags, Pins, and Screws: Medium carbon steel, hot dipped galvanized; sized to suit application.
- E. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolts or power activated type for anchorage to steel.

## **2.02 PRESERVATIVE TREATED WOOD (PTW)**

- A. Shop Preservative (Pressure Treatment Type): AWP C2 and C9.
- B. Wood for Above-Ground Contact Use: AWPB LP-2.
- C. Shop pressure treated and provide identification on preservative treated materials, including all wood blocking, cants, and plywood.
- D. Dry all PTW after treatment to the following maximum moisture content:
1. Plywood: 15 percent.
  2. Lumber: 19 percent.

## **2.03 SOURCE QUALITY CONTROL**

- A. Factory marked each piece of lumber with type, grade, mill, and grading agency.
- B. Nominal sizes are indicated. Provide actual sizes as required by PS 20.
- C. Provide dressed lumber, sized four sides.

# **PART 3 - EXECUTION**

## **3.01 EXAMINATION AND PREPARATION**

- A. Verify surfaces are ready to receive work and field measurements are as shown on shop drawings.
- B. Verify mechanical, electrical, and building items affecting work of this Section are placed and ready to receive this Work.
- C. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

## **3.02 INSTALLATION**

- A. Discard units or material with defects that might impair quality of work and units that are too small to use in fabricating work with minimum joints.

- B. Set carpentry work accurately to required levels and lines, with members plumb and true and accurately cut and fitted.
- C. Securely attach carpentry work to substrate to anchoring and fastening as shown and as required by recognized standards. Use common wire nails, except as otherwise indicated. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners with splitting wood; pre-drill as required.
- D. Install components with fasteners suited to materials.
  - 1. Nailable Surfaces: Galvanized compatible nails, sized as follows:
    - a. ¾ and 1-inch materials: 8d nails.
    - b. 1-1/2 or 2 inch materials: 16d nails.
  - 2. Hollow Masonry Walls: Toggle Bolts.
  - 3. Solid Masonry: Rawl Zamac pin drive.
  - 4. Steel Members: Bolts or Power actuated Hilti pins.
  - 5. Maximum Spacing: 12-inches on center, unless noted otherwise.
  - 6. Top of Hollow Masonry Wall: Set 12-inch minimum J-bolts in fully set bed of concrete; minimum 18-inches on center.
- E. Remove all bent or deformed nails from finished work and dispose of.

### **3.03 CLEANING**

- A. Pick up spilled carpentry products, unused nails, and fasteners daily.

### **3.04 PROTECTION**

- A. Protective Walkways - Traffic Area Protection: Install full sheets of ¾-inch exterior grade plywood and minimum ½-inch wood fiber insulation to those areas of new roof surface to be trafficked by personal and wheeled vehicles.

### **3.05 SITE TREATMENT OF CARPENTRY**

- A. Treat site-saw cut ends. Allow preservative to cure prior to erecting materials.

### **3.06 SCHEDULE**

- A. Rough Carpentry Work:
  - 1. Miscellaneous blocking and canting for single-ply roofing systems and related flashings and sheet metal.
  - 2. Blocking and canting for roof mounted mechanical items.

**END OF SECTION 06100**

## SECTION 07540.6 –THERMOPLASTIC MEMBRANE ROOFING

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. This Section includes the following:
  - 1. Adhered PVC sheet roofing
  - 2. Polyisocyanurate Insulation
  - 3. Cover board
  - 4. Walkway pads
- B. SCOPE OF WORK– Section A: Remove existing roof system down to the existing wood substrate roof deck. Replace any damaged or wet plywood with matching. Installation of manufacturer's approved SA vapor barrier over the primed wood substrate. Installation of one (1) layer of 1.5" polyisocyanurate insulation adhered with FM 1-90 ribbon method to the underlying SA vapor barrier. Installation of one (1) layer of 1/2" DensDeck board adhered with FM 1-90 ribbon method to the top layer of insulation. It is the responsibility of the contractor to ensure drain height. The new roof system shall consist of a heat welded Single-Ply, Thermo-Plastic, fully adhered PVC membrane system, separate piece PVC membrane flashing installation, and allied metal component installation. 24 ga. coping metal (match the detail of the existing coping with the outside caulk joint), new 24 ga. counter flashings at walls and around the radius of the windows. Liquid flash the top of the counterflashing along the window radius. Installation of new drain flashings and related components. Installation of new pitch pockets at structural support columns. In the event the columns can't be field wrapped, liquid flash the entire post.
- C. SCOPE OF WORK– Section B: Install 1/2" DensDeck board by mechanically fastening to the metal deck with a minimum of 16 fasteners per 4'x8' boards. Self-tapping fasteners will be needed to penetrate the metal deck panels 3/4" minimum, 1" maximum. Prime 1/2" DensDeck board with Manufacture's primer. Install a self-adhered vapor barrier membrane over primed 1/2" DensDeck board to achieve a watertight seal. Install a bead of caulk and t-patches at all the cross sections of the seams. Ensure that the temporary roof is free and clear of all debris and dust. Furnish and install a 1/4" per foot tapered polyisocyanurate insulation adhered with low rise foam over a base layer of 1.5" polyisocyanurate insulation fully adhered to SA Vapor barrier using FM 1-90 ribbon method. Installation of one (1) layer of 1/2" DensDeck board adhered with FM 1-90 ribbon method to the top layer of insulation. It is the responsibility of the contractor to ensure drain height. The new roof system shall consist of a heat welded Single-Ply, Thermo-Plastic, fully adhered PVC membrane system, separate piece PVC membrane flashing installation, and allied metal component installation. 24 ga. coping metal (match the detail of the existing coping with the outside caulk joint). New 24 ga. counter flashings. Installation of new drain flashings and related components. Installation of new pitch pockets at structural support columns. In the event the columns can't be field wrapped, liquid flash the entire post.
- D. SCOPE OF WORK– Section C: Remove existing roof system down to the existing lightweight concrete roof deck. Install 1/2" DensDeck board by mechanically fastening through the lightweight concrete substrate into the metal deck with 16 fasteners per 4'x 8' boards. Self-tapping fasteners will be needed to penetrate the metal deck panels 3/4" minimum, 1" maximum. Prime the 1/2" DensDeck board with Manufacture's primer. Install a self-adhered vapor barrier membrane over the primed 1/2" DensDeck board to achieve a watertight seal. Install a bead of caulk and t-patches at all the cross sections of the seams. Ensure that the temporary roof is free and clear of all debris and dust. Furnish and install two (2) layers of 2.0" polyisocyanurate insulation adhered with FM 1-90 ribbon method to the SA vapor barrier. Installation of one (1) layer of 1/2" DensDeck board adhered with FM 1-90 ribbon method to the top layer of insulation. It is the responsibility of the contractor to ensure drain height. The new roof system shall consist of a heat welded Single-Ply, Thermo-Plastic, fully adhered PVC membrane system, separate piece PVC membrane flashing installation, and allied metal component installation. 24 ga. clad premanufactured metal fascia detail at perimeter edge with 22 ga. continuous cleat, 24 ga. counter flashings. Installation of new drain flashings and related components.

- E. SCOPE OF WORK- (Mason Contractors only) Installation of new sealant at all concrete window sill joints, foundation caulk joints, window wet seal and all other miscellaneous items that need to be repaired.
- F. Related Sections include the following:
  - 1. Division 3, Section for "Concrete Decks"
  - 2. Division 5, Section for "Steel Decks"
  - 3. Division 6, Section "Rough Carpentry for Roofing"
  - 4. Division 7, Section "Sheet Metal Flashing and Trim"
  - 5. Division 7, Section "Caulking and Sealants"

### 1.03 DEFINITIONS

- A. PVC: Polyvinyl-Chloride.
- B. Installer: Roofing Contractor.
- C. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

### 1.04 REFERENCES

- A. American Society of Civil Engineers (ASCE): ASCE 7 - Minimum Design Loads for Buildings and Other Structures.
- B. Single-Ply Roofing Institute (SPRI): Application Guidelines and Wind Design Guidelines for Various Single Ply Membranes
- C. National Installers Association (NRCA): Current Roofing and Waterproofing Manual
- D. Sheet Metal and Air Conditioning Contractor's National Association (SMACNA): Current SMACNA Technical Manuals.
- E. Code of Federal Regulations, (CFR) including:
  - 1. CFR Title 29, Part 1910 "Occupational Safety and Health Standards."
  - 2. CFR Title 29, Part 1926 "Safety and Health Regulations for Construction."
- F. Underwriters Laboratories (UL):
  - 1. Roof Materials and Systems Directory. 2012.
  - 2. UL 790: Tests for Fire Resistance of Roof Covering Materials: 1983.
- G. American Society for Testing and Materials (ASTM)
  - 1. ASTM D 570 – 1981 (R 1988) Water Absorption of Plastics
  - 2. ASTM D 638 – 1991 Tensile Properties of Plastics
  - 3. ASTM D 751 – 1989 Coated Fabrics
  - 4. ASTM D 882 – 1991 Tensile Properties of Thin Plastic Sheeting
  - 5. ASTM D 1004 – 1990 Initial Tear Resistance of Plastic Film and Sheeting
  - 6. ASTM D 1204 – 1984 Linear Dimensional Changes of Non-rigid PVC Sheeting or Film at Elevated Temperature
  - 7. ASTM D 2136 – 1984 (R 1989) Coated Fabrics – Low-Temperature Bend Test
  - 8. ASTM D 2565 – 1982 Operating Xenon Arc-Type Light Exposure Apparatus With and Without Water for Exposure of Plastics
  - 9. ASTM D 3045 – 1974 (1984) Heat Aging of Plastics Without Load
  - 10. ASTM D 4434 – 1987 Poly (Vinyl Chloride) Sheet Roofing
  - 11. ASTM E 108 – 1991 (Rev. A) Fire Tests of Roof Coatings
  - 12. ASTM G 21 – 1990 Determining Resistance of Synthetic Polymeric Materials to Fungi
  - 13. ASTM G 53 – 1991 Operating Light – and Water-Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials

## **1.05 PERFORMANCE REQUIREMENTS**

- A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing system manufacturer based on testing and field experience.
- C. Roofing System Design: Comply with SPRI "Wind Design Guide for Adhered Single Ply Roofing Systems" for the following ground roughness exposure, classification of building and system design:
  - 1. Surface Roughness Category: Exposure B
  - 2. Classification of Building: Category II
  - 3. Wind uplift Design: 90 mph @ 3 second gust
  - 4. System 1 Design: Adhered Single Ply Membrane Roofing
- D. Underwriters Laboratories Inc. (UL):
  - 1. UL RMSD – 2009 Roofing Materials and Systems Directory
  - 2. UL 790 – 2009 Fire Resistance of Roofing Coverings Materials
  - 3. Exterior Fire Exposure Classification: Class A, ASTM E 108, for application and slopes shown.

## **1.06 ACTION SUBMITTALS**

- A. Product Data: Submit latest edition of roofing system manufacturer's roofing and base flashing specifications including list of materials proposed for use, installation procedures, and roofing system manufacturer's Product Safety Data Sheets.
- B. Product Safety Data Sheets: Installer shall review all product data safety data sheet chemical names prior to submitting to St. Louis Public Library.
- C. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work.
  - 1. Base flashings and membrane terminations.
  - 2. Tapered insulation, including slopes.
  - 3. Roof plan showing orientation of steel roof deck and orientation of membrane roofing.
  - 4. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
- D. Verification: For the following products:
  - 1. Sheet roofing, of color specified.
  - 2. Roof insulation.
  - 3. Cover board.
  - 4. Metal termination bars.
  - 5. Battens.
  - 6. Insulation fasteners of each type, length, and finish.
  - 7. Membrane fasteners of each type, length, and finish.
  - 8. Fasteners of each type, length, and finish.
  - 9. Walkway pads or rolls.

## **1.07 INFORMATION SUBMITTALS**

- A. Qualification Data: For qualified Installer and roofing system manufacturer.
- B. Installer: Provide copy of roofing system manufacturer's training certificate for each roofing mechanic permit to use the hot air welding equipment.
- C. Roofing system manufacturer Certificates: Signed by roofing system manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.



1. Submit evidence of compliance with performance requirements.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by roofing system manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.
- E. Research/Evaluation Reports: For components of membrane roofing system, from the ICC-ES.
- F. Single Ply Roofing Institute (SPRI) - Fasteners Withdrawal Resistance Testing:
  1. The Installer shall conduct fastener pullout tests in accordance with the August 11, 2011 revision of the ANSI/SPRI FX-1 - American National Standard – Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners.
  2. Prior to starting the project, provide a copy of the Fasteners Withdrawal Resistance Testing to roofing system manufacturer's technical department.
- G. Warranty:
  1. Provide sample copy of 20-year (NDL) Full System roofing system manufacturer's warranty stating obligations, remedies, limitations, and exclusions of warranty.
  2. Provide sample of copy 5-year Installer's workmanship warranty stating obligations, remedies, limitations, and exclusions of warranty.
- H. Inspection Report: Copy of roofing system roofing system manufacturer's final inspection report of completed roofing installation.

#### **1.08 CLOSE OUT SUBMITTALS**

- A. Maintenance Data: For roofing system to include in maintenance manuals.

#### **1.09 QUALITY ASSURANCE**

- A. Roofing System Manufacturer Qualifications: A qualified roofing system manufacturer that is UL listed for membrane roofing system identical to that used for this Project.
- B. Installer Qualifications:
  1. A qualified firm that is approved, authorized, or licensed by membrane roofing system roofing system manufacturer to install roofing system manufacturer's product and that is eligible to receive roofing system manufacturer's special warranty.
  2. Installer must have a status of "Elite" or "Alliance" with the roofing system manufacturer.
  3. Prior to submitting a roofing proposal, Installer must be approval by Owner's representative.
- C. Roofing system manufacturer's membrane shall meet the following characteristics:
  1. Protective membrane surface coating to resist accumulation of air borne contaminants such as dust and dirt.
  2. Membrane Thickness: Membrane roofing system manufacturer is to verify that the membrane thickness is of the membrane thickness specified (see 2.02, A, 2). ASTM D751 or D638 nominal thickness of +/- 10 percent will not be acceptable for measurement of membrane thickness.
- D. Source Limitations: Obtain components including roof insulation, fasteners, and accessories for membrane roofing system from same roofing system manufacturer as membrane roofing.
- E. Exterior Fire-Test Exposure: ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.
- F. Pre-installation Conference: Before installing roofing system, conduct conference at Project site. Notify participants at least 10 working days before conference.
  1. Meet with Owner's Representative/General Contractor, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.

2. Review methods and procedures related to roofing installation, including roofing system manufacturer's written instructions.
  3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
  5. Review structural loading limitations of roof deck during and after roofing.
  6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
  7. Review governing regulations and requirements for insurance and certificates if applicable.
  8. Review temporary protection requirements for roofing system during and after installation.
  9. Review roof observation and repair procedures after roofing installation.
- G. At no cost to St. Louis Public Library, roofing system manufacturer's technical representative shall perform:
1. Manufacturer's Quality Control Inspection: The Manufacturer's Technical Representative shall review the on-going work on the first day of the roofing production and a minimum of one (1) in-progress inspection every 10 working days. The Technical Representative shall:
    - a. Communicate with the St. Louis Public Library project manager each inspection, i.e. meet with the St. Louis Public Library designated project manager before entering work area.
    - b. Note all defects noted non-compliance with the specifications or the recommendations of the thermoplastic manufacturer should be itemized in a punch list. These items must be corrected immediately by the contractor to the satisfaction of the St. Louis Public Library representative and RMT.
    - c. Ensure the roofing contractor has received a copy of each In-Progress Inspection Report within two days of the inspection. The roofing contractor is to forward the St. Louis Public Library On-site Representative a copy of the In-Progress Inspection Report.
  2. Final Roof Inspection: Contractor is to arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion of the roofing project.
    - a. All defects noted non-compliance with the specifications, or the recommendations of the thermoplastic manufacturer should be itemized in a punch list. These items must be corrected immediately by the contractor to the satisfaction of the St. Louis Public Library and RMT.
    - b. The roofing contractor is to forward a copy of Final Inspection Report to RMT within two days after date inspection(s) is performed.
- H. Installer's Responsibility: Any failure by the Owner Representative or roofing system manufacturer's Representative to detect, pinpoint, or object to any defect or noncompliance of these specifications of work in progress or completed work shall not relieve the Installer, or reduce, or in any way limit, his responsibility of full performance of work required of the Installer under these specifications.

#### **1.10 DELIVERY, STORAGE AND HANDLING**

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with roofing system manufacturer's name, product brand name, and type, date of manufacture, and directions for storing and mixing with other components. Deliver materials in sufficient quantity to allow work to proceed without interruption.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within temperature range required by roofing system manufacturer.
  1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Store and protect materials, including roofing insulation from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store all materials in a dry location. Use pallets to support all materials from roof deck. Distribute the load to stay within live load limits of the roof construction. Remove unused materials from the roof at the end of each day's work. Comply with roofing system manufacturer's written instructions for handling, storing, and protecting during installation. All roof system related materials must be covered with a secured tarp once they are stored on St. Louis Public Library property.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

## 1.11 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with roofing work only when existing and forecasted weather conditions permit roofing to be installed according to roofing system manufacturer's written instructions and warranty requirements.
- B. The PVC adhered membrane shall not be installed under the following conditions without consulting manufacturer for precautionary steps:
  - 1. The roof assembly permits interior air to pressurize the membrane underside.
  - 2. Any exterior wall has 10% or more of the surface area comprised of opening doors or windows.
  - 3. The wall/deck intersection permits air entry into the wall flashing area.
- C. Protective wear shall be worn when using solvents or adhesives or as required by job conditions.
- D. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to roofing system manufacturer's written instructions and warranty requirements.
- E. Protection:
  - 1. Provide special protection and avoid traffic on completed areas of membrane installation.
  - 2. Restore to original condition or replace work or materials damaged during handling of roof materials.
  - 3. Take precautions as required to protect adjacent work and structures.
- F. Emergency Equipment and Materials: Maintain onsite equipment and materials necessary to apply emergency temporary edge seal in event of sudden storms or inclement weather. If inclement weather occurs while a temporary water stop is in place, the Installer shall provide the labor necessary to monitor the situation to maintain a watertight condition.
- G. Protection:
  - 1. Arrange work sequence to avoid use of newly constructed Roofing for storage, walking surface, and equipment movement. Where such access is absolutely required, the Installer shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent Roofing areas.
  - 2. The Installer shall provide a suitable temporary protective surface for all roofing areas which will receive construction traffic or construction of equipment during all phases of the roofing project.
  - 3. During installation of the membrane roofing systems, should there be any damage created by other construction trades to the new or to existing roofing membrane and/or roofing system, the Installer is to immediately notify the Owner's Representative and membrane roofing system manufacturer. All damages are to be repaired according to the membrane roofing system manufacturer's or Owner's representative's recommendations. The "party" responsible for the roofing damages shall bear the total cost for the repairs or for the replacement of existing or new roofing system.
- H. Restrictions:
  - 1. Comply with Owner's General and Safety Requirements on use of site.
  - 2. Smoking and Tobacco products are prohibited on all roof areas and on the campus grounds.
  - 3. Provide and maintain sanitary facilities for employees.
  - 4. Maintain facility and all utility services in a functional condition.

## 1.12 WARRANTY

- A. General Warranty: The warranties specified in this Article shall not deprive the Owner of other rights of the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Installer under requirements of the Contract Documents.
- B. Roofing System Manufacturer's Warranty: Submit a written warranty, without monetary limitation, with all available options, including flashing endorsement, roofing system manufacturer's roof insulation and roofing system manufacturer's accessories, signed by roofing system manufacturer's agreeing to promptly repair leaks resulting from defects in materials or workmanship for the following warranty period:
  - 1. Twenty (20) Year Full System Warranty (no ponding/standing water exclusions accepted). Warranty shall be non-prorated and cover basic wind speeds up to 60 mph.
  - 2. "Early Bird" warranties are not to be issued, as they will not be accepted by Owner.

3. The specified roofing system manufacturer's warranty will be issued only upon final acceptance by the roofing system manufacturer's technical department and the Owner's Representative's final approval.
  4. Request for final payment and issuance of the specified Roofing system manufacturer's warranty will be issued to the Installer's after successful completion and Owner's Representative's final approval and acceptance of the entire roof system installation.
- C. Installer's Warranty: Submit roofing Installer's workmanship warranty, on a notarized written warranty form, signed by Installer, covering Work of this Section, including membrane roofing, sheet flashing, cover board, roof insulation, fasteners, adhesives, sealants, and associated sheet metal, for the following warranty period:
1. Warranty Period: Five (5) years from date of Substantial Completion.

## **PART 2 - PRODUCTS**

### **2.01 ROOFING SYSTEM MANUFACTURER**

- A. The components of the roof system are to be products of a single roofing system manufacturer or approved by the Manufacturers, whose products meet or exceed the project specifications, have manufactured, and installed the roofing materials and systems of the type specified for a minimum of twenty (20) years, and who maintains a single source responsibility for the total roofing system.
- B. Roofing system manufacturers: The components of the roofing system are to be products of a single roofing system manufacturer as required to provide the specified system warranty. Subject to compliance with requirements, provide roofing products from:
1. Sika Manufacturers, Canton, MA.
  2. Versico, Carlisle, PA
  3. Carlisle, Carlisle. PA

### **2.02 PVC MEMBRANE**

- A. PVC Membrane: a uniform, flexible sheet formed from polyvinyl chloride, complying with **ASTM D 4434-87**, of the following Classification – Type and Grade, Membrane Thickness, UL Classification, and Membrane Exposed Face Color.
1. Classification: Type II, Grade I.
  2. Membrane Thickness: 60 mils, +/- 2.0 mils.
  3. UL Class: A.
  4. Membrane: Exposed Face Color: White

### **2.03 AUXILIARY MATERIALS**

- A. General: Furnish auxiliary materials recommended by roofing system roofing system manufacturer for intended use and compatible with membrane roofing materials.
1. Furnish liquid-type auxiliary materials that meet VOC limits of authorities having jurisdictions.
- B. Membrane flashing and Flashing Accessories: As recommended by the roofing system manufacturer's printed instructions for reinforced sheet flashing of same material, mil thickness and color as sheet membrane.
- C. Asphalt Resistance Membrane Flashing: 60 mil, flashing membrane is a formulated for direct exposure to the weather and is produced with a fiberglass mat reinforcement for dimensional stability. The asphalt resistance membrane flashing can be adhered directly to asphalt-contaminated surfaces. The asphalt resistant membrane can be installed over the field membrane to act as a protection layer membrane in conditions where oil and grease could develop from roof-top equipment.
- D. Insulation Fasteners: Roofing system manufacturer approved corrosion resistant steel #12 fasteners, screws of the appropriate size and type for roof membrane and insulation attachment. A #12 corrosion-resistant fastener is used with manufacturer's metal plates to attach insulation boards to steel roof decks. Fasteners for the insulation shall be supplied and installed as recommended by the roofing system manufacturer's printed instructions.

- E. Insulation Securement Plates: Roofing system manufacturer approved corrosion resistant steel, 3 inch round plates, plates, of the appropriate size and type for the securement of the insulation to approved substrates. Securement plates for the insulation shall be supplied and installed as recommended by the roofing system manufacturer's printed instructions.
- F. Membrane Securement Plates: Roofing system manufacturer approved corrosion resistant steel, 2 inch round plates, discs, for the securement of the membrane to the steel roof decks. Securement plates for the membrane shall be supplied and installed as recommended by the roofing system manufacturer's printed instructions.
- G. Membrane Securement Screw: Roofing system manufacturer approved corrosion resistant steel, #15 screws of the appropriate size and type for roof membrane securement. #15, heavy-duty, corrosion-resistant fastener used with discs and batten bar to attach roof membrane to steel roof decks. Fasteners for the membrane shall be supplied and installed as recommended by the roofing system manufacturer's printed instructions.
- H. Membrane Bonding Adhesive: Roofing system manufacturer's approved contact adhesive, used to attach membrane to the horizontal or near-horizontal substrate. Application rates are to be as recommended by roofing system manufacturer's printed instructions.
- I. Membrane Flashing Bonding Adhesive: Roofing system manufacturer's approved contact adhesive used to attach the flashing membrane to the substrate, either horizontally or vertically. Application rates are to be as recommended by roofing system manufacturer's printed instructions.
- J. Metal Termination Bar: a heavy-duty, extruded aluminum flashing termination reglet used at walls and large curbs. Termination Bar is produced from 6063-T5, 0.10 inch to 0.12 inch (2.5 mm to 3.0 mm) thick extruded aluminum. Reglet has a 2-1/4 inch (57 mm) deep profile and is provided in 10 foot (3 m) lengths.
- K. Membrane Securement Bar: is a 1 inch wide aluminum alloy bar used with #15 to clamp the membrane to the roof deck along walls, curbs, and certain vertical to horizontal changes in the roofing system.
- L. Sealants: Owner approved sealant shall be used to seal penetrations through the membrane system and at miscellaneous sealant applications that are exposed to roof systems components.
- M. Sealing Tape: "Multi-Purpose Tape," a high performance sealant tape with superior surface tack that remains elastic and is designed to bond the PVC membrane and a variety of metals. "Multi-Purpose" sealing tape strip is used to seal the metal roof edge of buildings reducing air infiltration into the roof assembly, behind the membrane flashing at termination details, and to seal the overlaps of the air/vapor retarder membrane.
- N. Safety Warning Membrane: A highly visible product to draw attention to an unprotected roof perimeter and potentially hazardous area. The safety warning membrane is designed for use on a membrane roof. The PVC safety warning membrane shall be a yellow in color, 60 mils in thickness, 4 inches wide, and 100 feet in length.
- O. Prefabricated Pipe Flashing prefabricated vent pipe flashing made from 0.060 inch (60 mil/1.5 mm) thick membrane.
- P. Prefabricated Corner Flashing: corners, prefabricated universals corners made of 0.060 inch (60 mil/1.5 mm) thick membrane that are heat-weldable to membrane or base flashings.
- Q. Membrane Coated Metal: PVC-coated, heat-weldable sheet metal capable of being formed into a variety of shapes and profiles. Is a 24 gauge, galvanized metal sheet with a 20 mil (0.5 mm) unsupported Manufacturers membrane laminated on one side.
- R. Mineral Wool-Fiber Fire-Resistant Insulation: Semi-rigid mineral-wool-fiber batt insulation; Type IVA per ASTM C 612; not less than 144 psf (6.9 kPa) compressive strength per ASTM C 165; less than 0.05 percent moisture absorption per ASTM C 1104; complying with ASTM E 136; and with the following surface-burning characteristics per ASTM E 84:
  - 1. Flame Spread: 0.
  - 2. Smoke Developed: 0

3. Manufacturers: Subject to compliance with requirements, available products include the following:
  - a. Basis of Design: Roxul Safe; Roxul Inc.

## 2.04 INSULATION

- A. General: Provide preformed roof insulation boards that comply with requirements, selected from roofing system manufacturer's standard sizes and of thickness indicated.
- B. Polyisocyanurate Board Insulation: Type II, Class 2 – Closed cell polyisocyanurate foam with paper facer laminated to both faces, complying with the following additional characteristic.
- C. Polyisocyanurate board insulation: Closed cell polyisocyanurate foam with black glass reinforced mat laminated to faces, complying with the following additional characteristics:
  1. Section C : Installation two layers of 2.0" true thickness
  2. Section B: Installation of a 1.5" base layer. Installation of 1/4" in 12" tapered system on section
  3. Section A: Installation of a base layer of 1.5" ISO
  4. Size: 48 inches by 96", nominal.
    - a. Exception: Insulation to be attached using adhesive may be no larger than 48" by 48", nominal.
  5. R-Value (LTTR):
    - a. 1.0 inch Thickness: 5.56, minimum.
  6. Compressive Strength: 20 psi when tested in accordance with ASTM C 1289.
  7. Ozone Depletion Potential: Zero; made without CFC or HCFC blowing agents.
  8. Recycled Content: 19 percent post-consumer and 15 percent post-industrial, average.
- D. Tapered Polyisocyanurate Insulation Shapes: Preformed insulated shapes for saddles, crickets, tapered edge strips, sumps, and other insulation shapes where indicated or where required for sloping to drain. Fabricate to slopes indicated. Saddles, Crickets, Edge Strips, and Other Shapes:
  1. Tapered insulation boards fabricated to slope of 1/4-inch per 12 inches (1:48) unless otherwise indicated.
  2. Crickets between Roof Drains: Tapered insulation boards fabricated to slope of 1/2-inch per 12 inches (1:24) unless otherwise indicated.
  3. Sumps for Roof Drains, measuring 4 feet x 4 feet; size to be modified when drains are located next to parapet wall: Tapered insulation boards fabricated to slope of 1/4-inch per 12 inches (1:48). Provide a minimum insulation thickness at the roof drain or roof scupper of 3.0 inches.
  4. Saddle Behind (Upslope) from Curbs Measuring 18 inches and greater: Tapered insulation boards fabricated to slope of 1/2-inch per 12 inches (1:24).
  5. Saddle Behind (Upslope) from Round Penetrations Measuring 12 inches in diameter and greater: Tapered insulation boards fabricated to slope of 1/2-inch per 12 inches (1:24).
- E. Approved Roofing system manufacturer and Product:
  1. Sika Sarnafil
  2. Versico
  3. Carlisle

## 2.05 COVER BOARD

- A. Furnish auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing materials.
  1. Type, Thickness and Size: Gypsum core board with a thickness of 1/2 -inch x 4 feet x 8 feet.
  2. UL Class A (UL 790) and ULC S-102
  3. Product: Subject to compliance with requirements, provide product as manufactured by:
    - a. "Dens-Deck Prime®" as manufactured by Georgia-Pacific Corporation.

## 2.06 INSULATION AND COVER BOARD ACCESSORIES

- A. General: Furnish roof insulation accessories recommended by insulation roofing system manufacturer for intended use and compatible with membrane material.



- B. Fasteners: Factory-coated steel fasteners and metal plates meeting corrosion-resistance, designed for fastening roof insulation and cover board to substrate, and acceptable to roofing system manufacturer.

## **2.07 DUAL COMPONENT POLYURETHANE ADHESIVE**

- A. General: Provide a dual component polyurethane adhesive that is intended for the attachment of polyisocyanurate insulation to various substrates. The dual component polyurethane adhesive must have approvals from the insulation and roofing system manufacturer for adhering the polyisocyanurate insulation to approved substrates, multiple layers of polyisocyanurate insulation, and cover boards. Consult adhesive roofing system manufacturer on current acceptable substrates to apply dual component polyurethane adhesive to various substrates.
- B. Dual component polyurethane adhesive: The low-slope dual component polyurethane adhesive shall have the following minimum properties:
  - 1. Density ASTM D-1622: Free Rise, 3.2 lb./cf.
  - 2. Compressive Strength ASTM D-1621: Parallel, 38 psi @ 6% deflection.
  - 3. Tensile Strength ASTM D-1623: 35 psi
  - 4. Water Absorption ASTM D-2843: 5.1%
  - 5. Closed Cell Content ASTM D-6226: 90% min.
  - 6. R-Value ASTM C-518 3.8/inch (new)
  - 7. VOC Content ASTM D-2369 <5 g/l (1&2 combined)
  - 8. Weight/Gallon: Part A Component 10.32 lbs. Part B Component 8.54 lbs.
- C. Approved Roofing system manufacturer and Product:
  - 1. OMG Roofing Products, "OlyBond 500<sup>®</sup> SpotShot."
  - 2. Carlisle Roofing Products "DASH"

## **2.08 VAPOR RETARDER/AIR BARRIER**

- A. Manufacturer's 120 MIL Self-Adhered Vapor Barrier

## **2.09 RELATED MATERILAS**

- A. Timber, General: Hand select material at factory from lumber of species and grade indicated below for compliance with "Appearance" grade requirements of ALSC National Grading Rule; provide certificate of inspection from an accredited Agency for selected material.
  - 1. Provide seasoned lumber with 19 percent moisture content at time of dressing and shipment, for sizes 2-inches or less in thickness.
  - 2. Provide lumber with 15 percent moisture content at time of dressing and shipment for, sizes 2-inches or more in thickness.
- B. Dimensioned Lumber: Graded in accordance with established grading rules; grade and species as follows:
  - 1. Concealed Boards: WWPA standard grade, any species, or SPIB No. 3 grade Southern Pine.
  - 2. Lumber for Miscellaneous Uses: Standard grade unless otherwise indicated.
  - 3. Plywood: PS 1; select sheathing grade or APA rated 5/8-inch minimum thickness, CD-X, or better in sheathing.

## **2.10 MISCELLANEOUS FASTENERS AND ANCHORS**

- A. General: All fasteners, anchors, nails, straps, bars, etc. shall be post-galvanized steel, aluminum, or stainless steel. Mixing metal types and methods of contact shall be assembled in such a manner as to avoid galvanic corrosion. Fasteners for attachment of metal to masonry shall be expansion type fasteners with stainless steel pins. All concrete fasteners and anchors shall have a minimum embedment of 1 1/4 inch (32 mm) and shall be approve for such use by the fastener roofing system manufacturer. All miscellaneous wood fasteners and anchors used for flashings shall have a minimum embedment of 1 inch (25 mm), stainless steel, and to be approved for such use by the fastener roofing system manufacturer.

## **2.11 PROTECTION PADS**

- A. Protection Pads: Manufacturers- factory-formed, nonporous, heavy-duty, slip resisting, surface-textured protection pads, approximately 96-mil in thickness, as supplied by the Manufacturers. Protection pads to be used under all wood support blocking, equipment supports, pipe steel supports, and under downspout splash blocking.

## **2.12 ROOF WALKWAYS**

- A. Walkway: factory-formed, nonporous, heavy-duty, slip resisting, surface-textured protection pads, approximately 9/16 inch (14 mm) in thickness, as supplied Manufacturers.

# **PART 3 - EXECUTION**

## **3.01 INSPECTION**

- A. Inspect entire roof area to be roofed for acceptability. Examine substrates, areas, and conditions for compliance with the following requirements and other conditions affecting installation and performance of the roofing system:
  - 1. Verify that roof openings and penetrations are in place, and curbs are set and braced, and that the roof drains and drain lines are properly clamped into position and are in a 100% functional condition.
  - 2. Verify that primary drain bodies are at proper elevations for construction of sump at slopes indicated.
  - 3. Verify that secondary overflow drain bodies are at proper elevations for construction, without sumps, at level of roof surface.
- B. The Installer shall conduct fastener pullout tests in accordance with the August 11, 2011 revision of the ANSI/SPRI FX-1 - American National Standard – Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners.
- C. Verify that structural use panels, sheathing, and similar wood products are securely anchored to substrates, and that surfaces of panels and sheathing are without irregularities which could interfere with proper membrane and flashing installation.
- D. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Division 03 Section "Concrete Decking."
- E. Verify that steel deck is securely fastened with no projecting fasteners and no adjacent units in exceed 1/16 inch (1.6 mm) or more out of plane measured to adjoining deck.
- F. Verify that installed steel roof decking complies with required slopes indicated, that no holes, ridges, voids, uneven or misaligned surfaces or conditions, gaps, or other irregularities exist, and deck and substrates are smooth and free of sharp edges.
- G. Visually inspect cast-in-place reinforced concrete roof deck for the following:
  - 1. Evidence of impaired deck structural capacity or integrity.
  - 2. Exposed concrete reinforcing.
  - 3. Presence of corrosion.
  - 4. Spalling or loss of concrete cover.
  - 5. Presence of foreign materials.
  - 6. Efflorescence.
  - 7. Ridges or uneven conditions in concrete deck.
  - 8. Holes, voids, or gaps in concrete deck.
  - 9. Accumulations of moisture.
- H. Other conditions that would prevent proper application of roofing or that would prevent membrane roofing manufacturer's approval of substrate, components, or system.



- I. Verify that roofing systems can be installed with positive drainage of minimum slopes indicated at all areas of roof, without ponding after 24 hours.
- J. Verify that roofing as completed will discharge to internal roof drains without ponding or inadvertent discharge through secondary roof drains.
- K. Verify that final installed curb heights for flashing are a minimum of 8-inches (200 mm) measured above finished roof membrane.
- L. Verify piping and conduit penetrations of roof are made individually, separated by a minimum of 12 inches (300 mm) from each other and from restraining surfaces or other obstructions.
- M. Verify locations of interior electrical conduits, piping, ducts, and similar items near underside of steel roof decking, to avoid striking with fasteners.
- N. Verify that deck and other substrates are dry, free of debris, excess, and foreign materials.
- O. Verify substrates and surfaces to receive flashings are dry, clean, and free of sharp or penetrating projections or other irregularities.
- P. Proceeding: Proceed with installation only after unsatisfactory conditions have been corrected.
- Q. Do not commence work until decking and substrates are in full compliance with roof system manufacturer's requirements, deck and substrate conditions are sound, and positive fall to drainage points are achieved.
- R. Commencement: Commencement of work indicates acceptance of conditions and responsibility for all corrections.

### **3.02 PREPARATION**

- A. Clean substrate of dust, debris, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove all sharp projections.
- B. The Installer will be entirely responsible for the complete removal of all dirt, debris, moisture from the roof's substrate, i.e. steel decking, concrete decking, before the installation of the roofing system. The roof's substrate must be 100% completely dry before applying the spray-in-foam insulation or before the installation of the specified roofing insulation.
- C. Cleaning: Clean substrate including metal decking flutes of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- D. Debris, water, moisture, or foreign materials found in flutes of steel roof decking is not permitted; remove and replace roofing installed above flutes found to contain foreign materials.
- E. Cleaning, repair, or replacement of damaged items, as a result of roofing related materials entering the facility, shall be solely at the roofing contractor's expense.
- F. Broom clean cover board immediately prior to membrane roofing application.
- G. Promptly remove debris each day; do not stockpile debris or allow waste to accumulate on steel decking, insulation, or roofing under construction.
- H. Containment: Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction at the end of the workday or when rain is forecast. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- I. Mask off adjoining surfaces not receiving roofing membrane materials to prevent spillage or over spray affecting other construction.

- J. Fill all gaps and voids between substrate components that are wider than 1/4 inch. Fill all gaps with same materials as the substrate.
- K. Seal around along perimeters, along equipment curbs, around pipes, around conduits, and any other roof penetrations for a distance of 2 minimum inches wide and 6 inches onto the bottom rib of steel decking with the specified spray in place foam insulation.
- L. Base Vertical Flashings: Coordinate roof insulation thickness with adjacent base flashing height, to maintain not less than 8-inch (203 mm) flashing height. Adjust base vertical flashing height including substrates and changes in exterior wall materials to maintain minimum height.
- M. Proceed with roofing work only when weather conditions permit work to proceed in accordance with manufacturer's requirements and recommendations.

### **3.03 WOOD NAILER INSTALLATION**

- A. All Wood Nailers shall be anchored to resist a minimum force of 300 pounds per lineal foot (4,500 Newtons/lineal meter) in any direction. Individual nailer lengths shall not be less than 3 feet (0.9 meter) long. Nailer fastener spacing shall be at 12 inches (0.3 m) on center or 16 inches (0.4 m) on center if necessary, to match the structural framing. Fasteners shall be staggered 1/3 the nailer width and installed within 6 inches (0.15 m) of each end. Two fasteners shall be installed at ends of nailer lengths. Wood nailer attachment shall meet the current Factory Mutual Loss Prevention Data Sheet 1-49. Refer to Division 06 10 00 for acceptable fasteners for wood product attachments.
- B. Wood Nailer thickness shall be as required to match the insulation and cover board height (thickness) to allow a smooth transition.
- C. Stainless steel, corrosion resistant, fasteners are required when mechanically attaching any thermoplastic product to wood nailers and wood products treated with ACQ (Alkaline copper Quaternary). When ACQ treated wood is used on steel roof decks or with metal edge detailing, a separation layer must be placed between the metal and ACQ treated wood.
- D. New wood nailers and/or plywood sheeting shall meet the performance criteria in Division 06 10 00.

### **3.04 VAPOR-RETARDER / AIR BARRIER INSTALLATION**

- A. Install vapor retarder/air barrier in a single layer under base layer insulation, side and end lapping each sheet a minimum of 2 inches (50 mm) and 6 inches (150 mm), respectively.
- B. Clean surfaces to receive vapor barrier. Continuously seal seams and side and end laps.
- C. Terminations: Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into membrane roofing system.
  - 1. Turn up vapor barrier at openings, penetrations, curbs, and bases of parapets, corners, and other vertical and other transitions a minimum of 2-inches (50 mm), maximum 3-inches (75 mm). Overlap onto vertical surface, unless otherwise indicated or required.
  - 2. Cut vapor barrier and patch at curbs, openings or penetrations, folding flaps onto vertical flange or surfaces.
  - 3. Clean surfaces to receive vapor barrier. Seal and secure all terminations, upturned edges, penetrations, base termination, and interruptions with tape.
- D. Repair damaged or abraded areas of vapor-barrier/air barrier to seal and secure.

### **3.05 INSULATION BOARD INSTALLATION**

- A. General Criteria:
  - 1. Coordinate installing membrane roofing system components, so insulation is not exposed to precipitation or left exposed at the end of the workday.
  - 2. Wet, broken, warped, or bent insulation boards are not acceptable. Any damaged insulation boards are to be replaced with new insulation boards.

3. The substrate surface must be free of debris, dirt, grease, oil, ice, snow, frost, standing water, and must be 100% completely dry prior to the installation of the specified roofing insulation or during the time of applying the dual component polyurethane adhesive and the spray- in-place foam.
  4. Construct sumps at primary roof drains using tapered insulation to slope indicated. Install nailers or blocking as required to secure drain body assembly to roof deck.
    - a. Unless otherwise indicated, construct sumps to consistent and uniform slope of 1/4 per 12 inches (1:48) to provide a smooth transition from the roof surface to the drain. Do not introduce steeper or shallower slopes within sump.
    - b. Use tapered insulation to form a square sump. Unless indicated otherwise, construct sump measuring 8 foot by 8 foot (2.4 m by 2.4 m) at primary roof drains.
    - c. Adjust primary roof drain assemblies to proper elevation for sump.
    - d. Install tapered insulation so edges do not restrict flow of water.
    - e. Do not create circular depressions around primary roof drains at bottoms of sumps.
  5. Do not install sumps at secondary overflow roof drains.
    - a. Adjust secondary roof drain assemblies to proper elevation of final roofing membrane.
    - b. Do not create circular depressions around secondary roof drains.
  6. Where conditions required drain modifications to match specified insulation thickness, roofing contractor will be responsible for the cost of readjusting the primary roof drain bowl and associated plumbing to match the “finished” insulation thickness. St. Louis Public Library will not permit the circular depressions, nor the cutting or shaving the insulation to slope the insulation to the edge of the drain bowl.
  7. Roofing system manufacturer’s technical representative shall be on the jobsite during the first initial day of installation of the roofing system.
- B. Attachment of the Polyisocyanurate Insulation on an approved decking:
1. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.5 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 16 inches in each direction.
  2. Over the top of the first layer of insulation, the second layer of insulation board shall be lay transverse to the direction of the first layer of insulation. Stagger end joints of boards a minimum of 1/3 of overall length.
  3. The base layer of the specified polyisocyanurate insulation shall be adhered per a FM 1-90 ribbon pattern. The specified insulation board shall be adhered to the vapor barrier with manufacturer approved 2 part adhesive. The polyisocyanurate insulation adhesive shall be a minimum of 12” ribbons for the field of the roof, increasing the number of adhesive ribbons along the perimeter by 50% and increasing the number of ribbons by 100% in the corners of the roof.
  4. Install four (4’) feet x four (4’) feet tapered insulation at each primary roof drain or scupper. The tapered insulation shall be mitered at the corners to provide a smooth and tapered transition into the roof drains and scuppers.
  5. Installer shall ensure the “flat stock” and tapered insulation has been installed to where there will not be any ponding of water anywhere on the roofing system (roof area) after 24 hours of rainfall. Any ponding of water after 24 hours will not be acceptable to the Owner and shall be corrected by the Installer at no charge to the Owner.
- C. Installation of additional “flat stock” and tapered polyisocyanurate insulation:
1. The “flat stock” and / or tapered polyisocyanurate insulation panels shall be laid transverse to the proceeding layer of insulation, with joints staggered at least 1/3 of overall length from those of the proceeding layer of the “flat stock” insulation.
  2. The “flat stock” and / or tapered polyisocyanurate insulation boards shall be adhered to top layer of “flat stock” insulation with the dual component polyurethane adhesive. The dual component polyurethane adhesive shall be dispensed ¾ inch wide and 12 inches on center bands in the field of the roof. In the corners and perimeters of the roof area where the tapered crickets or saddles are to be installed, the number of ribbons per unit width or area over the field rate by:
    - a. 70% in the perimeter - resulting in a maximum on center spacing equal to 60% of the field spacing (field ribbons at 12" on center, the perimeter spacing shall be 7" on center).
    - b. 160% in the corner - resulting in a maximum on center spacing equal to 40% of the field spacing (field ribbons at 12" on center, the corner spacing shall be 4.8" on center.).

3. After allowing dual component polyurethane adhesive to rise  $\frac{3}{4}$  inch to 1 inch, lay insulation board in to position and walk into place. After walking into place, the insulation board shall be pressed firmly into the adhesive layer with using an approved weighted roller by frequent rolling in two or more directions. Contractor shall also “weigh down” the insulation board to ensure proper adhesive to the top layer of insulation.
4. St. Louis Public Library will not accept any un-adhered or loose insulation boards. After installation of the insulation board, should the insulation board is not properly adhered to the proceeding layer, Contractor will held responsible for replacing the unacceptable installed insulation board. All cost related, i.e. replacement of specified insulation, cover board, membrane, etc., to the replacement of the unacceptable installed insulation board will be at no cost to the Owner.

### 3.06 COVER BOARD INSTALLATION

#### A. General Criteria:

1. Fasten the specified cover board according to requirements of the roofing system manufacturer’s written instructions.
2. Wet, broken, warped, or bent insulation boards are not acceptable. Any damaged cover boards are to be replaced with new cover boards.
3. Consult roofing system manufacturer on current acceptable substrates and rates for applying the low-rise urethane adhesives. The surface of substrate shall be inspected prior to installation of the cover board.
4. The substrate surface must be free of debris, dirt, grease, oil, ice, snow, frost, standing water, and must be 100% completely dry prior to the installation of the specified cover board or during the time of applying the dual component polyurethane adhesive and the spray- in-place foam.
5. Roofing system manufacturer’s technical representative must be on the jobsite during the first initial day of installation of the roofing system.
6. Install a single layer of cover board over the specified polyisocyanurate insulation.
7. The cover board sheeting shall be laid transverse to the top layer of the insulation board, with joints staggered at least  $\frac{1}{3}$  of overall length from those of the insulation layer.
8. The cover board shall be neatly cut to fit within  $\frac{1}{4}$  inch (6 mm) of nailers, penetrations, and projections.
9. Fill all gaps exceeding  $\frac{1}{4}$  inch (6 mm) with spray-in-place foam insulation.
10. Trim surface of cover board where necessary at roof drains so completed surface is flush and does not restrict flow of water.
11. Do not install more cover board than can be covered with the specified roofing system by the end of the day, or onset of inclement weather.

#### B. Attachment of Cover Board:

1. Apply the dual component polyurethane adhesive at the manufacturer’s written instructions for adhering the specified cover board to the specified polyisocyanurate insulation.
2. The dual component polyurethane adhesive shall be dispensed in 12 inches on center bands in the field of the roof. In the corners and perimeters of the roof area, the number of ribbons per unit width or area over the field rate by:
  - a. 70% in the perimeter - resulting in a maximum on center spacing equal to 60% of the field spacing (field ribbons at 12" on center, the perimeter spacing shall be 7" on center).
  - b. 160% in the corner - resulting in a maximum on center spacing equal to 40% of the field spacing (field ribbons at 12" on center, the corner spacing shall be 4.8" on center.).
3. After allowing low rise urethane foam to rise  $\frac{3}{4}$  inch to 1 inch, lay cover board in to position and walk into place. After walking into place, the cover board shall be pressed firmly into the adhesive layer with using an approved weighted roller by frequent rolling in two or more directions. Contractor shall also use “weights” to ensure the cover board is completely adhered to the top layer of the polyisocyanurate insulation. There shall not be any elevation change or raise of the corners or sides of the cover board as compared to the sides of the adjacent cover board sides. The cover board shall lay flat or level as compared to the edges of the adjacent cover board.
4. After installation of the cover board, should the cover board have more than  $\frac{1}{8}$  inch deviation or rise to the adjacent cover board, the Installer will held responsible for replacing the unacceptable installed cover board. All cost related, i.e. replacement of specified insulation, cover board, membrane, etc., to the replacement of the unacceptable installed cover board will be at no cost to the Owner. The replacement of the unacceptable cover boards shall be completed prior to the installation of the membrane.

### 3.07 PVC MEMBRANE INSTALLATION

- A. General: Install in strict accordance with roofing system manufacturer's latest published requirements, instructions, specifications, details, and approved shop drawings.
- B. Install PVC membrane per roofing system manufacturer's requirements to obtain roofing system manufacturer Twenty (20)-year Full System (NDL) warranty.
- C. Install in strict accordance with roofing system manufacturer's latest published instructions.
- D. Roofing system manufacturer's technical representative must be on the jobsite during the first initial day of installation of the roofing system.
- E. Coordinate with Owner representative to shut down air-intake equipment in the vicinity of the Work. Roofing Contractor shall cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors located in the mechanical ductwork.
- F. The PVC membrane is to be adhered with roofing system manufacturer's approved adhesive. Membrane overlaps shall be shingled with the flow of water where possible. Tack welding of the PVC membrane side laps for purposes of temporary restraint during installation is not permitted.
- G. Layout: Layout roofing membrane to minimize number of seams. Avoid seams through roof primary roof drain sumps or through secondary roof drain locations.
  - 1. Position membrane straight and square to building.
- H. Installation of PVC membrane:
  - 1. The PVC membrane shall be adhered to the specified cover board substrate with Manufacturer's membrane adhesive. – Prior to adhering the membrane, the cover board substrate shall be completely clean of all debris, i.e. gypsum dust, dual component adhesive residue, etc.
  - 2. The adhesive is roller-applied, using a using solvent-resistant  $\frac{3}{4}$  inch (19 mm) nap paint rollers. Installer is to consult Roofing System Manufacturer's Technical Department for the proper application.
  - 3. The adhesive shall be applied in smooth, even coating with no gaps, globs, puddles or similar inconsistencies.
  - 4. After installing the PVC membrane, the PVC membrane shall be pressed firmly into the adhesive layer with using an approved weighted roller by frequent rolling in two or more directions.
  - 5. Installer is to ensure there are no wrinkles in the membrane. There shall not be any wrinkles or "fish mouths" in the membrane overlap seams.
- I. The means of application and the quantities of the membrane adhesive to be used shall be per the roofing system manufacturer's recommendations. Consult roofing system manufacturer on proper application rates for adhering the membrane to the acceptable substrates.
- J. **USE CAUTION TO ENSURE ADHESIVE FUMES ARE NOT DRAWN INTO THE BUILDING.**
- K. Mechanically fasten membrane securely at all vertical to horizontal transitions, at points of terminations, and at the perimeter of roof to meet Manufacturer's Technical Department's requirements for properly securing the specified roofing system.
- L. Spread sealant bed over deck drain flange at deck drains and securely seal roofing membrane in place with drain clamping ring.
- M. Securement Around Perimeter and Rooftop Penetrations
  - 1. Around all perimeters, at the base of walls, drains, curbs, vent pipes, or any other roof penetrations, roofing system manufacturer's fasteners and baton bar or termination discs shall be installed. Fasteners, disc, and baton bar shall be installed accord to the roofing system manufacturer's instructions. Fasteners shall be installed using the fastener roofing system manufacturer's recommended fastening tools with depth locators.
  - 2. PVC membrane flashings shall extend a minimum of 3 inches past the securement bar or plates and shall be hot air welded to the PVC membrane.

- N. Field-seam according to Section 3.07, "Seam Installation."
- O. Excessive Repairs: Excessive repairs to membrane, or to membrane seams are not permitted. Remove and replace membrane in entire area affected, and as directed by St. Louis Public Library representative.

**Note:**

1. **The Installer shall employ all means necessary to assure that the installation of all field and flashing membranes are free of loose (un-adhered) areas and wrinkles. The Owner's Representative(s) reserves the right to require that all preventable loose and /or wrinkled field membrane and membrane flashings to be repaired to the satisfaction of the Owner's Representative. If the Installer determines that loose and /or wrinkled membrane or membrane flashing is unavoidable in a specific area(s), the onsite Owner's Representative must be notified immediately for a determination of acceptability.**
2. Contractor is to ensure during the time of installing the membrane field and membrane flashing sheet, there are no entrapment of debris under the membrane.

### 3.08 SEAM INSTALLATION

A. General:

1. All seams shall be hot air welded. Seam overlaps should be 3 inches (75 mm) wide when automatic machine-welding and 4 inches (100 mm) wide when hand-welding, except for certain details.
2. The Installer shall provide and use Automatic Welding Equipment, for machine welding the specified PVC membrane. All mechanics intending to use the automatic welding equipment shall have successfully completed a training course provided by a Roofing system manufacturer's Technical Representative prior to welding.
3. All membrane to be welded shall be clean and dry.

B. Hand-Welding:

1. Hand-welded seams shall be completed in two stages. Hot-air welding equipment shall be allowed to warm up for at least one minute prior to welding.
2. The back edge of the seam shall be welded with a narrow but continuous weld to prevent loss of hot air during the final welding.
3. The nozzle shall be inserted into the seam at a 45-degree angle to the edge of the membrane. Once the proper welding temperature has been reached and the membrane begins to "flow," the hand roller is positioned perpendicular to the nozzle and pressed lightly. For straight seams, the 1½-inch (40-mm) wide nozzle is recommended for use. For corners and compound connections, the ¾ inch (20 mm) wide nozzle shall be used.

C. Machine Welding:

1. Machine welded seams are achieved using Manufacturer's approved hot air welder. When using the hot air welding equipment, Installer shall follow manufacturer's instructions on proper operation of the hot air welding machine.
2. All applicable building local codes for electric supply, grounding and over current protection shall be observed. A dedicated portable generator is recommended for machine welding. No other equipment shall be operated off the generator during the time of machine welding.
3. **Metal tracks may be used over the field membrane and under the machine welder to minimize or eliminate wrinkles along the seam. AIR POCKETS OR VOIDS ALONG THE SEAM ARE NOT ALLOWED BY OWNER.**

### 3.09 MEMBRANE FLASHING INSTALLATION

- A. General: All membrane flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and the roofing system manufacturer. Approval shall only be for specific locations on specific dates. Membrane flashing shall be adhered to compatible, dry, smooth, and solvent-resistant surfaces.
- B. Manufacturer's adhesive to be used to adhere the PVC membrane flashing to acceptable wall and equipment curb substrates. No bitumen shall be in contact with the PVC membrane. If bitumen exists, then the roofing system manufacturer's asphalt resistant membrane shall be use for the membrane flashing.



- C. Adhesive for Membrane Flashings:
  - 1. Over the properly installed and prepared flashing substrate, the adhesive shall be applied according to instructions found on the Product Data Sheet. The adhesive shall be applied in smooth, even coats with no gaps, globs, or similar inconsistencies. Only an area that can be completely covered in the same day's operations shall be flashed. The bonded sheet shall be pressed firmly in place with a hand roller.
  - 2. No adhesive shall be applied in seam areas that are to be welded. All panels of membrane shall be applied in the same manner, overlapping the edges of the panels as required by welding techniques.
  - 3. All flashing membranes shall be consistently adhered to substrates. All interior and exterior corners and miters shall be cut and hot-air welded into place. Where applicable, roofing system manufacturer's prefabricated corners shall be used.
  - 4. The membrane flashing shall be completed adhered to the substrate with no unadhered areas.
- D. All flashings shall extend a minimum of 8 inches (0.2 m) above roofing level unless otherwise accepted in writing by the Owner's Representative and roofing system manufacturer's technical department.
- E. Vertical Surfaces Taller Than 30 Inches (760 mm): Where vertical distance of flashing membrane exceeds 30 inches (760 mm) in height, in addition to terminations at base flashings, mechanically fasten fully adhered flashing membrane with additional termination bar installed horizontally at not greater than 30 inches (760 mm) on center vertically to top of flashing membrane.
  - 1. Install membrane cover strip of standard sheet at least 8 inch (0.23 m) in width of same material, type, reinforcement, and color as roofing membrane over termination bars and hot-air weld seams.
  - 2. Install termination bar and cover strip using mechanical fasteners as roofing progresses. Do not proceed with roofing without full attachment of termination bars and installation of coversheet for area under construction.
- F. Flashing Termination: Terminate all vertical flashing membrane surfaces horizontally and vertically with mechanically fastened termination bars and sheet metal flashings/counterflashings. Mechanically fasten flashing membrane securely using mechanical fasteners specifically designed and sized for fastening specified membrane flashing and termination bars into substrate.
  - 1. Fasten termination bar with fasteners not greater than 6 inches (152 mm) on center for length of bar, with fasteners within 3 inches (76 mm) of ends, or closer as required by manufacturer. Fasten into nailer or other substantial backing located behind point of base or curb termination.
  - 2. Uniformly fasten, seat, and compress the termination bar into top of fully adhered flashing membrane.
  - 3. Install sealants continuously across surface of termination, including terminations covered with sheet metal flashing and counterflashing.
  - 4. Install termination bars using mechanical fasteners as roofing progresses. Do not proceed with roofing without full attachment of termination bars for area under construction.
  - 5. At termination of vertical and wall sheet flashings not under copings, install termination bar at vertical and wall membrane flashings with metal surface mounted one- or two- piece counterflashing assemblies, as is required for condition. Install as indicated in Drawings or if not shown in Drawings or otherwise indicated, as required to produce continuous closure of membrane with termination bar and metal flashing, regardless of abutting materials overlap.
  - 6. Refer to Division 07 Section "Sheet Metal Flashing and Trim" for requirements for counterflashings and other metal fabrications.
- G. Primary Roof Drains: Install membrane into sump and extend into line of depressed sump at roof drain. Install membrane free of wrinkles or surface irregularities. Shingle seams around and outside sump in direction of water flow and drainage; backwater laps and seams are not permitted in or around sumps or drains.
  - 1. Cut membrane to fit roof drain piping inlet; do not allow membrane to restrict opening size.
  - 2. Spread sealant over roof drain deck flange and securely seal roofing membrane in place with clamping ring. Seal between membrane and drain base with water cut off mastic in accordance with manufacturer's recommendations.
    - a. Apply sealant in strict compliance with manufacturer's requirements.
  - 3. Install membrane to comply with other requirements indicated for roofing membrane.
  - 4. Remove and replace any steel fasteners and washers in clamping ring. Install clamping ring using stainless steel fasteners and washers.
  - 5. Securely tighten clamping rings to provide constant pressure on water cut off mastic.
  - 6. Install new metal strainers to complete primary roof drains.

- H. High- or Elevated- Temperature Vent Flashings: Install prefabricated or field-formed membrane flashings to comply with manufacturer's written requirements and recommendations and as indicated. Field form flashings from sheet flashing membrane designed for and suited to condition.
1. Install stainless steel metal base fabricated metal flashing sleeves prior to installing flashings.
  2. Install fire-resistant mineral-wool-fiber insulation between metal flashing sleeve and high- or elevated-temperature outside vent surfaces.
  3. Select proper diameter prefabricated flashing to properly fit penetration and roof conditions.
  4. Secure deck membrane around metal base sleeve penetration to comply with manufacturer's requirements. Secure close to penetration so prefabricated flashing will cover attachments. Secure top of membrane flashing to top of sleeve penetration.
  5. Secure deck membrane around sleeve penetration to comply with manufacturer's requirements. Secure close to penetration so prefabricated flashing will cover attachments.
  6. Install flashings to produce a minimum of 8-inch (200 mm) flashing height.
  7. Lap base of flashings atop roof membrane at least 4 inches (100 mm). Hot-air weld seams at roofing membrane lap.
  8. Place prefabricated flashing in place tight to horizontal deck membrane; ensure flange lays flat to deck membrane.
  9. Weld base of prefabricated flashing continuously to deck membrane.
  10. Where required by manufacturer, heat upper part of prefabricated flashing to temperature required by manufacturer; avoid overheating.
  11. Clamp top of flashing at vent with stainless steel clamping ring.
  12. Install stainless steel metal umbrella cap flashing, holding close to membrane base flashing.
- I. Only an area, which can be completely covered in the same day's operations, shall be flashed.
- J. Daily test lap edges with probe to verify seam weld continuity of all membrane flashings.
- K. Complete all membrane flashing and metal details daily. No temporary flashings shall be allowed with the prior written approval of the Owner's Representative and roofing system manufacturer. If any water is allowed to enter under the completed roofing due to incomplete flashings, the affected area shall be removed and replaced at the Installer's expense.
- L. **USE CAUTION TO ENSURE ADHESIVE FUMES ARE NOT DRAWN INTO THE BUILDING.**
- M. Installer is to ensure there are no wrinkles and "fish-mouths" in the membrane flashing and in the overlap seams.
- N. Excessive Repairs: Excessive repairs to seams or flashings are not permitted. Remove and replace membrane, and if required the roofing components, in entire area affected as directed by St. Louis Public Library representative.

### **3.10 PVC COATED CLAD PERIMETER AND METAL BASE FLASHINGS**

- A. General: All flashings shall be installed concurrently with the roofing membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and the roofing system manufacturer. Acceptance shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing due to incomplete flashings, the affected area shall be removed and replaced at the Installer's expense.
- B. Manufacturer's metal detail shall be installed to provide adequate resistance to bending and allow for normal thermal expansion and contraction.
- C. All perimeter metal edging shall be fabricated and install per current SMACNA requirements.
- D. Metal hook strips shall be installed for perimeter metal edging. The metal hook strips shall extend past wood nailer over the perimeter surfaces by 1.5 inches (38 mm) minimum. The metal hook strip shall be secured to the wood nailer and sealed with "Multi-Purpose Sealing Tape" to prevent any air entry between the building and the metal hook strip, between the membrane, and between the clad perimeter edges.



- E. Secure the clad metal over the field membrane and the “Multi-Purpose Sealing Tape.” Fastened the clad with approved stainless-steel nails or other acceptable fastener. Fasteners shall be fastened 4 inches on center and staggered 4 inches on center.
- F. Adjacent sheets of clad metal shall be spaced ¼ inch (6 mm) apart. The joint shall be covered with 2-inch (50-mm) wide aluminum tape. A 4-inch minimum wide strip of membrane flashing membrane shall be hot air welded over the joint. Check all coverstrip welds with a rounded screwdriver prior to installation of eight-inch coverstrip. Re-weld any inconsistencies before eight-inch coverstrip installation.
- G. An 8 inch minimum wide strip of the 60 mil membrane flashing shall be hot air welded to the 4 inch wide flange of the PVC coated metal and to the field membrane. Check all coverstrip welds with a rounded screwdriver. Re-weld any inconsistencies.

### 3.11 WALKWAY INSTALLATION

- A. Installer is to install walkway in the areas as indicated on roof plans. Installer is responsible for verification of the total linear footage of the required walkway installation. The minimum length of the walkway, installed at any one location, shall be four (4') feet. **(INCLUDE IN BASE BID A MINIMUM OF 200 LF OF WALKPATH FOR WALKWAYS ON THE ROOF AREA.)**
- B. Install the walkway to roofing system manufacturer's written instructions.
  - 1. Clean all dirt and debris from the deck membrane in areas where the walkway will be installed.
  - 2. Important: Check all deck membrane welds with a rounded screwdriver prior to installation of walkway. Re-weld any inconsistencies before walkway installation.
  - 3. Install walkway in the indicated roof areas.
  - 4. Installer shall not hot air weld the walkway to the field membrane.

### 3.12 PROTECTION PAD INSTALLATION

- A. General: Install protection pad under exposed wood blocking and under equipment supports.
- B. The installation of the protection pad:
  - 1. Clean all dirt and debris from the deck membrane in areas where the protection pad will be installed.
  - 2. Important: In areas where protection pads are to be installed, Installer is to probe all field membrane seams welds with a rounded screwdriver prior to installation of the protection pad. Re-weld any inconsistencies before protection pad installation.
  - 3. Cut the protection pad 4 inches (4") wider than the dimensions of the wood blocking or equipment and piping support.
  - 4. Hot-air weld the entire perimeters of the protection pad to the field membrane sheet.
  - 5. Probe all protection pad seam welds with a rounded screwdriver. Re-weld any inconsistencies found in the protection pad seams.
  - 6. Center the wood blocking or equipment or pipe support over the protection pad.

### 3.13 MEMBRANE PROTECTION LAYER INSTALLATION

- A. Before the installation of protection layer membrane, the Installer shall:
  - 1. In the areas where the protection layer will be installed, the field membrane shall be cleaned of all dirt and debris.
  - 2. It is important to have Technical Inspector to probe all seam welds with a rounded screwdriver prior to installation of protection layer membrane. Re-weld any inconsistencies before protection layer membrane installation.
  - 3. Measure 6 feet from the base of the equipment curb and on each side of the equipment curb. Place chalk lines on deck sheet to indicate location of protection layer membrane. Mark areas, a minimum 4 inches wide, to where no adhesive will be applied; no adhesive shall be applied area of hot air welding seams.
  - 4. The adhesive is roller-applied, using a using solvent-resistant ¾ inch (19 mm) nap paint rollers, to both the protection layer membrane and the PVC field membrane in the following manner:
    - a. Apply approximately ½ gallon per 100 square feet of the manufacturer's adhesive to the field sheet and allow to dry completely.

- b. After the PVC sheet adhesive has dried completely, apply adhesive to the **top (white) side** of the membrane, and allow to become tacking (producing strings) when touch with a dry finger. The adhesive shall not be permitted to dry completely.
  - c. The protection layer membrane is then place on the substrate (mating adhesive surfaces).
  - d. The protection layer membrane shall be rolled firmly into place with a water-filled, foam-covered lawn roller by frequently rolling in two or more directions.
  - e. Installer is to ensure there are no wrinkles in the protection layer membrane.
5. All panels of protection layer membrane shall be applied in the same manner, overlapping the edges of the panels as required by welding techniques around the equipment curb.
6. Hot-air weld the protection layer perimeter side and end laps to the PVC field sheet.
7. Check all protection layer seam welds with a rounded screwdriver. Re-weld any inconsistencies found in the protection layer seams.

### **3.14 HIGHLY VIISBLE MEMBRANE INSTALLATION**

- A. General Requirements: Provide and install a highly visible membrane product; designed to draw attention to an unprotected roof perimeter and potentially hazardous area that do not comply with St. Louis Public Library safety guidelines.
- B. Installation of yellow, 4 inch wide, cover strip:
  1. Installer and St. Louis Public Library Representative shall verify unprotected roof perimeters and potentially hazardous areas on the referenced project's roof area(s).
  2. The yellow cover strip shall be installed not less than 6 feet 6 inches (2 meters) from unprotected roof perimeters and potentially hazardous areas.
  3. Before installing the yellow membrane 4 inch wide cover strip, the Installer shall have Manufacturers Technical Representative to verify permanence of all deck membrane welds with a rounded screwdriver. Repair any inconsistencies of the membrane seams before yellow membrane installation.
  4. The roofing membrane shall be properly cleaned prior to install the "yellow membrane 4 inch wide cover strip." Failure to thoroughly clean the membrane will result in less than satisfactory hot air welding of the yellow membrane.
  5. Hot air weld the yellow cover strip to installed and inspected roofing membrane.
  6. Installer shall take care to avoid trapping air under the yellow membrane.
  7. After hot air welding the yellow cover strip, the Installer shall verify permanence of all yellow cover strip welds with a rounded screwdriver. Repair any inconsistencies of the yellow cover strip installation.

### **3.15 TEMPORARY ROOFING TERMINATIONS AND PROTECTION**

- A. Prior to starting roofing project, the Installer shall inspect the facility existing roof area(s) associated with the contract roofing project for any defects which could cause water or moisture vapor entries into the building during the roofing application. Any defects or concerns shall be address in writing to the Owner's representative prior to starting the roofing project. Proceeding with the roofing project indicates the Installer's acceptance of the existing facility conditions.
- B. For existing roof areas where access is absolutely required for the installation of the new roofing system on another roof area, the Installer shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent roof areas. A suitable temporary protective surface shall be provided for all roof areas which receive traffic during construction of the new roofing system. During the roofing project, any damage which occurs to the new or existing roofing membrane and/or system shall be removed and replaced at the Installer's expense.
- C. The Installer shall provide the labor and materials required to maintain a watertight and impermeable condition at all times on the roof areas as referenced in the project's contract documents. All membrane and metal flashings shall be installed concurrently with the field membrane installation to maintain a 100% watertight and to prevent any air/water vapor infiltration into the completed roofing system each day.

- D. When an interruption or a postponement in the roofing work occurs during the installation of the roofing system, the Installer shall install temporary watertight and hermetic terminations across the installed Manufacturers roofing system. The Manufacturers roofing system shall be 100% impermeable to prevent water and air/water vapor infiltration into or under the new roofing system. When work resumes, any contaminated membrane shall be removed from the work area and disposed off site. None of these materials shall be reused in the new work.
- E. During inclement weather or during a postponement in the roofing work occurs while a temporary water stops or terminations are in place, the Installer shall provide the labor and materials to monitor and ensure the temporary water stops and terminations are 100% watertight and impermeable condition.
- F. If any weather-related moisture or the result of moisture caused by the condensation of water vapor are allowed to enter into the newly completed Roofing System, the affected roof area(s) shall be removed and replaced at the Installer's expense.

### **3.16 FIELD QUALITY CONTROL**

- A. Quality Control of Welded Seams:
  - 1. The Installer shall designate a Quality Control Supervisor to daily check all welded seams for continuity by using a rounded screwdriver.
  - 2. On-site evaluation of welded seams shall be made by the Installer at locations as directed by the Owner's Representative or roofing system manufacturer's technical representative.
  - 3. Correct welds display failure from shearing of the membrane prior to separation of the weld.
  - 4. Repair cold welds, tears, voids, and wrinkles in the over lapped seams of the roofing membrane and membrane flashing which do not meet manufacturer's requirements for a quality seam weld.
  - 5. Each test cut shall be patched by the Installer at no extra cost to the Owner or to roofing systems manufacturer.
  - 6. All membrane seams, both field and flashings, shall be hot air welded and probed daily. NO EXCEPTIONS.
- B. Roofing system manufacturer's technical representative: Installer shall arrange to have the system manufacturer's technical representative on site of the first day of installation of the roofing system. The Technical Representative shall note:
  - 1. Conduct a site inspection on the first day of production.
  - 2. Communicate with the St. Louis Public Library project manager each inspection, i.e. meet with the St. Louis Public Library designated project manager before entering work area.
  - 3. Note all defects noted non-compliance with the specifications or the recommendations of the thermoplastic manufacturer should be itemized in a punch list. These items must be corrected immediately by the contractor to the satisfaction of the St. Louis Public Library representative and Manufacturer's representative.
  - 4. Ensure the roofing contractor has received a copy of each In-Progress Inspection Report within two days of the inspection. The roofing contractor is to forward the St. Louis Public Library On-site Representative a copy of the In-Progress Inspection Report.
- C. Final Roof Inspection: Arrange for roofing system manufacturer's technical representative to inspect roofing installation on completion of the roofing project.
  - 1. All defects noted non-compliance with the roofing specifications and details, or the recommendations of roofing system manufacturer representative should be itemized in a punch list. These items must be corrected immediately by the Installer to the satisfaction of the Owner's Representative and roofing system manufacturer technical representative.
  - 2. Ensure the roofing contractor has received a copy of Final Inspection Report within two days of the inspection. The roofing contractor is to forward the St. Louis Public Library On-site Representative a copy of the Final Inspection Report.

### **3.17 PROTECTING AND CLEANING**

- A. Protect sheet membrane roofing from, not limited to the following items: dirt, grease, rust stains, roofing asphalt, scuff marks, abrasions, adhesive spills, sealant spills, membrane cuts, and any physical damages to the installed Manufacturers roofing system during the construction period.

- B. Upon completion of the Work, dispose of, away from the Site, all debris, trash, containers, fasteners, roofing remnants and scraps.
- C. **The completed “Roof” shall be washed with water and St. Louis Public Library approved cleaner to remove all dirt, stains, adhesive and sealant spills, and any residue from roof membrane.**

### **3.18 ACCEPTANCE**

- A. Prior to demobilization from the site, the roofing system manufacturer’s project manager, St. Louis Public Library’s representative(s), roofing system manufacturer’s designated field technical representative and Installer’s project manager, production crew superintendent, and project’s roofing foreman shall review the completed work.
- B. Installer and St. Louis Public Library representative shall inspect the completed roofing system for any uneven cover boards, loose or improperly attached insulation or cover boards, ponding of water, un-adhered membrane and membrane flashing, membrane damage, dirt, rust stains, roofing asphalt, grease, scuff marks, cuts, abrasions, adhesive spills, and sealant spills.
- C. All defects noted noncompliance with the project’s bid documents will be itemized in a punch list. Any non-compliance item shall be removed and/or repaired immediately by the Installer to the satisfaction of the St. Louis Public Library representative, and to roofing system manufacturer.
- D. The noted deficiencies shall be repaired or replaced to a condition free of damage and deterioration at the time of Substantial Completion Acceptance by St. Louis Public Library’s representative, and / or to accordance of the St. Louis Public Library project contract documents.
- E. All warranties as required for the project of this specification shall be submitted for approval prior to final payment by St. Louis Public Library.

### **END OF SECTION 07540.6**

## **SECTION 07590 – PREPARATION OF RE-ROOFING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Fastener Pullout Testing: Provide fastener pullout testing in each roof area for each type of roof deck in accordance with SPRI – Standard Pullout Test Procedure.
- B. The removal of the existing roofing system down to the existing roof's substrate, i.e. concrete or steel decking.
- C. The coordination with the electrical / mechanical contractor for the removal of any unused equipment / penetrations or deck accessories prior to initial roof replacement.
- D. The coordination with the electrical / mechanical contractor for raising any rooftop appurtenances, i.e. refrigeration piping supports, where it is required to achieve minimum recommended heights and clearances for the new roofing system.
- E. Replacement of any deteriorated steel decking.
- F. Application of a rust inhibitor coating to rusting steel decking.
- G. The coordination with the electrical contractor for the lightning protection system.
- H. Temporary roofing tie-ins and water stops.
- I. Quality Control

#### **1.02 DEFINITIONS**

- A. Division 01 – General Requirements
- B. Section 06100 – Carpentry Work
- C. Section 07540 – Membrane Roofing System
- D. Section 07600 – Flashing and Sheet Metal: Requirements for sheet metal components.

#### **1.03 SUBMITTALS**

- A. Submit under provisions of General Requirements.
- B. Product List: Submit list of proposed Products and manufacturers, including all items specified in Part 2 – Products or otherwise required by the Work.
- C. Product Data: Provide data for each required product indicating characteristics, performance criteria, mixing and preparation requirements, limitations, and Material Safety Data Sheets (MSDS).
- D. Demolition and Removal Procedures and Schedule: Outline all work tasks and schedule them, showing clearly when each area is to be performed. Coordinate with Owner and other contractors to avoid impact to Owner's occupancy.
- F. Project Record Documents: Indicate extent of work installed, actual locations of appurtenances and items that will be hidden from view at completion of work.

#### **1.04 PRE-INSTALLATION CONFERENCE**

- A. Convene prior to commencing work of this Section, under provisions of General Requirements.

#### **1.05 COORDINATION AND PROTECTION**

- A. Provide, erect, and maintain temporary barriers and security devices.
- B. Roofing contractor is to verify all field measurements for the referenced roof areas.
- C. Do not close or obstruct roadways or sidewalks without permits.
- D. Conduct demolition to minimize interference with adjacent roofing and siding, roof mounted equipment, and roof deck and structure to remain.
- E. When building exceeds one-story or fifteen feet in height, or when debris must be discharged adjacent to windows, pedestrian, or vehicular traffic, or where the conditions dictate extra precautions, provide enclosed trash chute from rooftop to trash containers.
- F. Conduct operations with minimum interference to public or private thoroughfares. Always maintain required egress (exit way) and access.
- G. Provide protective measures, including all OSHA and St. Louis Public Library safety requirements, in and around the work area, and in all and around the building prior to beginning the project.
- H. At any time, no open flames, torches, or any type of equipment which creates an “open flame” are allowed on St. Louis Public Library’s properties.
- I. Roofing contractor shall not refuel any roofing equipment or electrical generators on the roof. All refueling of roofing equipment and generators shall be accomplished on the ground and a minimum of 25 feet from the side of any materials and the side of each building. Provide appropriate fire extinguishers in the designated refueling area. All motorized (gasoline, propane, natural gas-, or diesel-powered engines) are to be removed from the roof at the end of the work day.
- J. All terrain vehicles, i.e. “four-wheelers,” or any motorized rideable roofing equipment will not be allowed for facilitating any segment of the St. Louis Public Library roofing project. This includes any type of ATVs, rideable roofing carts, and lawn tractors.
- K. Schedule and coordinate all mechanical and electrical service interruptions with Owner’s Representative and designated on-site personnel.
- L. Hazardous Materials: It is not expected that hazardous materials such as asbestos-containing materials will be encountered in the Work.
  - 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Owner Representative.
- M. Restrictions:
  - 1. Comply with St. Louis Public Library’s General Requirements on use of site.
  - 2. Firearms, Smoking, and Tobacco products are prohibited on all roof areas and on the campus grounds.
  - 3. No food products are allowed on the St. Louis Public Library facility grounds and on the roof at any time.
  - 4. Water is the only liquid allowed on the roof at any time. Provide approved individual and disposable water drinking cups for employees. After use, the disposable drinking cups are to be disposed in approved trash container. Do not dispose drinking cup debris in the roofing debris trash container. Drinking cups debris is to be removed from the facility each day.

5. Maintain facility and all utility services in a functional condition.
6. Provide and maintain sanitary facilities for employees. Provide sanitary soaps for employees.

## **PART 2 PRODUCTS**

### **2.01 DECK AND SUPPORT MATERIALS**

- A. Curbs and Support Members: Wood or metal curbs and support items as indicated and required for existing conditions.
- B. Miscellaneous Metals: Conform to existing Products and installations.

## **PART 3 EXECUTIONS**

### **3.01 EXAMINATION AND PREPARATION**

- A. Verify that areas to be demolished are clear of encumbrances.
- B. Roofing contractor shall include in his bid proposal the cost for sub-contracting with St. Louis Public Library approved interior protection company.
- C. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces that might be misconstrued as having been damaged by roof replacement operations. Submit before Work begins.
- D. Contractor must communicate the proposed starting date for reroofing the referenced roof areas to St. Louis Public Library. Contractor must allow St. Louis Public Library time to have the inside protection system installed. In the areas where interior protection is required, the interior protection system must be in place prior to starting the roofing in "that" roof area.
- E. Contractors shall remove existing securement fasteners from the existing roofing system by mechanically backing out the securement fasteners from the steel decking. Breaking or snapping off the fasteners will not be permit.
- F. Prevent movement or settlement of adjacent structures and paving. Provide bracing and shoring.
- G. Emergency Equipment and Materials: Maintain on site equipment and materials necessary to apply emergency temporary edge seal in event of sudden storms or inclement weather. If inclement weather occurs while a temporary water stop is in place, the contractor shall provide the labor and materials necessary to monitor the conditions to maintain a 100% watertight condition.
- H. Arrange work sequence to avoid use of newly constructed Roofing for storage, walking surface, and equipment movement. Where such access is absolutely required, the contractor shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A suitable temporary protective surface shall be provided for all Roofing areas which receive traffic during construction. Any damage which occurs to the Roofing membrane and/or system is to be brought to the attention of the Owner's Representative and membrane manufacturer. All damage is to be repaired or replaced according to the membrane manufacturer's recommendations. The party responsible for damage shall bear the cost of repairs.
- I. Protect existing landscaping materials, appurtenances, structures, paving, roofing, and siding, roof mounted equipment, roof deck (new and existing) and structures that are not to be demolished.
- J. Examine existing mechanical and electrical items to determine conditions and operability.



- K. The roofing contractor is to verify the drainage piping is properly connected, free flowing, and sealed to roof drain bowls. Additionally, roofing contractor is to verify all roof drains components are in serviceable and functional condition and are clear of debris. Roofing contractor is to replace any missing drain covers with new metal drain strainer covers.
- L. Immediately notify Owner's Representative verbal and in writing of any inoperable items or unsafe conditions found in the referenced work area(s).
- M. Beginning any work indicates acceptance of existing conditions, including operability of plumbing, mechanical and electrical items / equipment located in the referenced work area(s).

### **3.02 EXECUTION**

- A. Coordinate all aspects of demolition work with Owner's Representative and with all other Trades.
- B. Roofing Contractor is to provide safety protective measures inside, outside, and around the building by following all OSHA and St. Louis Public Library safety requirements. If inside protection measures are being provided by St. Louis Public Library's employees or by a contracted interior protection company, the roofing contractor shall coordinate all roofing activities which may affect the activities of installing or removal of the interior protection system.
- C. Prior to demolition work, verify all roof drains, soil pipes, flutes, roof equipment, steel decking and associated members, piping, electrical conduit, and other roof top equipment are secured to the building structure. Coordinate removal and securement of all unsecured roof penetrations and equipment with the electrical / mechanical contractor prior to the start of the roofing demolition.
- D. Broom clean, using power assisted apparatus, all loose gravel on designated areas.
- E. Owner will occupy portions of building immediately below roof replacement area. Conduct roof replacement so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.
  - 1. Coordinate with Owner to shut down all air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or could activate smoke detection equipment in the ductwork or equipment.
  - 2. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below the affected area. Verify that occupants below the work area have been evacuated prior to proceeding with work over the impaired deck area.
- F. Remove and dispose all designated, obsolete-roof penetrations and mechanical equipment as identified by the Owner's Representative in an orderly and careful manner. Contractor shall verify and coordinate all roof penetrations and mechanical removal with the Owner's Representative. Contractor shall coordinate with Owner's Representative and perform all necessary service disconnects.
- G. All piping and electrical supports shall be adjusted to accommodate the new height or thickness of the specified roofing system. All lifting and lowering work required for the refrigeration piping supports shall be completed by a St. Louis Public Library approved, licensed mechanical contractor. All roofing work associated with the refrigeration piping supports shall be closely coordinated by the roofing contractor with the mechanical contractor.
- H. Remove and dispose of all existing wood blocking, used for piping and equipment supports.
- I. Remove and dispose of existing roof related sheet metal, i.e. metal coping, perimeter metal edging, and metal counter-flashing, unless a particular component is identified on the project drawings for reuse of the existing sheet metal.
- J. Evenly cut edges of existing materials that are to be expanded, replaced, or modified. Completely remove materials from areas to be replaced or repaired each day.



- K. Cease operations and notify Owner immediately if adjacent structures or materials appear to be endangered. Do not resume operations until corrective measures have been taken.
- L. Remove materials to be re-installed or retained in a manner to prevent damage. Store and protect.
- M. Remove roofing, insulation, flashing, and damaged nailers and deck.
- N. Perimeter wood blocking shall be left in place for re-use for attachment of the perimeter metal edging or metal coping. Contractor shall provide a unit cost for the replace of the perimeter wood blocking should owner's representative finds the perimeter wood blocking to be damaged or deteriorated. Any perimeter wood blocking replacement will be based upon per unit cost established in the project's bid form and document replacements.
- O. Contractor shall provide, where required to match the new insulation and Dens Deck thickness, additional wood blocking at the perimeter metal edge or expansions joints. All Existing and New Wood Nailers shall be anchored to resist a minimum force of 300 pounds per lineal foot (4,500 Newton / lineal meter) in any direction. Individual nailer lengths shall not be less than 3 feet (0.9 meter) long. Nailer fastener spacing shall be at 12 inches (0.3 m) on center or 16 inches (0.4 m) on center if necessary, to match the structural framing. Fasteners shall be staggered 1/3 the nailer width and installed within 6 inches (0.15 m) of each end. Two fasteners shall be installed at ends of nailer lengths. All wood nailer attachment shall meet the current Factory Mutual Loss Prevention Data Sheet 1-49. Refer to Division 06100 for acceptable fasteners for wood product attachments.
- P. Except when instructed otherwise, immediately remove demolished material from site as work progresses. There shall not be any stock piling of roof removal materials on any roof section. All roofing removal materials shall be removed from the roof each day. All roofing debris is to be disposed in a state approved landfill. At the end of the reroofing project, documentation of each trash bin disposal shall be submitted to the Owner's Representative for verification of proper disposal.
- Q. Remove and properly dispose of contaminated, vermin infested, or dangerous materials encountered.
- R. Do not burn or bury materials on site.
- S. Clean up debris daily, both on the roof and around the facility grounds. Leave site in clean condition each day.

### **3.03 MODIFICATIONS TO EXISTING MECHANICAL AND ELECTRICAL ITEMS**

- A. When required to achieve recommended clearances, minimum curb heights, or other modifications, disconnect, modify, and reconnect mechanical and electrical services, contractor shall coordinate all work with the and licensed electrical / mechanical contractor.
- B. Do not disrupt any services unless specifically approved by Owner's Representative and on-site personnel.
- C. Restore services and verify proper operational conditions to satisfaction of Owner's Representative.

### **3.04 MODIFICATIONS TO EXISTING ROOF DRAINS AND PLUMBING**

- A. Examine areas to receive new roofing system; prior to starting reroofing project. Roofing contractor shall note the existing height of the existing roof drain bowls regarding the new roofing insulation thickness.
- B. Where required to achieve a roof drain bowl height to match the total insulation thickness, the roofing contractor shall be responsible for raising or lowering the drain bowl and / or associated piping to achieve a smooth transition from the flat stock / tapered insulation to the roof's drain bowl. Any modifications, disconnect, modify, and reconnecting the roof drain / plumbing services, contractor shall coordinate all work with St. Louis Public Library approved licensed mechanical contractor.
- C. Do not disrupt any services unless specifically approved by St. Louis Public Library Representative.
- D. Restore services and verify proper operational conditions to satisfaction of St. Louis Public Library Representative.

### **3.05 TEMPORARY ROOFING TERMINATIONS AND PROTECTION**

- A. Prior to starting roofing project, the roofing contractor shall inspect the facility existing roof area(s) associated with the contract roofing project for any defects which could cause water or moisture vapor entries into the building during the roofing application. Any defects or concerns shall be address in writing to the St. Louis Public Library representative prior to starting the roofing project. Proceeding with the roofing project indicates the roofing contractor's acceptance of the existing facility conditions.
- B. For existing roof areas where access is absolutely required for the installation of the new roofing system on another roof area, the roofing contractor shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent roof areas. A suitable temporary protective surface shall be provided for all roof areas which receive traffic during construction of the new roofing system. During the roofing project, any damage which occurs to the new or existing roofing membrane and/or system shall be removed and replaced at the contractor's expense.
- C. The roofing contractor shall provide the labor and materials required to always maintain a watertight and impermeable condition on the roof areas as referenced in the project's contract documents. All membrane and metal flashings shall be installed concurrently with the field membrane installation to maintain a 100% watertight condition as the work progresses each day. For freezer applications, all equipment and piping flashings, perimeter flashings, i.e. metal edge and coping, must be 100% completed and must be 100% airtight to prevent any air/water vapor infiltration into the completed roofing system each day.
- D. When an interruption or a postponement in the roofing work occurs in the installation of the roofing system, the roofing contractor shall install temporary watertight and hermetic terminations across the installed roofing system. The roofing system shall be 100% impermeable to prevent water and air/water vapor infiltration into or under the new roofing system. When work resumes, any contaminated membrane shall be removed from the work area and disposed off site. None of these materials shall be reused in the new work.
- E. During inclement weather or during a postponement in the roofing work occurs while a temporary water stops or terminations are in place, the contractor shall provide the labor and materials to monitor and ensure the temporary water stops and terminations are 100% watertight and impermeable condition.
- F. If any weather-related moisture or the result of moisture caused by the condensation of water vapor are allowed to enter into the newly completed Roofing System, the affected roof area(s) shall be removed and replaced at the contractor's expense.

### **3.06 QUALITY CONTROL – PERFORMANCE OF INSTALLATION**

- A. Roofing Contractor to assign a qualified, full, non-working Quality Control Supervisor to be on Project site at all times during installation of Work. This supervisor is to have good communication skills and be able to communicate with the Owner Representative and with Contractor's Employees.
- B. Roofing Contractor to assign a qualified, full, non-working Quality Control Supervisor to inspect all installed Work, particularly roofing tie-ins, at the end of each working day, and as otherwise required ensuring watertightness. Inspection to be verified by signature on the Contractor's Quality Assurance Form signifying installation is in accordance with specified requirements for "that" day of installation.

### **3.07 CLEANING**

- A. Clean work under provisions of Section 07540.
- B. Contractor will be responsible for all cleaning of occupied or work areas when soiled or polluted by Work or operations of the roofing project.

**END OF SECTION 07590**

## SECTION 07600 - SHEET METAL FLASHING AND TRIM

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Section Includes:
  - 1. Flashings and counterflashings, gutters and downspouts, metal coping, metal edge and fabricated sheet metal items.
  - 2. Splash pads
  - 3. Sheet metal accessories
- B. Related Documents: The Contract Documents apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other Documents.

#### 1.02 RELATED SECTIONS

- A. Section 06100 - Carpentry (for Roofing): Wood blocking, nailers, and grounds.
- B. Section 07540 - Membrane Roofing.
- C. Section 07900 - Joint Sealers (for Roofing).

#### 1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
  - 2. A653 - Steel Sheet, Zinc Coated, (galvanized) by the Hot-Dip process, Structural (Physical) Quality Property.
  - 3. A924 - Steel Sheet, Zinc Coated, (galvanized) by the Hot-Dip process.
- B. Federal Specifications (FS):
  - 1. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.
  - 2. Q-F-506 - Flux, Soldering, Paste and liquid.
  - 3. QQ0L-201F - Lead Sheet.
  - 4. QQ-S-571 - Solder, Tin Alloy
- C. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
- D. Sheet Metal and Air Conditioning Contractor's National Association (SMACNA): Architectural Sheet Metal Manual.

#### 1.04 SYSTEM DESCRIPTION

- A. Work of this Section is to physically protect membrane roofing, base flashings, and expansion joints from damage that would permit leakage to building interior.

#### 1.05 SUBMITTALS

- A. Submittal Procedures: Procedures for submittals.
  - 1. Product Data: Provide data on prefabricated components.
  - 2. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
  - 3. Samples: Provide full sized sample of metal flashing illustrating typical seam, external corner, internal corner, material, and finish.
  - 4. Submit color chart or physical samples for selection of prefinished metal color by the Owner.
  - 5. Assurance/Control Submittals:
    - a. Certificates: Manufacturer's certificate that Products meet or exceed specified requirements.

- b. Qualification Documentation: Submit documentation of experience indicating compliance with specified qualification requirements.

## **1.06 QUALITY ASSURANCE**

- A. Standards: Comply with latest edition of standards specified in this section and as referenced below:
  - 1. ANSI/SPRI ES -1
  - 2. Architectural Sheet Metal Manual, Sheet Metal and Air Conditioning Contractors
  - 3. The NRCA Roofing and Waterproofing Manual, Latest Edition - National Roofing Contractors Association
  - 4. Published installation from manufacturers of selected products.
  - 5. Annual Book of ASTM Standard, Latest Edition - ASTM International
- B. Qualifications:
  - 1. Fabricator: Company specializing in manufacturing Products specified with minimum 3 years documented experience.
  - 2. Installer: Company specializing in performing the Work of this Section with minimum 3 years documented experience. Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and methods needed for proper performance of the work in this section.

## **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Product Requirements: Transport, handle, store, and protect Products.
- B. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- C. Prevent contact with materials during storage and installation that may cause discoloration, staining, or damage.

## **1.08 WARRANTY**

- A. All new materials and workmanship provided under this section of the specifications shall be guaranteed in writing by the Contractor to maintain all sheet metal flashing in a watertight condition without cost to the Owner for a period of five years after date of substantial completion.

# **PART 2 PRODUCTS**

## **2.01 MATERIALS**

- A. Aluminum Sheet: ASTM B209, 3004 alloy, 0.040 inch thick.
- B. Galvanized Steel: ASTM A 653, Grade A, G90, 24-gauge minimum core steel.
- C. Lead: FS QQ-L-201F, 4-lb/sq ft and 2-1/2-lb/sq ft.
- D. Pre-Finished Galvanized Steel: ASTM A 653, Grade A, G90, 24 gauge minimum core steel, exposed face pre-finished with fluorocarbon type coating (Kynar<sup>7</sup> 500), color as selected by Owner's Representative from manufacturer's standard sections; unexposed face finished with manufacturer's standard primer; manufactured by Centria; PAC-CLAD; or MBCI. Protect finish with factory applied plastic film.
- E. Copper: ASTM B 370, cold rolled temper, commercially pure alloy 110; minimum 16 ounces per foot.
- F. Stainless Steel: ASTM A 167, Type 302/304, soft temper, 24-gauge minimum, No. 2B finish.
- G. Where sheet metal is required and material or gauge is indicated on the drawings, provide the highest quality and gauge commensurate with the referenced standards.

- H. Contractor shall use gauges or thickness listed in the referenced standards for specific girths.
- I. Continuous clip shall be fabricated with material one gauge heavier than connecting.

## **2.02 COMPONENTS**

- A. Counter and Slip Flashings, Base and Cover Plates, End Caps, Joint Fasteners, and Gravel Stop: Profiled as indicated and to suit existing conditions.
- B. Downspouts: Rectangular profile; fabricated from Pre-Finished Galvanized Steel.
- C. Counter and Slip Flashings, Base and Cover Plates, End Caps, Joint Fasteners, and Gravel Stops, Scupper Sleeves and Boxes: Profiled as indicated and to suit existing conditions.
- D. End Caps, Downspout Outlets, Gutter and Downspout Support Brackets and Straps, Joint Fasteners, Gutters, Downspout Strainers, Downspout Header, and Scupper Boxes: Profiled to suit gutters and downspouts.

## **2.03 FASTENERS**

- A. Manufacturers:
  - 1. Construction Fasteners, Inc.
  - 2. Hilti
  - 3. OMG
  - 4. Powers
  - 5. Simplex
- B. Fasteners and Anchorage Devices: Comply with SMACNA requirements, unless otherwise indicated.
  - 1. Appropriate for purpose intended, approved by Factory Mutual where required.
  - 2. Rust-resistant and compatible with materials to be joined.
    - a. Ferrous Metals: Stainless steel, finish of exposed fasteners same as flashing metal.
    - b. Rivets: Stainless steel (rivet and mandrel), Series 44.
  - 3. Length: As required for thickness of material to penetrate substrate ½-inch minimum.
  - 4. Exposed Fasteners: Provide metal-jacketed neoprene washers, jacket color to match pre-finished sheet metal.
- C. Mechanical Fasteners for Sheet Metal to Substrate Anchorage:
  - 1. Masonry: One-step, screw-type drive anchor (nailing); heat-treated, stress relieved, stainless steel pin; zinc jacketed; sized for intended application; minimum 1-1/4-inch length x ¼-inch diameter; Hammer-Screw® manufactured by Powers Fasteners, Inc.
  - 2. Wood Blocking: Hexagonal head screws, stainless steel, with neoprene rubber washers with jacket color to match pre-finished sheet metal.
  - 3. Concrete: Same as masonry or other power actuated fasteners, suitable for application.
- D. Roofing Nails: Hot-dipped galvanized or non-ferrous type, with annular rings, size as required to suit application, minimum 11-gauge with 3/8-inch diameter head.
- E. Mechanical Fasteners for Sheet Metal to Metal Fabrications (Support Framing) Anchorage: Appropriate for purpose intended, size as required to suit application and achieve positive anchorage to substrate material.

## **2.04 ACCESSORIES**

- A. Solder: FS QQ-S-571, 50/50 type.
- B. Flux: FS O-F-506.
- C. Metal Primer: Zinc-rich, or Zinc Chromate, compatible with metal and substrate material.
- D. Reglets/Receivers: Surface mounted or recessed pre-finished steel, face and ends covered with plastic tape.

- E. Downspout Supports: Brackets; Pre-Finished Galvanized Steel.
- F. Sealant: As specified in Section 07900.
  - 1. Metal Contact: Type I.
  - 2. Pitch Pan Filler: Type II.
- F. Vent Pipe, Piping, and Electrical Conduit Flashings: Preformed membrane pipe flashings, minimum height above roof: 8 inches.
- G. Roof Drain Flashings: Membrane flashing extended minimum 36-inches beyond drain bowl in all directions.
- H. Aluminum Tape: Pressure sensitive aluminum tape, approved by membrane manufacturer.
- I. Fiberglass reinforced membrane manufactured by membrane manufacturer.

## 2.05 FABRICATION

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.
  - 1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
  - 2. Obtain field measurements for accurate fit before shop fabrication.
  - 3. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
  - 4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.
- B. Form all sheet metal sections and components (except corners) in longest practical length up to 10-feet maximum, true to shape, accurate in size, square, and free from distortion or defects detrimental to appearance or performance.
- C. Fabricate continuous cleats and starter strips of same material as sheet, interlocking with sheet.
- D. Form pieces in longest possible lengths.
- E. Hem exposed edges on underside ½-inch, miter, and seam corners.
- F. Form all sheet metal material to provide watertight joints. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
  - 1. Unprotected Horizontal Surface (expansion joint covers, etc.) Standing seam or drive cleat joints.
  - 2. Vertical Surfaces (copings, cap flashings, etc.): Flat lock or cover and backer plate seams.
- G. Fabricate corners on all sheet metal components (copings, cap flashings, etc.) to form one piece with minimum 18-inch and maximum 36-inch long legs.
- H. Prefabricate all sheet metal accessory components (pitch pans, utility sleeves, umbrellas, etc.) as much as practical.
- I. Gutter and Downspouts: Form in sections from minimum Pre-Finished 24-gauge sheet metal with all required special pieces and accessories. Owner's Representative shall select gutter and downspout color from manufacturer's standard color. Gutter and downspouts shall be form to the profiles and sizes accord to SMACNA requirements. All downspout openings will have mechanically attached screens installed over each one to ensure debris and foreign objects do not block the downspouts.
- J. Fabricate downspout accessories, solder watertight.
- K. Miter all sheet metals corners and solder, weld, tape, or fasten and seal all joints watertight:

1. Pre-finished Galvanized Steel: Apply minimum ¼-inch bead of sealant between connecting metal flanges and drill and fasten with rivets at 2-inches on center.
  2. Unfinished Galvanized Steel: Solder joints watertight.
    - a. After soldering, remove flux. Wipe and wash solder joints clean.
  3. Install sealant so it will not be visible on outside of joints.
- L. Fabricate elements complete with required connection pieces.
- M. Fabricate all components with allowance for expansion at joints. Provide enlarged or oval holes at all piercing fasteners.
- N. Fabricate all components, i.e. coping cap, with horizontal (flat) surfaces with built-in slope for drainage toward roof unless indicated otherwise.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verification of Conditions: Verify that field measurements, surfaces, substrates, and conditions are as required, and ready to receive Work.
1. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
  2. Verify roofing termination and base flashings are in place, sealed, and secure.
- B. Report in writing to Owner's Representative prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.
- C. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the Owner.

### **3.02 PREPARATION**

- A. Field measure site conditions prior to fabricating Work. Contractor shall be responsible for all dimensions for all sheet metal applications and installations.
- B. Apply manufacturer's approved protective backing paint, to a minimum dry film thickness of 15-mil, on surfaces in contact with dissimilar materials.

### **3.03 INSTALLATION - VARIOUS SHEET METAL COMPONENTS**

- A. Install starter and edge strips, and cleats before starting installation.
- B. Install reglets and / or receivers on vertical surfaces to receive counterflashings.
1. Sawcut new reglets where required.
    - a. Install receiver component and anchor with lead wedges at 12-inches on center.
    - b. Provide bayonet style lap joints, minimum 4-inch overlap.
    - c. Fill voids between wedges with backer rod.
    - d. Seal receiver to vertical face of wall.
  2. Install surface mounted reglets true to lines and levels.
    - a. Fasten to substrate with neoprene head screws at 12-inches on center maximum.
    - b. Seal top of reglets with sealant.
- C. Insert flashings into reglets or receivers to form tight fit. Apply ¼-inch bead of sealant and lap sheet metal minimum 4-inches.
1. Reglets: Secure in place with plastic wedges at maximum 6-inches on center.



2. Receivers: Secure in place with neoprene head screws at maximum 12-inches on center.
  3. Seal flashings into reglets with sealant.
- D. Secure flashings in place using concealed fasteners. Use exposed fasteners only in locations approved by Owner's Representative.
- E. Metal coping shall be secured to the parapet with a continuous metal cleat. The 22 gauge metal cleat shall be secured with appropriate concrete fastener, spaced 12 inches on center, to both sides of the parapet wall.
- F. Fit flashings tight in place. Make corners square surfaces true and straight in planes and lines accurate to profiles.
- G. Provide minimum 6-inch wide backer and corner plates at copings. Fit to ensure complete and permanent watertight seal of joints.
1. Apply ¼-inch bead of sealant between each layer of metal at each edge.
  2. Corner and Backer Plates: Secure with the Backer Plates by using appropriate fasteners and securing to the parapet wall.
  3. Cover Plates: Hook front or exposed face of cover plate over drip edge; and enclosing or clamping interior seam to the metal coping drip edge.
  4. Do not use mastic between sheet metal components.
- H. Where indicated in project drawings, provide perimeter metal edging form stainless steel metal. Fabricate the metal edge to match existing metal edge configuration. The perimeter metal joints are to have ¼ inch spacing; to have a 2-inch wide aluminum tape apply over the joint;
- I. Provide metal scuppers form from the at all roof scuppers. Contractor to verify scupper dimension prior to fabrication of the metal scuppers.
- J. Lock and seal all sheet metal joints watertight.
- K. Install pre-fabricated vent pipe flashing.
- L. Install membrane flashings at all roof drains.
- M. Provide Stainless Steel Rain Hoods and Umbrellas at all hot stacks, hot pipe penetrations, and at insulated pipe penetrations.
- N. **Pitch pans are not desired.** Construct pitch pans from stainless steel metal. For PVC alternate: Construct pitch pans from PVC covered clad metal. Install only where specifically indicated or approved by Owner's Representative. Provide flanged umbrellas at all pitch pans.
1. Fill with non-shrink group to 1-inch from top of flange.
  2. Top with Pitch Pan Filler - Sealant Type II.
- O. Protect all membrane penetrations as indicated and as recommended in SMACNA and NRCA manuals.

### 3.04 SCHEDULE - MATERIALS

- A. Exposed to View Components:
1. Through Wall Scuppers: Kynar Coated
  2. Scupper Face Plate: Prefinished galvanized steel.
  3. Metal Coping and associated components: Prefinished galvanized steel.
  4. Perimeter Metal Edge: Match existing color.
  5. Wrap downspout straps and other heavy gauge materials with prefinished galvanized steel.
- B. Concealed Components, (Counterflashings, Etc.): Unfinished 24 gauge galvanized steel.
- C. Drip Pans Accessories: Stainless steel



- D. Rain Hoods and Umbrellas: Stainless steel.

### **3.05 SCHEDULE - MINIMUM STEEL THICKNESS**

- A. Metal Copings, Metal Coping Caps and Counterflashing: ASTM A 653, Grade A, G90, 24 gauge minimum core steel.
- B. Perimeter Metal Fascia: ASTM A 653, Grade A, G90, 24 gauge minimum core steel.
- C. Rain Hoods and Umbrellas: Stainless Steel 24-gauge.
- D. Hook Cleats: 22-gauge.

### **3.06 TESTING AND ADJUSTING**

- A. Test all modified, relocated, and new systems and equipment.
- B. Correct all deficiencies identified, including replacement of parts and components when required.
- C. Adjust all Products and equipment to ensure proper operation and function.

### **3.07 CLEANING**

- A. Clean work.
- B. Clean Owner occupied areas when soiled by Work or operations of this Division.

**END OF SECTION 07600**



## **SECTION 07700 - NON-PENETRATING, ROOFTOP PIPE SUPPORTS**

### **PART 1: GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Rooftop pipe supports for small pipes or conduits.

#### **1.02 RELATED SECTIONS**

- A. Division 7 – Thermoplastic Roofing

#### **1.03 SYSTEM DESCRIPTION**

- A. System design to support rooftop pipes with an engineered prefabricated support designed for installation without roof penetrations or other features to damage the single ply roof system.

#### **1.04 SUBMITTALS**

- A. Provide specification and data sheet.
- B. Shop Drawings: Show installation layout including sizes and spacing.
- C. Verification Samples: Actual samples of each size of support.

#### **1.05 DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials to project site in manufacturer's original packaging, marked with manufacturer's name, product model names and catalog numbers, identification numbers and other related information.
- B. Store materials under cover until needed.

### **PART 2: PRODUCTS**

#### **2.01 MANUFACTURER**

- A. Acceptable Manufacturer:
  - 1. Micro Industries, Inc., 844 South 430 West, Suite 100, Heber City, UT. 800-768-6978.
  - 2. MAPA Products, 103 W CJ Wise Parkway, Naples, Texas. 877-897-2371
  - 3. Owner Approved Equal

#### **2.02 MATERIALS**

- A. Pipe Support shall have the following characteristics:
  - 1. Capable of supporting gas piping and electrical conduit up to a diameter size of 4 inches.
- B. Acceptable Product:
  - 1. Micro Industries, Inc. Model No. 3-RAH-7
  - 2. MAPA product number – MS-3RA7.

## **PART 3: EXECUTION**

### **3.01 PREPARATION**

- A. The contractor will confirm the correct size supports have been chosen for the size of pipe to support.  
**(St. Louis Public Library preferred vendor for installation of all new pipe supports and other allied components associated with pipe penetrations.)**

### **3.02 INSTALLATION**

- A. Install the supports in accordance with St. Louis Public Library specifications.
- B. Pipe Supports shall be installed at all locations where existing piping or electrical conduit runs across the roof area that are presently mounted on wood blocking.
- C. Contact roof system manufacturer as to requirements of separator sheet between pipe support and the installed roof system. Dead wood blocking shall be installed within the roofing system when weight of the supports exceeds recommend weight loads of the specified polyisocyanurate insulation.
- D. Pipe Support placement recommendations.
  - 1. The following are to be used as minimum recommendations. For specific requirements, the installer should consult a structural engineer.
  - 2. For pipe diameters of 1 ½" to 5" – space supports at a maximum distance of 8' apart.
  - 3. For pipe diameters less than 1 ½" – space supports at a maximum distance of 10' apart.
  - 4. Along with the above noted spacing recommendations, one additional support should be placed at every union and source and along with one at side of junctions.

**END OF SECTION 07700**

**SECTION 07723- ROOF HATCH RAIL SYSTEM**  
**(BILCO TYPE BIL-GUARD 2.0)**

**PART 1 - GENERAL**

1.1 SUMMARY

- A. Work Included: Provide factory-fabricated fixed hatch railing system.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data.
- B. Shop Drawings: Submit shop drawings including profiles, accessories, location, adjacent construction interface, and dimensions.
- C. Warranty: Submit executed copy of manufacturer's standard warranty.

1.3 QUALITY ASSURANCE

- A. Manufacturer: A minimum of 5 years experience manufacturing similar products.
- B. Installer: A minimum of 2 years experience installing similar products.
- C. Manufacturer's Quality System: Registered to ISO 9001 Quality Standards including in-house engineering for product design activities.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in manufacturer's original packaging. Store materials in a dry, protected, well-vented area. Inspect product upon receipt and report damaged material immediately to delivering carrier and note such damage on the carrier's freight bill of lading.

1.5 WARRANTY

- A. Manufacturer's Warranty: Provide manufacturer's standard warranty. Materials shall be free of defects in material and workmanship for a period of five years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge.

**PART 2 - PRODUCTS**

2.1 MANUFACTURER

- A. Basis-of-Design Manufacturer: Type Bil-Guard® 2.0 Roof Hatch Railing System by The BILCO Company, P.O. Box 1203, New Haven, CT 06505, 800-366-6530, Fax: 1-203-535-1582, Web: [www.bilco.com](http://www.bilco.com).

## 2.2 HATCH RAIL SYSTEM

- A. Furnish and install where indicated on plans hatch rail system Model [insert RL2-S; RL2-NB; RL2-L; RL2-E; RL2-F, RL2-SS, RL2-D]. The hatch rail system shall be field assembled and installed (by others) per the manufacturer's instructions.
- B. Performance characteristics:
  - 1. High visibility safety yellow powder coat paint finish (*other colors available as a special order*).
  - 2. Hatch rail system shall attach to the capflashing of the roof hatch and shall not penetrate any roofing material.
  - 3. Hatch rail system shall satisfy the requirements of OSHA 29 CFR 1910.29 and shall meet OSHA strength requirements with a factor of safety of two.
  - 4. Corrosion resistant construction with a five-year warranty.
  - 5. Hinged gate shall ensure continuous barrier around the roof hatch.
  - 6. Self-closing gate hinge and positive latching system provided with hatch rail system.
- C. Posts and Rails: 1-1/4" (32mm) 6061 T6 schedule 40 aluminum pipe
- D. Hardware: Mounting brackets shall be 3/8" (9mm) thick extruded aluminum. Pivoting post guides with compression fittings and latching mechanism shall be cast aluminum. Self-closing hinges and all fasteners shall be type 316 stainless steel.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and openings for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Install products in strict accordance with manufacturer's instructions and approved submittals. Locate units level, plumb, and in proper alignment with adjacent work.
  - 1. Test units for proper function and adjust until proper operation is achieved.
  - 2. Repair finishes damaged during installation.
  - 3. Restore finishes so no evidence remains of corrective work.

### 3.3 ADJUSTING AND CLEANING

- A. Clean exposed surfaces using methods acceptable to the manufacturer which will not damage finish.

## END OF SECTION

## SECTION 07900 - JOINT SEALERS (FOR ROOFING)

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Section Includes:
  - 1. Preparing sealant substrate surfaces.
  - 2. Sealant and backing.
- B. Related Sections:
  - 1. The Contract Documents apply to the Work of this Section.
  - 2. Section 07540 - Membrane Roofing: Application and locations for sealants used in conjunction with roofing.
  - 3. Section 07600 - Flashing and Sheet Metal: Sealants used in conjunction with metal flashing for roofing.

#### 1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM C920 - Specification for Elastomeric Joint Sealants.
  - 2. ASTM D1056 - Flexible Cellular Material- Sponge or Expanded Rubber.
  - 3. ASTM D1565 - Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Open Cell Foam).
- B. Federal Specifications (FS):
  - 1. TT-S-00227- Sealing Compound, Rubber Base, Polyurethane, Two Component.
  - 2. TT-S-002330 - Sealing Compounds, Synthetic - Rubber Base, Single Component.
  - 3. TT-S-00230C - Sealing Compound, Silicone, Single Component.
  - 4. FS TT-S-1657 - Sealing Compound, Single Component Butyl Rubber Based Solvent Release Type (for Buildings and other Types of Construction).

#### 1.03 SYSTEM DESCRIPTION

- A. System performance to achieve moisture and air tight joint seals.

#### 1.04 SUBMITTALS

- A. Submittals: Procedures for submittals.
  - 1. Product Data: Product chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
  - 2. Product List: Submit list of proposed Products and manufacturers, including all items specified in Part 2 - Products or otherwise required by the Work.
  - 3. Assurance/Control Submittals:
    - a. Certificates: Manufacturer certificate that components and Products meet or exceed specified requirements.
    - b. Qualification Documentation: Sealant installer documentation of experience indicating compliance with specification qualification requirements.
  - 4. Samples: Submit full range of colors available for each selected product.
  - 5. Manufacturer's Installation Instructions: Induced substrate preparation requirements, special precautions and installation temperature range.

#### 1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing Work of this Section with minimum 3 years documented experience.
- B. Perform work in accordance with SWRI (Sealant, Waterproofing and Restoration Institute) requirements for materials and installation.



- C. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

#### **1.06 DELIVERY, STORAGE AND HANDLING**

- A. Product Requirements: Transport, handle, store, and protect products.
- B. Deliver Products in manufacturer's original unopened containers or packages with labels intact, identifying product and manufacturer, date of manufacture, lot number, shelf life, curing time, and mixing instructions, where applicable.
- C. Store and handle materials to prevent deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

#### **1.07 PROJECT CONDITIONS OR SITE CONDITIONS**

- A. Environmental Requirements: Install sealant during manufacturer's recommended temperature ranges and weather conditions for application and cure. Consult manufacturer when sealant cannot be applied during recommended conditions.

#### **1.08 WARRANTY**

- A. Closeout Submittals: See procedures for closeout submittals.
- B. Warranty:
  - 1. Submit written warranty signed by sealant manufacturer agreeing to replace sealants and accessories which fail because of loss of cohesion or adhesion or which do not cure.
  - 2. Warranty Period: 5 years.

### **PART 2 PRODUCTS**

#### **2.01 BUILDING SEALANTS (See Sealant Schedule at the end of this Section for specific use of sealants.)**

- A. Urethanes:
  - 1. Two-Part Urethane (Type I Sealant): Self-Leveling, ASTM C920, Type M, Grade P, Class 25.
    - a. Chem-Calk CC-550, by Bostik.
    - b. Vulkem 245, by Mameco.
    - c. Vulkem 255, Wide-Joint, by Mameco.
    - d. NR-200 Urexpam, by Pecora Corporation.
  - 2. Two-Part Urethane (Type II Sealant): Non-Sag, ASTM C920, Type M, Grade NS, Class 25.
    - a. Chem-Calk 500, by Bostik.
    - b. Vulkem 227, by Mameco.
    - c. Dynatrol II, by Pecora Corporation.
  - 3. One-Part Urethane (Type I Sealant): Self-Leveling, ASTM C920, Type S, Grade P, Class 25.
    - a. Vulkem 45, by Mameco.
    - b. Urexpam NR-201, by Pecora Corporation.
  - 4. One-Part Urethane (Type II Sealant): Non-Sag, ASTM C920, Type S, Grade NS, Class 25.
    - a. Chem-Calk 900, by Bostik.
    - b. Vulkem 116, by Mameco.
- B. Butyls:
  - 1. One-Part Butyl, Non-Sag, FS TT-S-1657.
    - a. Chem-Calk 300, by Bostik.
    - b. BC-158 Butyl Rubber, by Pecora Corporation. (ASTM C1085)
- C. Modified-acrylic:
  - 1. A two-component, solvent- and styrene-free, modified-acrylic anchoring adhesive.

D. Preformed Compressible & Non-Compressible Fillers:

1. Backer Rod - Closed cell polyethylene foam:
  - a. HBR Backer Rod, by Nomaco.
  - b. #92 Greenrod, by Nomaco.
  - c. Sonofoam Closed-Cell Backer Rod, Sonneborn Building Products, ChemRex Inc.
2. Backer Rod - Open cell polyurethane foam:
  - a. Denver Foam, by Backer Rod Mfg. Inc.
  - b. Foam Pack II, by Nomaco.
3. Neoprene compression seals:
  - a. WE, WF, and WG Series, by Watson Bowman & Acme Corp.
  - b. Will-Seal 150 Precompressed Expanding Foam Sealants, by Will-Seal, a Division of Illbruck.
4. Butyl Rod: Kirkhill Rubber Co. (714) 529-4901.

E. Bond Breaker Tape: Polyethylene tape of plastic as recommended by sealant manufacturer, to be applied to sealant-contact surfaces where bond to substrate of joint filler must be avoided for proper performance of sealant.

## **2.02 COLORS**

- A. Generally use sealant colors matching color of material joint is located in.
- B. Where a joint occurs between two materials of differing colors and Contractor cannot determine which material to match, contact Owner's Representative for selection.

## **2.03 ACCESSORIES**

- A. Joint Cleaner: Provide type of joint cleaning compound recommended by sealant manufacturer for joint surfaces to be cleaned.
- B. Primer: Non-staining type as recommended by sealant manufacturer.
- C. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suite application.
- D. Masking tape and similar accessories to protect surfaces from damage.

# **PART 3 EXECUTION**

## **3.01 EXAMINATION**

- A. Execution Requirements: Verification of existing conditions before starting work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.
  1. Verify that joint widths are in conformance with sealant manufacturer allowable limits.
  2. Verify that contaminants capable of interfering with adhesion have been cleaned from joint and joint properly prepared.
- C. Report in writing to Owner's Representative prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.
- D. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the Owner.



### **3.02 PREPARATION**

- A. Prepare and size joints in accordance with manufacturer's instructions. Clean substrates of dirt, laitance, dust, or mortar using solvent, abrasion, or sandblasting as recommended by manufacturer. Remove loose materials and foreign matter, which might impair adhesion of sealant.
- B. Verify that joint backing and release tapes are compatible with sealant. Verify sealant is suitable for substrate. Verify that sealant is paintable if painted finish is indicated.
- C. Protect materials surrounding work of this Section from damage or disfiguration.

### **3.03 INSTALLATION**

- A. Install sealant in accordance with manufacturer's published instructions. Perform work in accordance with ASTM C804 for solvent release sealants.
- B. Prime or seal joint surfaces where recommended by sealant manufacturer. Do not allow primer or sealer to spill or migrate onto adjoining surfaces.
- C. Install backer rod and bond breaker tape as indicated project drawings and where required by manufacturer.
- D. Install preformed compressible and non-compressible fillers in accordance with manufacturer's published instructions.
- E. Install sealants to depths recommended by sealant manufacturer in uniform, continuous ribbons free of air pockets, foreign embedded matter, ridges, and sags, "wetting" joint bond surfaces equally on both sides.
- F. Tool joints concave unless shown otherwise. Where horizontal joints are between a horizontal surface and a vertical surface, fill joint to form slight cove so that joint will not trap moisture and foreign matter. Dry tool joints. Do not use soap, water, or solvent to tool joints.

### **3.04 CURING**

- A. Cure sealants in compliance with manufacturer's published instructions.

### **3.05 CLEANING**

- A. Remove excess and spillage of sealants promptly as the work progresses, using materials and methods as recommended by sealant and substrate manufacturers. Clean adjoining surfaces to eliminate evidence of spillage without damage to adjoining surfaces or finishes.

### **3.06 PROTECTION**

- A. Protect finished installation.
- B. Do not permit traffic over uncured sealant.

### **3.07 SEALANT SCHEDULE**

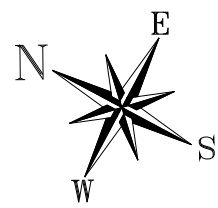
- A. Exterior Joints:
  - 1. Perimeters of exterior openings where frames and other penetrations meet exterior facade of building: precast concrete, brick, CMU, polymer reinforced concrete.
    - a. Sealant No. 2.01 A2
    - b. Sealant No. 2.01 B1 (for prefinished materials only)
  - 2. Expansion and control joints in exterior surfaces of cast-in-place concrete walls, precast architectural wall panels.
    - a. Sealant No. 2.01 A2



- b. Sealant No. 2.01 A4
  - 3. Expansion and control joints in exterior surfaces of unit masonry walls and polymer reinforced concrete, including at metal panels.
    - a. Sealant No. 2.01 A2
    - b. Sealant No. 2.01 A4
  - 4. Coping joints, coping-to-facade joints, cornice and wash, or horizontal surface joints not subject to foot or vehicular traffic.
    - a. Sealant No. 2.01 A2
    - b. Sealant No. 2.01 A4
    - c. Sealant No. 2.01 B1 (for prefinished materials only)
  - 5. Exterior joints in horizontal wearing and non-wearing surfaces.
    - a. Sealant No. 2.01 A1
    - b. Sealant No. 2.01 A3
  - 6. Painted metal lap or flashing joints.
    - a. Sealant 2.01 B1
- B. Flashing and Sheet Metal:
  - 1. Sealant No. 2.01 A3
- C. Parapet Wall – Safety Rail Support:
  - 1. Sealant No. 2.01 C1a
- D. Pitch Pan Filler:
  - 1. Sealant No. 2.01 A4

**END OF SECTION 07900**

1 ROOF PLAN  
SCALE:  $\frac{1}{8}" = 1'$



GROUND LEVEL  
0'-0"

SECTION ELEVATION  
37'-0"

SECTION ELEVATION  
12'-6"

SECTION ELEVATION  
24'-0"

#### LEGEND

	ROOF DRAIN
	DOMED VENTILATOR
	CORE EXTRACTION
	POWER VENT
	PLUMBING VENT
	ROOF HATCH
	EXHAUST FAN
	MASONRY CHIMNEY
	AWNING
	LEAK AREA
	SECTION IDENTIFICATION
	DEMOLITION NOTES
	RENOVATION NOTES

#### SECTION SQ FT

	850 Sq Ft
	200 Sq Ft
	8,153 Sq Ft

LOWER ROOF:

CORE SAMPLE:

- WOOD DECK
- 1.5" PERLITE BOARD
- 2 PLY MODIFIED BITUMEN

UPPER LOWER ROOF:

CORE SAMPLE:

- METAL DECK
- 4.5" TAPERED POLYISO INSULATION
- $\frac{1}{2}$ " PERLITE BOARD INSULATION
- 2 PLY MODIFIED BITUMEN

UPPER MAIN ROOF:

CORE SAMPLE:

- METAL DECK
- LIGHTWEIGHT CONCRETE TAPERED
- TO  $\frac{1}{4}$ "-12"
- 2.5" POLYISO INSULATION
- 2.0" POLYISO INSULATION
- $\frac{1}{2}$ " PERLITE
- 2 PLY MODIFIED BITUMEN MOPPED

DEMOLITION NOTES:

- REMOVE ROOF ASSEMBLY TO LIGHTWEIGHT CONCRETE
- REMOVE ROOF ASSEMBLY TO WOOD DECK
- REMOVE ROOF ASSEMBLY TO STEEL DECK
- SWEEP CLEAN ALL METAL DECK FLUTES
- REMOVE ANY WET/DETERIORATED LIGHTWEIGHT CONCRETE, IF IDENTIFIED
- REMOVE DETERIORATED WOOD DECKING, IF IDENTIFIED
- REMOVE DRAIN FLASHING
- REMOVE ALL MEMBRANE FLASHING
- REMOVE ALL METAL FASCIA COMPONENTS
- REMOVE COUNTERFLASHING AROUND CHIMNEY
- REMOVE ALL COUNTERFLASHING ON ALL WALLS AND WINDOWS

RENOVATION NOTES:

- MECHANICALLY ATTACH  $\frac{1}{2}$ " DENSDECK THROUGH LIGHTWEIGHT CONCRETE INTO METAL DECK
- INSTALL  $\frac{1}{2}$ " DENSDECK MECHANICALLY ATTACHED INTO METAL DECK PANEL W/ 16 FASTENERS PER 4'X8' BOARD
- INSTALL SA BASE PLY MEMBRANE
- PRIME WOOD DECK
- INSTALL 2 LAYERS 2.0" POLYISO ADHERED W/ LOW RISE FOAM ADHESIVE
- INSTALL MECHANICALLY ATTACHED 1.5" POLYISO BOARD
- INSTALL 1.5" POLYISO BOARD ADHERED W/ LOW RISE FOAM ADHESIVE
- INSTALL  $\frac{1}{4}$ "-12" TAPERED POLYISO BOARD ADHERED W/ LOW RISE FOAM ADHESIVE
- INSTALL  $\frac{1}{2}$ " DENSDECK ADHERED W/ LOW RISE FOAM ADHESIVE
- INSTALL 60 MIL FULLY ADHERED PVC SINGLE PLY MEMBRANE
- INSTALL 60 MIL PVC FLASHING AROUND ALL PROJECTIONS
- INSTALL PVC COATED 24 GA. PERIMETER FASCIA AT ALL PERIMETER TERMINATIONS W/ 22 GA. CLEAT
- INSTALL 24 GA. KYNAR COATED COUNTERFLASHING AROUND ALL CURB PROJECTIONS
- INSTALL 4'X4' TAPERED SUMPS AROUND ALL DRAINS
- INSTALL NEW 24 GA. COPING W/ 22 GA. CONTINUOUS CLEAT

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PROJECT NUMBER

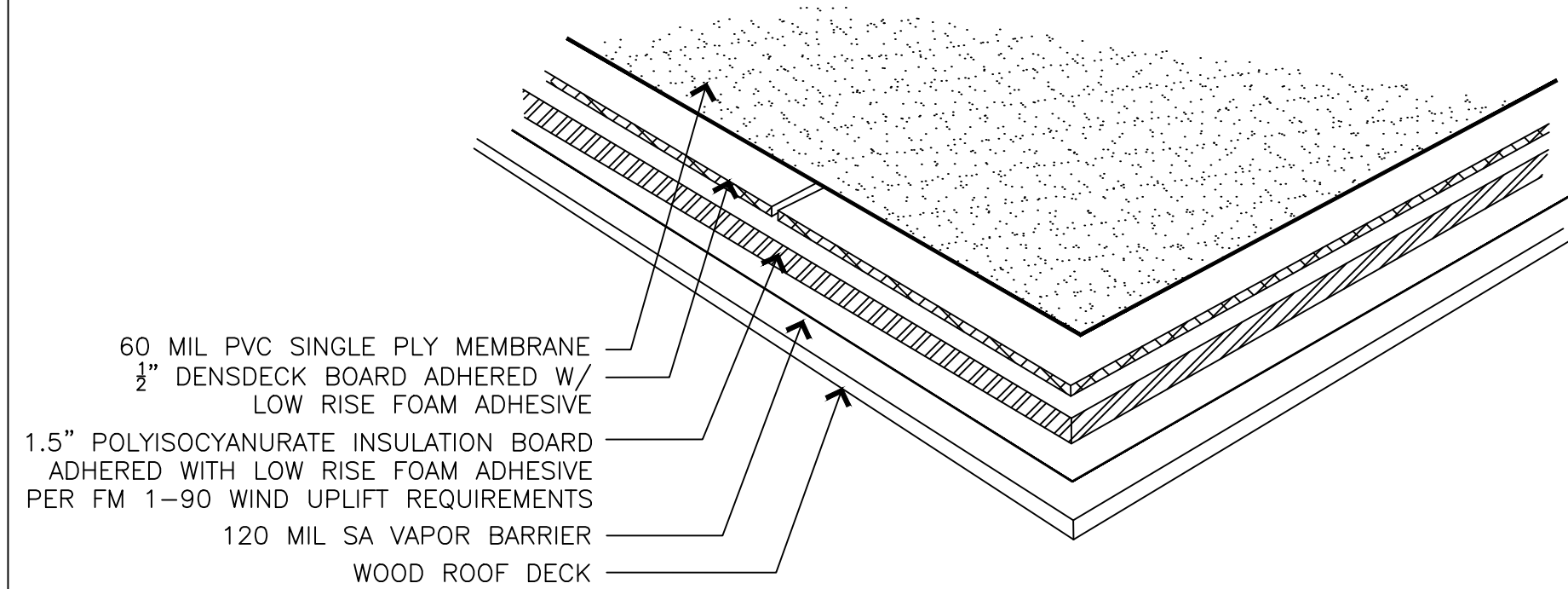
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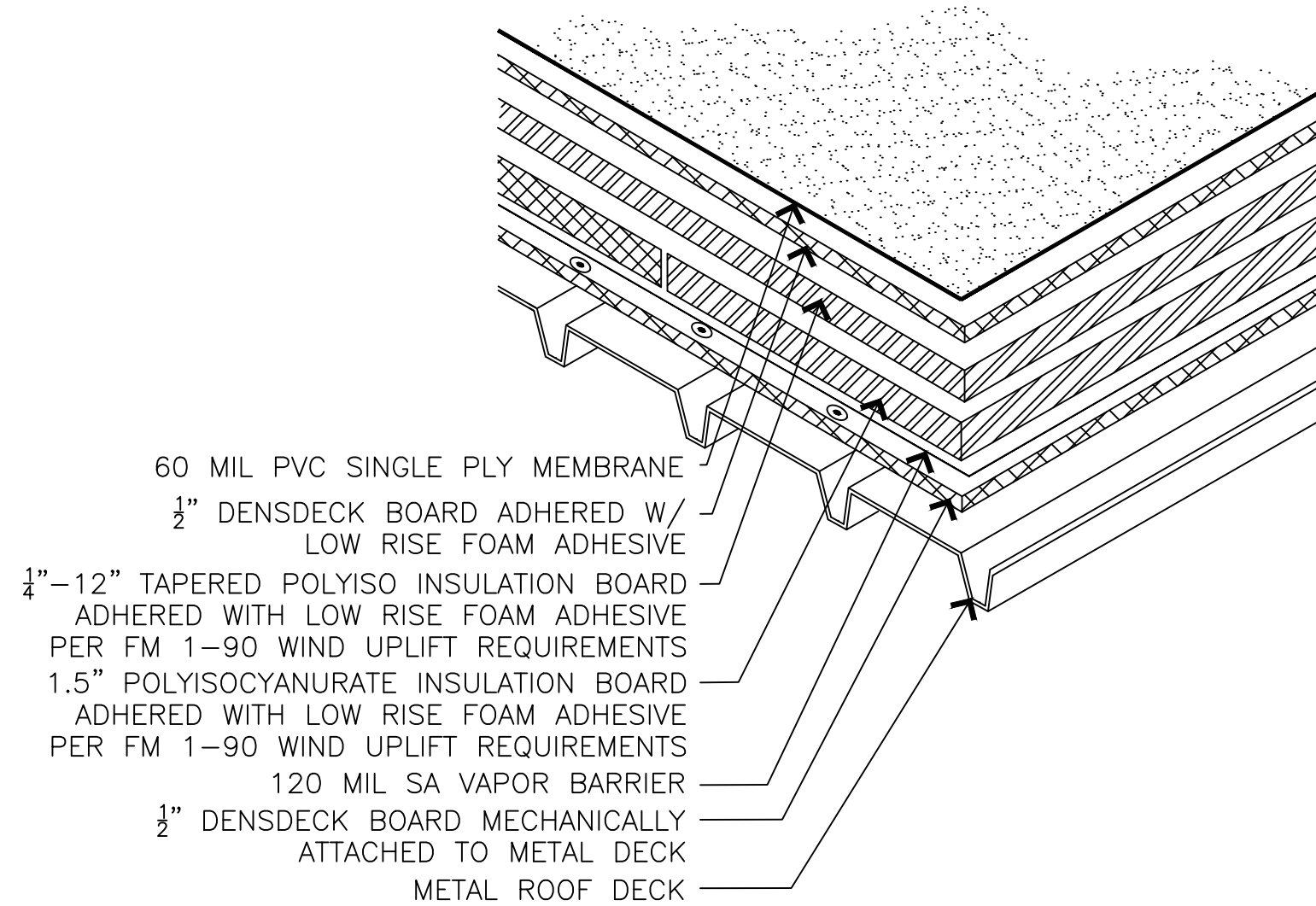
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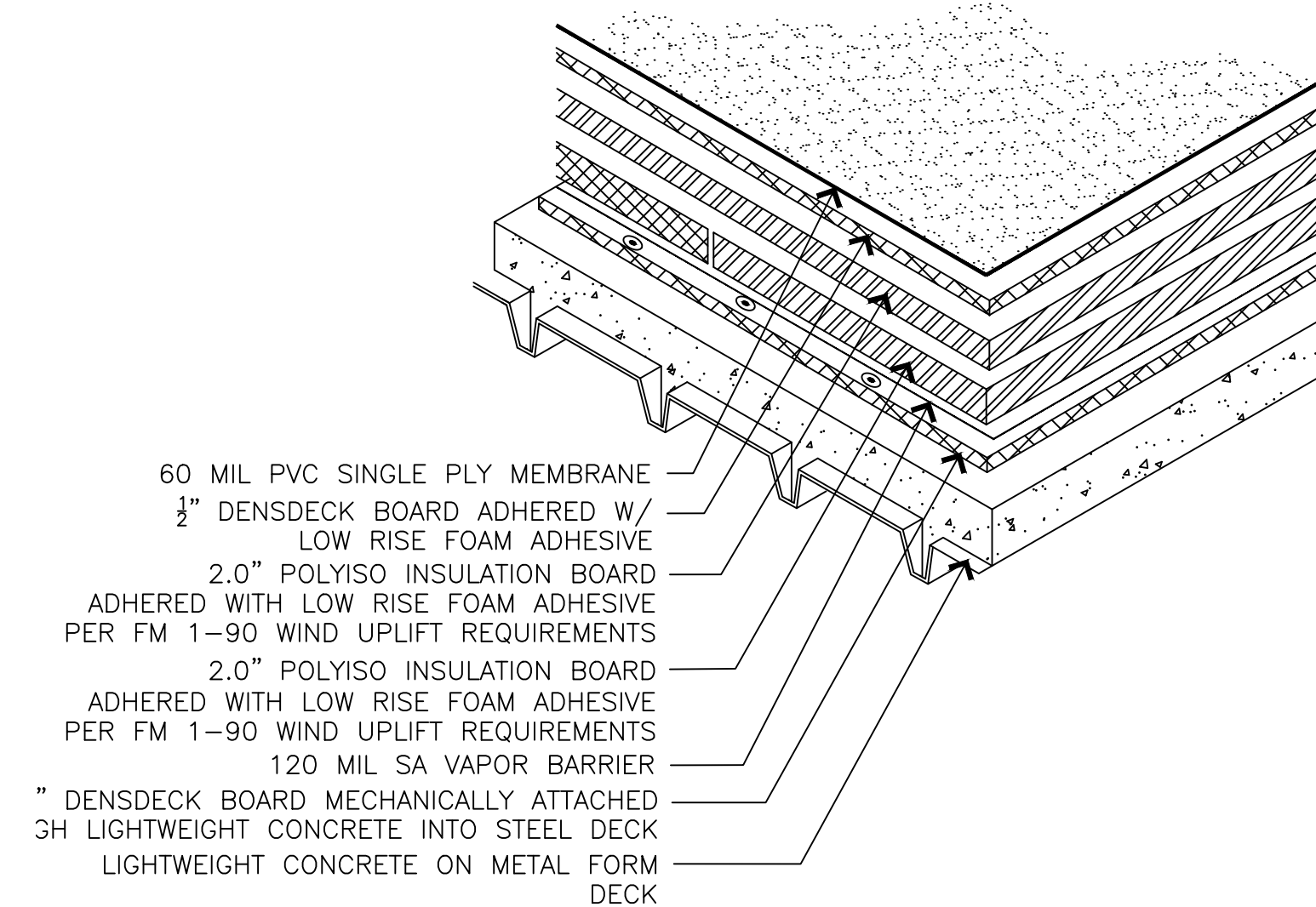
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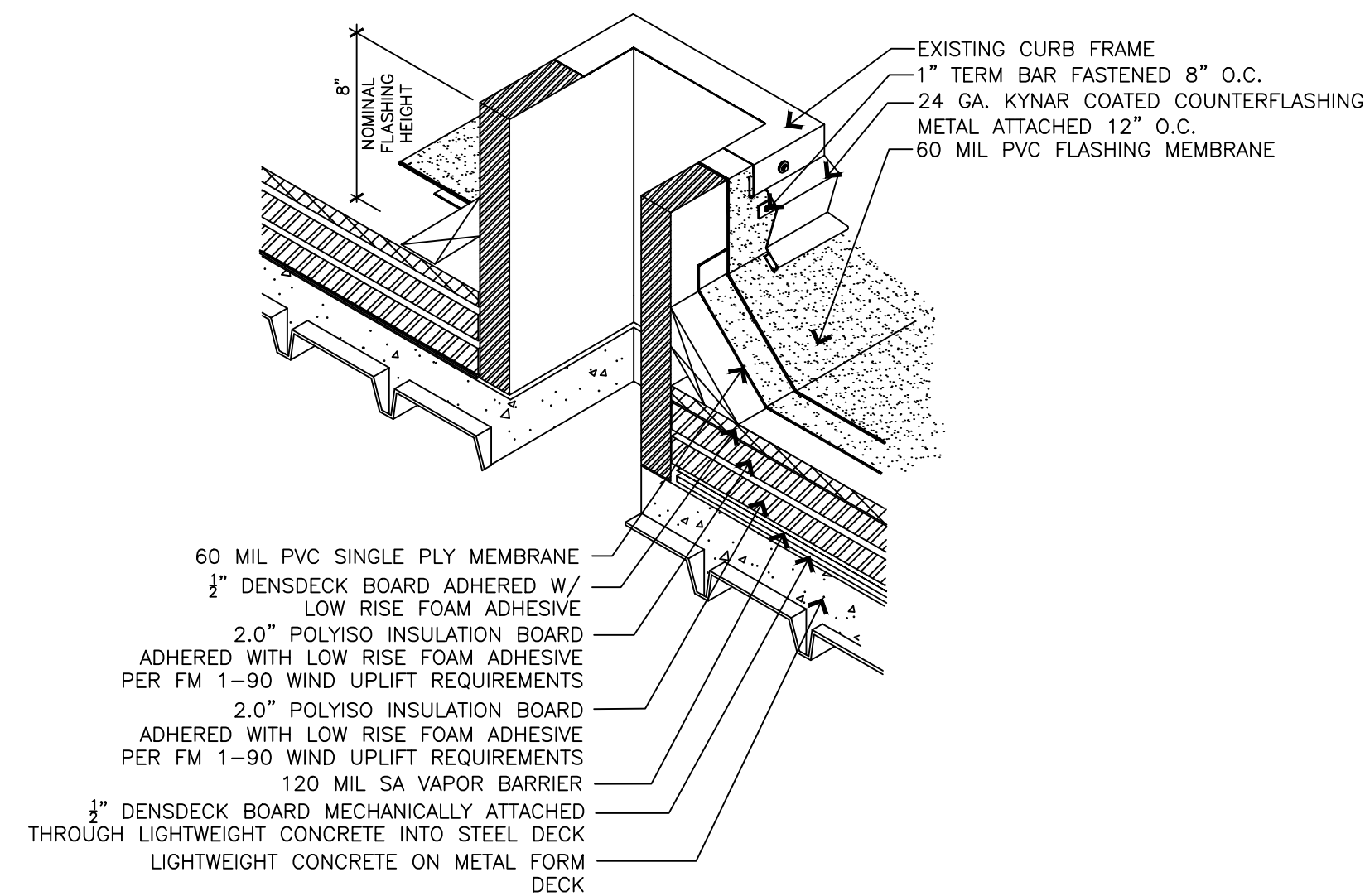
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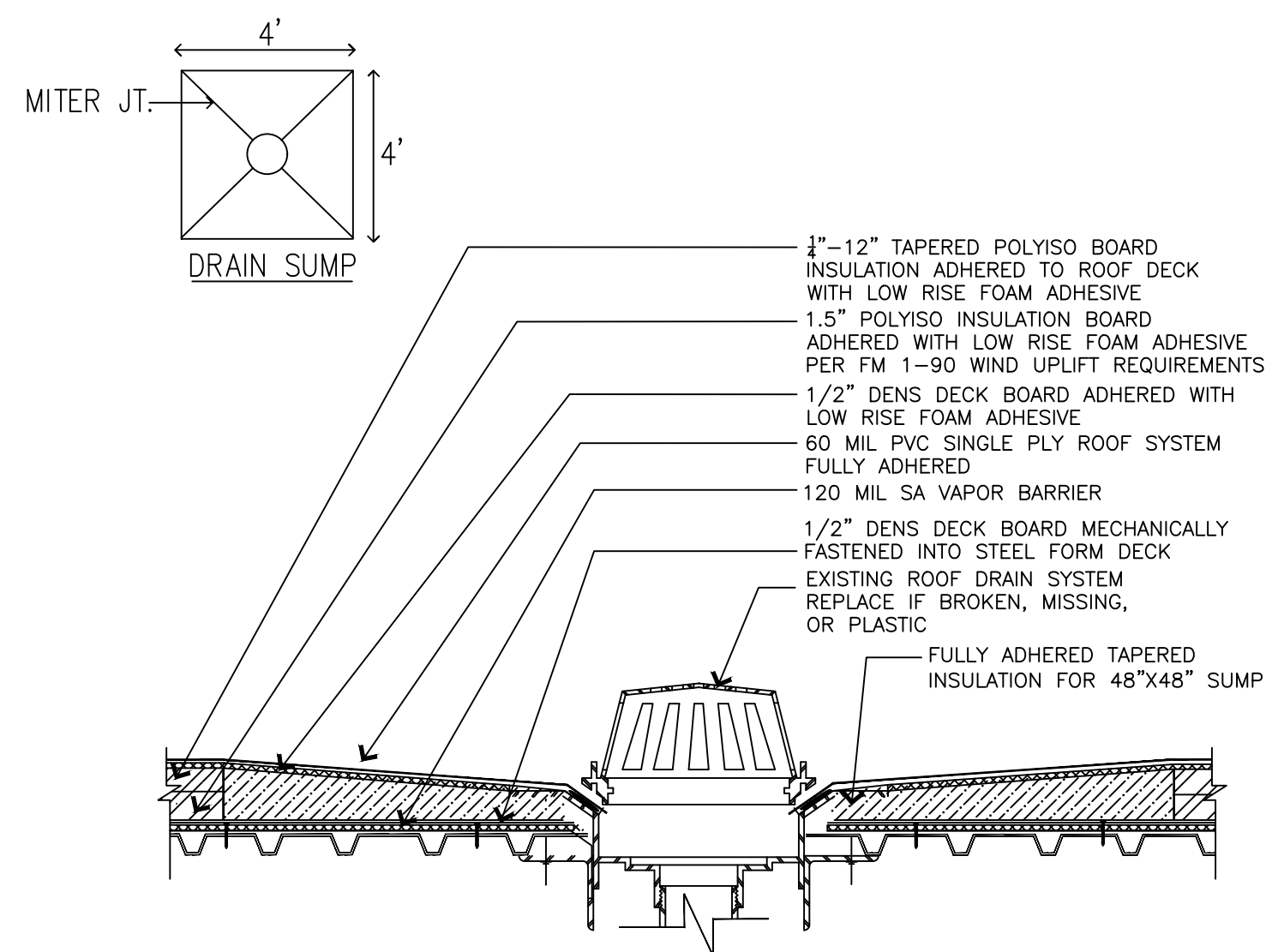
2 CROSS VIEW METAL DECK  
SCALE: NTS



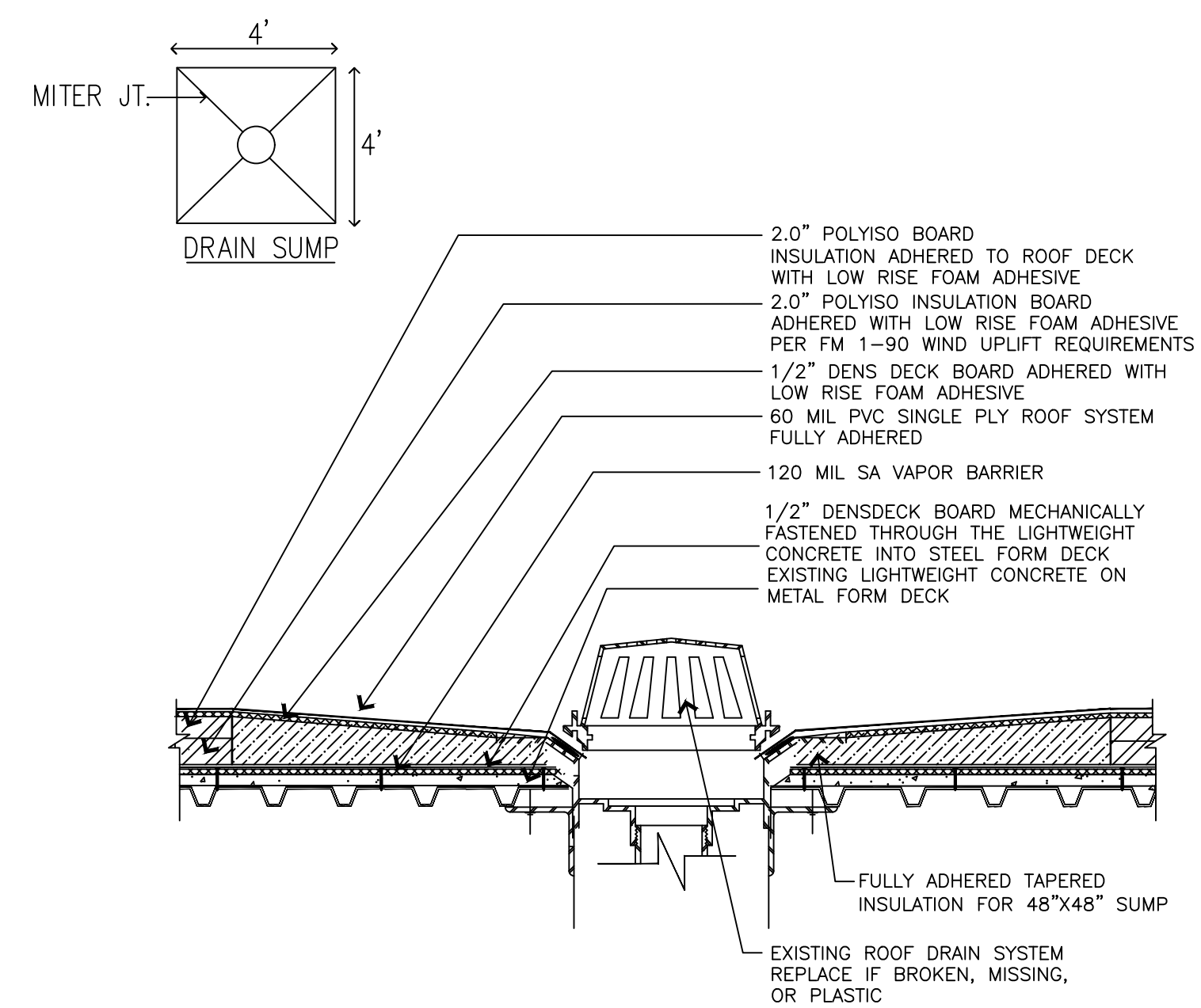
3 CROSS VIEW LIGHTWEIGHT CONCRETE DECK  
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4 CURB FLASHING  
SCALE: NTS

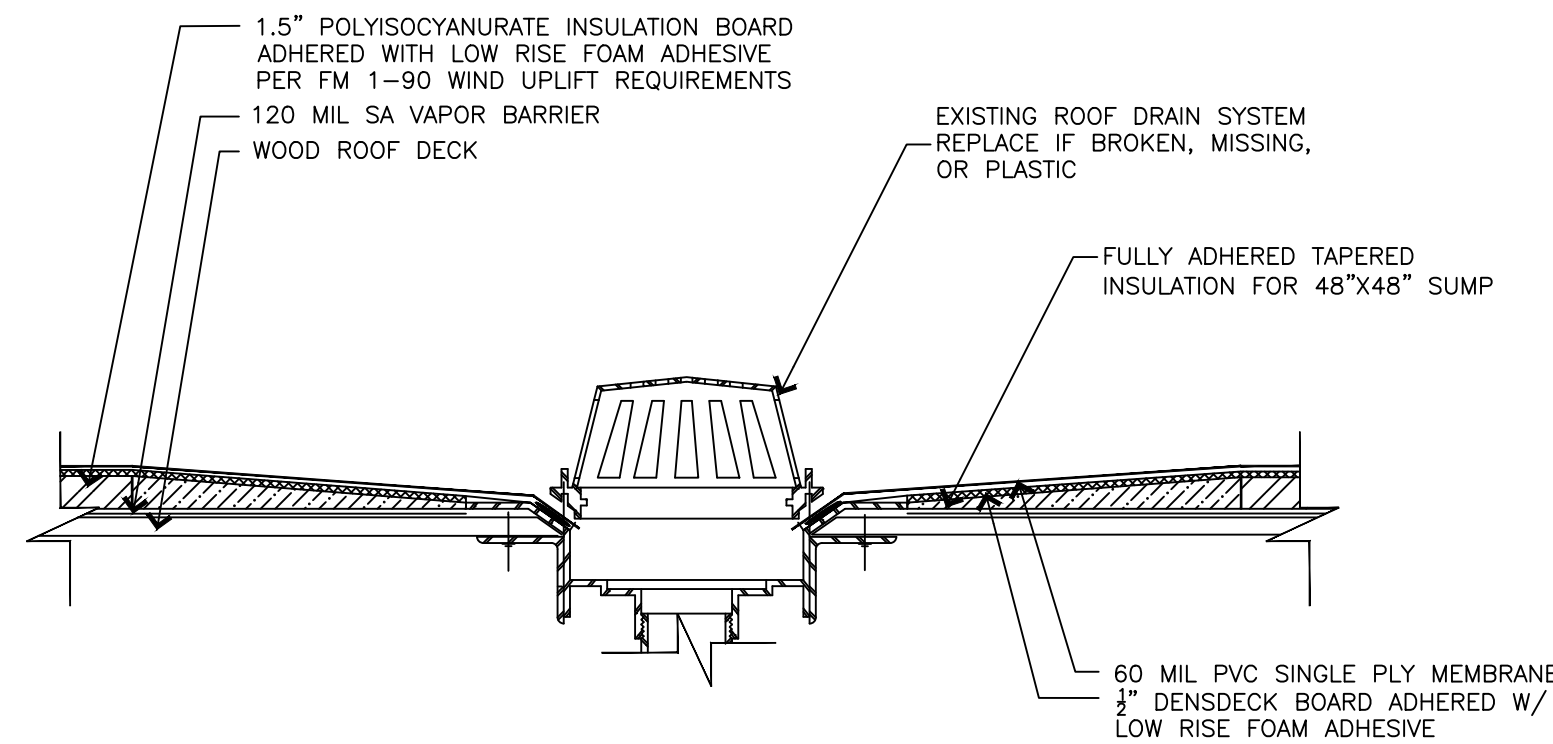
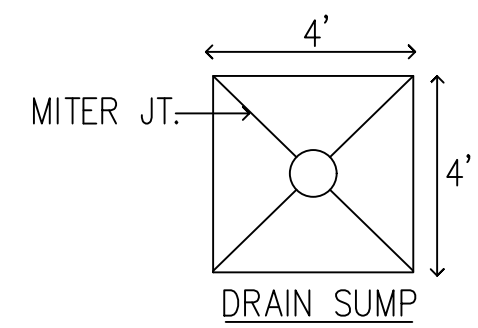


5 DRAIN FLASHING  
SCALE: 1"=1'

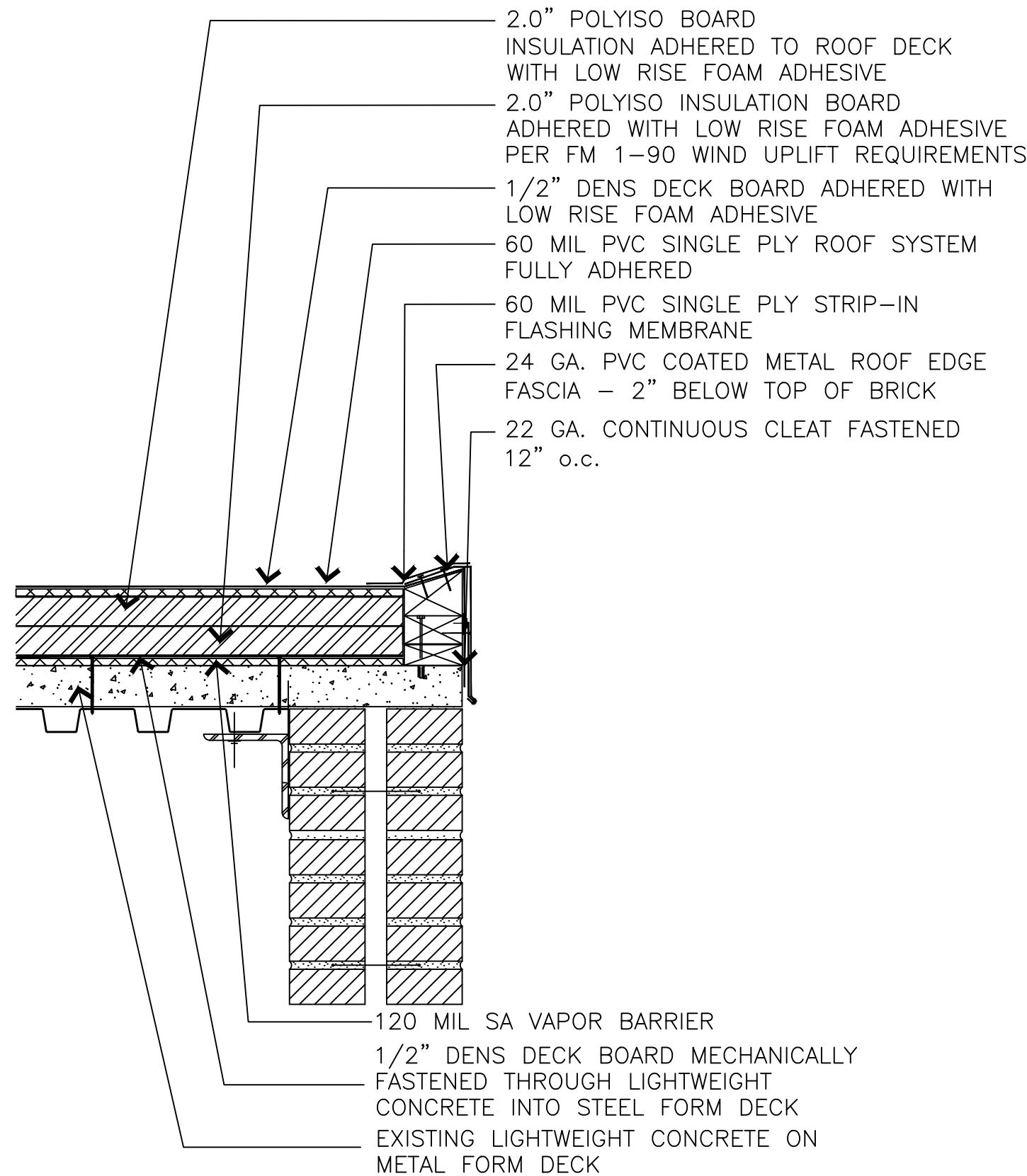


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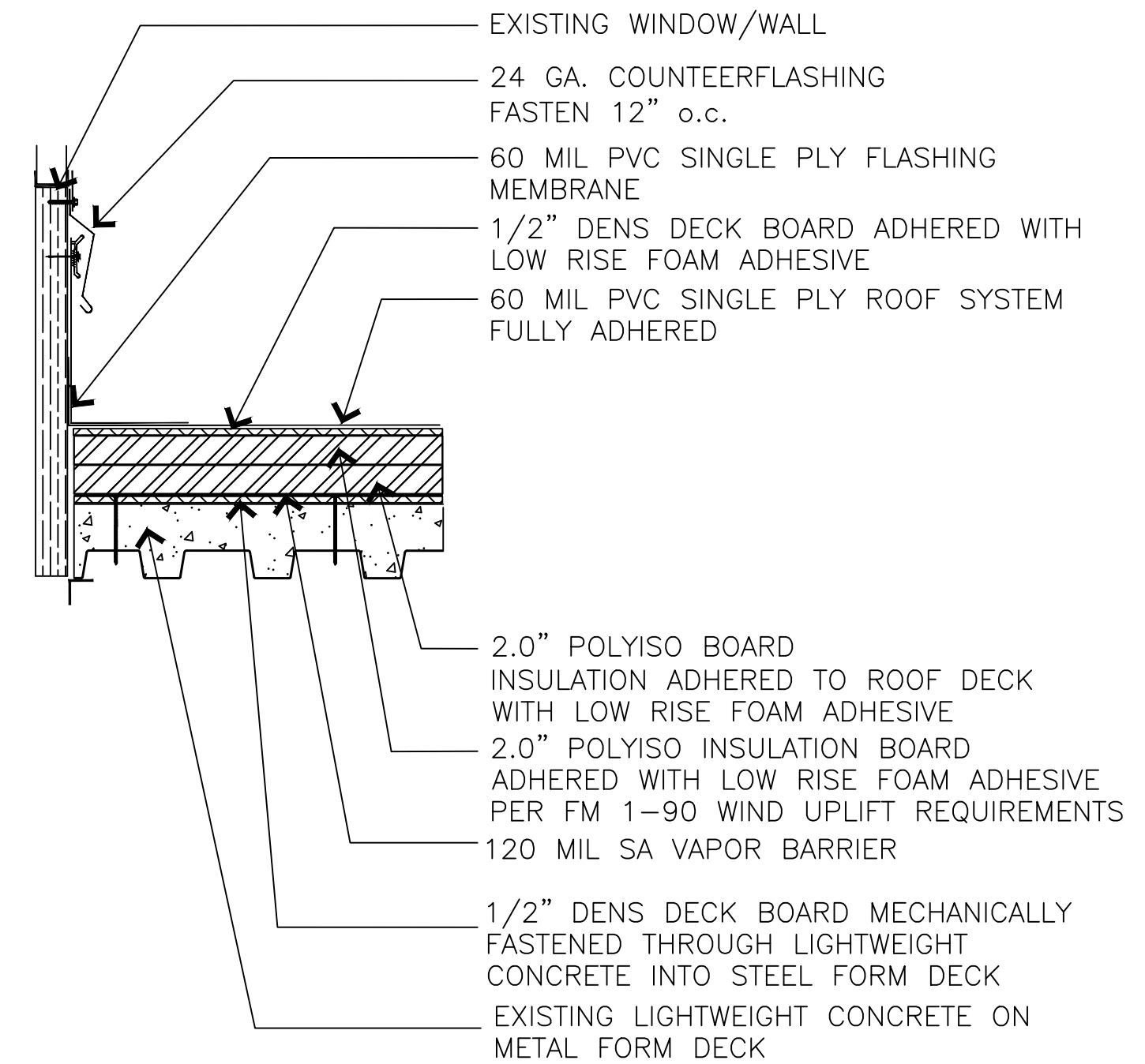




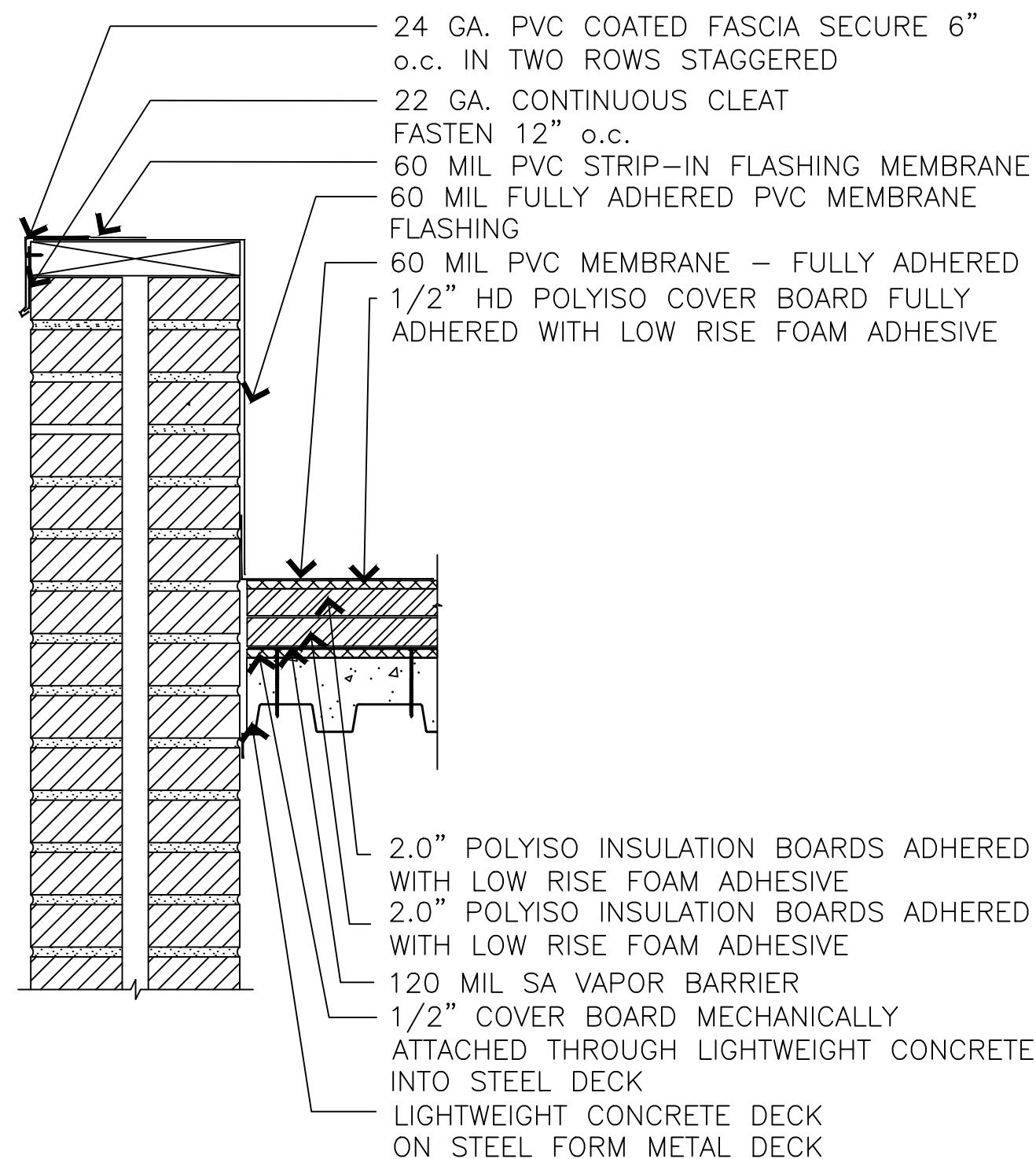
7 DRAIN FLASHING  
A103 SCALE: 1"=1'



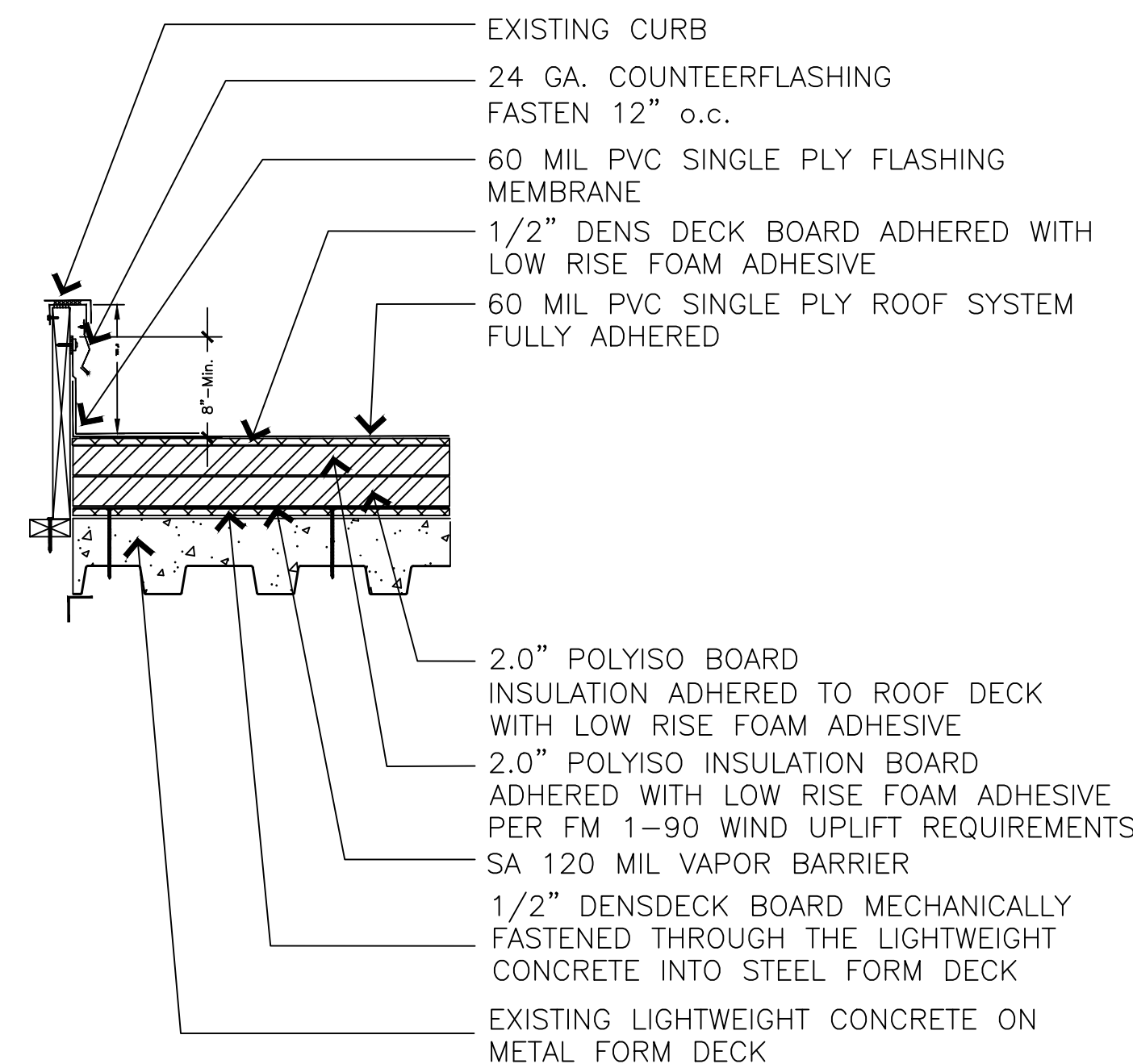
8 PERIMETER FASCIA  
A103 SCALE: 1"=1'



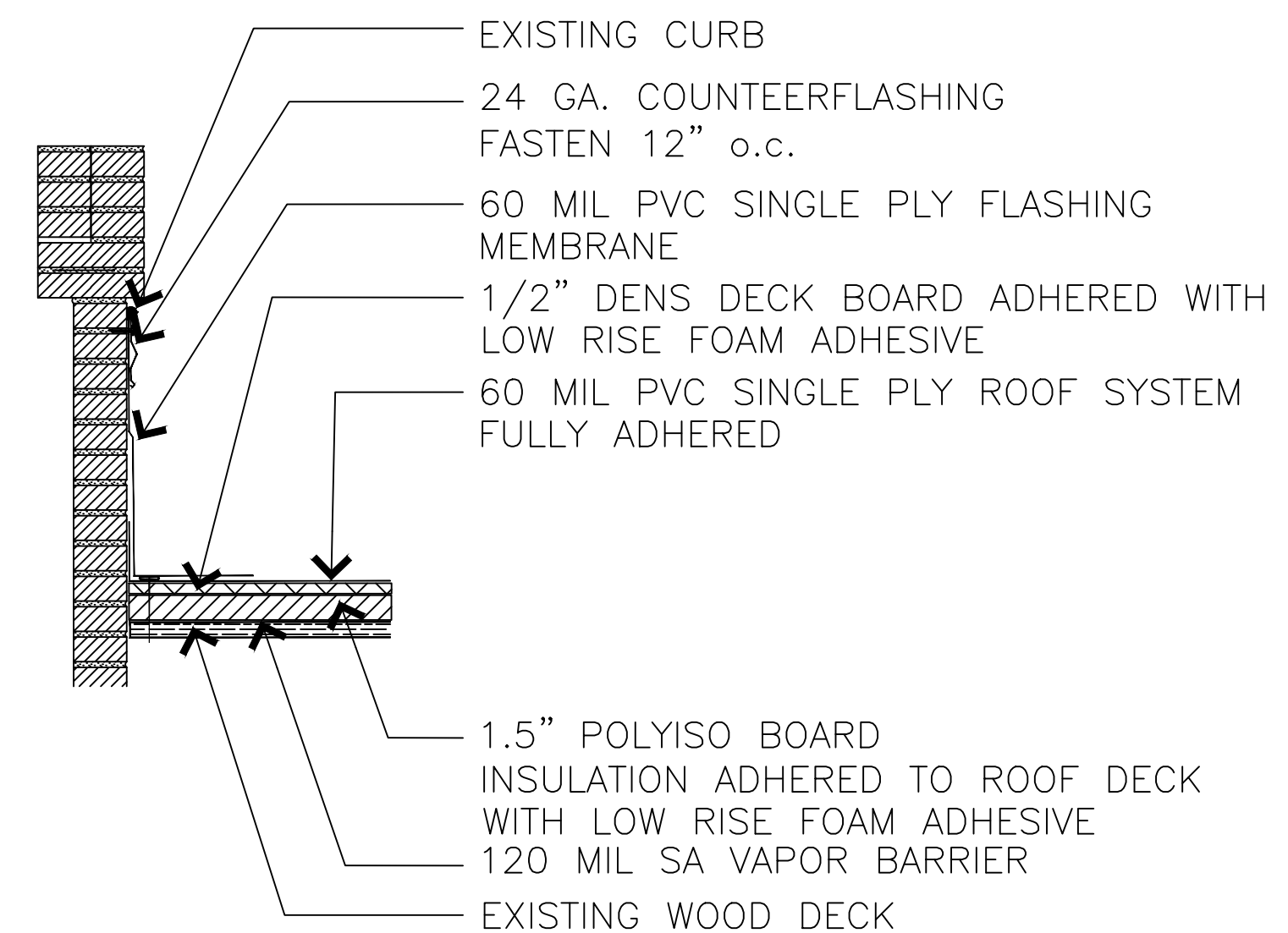
9 PARAPET WALL - TYPICAL  
A103 SCALE: 1-1/2"=1'



10 PARAPET WALL - TYPICAL  
A103 SCALE: 1-1/2"=1'



11 HATCH CURB  
A103 SCALE: 1-1/2"=1'



12 WALL FLASHING  
A103 SCALE: NTS

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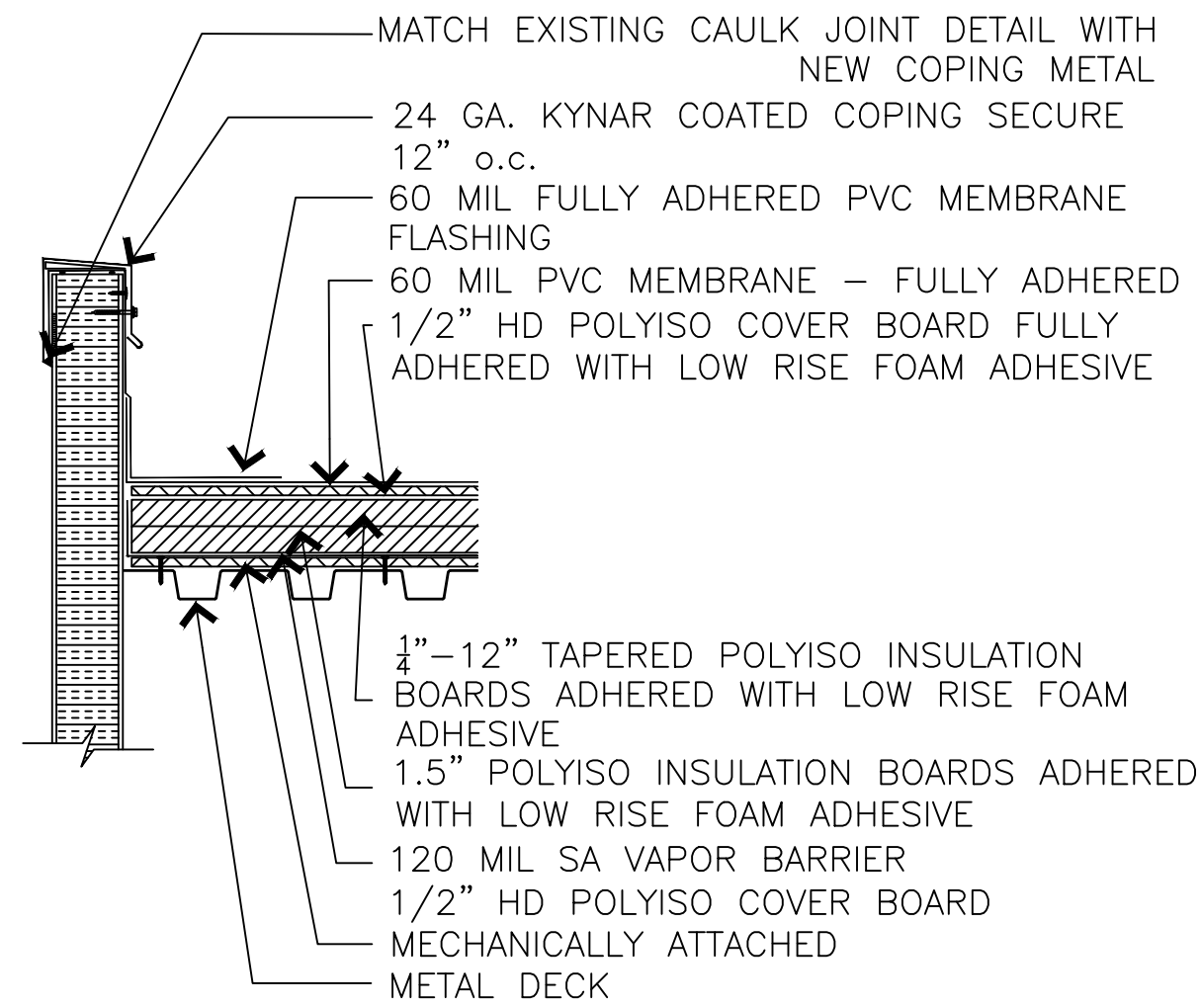
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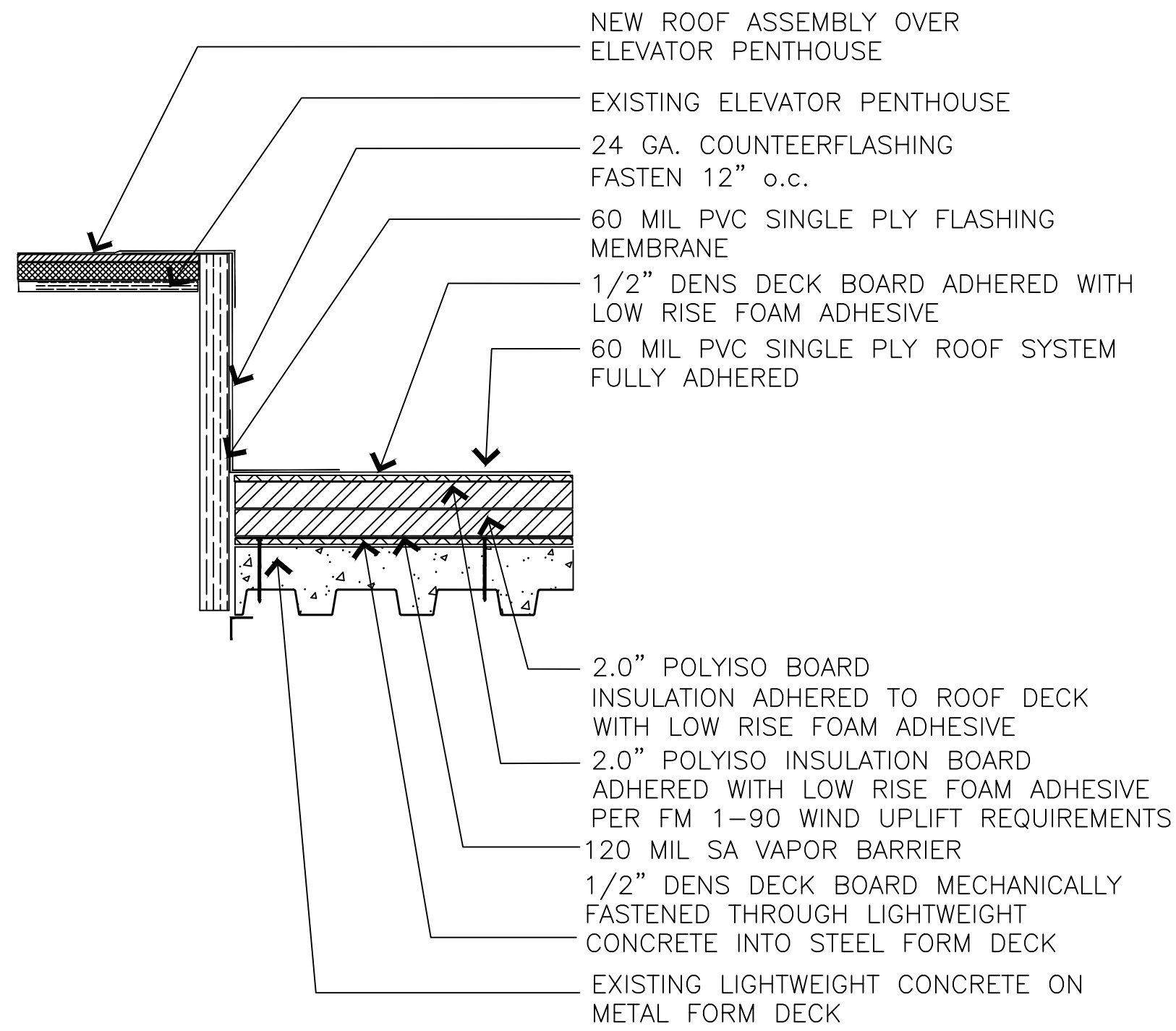
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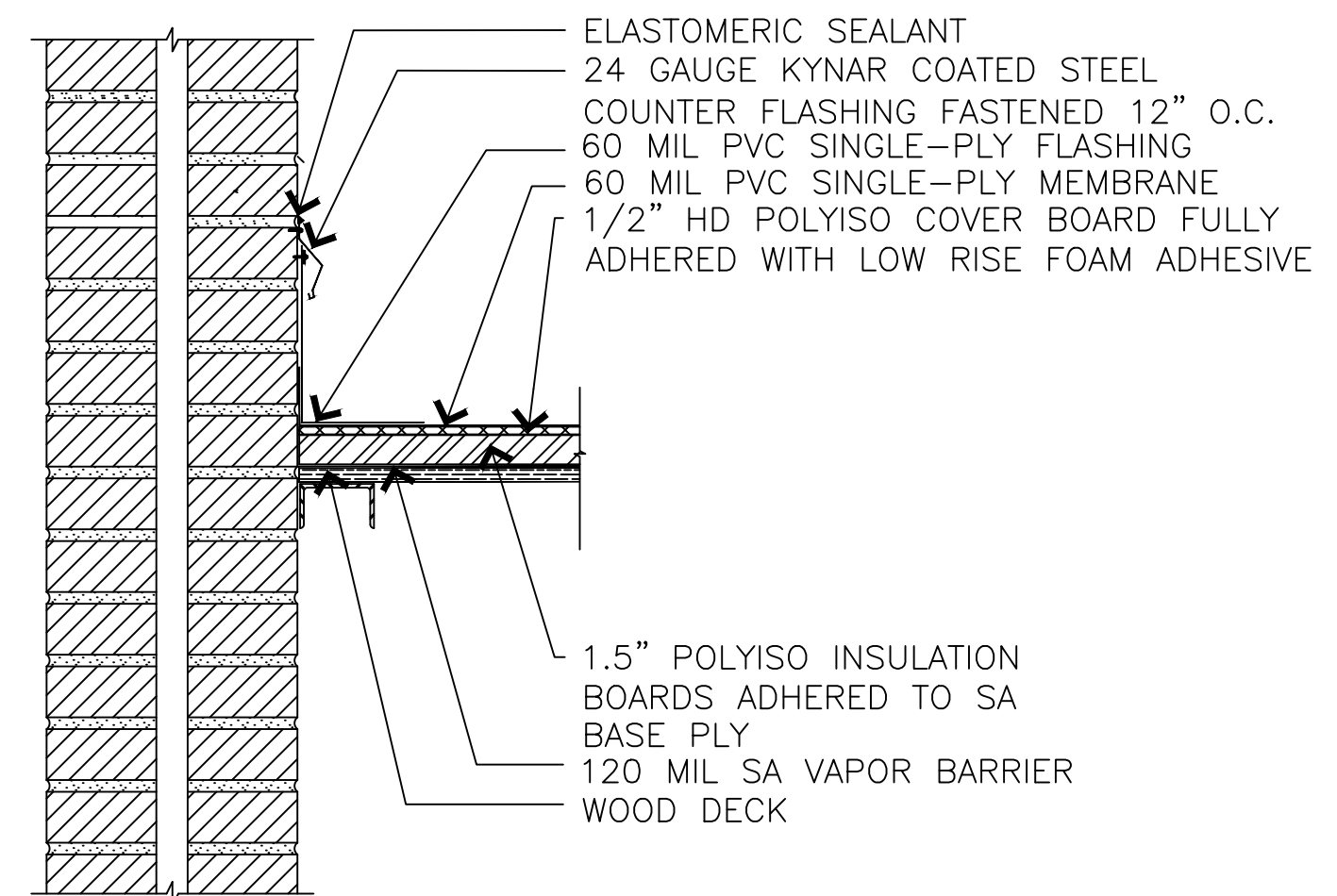
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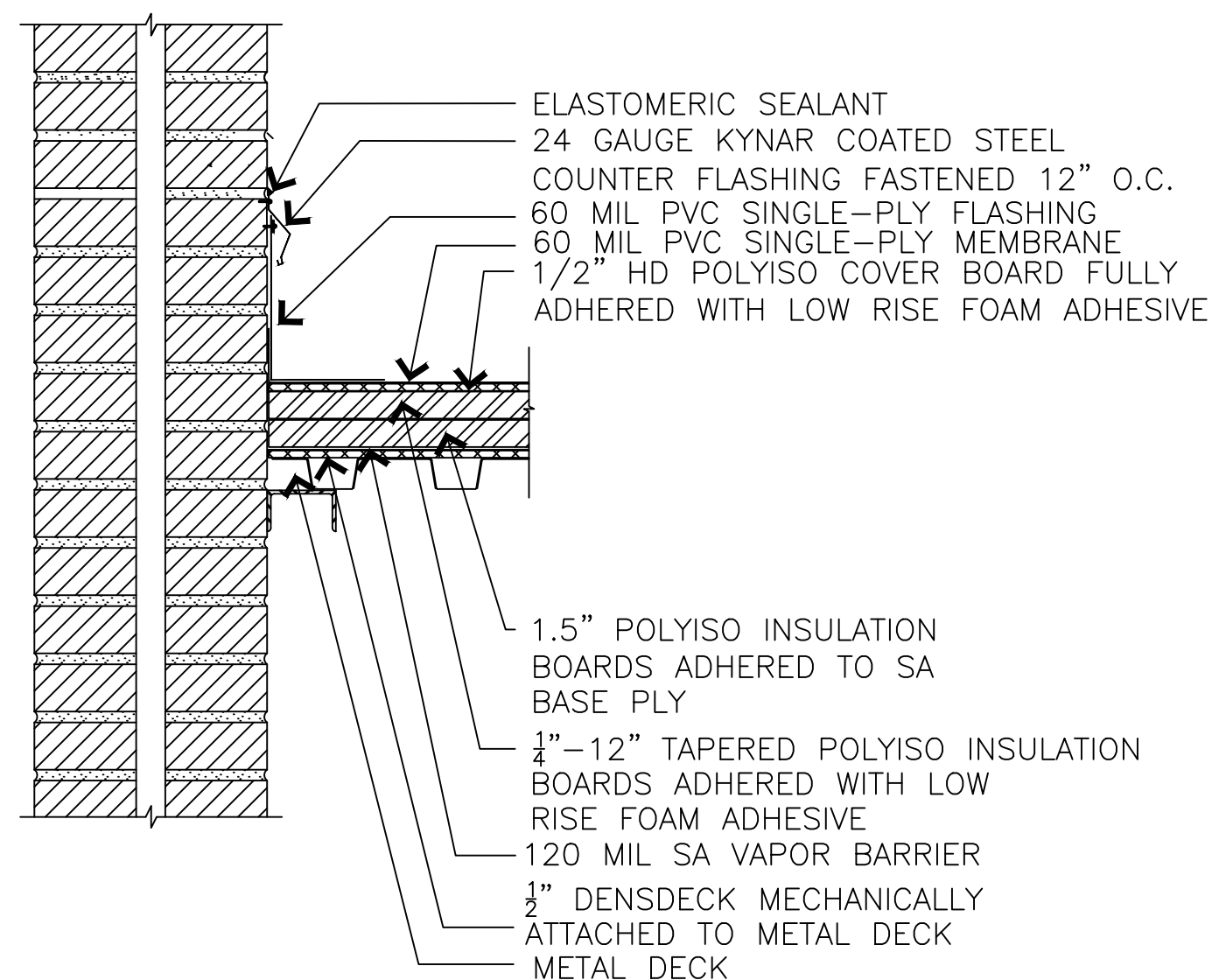
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A104 PARAPET WALL FLASHING  
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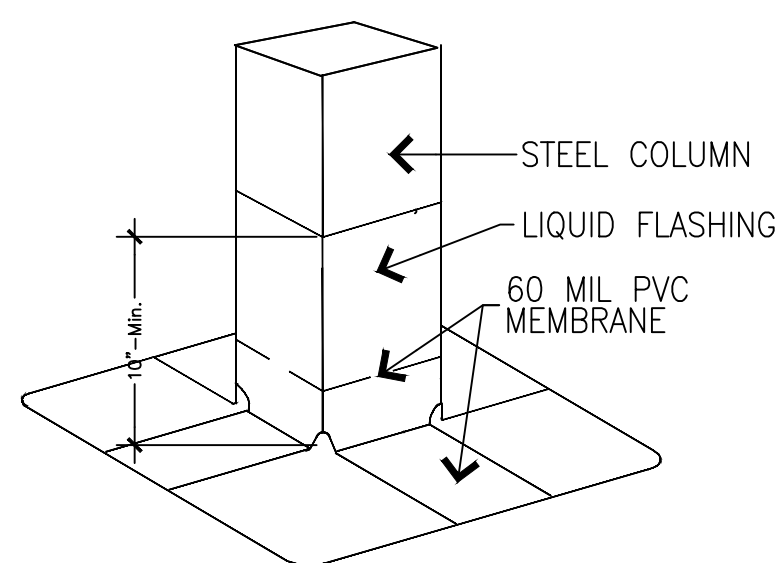
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A104 ELEVATOR PENTHOUSE FLASHING  
SCALE: 1-1/2"=1'



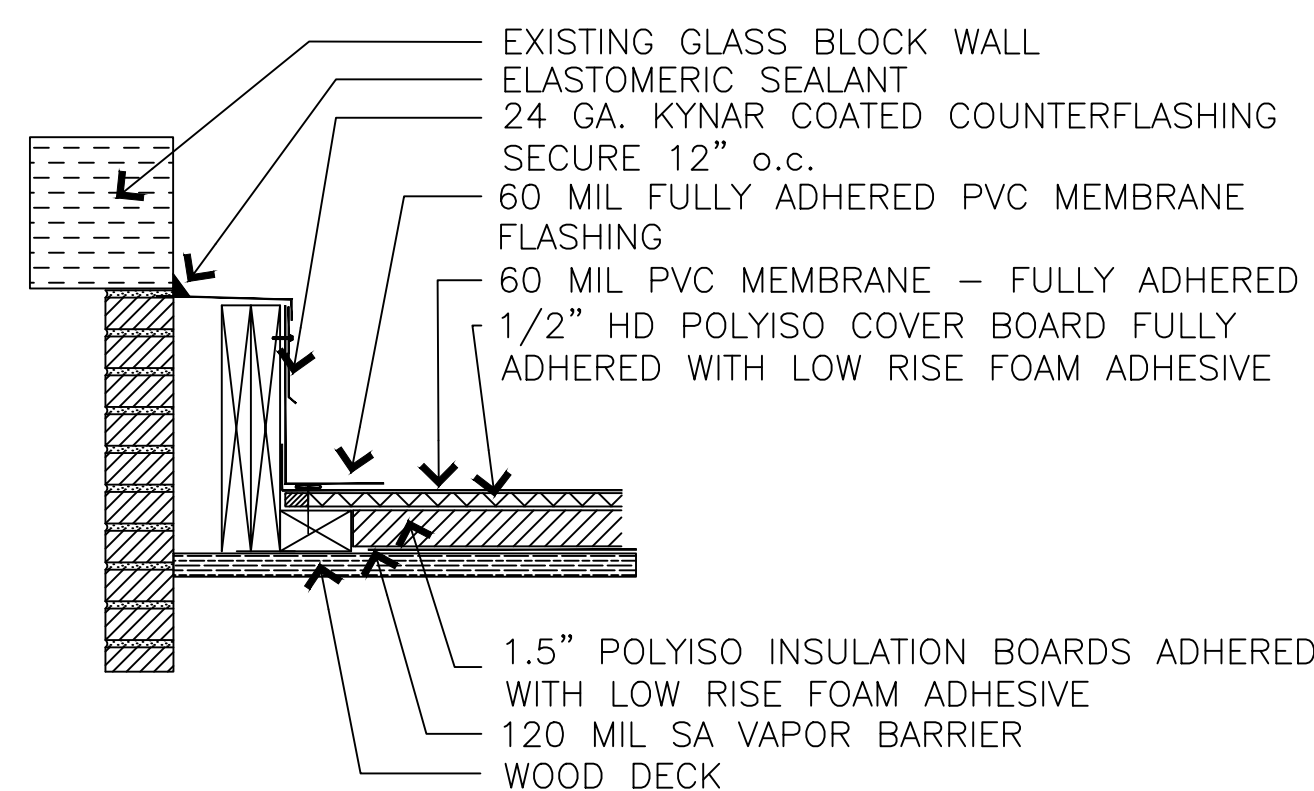
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A104 WALL FLASHING  
SCALE: 1-1/2"=1'



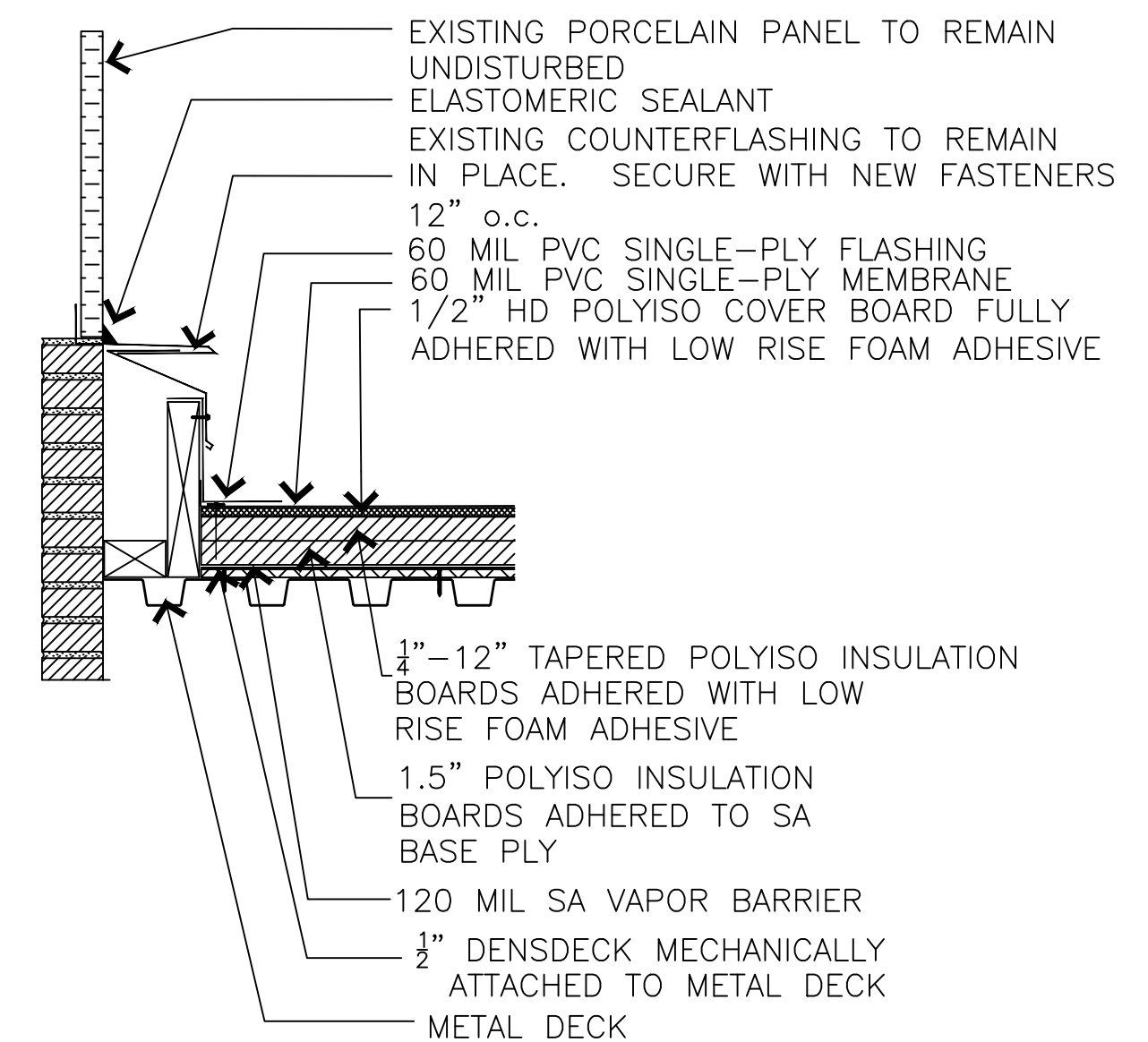
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A104 WALL FLASHING  
SCALE: 1-1/2"=1'



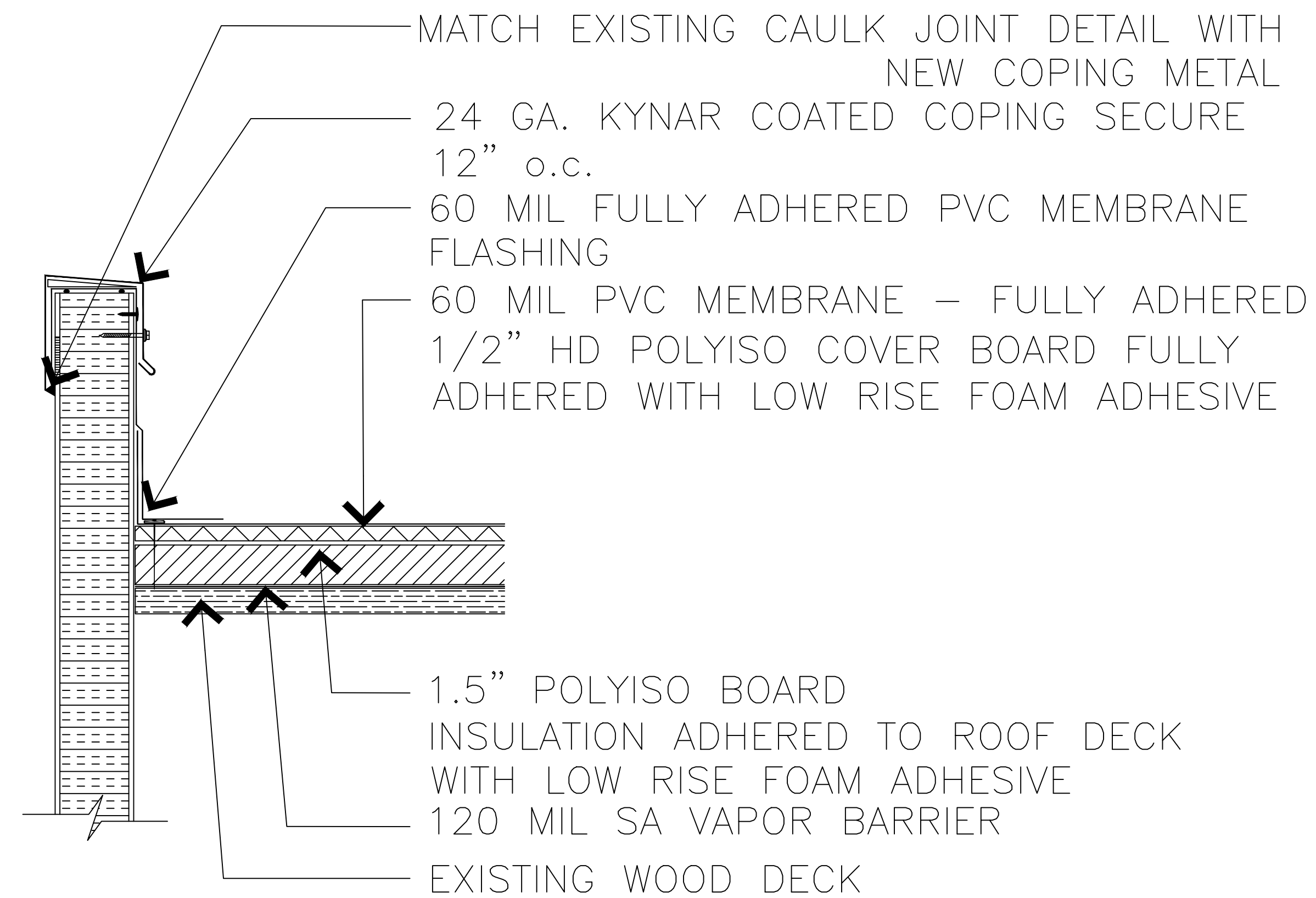
17  
A104 STEEL COLUMN FLASHING  
SCALE: NTS



18  
A104 CURB FLASHING  
SCALE: 1-1/2"=1'



19  
A104 PORCELAIN PANEL FLASHING  
SCALE: 1-1/2"=1'



20 PARAPET WALL FLASHING  
A105 SCALE: 3"=1'

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