

# ST. LOUIS PUBLIC LIBRARY DOCUMENTS

IFB 24-006320 Roof Replacement for Walnut Park & Machacek Branches

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**INVITATION FOR BIDS**

**IFB NO:** 24-006320

**DATE ISSUED:** March 28, 2024

**SEND BIDS TO:**

Purchasing Manager, Lawrence Pruitt  
Board of Directors of the City of St.  
Louis Municipal Library District DBA  
St. Louis Public Library  
1415 Olive Street  
St. Louis, MO 63103  
(314) 539-0313  
**OR: [bids@slpl.org](mailto:bids@slpl.org)**

**PRE-BID WALK THROUGH DATE:** April 8, 2024 @ 10:00 am

**BID DUE DATE:** May 6, 2024 by 2:00 p.m.

**PURCHASING MANAGER:** Lawrence Pruitt

**EMAIL ADDRESS:** [lp Pruitt@slpl.org](mailto:lp Pruitt@slpl.org)

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL  
LIBRARY DISTRICT DBA ST. LOUIS PUBLIC LIBRARY  
IFB 24-006320 ROOF REPLACEMENT FOR WALNUT PARK & MACHACEK BRANCHES**

This Bid is subject to all the terms and conditions of this Invitation for Bids and any Bidder representations, as well as accompanying specifications. The signature of the Bidder indicates that Bidder understands these documents and will comply with them.

**Name, Address, and Contact Information of Authorized Representative of Bidder**

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

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

Print Company  
Name: \_\_\_\_\_

Print Address,  
City, State, Zip: \_\_\_\_\_

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

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

Bidder Signature: \_\_\_\_\_

Bidder (Check One):  **Individual**  **Corporation**  **Partnership**  **LLC**  
 **Other** (Describe) \_\_\_\_\_

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL**  
**LIBRARY DISTRICT DBA ST. LOUIS PUBLIC LIBRARY**  
**IFB 24-006320 ROOF REPLACEMENT FOR WALNUT PARK & MACHACEK BRANCHES**

**INVITATION FOR BID(S) SCHEDULE**

IFB Issued	Friday, March 28, 2024
Public Notification of IFB	Friday, March 28, 2024
Pre-Bid Walk Through  <b>Meeting Location:</b>  (1) Start at Walnut Park Branch Library, (5760 W. Florissant Ave., 63120) (2) Machacek Branch Library, (6548 Scanlan Ave., 63139)	April 8, 2024 @10:00 am
Deadline for Questions	April 19, 2024 <b>Due by 2:00 p.m.</b>
IFB Due	May 6, 2024 <b>Due by 2:00 p.m.</b>

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL**  
**LIBRARY DISTRICT DBA ST. LOUIS PUBLIC LIBRARY**  
**IFB 24-006320 ROOF REPLACEMENT FOR WALNUT PARK & MACHACEK BRANCHES**

**INSTRUCTIONS TO BIDDERS**

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, Bids will be handled so as not to permit disclosure of the identity of any Bidder or the contents of any Bid to competing Bidders during the process of negotiation. A register of Bids shall be prepared containing the name of each Bidder, the number of modifications received, if any, and a description sufficient to identify the item offered. The register of Bids shall be open for public inspection only after a final contract is executed.

Whenever a material, article, or piece of equipment is identified by reference to manufacturer's or vendor's names, trade names, catalog numbers, etc., it is intended merely to establish a standard, and, any material, article, or equipment of other manufacturers and vendors that will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment Bid(s) are, in the opinion of the St. Louis Public Library, of equal substance and function. Substitute items may be rejected at the discretion of the St. Louis Public Library.

The right is reserved by the St. Louis Public Library to cancel the IFB 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 Bid. The St. Louis Public Library reserves the right to split awards, make multiple awards and to reject all Bids.

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

Questions about the IFB should be made in writing and directed to Lawrence Pruitt, Purchasing Manager, at [lpruitt@slpl.org](mailto:lpruitt@slpl.org) or at the address provided below. Responses, when provided, will be included in a written amendment. To preserve the integrity of the selection process, questions regarding this IFB should only be directed in writing to Mr. Pruitt, [lpruitt@slpl.org](mailto:lpruitt@slpl.org). **Bid inquiries must be submitted in writing for the St. Louis Public Library review no later than Friday, April 19, 2024, by 2:00 p.m.,** to allow for the St. Louis Public Library's reply prior to Bid submissions.

Bids must be in ink or typewritten and must be manually signed by a company official. All Bid document pages should be initiated and dated by the company submitting the Bid. It is the responsibility of the Bidder to deliver the Bid and/or IFB modification on or before the hour and date specified for the receipt of Bids.

Bids received late will be rejected.

Bids and modifications should be submitted in sealed envelopes addressed to the attention of the **Purchasing Manager, St. Louis Public Library, 1415 Olive St., St. Louis, MO 63103** for a 2:00 p.m. Bid opening at that location on **Monday, May 6, 2024. EMAIL BIDS WILL ALSO BE ACCEPTED. PLEASE SEND YOUR EMAIL BID RESPONSE TO: [bids@slpl.org](mailto:bids@slpl.org). The Bid IFB number shall show in the subject line of the email.**

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL**  
**DISTRICT DBA ST. LOUIS PUBLIC LIBRARY IFB 22-990750**  
**IFB 24-006320 ROOF REPLACEMENT FOR WALNUT PARK & MACHACEK BRANCHES**

**INVITATION FOR BIDS**

March 28, 2024

**1. INTRODUCTION**

The St. Louis Public Library requests qualified Bids for the Roof Replacement at Walnut Park & Machacek Branches.

Bids must be received no later than 2:00 p.m., May 6, 2024 by:

Lawrence Pruitt, Purchasing Manager  
St. Louis Public Library  
1415 Olive Street  
St. Louis, MO 63103-2389

**Electronic submissions will be accepted. The email address is: [bids@slpl.org](mailto:bids@slpl.org).**

**The IFB number must be the subject in the subject line.**

Questions and clarification inquiries about this IFB must be received prior to 2:00 p.m. April 19, 2024. To preserve the integrity of the selection process, questions regarding this IFB should only be directed in writing to Lawrence Pruitt: [lpruitt@slpl.org](mailto:lpruitt@slpl.org)

The St. Louis Public Library wishes to engage a Prosper to provide the services in accordance with and in the furtherance of the St. Louis Public Library's purpose and mission. This IFB seeks Bids from qualified vendors for the goods and products described in this IFB.

The selected Bidder shall enter into a vendor agreement with the St. Louis Public Library for the services consistent with the terms of this IFB, and with the general provisions contained in this IFB.

**BOARD OF DIRECTORS OF THE CITY OF ST LOUIS MUNICIPAL  
LIBRARY DISTRICT DBA ST. LOUIS PUBLIC LIBRARY**

**TERMS AND CONDITIONS**

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

- A. **Labor and Materials.** The Bidder shall provide all labor, materials and supplies for the services to be performed under this IFB.
- B. **Form of Agreement.** The submission of a Bid constitutes the agreement of any submitting Bidder that any contract to be drawn as a result of an award to the Bidder will be prepared by counsel for the St. Louis Public Library and will be the controlling agreement. The Bidders 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 Bidder 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 St. Louis Public Library.
- D. **Out of State Bidder.** It shall be a condition to a Vendor Agreement that any out-of-state Bidder 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 Bid. 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 Bidder. The Bidder 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 Bidder 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 Bidder 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 St. Louis Public Library's retirement or personnel rules accrue to such persons. The Bidder 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 Bidder 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.** Bidder 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 Bid, 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 Bidder, 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.** Bidder 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 Bidder 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 Bidder 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 Bidder's activities at Central Library. Any deductible shall be at Bidder'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 Bidder'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 Bidder on behalf of St. Louis Public Library.
5. Property Insurance coverage for all materials, equipment, and other items owned, borrowed, or leased by Bidder shall be Bidder's responsibility. The St. Louis Public Library shall not be responsible for such materials, equipment, and other items owned, borrowed, or leased by Bidder.
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.

Bidder 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 Bidder access to St. Louis Public Library facilities. These insurance provisions are minimum requirements and shall not relieve Bidder of its indemnity, defense and hold harmless obligations.

- I. **E-Verify.** The Bidder 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 Bidder must agree to require its subcontractors who may perform work under a Vendor Agreement to certify to Bidder 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 Bidder 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 Bidder 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 Bidder 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 IFB as **Attachment B**.
- J. **Performance Uninterrupted.** Bidder shall perform the Services without interruption except as provided herein. The decision whether to postpone or excuse the performance of the Bidder shall be in sole discretion of the St. Louis Public Library.
- K. **Communications.** The Bidder 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 Bidder shall correct all deficiencies within forty-eight (48) hours after being notified by designated St. Louis Public Library management.
- L. Bidder 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. Bidder 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 Bidder 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, Bidder 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.** Bidder 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 Bidder must be ready to begin services no later than thirty (30) days after date of contract execution.
- O. **Compliance with Laws.** The selected Bidder 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 Bidder'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 IFB 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 Bids and to waive any irregularity or informality with respect to any Bid. The Library reserves the right to split awards, make multiple awards and to reject all Bids.
2. Discussions may be conducted with responsible Bidders who submit Bids determined to be reasonably susceptible of being selected for award for the purpose of clarification to assure full understanding of, and conformance to, the IFB requirements. Bidders shall be accorded fair and equal treatment with respect to any opportunity for discussion and revision of Bids 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 Bidders or of any information derived from Bids submitted by competing Bidders.
3. Subject to the terms of this IFB, an award will be made by the Library to the responsible Bidder whose Bid is determined in writing to be the most advantageous to the Library, taking into consideration price and the evaluation factors set forth in the IFB. No other factors or criteria shall be used in the evaluation.
4. The selected Bidder shall enter into a Vendor Agreement consistent with this IFB.



# AIA<sup>®</sup> Document A305<sup>™</sup> – 2020 Exhibit A

## General Information

This Exhibit is part of the Contractor’s Qualification Statement, submitted by \_\_\_\_\_ and dated the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_.  
*(In words, indicate day, month and year.)*

### § A.1 ORGANIZATION

#### § A.1.1 Name and Location

§ A.1.1.1 Identify the full legal name of your organization.

§ A.1.1.2 List all other names under which your organization currently does business and, for each name, identify jurisdictions in which it is registered to do business under that trade name.

§ A.1.1.3 List all prior names under which your organization has operated and, for each name, indicate the date range and jurisdiction in which it was used.

§ A.1.1.4 Identify the address of your organization’s principal place of business and list all office locations out of which your organization conducts business. If your organization has multiple offices, you may attach an exhibit or refer to a website.

#### § A.1.2 Legal Status

§ A.1.2.1 Identify the legal status under which your organization does business, such as sole proprietorship, partnership, corporation, limited liability corporation, joint venture, or other.

- .1 If your organization is a corporation, identify the state in which it is incorporated, the date of incorporation, and its four highest-ranking corporate officers and their titles, as applicable.
- .2 If your organization is a partnership, identify its partners and its date of organization.
- .3 If your organization is individually owned, identify its owner and date of organization.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

- .4** If the form of your organization is other than those listed above, describe it and identify its individual leaders:

**§ A.1.2.2** Does your organization own, in whole or in part, any other construction-related businesses? If so, identify and describe those businesses and specify percentage of ownership.

**§ A.1.3 Other Information**

**§ A.1.3.1** How many years has your organization been in business?

**§ A.1.3.2** How many full-time employees work for your organization?

**§ A.1.3.3** List your North American Industry Classification System (NAICS) codes and titles. Specify which is your primary NAICS code.

**§ A.1.3.4** Indicate whether your organization is certified as a governmentally recognized special business class, such as a minority business enterprise, woman business enterprise, service disabled veteran owned small business, woman owned small business, small business in a HUBZone, or a small disadvantaged business in the 8(a) Business Development Program. For each, identify the certifying authority and indicate jurisdictions to which such certification applies.

**§ A.2 EXPERIENCE**

**§ A.2.1** Complete Exhibit D to describe up to four projects, either completed or in progress, that are representative of your organization's experience and capabilities.

**§ A.2.2** State your organization's total dollar value of work currently under contract.

**§ A.2.3** Of the amount stated in Section A.2.2, state the dollar value of work that remains to be completed:

**§ A.2.4** State your organization's average annual dollar value of construction work performed during the last five years.

**§ A.3 CAPABILITIES**

**§ A.3.1** List the categories of work that your organization typically self-performs.

**§ A.3.2** Identify qualities, accreditations, services, skills, or personnel that you believe differentiate your organization from others.

**§ A.3.3** Does your organization provide design collaboration or pre-construction services? If so, describe those services.

**§ A.3.4** Does your organization use building information modeling (BIM)? If so, describe how your organization uses BIM and identify BIM software that your organization regularly uses.

**§ A.3.5** Does your organization use a project management information system? If so, identify that system.

#### **§ A.4 REFERENCES**

**§ A.4.1** Identify three client references:

*(Insert name, organization, and contact information)*

**§ A.4.2** Identify three architect references:

*(Insert name, organization, and contact information)*

**§ A.4.3** Identify one bank reference:

*(Insert name, organization, and contact information)*

**§ A.4.4** Identify three subcontractor or other trade references:

*(Insert name, organization, and contact information)*



# AIA<sup>®</sup> Document A305<sup>™</sup> – 2020 Exhibit B

## Financial and Performance Information

This Exhibit is part of the Contractor’s Qualification Statement, submitted by \_\_\_\_\_ and dated the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_.  
*(In words, indicate day, month and year.)*

### § B.1 FINANCIAL

§ B.1.1 Federal tax identification number:

§ B.1.2 Attach financial statements for the last three years prepared in accordance with Generally Accepted Accounting Principles, including your organization’s latest balance sheet and income statement. Also, indicate the name and contact information of the firm that prepared each financial statement.

§ B.1.3 Has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, been the subject of any bankruptcy proceeding within the last ten years?

§ B.1.4 Identify your organization’s preferred credit rating agency and identification information.  
*(Identify rating agency, such as Dun and Bradstreet or Equifax, and insert your organization’s identification number or other method of searching your organization’s credit rating with such agency.)*

### § B.2 DISPUTES AND DISCIPLINARY ACTIONS

§ B.2.1 Are there any pending or outstanding judgments, arbitration proceedings, bond claims, or lawsuits against your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, or any of the individuals listed in Exhibit A, Section 1.2, in which the amount in dispute is more than \$75,000?  
*(If the answer is yes, provide an explanation.)*

§ B.2.2 In the last five years has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management:  
*(If the answer to any of the questions below is yes, provide an explanation.)*

.1 failed to complete work awarded to it?

.2 been terminated for any reason except for an owners’ convenience?

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

.3 had any judgments, settlements, or awards pertaining to a construction project in which your organization was responsible for more than \$75,000?

.4 filed any lawsuits or requested arbitration regarding a construction project?

**§ B.2.3** In the last five years, has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management; or any of the individuals listed in Exhibit A Section 1.2:  
*(If the answer to any of the questions below is yes, provide an explanation.)*

.1 been convicted of, or indicted for, a business-related crime?

.2 had any business or professional license subjected to disciplinary action?

.3 been penalized or fined by a state or federal environmental agency?



**AIA**<sup>®</sup>

# Document A305™ – 2020 Exhibit C

## Project Specific Information

This Exhibit is part of the Contractor’s Qualification Statement, submitted by \_\_\_\_\_ and dated the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_.  
*(In words, indicate day, month and year.)*

**PROJECT:**

*(Name and location or address.)*

H-GAC Main Office Renovations General Contractor/Construction Manager  
Solicitation Number: FIN-AD-RENOGC-10-2022

**CONTRACTOR’S PROJECT OFFICE:**

*(Identify the office out of which the contractor proposes to perform the work for the Project.)*

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

**TYPE OF WORK SOUGHT**

*(Indicate the type of work you are seeking for this Project, such as general contracting, construction manager as constructor, design-build, HVAC subcontracting, electrical subcontracting, plumbing subcontracting, etc.)*

**CONFLICT OF INTEREST**

Describe any conflict of interest your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, or any of the individuals listed in Exhibit A Section 1.2, may have regarding this Project.

**§ C.1 PERFORMANCE OF THE WORK**

**§ C.1.1** When was the Contractor’s Project Office established?

**§ C.1.2** How many full-time field and office staff are respectively employed at the Contractor’s Project Office?

**§ C.1.3** List the business license and contractor license or registration numbers for the Contractor’s Project Office that pertain to the Project.

**§ C.1.4** Identify key personnel from your organization who will be meaningfully involved with work on this Project and indicate (1) their position on the Project team, (2) their office location, (3) their expertise and experience, and (4) projects similar to the Project on which they have worked.

§ C.1.5 Identify portions of work that you intend to self-perform on this Project.

§ C.1.6 To the extent known, list the subcontractors you intend to use for major portions of work on the Project.

## § C.2 EXPERIENCE RELATED TO THE PROJECT

§ C.2.1 Complete Exhibit D to describe up to four projects performed by the Contractor's Project Office, either completed or in progress, that are relevant to this Project, such as projects in a similar geographic area or of similar project type. If you have already completed Exhibit D, but want to provide further examples of projects that are relevant to this Project, you may complete Exhibit E.

§ C.2.2 State the total dollar value of work currently under contract at the Contractor's Project Office:

§ C.2.3 Of the amount stated in Section C.2.2, state the dollar value of work that remains to be completed:

§ C.2.4 State the average annual dollar value of construction work performed by the Contractor's Project Office during the last five years.

§ C.2.5 List the total number of projects the Contractor's Project Office has completed in the last five years and state the dollar value of the largest contract the Contractor's Project Office has completed during that time.

## § C.3 SAFETY PROGRAM AND RECORD

§ C.3.1 Does the Contractor's Project Office have a written safety program?

§ C.3.2 List all safety-related citations and penalties the Contractor's Project Office has received in the last three years.

§ C.3.3 Attach the Contractor's Project Office's OSHA 300a Summary of Work-Related Injuries and Illnesses form for the last three years.

§ C.3.4 Attach a copy of your insurance agent's verification letter for your organization's current workers' compensation experience modification rate and rates for the last three years.

## § C.4 INSURANCE

§ C.4.1 Attach current certificates of insurance for your commercial general liability policy, umbrella insurance policy, and professional liability insurance policy, if any. Identify deductibles or self-insured retentions for your commercial general liability policy.

§ C.4.2 If requested, will your organization be able to provide property insurance for the Project written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis?



§ C.4.3 Does your commercial general liability policy contain any exclusions or restrictions of coverage that are prohibited in AIA Document A101-2017, Exhibit A, Insurance A.3.2.2.2? If so, identify.

§ C.5 SURETY

§ C.5.1 If requested, will your organization be able to provide a performance and payment bond for this Project?

§ C.5.2 Surety company name:

§ C.5.3 Surety agent name and contact information:

§ C.5.4 Total bonding capacity:

§ C.5.5 Available bonding capacity as of the date of this qualification statement:



# AIA<sup>®</sup> Document A305™ – 2020 Exhibit D

## Contractor's Past Project Experience

	1	2	3	4
PROJECT NAME				
PROJECT LOCATION				
PROJECT TYPE				
OWNER				
ARCHITECT				
CONTRACTOR'S PROJECT EXECUTIVE				
KEY PERSONNEL (include titles)				
PROJECT DETAILS	Contract Amount  Completion Date  % Self-Performed Work	Contract Amount  Completion Date  % Self-Performed Work	Contract Amount  Completion Date  % Self-Performed Work	Contract Amount  Completion Date  % Self-Performed Work
PROJECT DELIVERY METHOD	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:
SUSTAINABILITY CERTIFICATIONS				



# AIA<sup>®</sup>

# Document A305™ – 2020 Exhibit E

## Contractor's Past Project Experience, Continued

	1	2	3	4
PROJECT NAME				
PROJECT LOCATION				
PROJECT TYPE				
OWNER				
ARCHITECT				
CONTRACTOR'S PROJECT EXECUTIVE				
KEY PERSONNEL (include titles)				
PROJECT DETAILS	Contract Amount  Completion Date  % Self-Performed Work	Contract Amount  Completion Date  % Self-Performed Work	Contract Amount  Completion Date  % Self-Performed Work	Contract Amount  Completion Date  % Self-Performed Work
PROJECT DELIVERY METHOD	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:	<input type="checkbox"/> Design-bid-build <input type="checkbox"/> Design-build <input type="checkbox"/> CM constructor <input type="checkbox"/> CM advisor <input type="checkbox"/> Other:
SUSTAINABILITY CERTIFICATIONS				

# Missouri

## Division of Labor Standards

### WAGE AND HOUR SECTION



MICHAEL L. PARSON, Governor

# Annual Wage Order No. 30

Section 096  
CITY OF ST. LOUIS CITY

In accordance with Section 290.262 RSMo 2000, within thirty (30) days after a certified copy of this Annual Wage Order has been filed with the Secretary of State as indicated below, any person who may be affected by this Annual Wage Order may object by filing an objection in triplicate with the Labor and Industrial Relations Commission, P.O. Box 599, Jefferson City, MO 65102-0599. Such objections must set forth in writing the specific grounds of objection. Each objection shall certify that a copy has been furnished to the Division of Labor Standards, P.O. Box 449, Jefferson City, MO 65102-0449 pursuant to 8 CSR 20-5.010(1). A certified copy of the Annual Wage Order has been filed with the Secretary of State of Missouri.

Original Signed by \_\_\_\_\_

Todd Smith, Director  
Division of Labor Standards

Filed With Secretary of State: \_\_\_\_\_ **March 10, 2023**

Last Date Objections May Be Filed: **April 10, 2023**

Prepared by Missouri Department of Labor and Industrial Relations

OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Asbestos Worker	\$67.27
Boilermaker	\$41.79*
Bricklayer	\$62.43
Carpenter	\$58.84
Lather	
Linoleum Layer	
Millwright	
Pile Driver	
Cement Mason	\$49.54
Plasterer	
Communications Technician	\$62.02
Electrician (Inside Wireman)	\$72.22
Electrician Outside Lineman	\$85.68
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Elevator Constructor	\$99.87
Glazier	\$65.38
Ironworker	\$67.34
Laborer	\$51.44
General Laborer	
First Semi-Skilled	
Second Semi-Skilled	
Mason	\$46.59
Marble Mason	
Marble Finisher	
Terrazzo Worker	
Terrazzo Finisher	
Tile Setter	
Tile Finisher	
Operating Engineer	\$66.83
Group I	
Group II	
Group III	
Group III-A	
Group IV	
Group V	
Painter	\$49.47
Plumber	\$75.04
Pipe Fitter	
Roofer	\$56.40
Sheet Metal Worker	\$71.67
Sprinkler Fitter	\$77.73
Truck Driver	\$41.79*
Truck Control Service Driver	
Group I	
Group II	
Group III	
Group IV	

\*The Division of Labor Standards received fewer than 1,000 reportable hours for this occupational title. The public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center.

\*\*The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title as defined in RSMO Section 290.210.

Heavy Construction Rates for  
CITY OF ST. LOUIS CITY

Section 096

OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Carpenter	\$69.52
Millwright	
Pile Driver	
Electrician (Outside Lineman)	\$85.68
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Laborer	\$52.74
General Laborer	
Skilled Laborer	
Operating Engineer	\$67.08
Group I	
Group II	
Group III	
Group IV	
Truck Driver	\$41.79*
Truck Control Service Driver	
Group I	
Group II	
Group III	
Group IV	

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

If a worker is performing work on a heavy construction project within an occupational title that is not listed on the Heavy Construction Rate Sheet, use the rate for that occupational title as shown on the Building Construction Rate Sheet.

\*The Division of Labor Standards received fewer than 1,000 reportable hours for this occupational title. Public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center.

\*\*The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title.

# OVERTIME and HOLIDAYS

## OVERTIME

For all work performed on a Sunday or a holiday, not less than twice (2x) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work.

For all overtime work performed, not less than one and one-half (1½) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work or contractual obligation. For purposes of this subdivision, "**overtime work**" shall include work that exceeds ten hours in one day and work in excess of forty hours in one calendar week; and

A thirty-minute lunch period on each calendar day shall be allowed for each worker on a public works project, provided that such time shall not be considered as time worked.

## HOLIDAYS

January first;  
The last Monday in May;  
July fourth;  
The first Monday in September;  
November eleventh;  
The fourth Thursday in November; and  
December twenty-fifth;

If any holiday falls on a Sunday, the following Monday shall be considered a holiday.

**Proposal for a Stipulated Sum**

**Contract**

Date: \_\_\_\_\_

Proposal of \_\_\_\_\_ (hereinafter called Bidder), a corporation organized and existing under the laws of the state of \_\_\_\_\_. A partnership consisting of a \_\_\_\_\_ individual consisting of \_\_\_\_\_.

A joint venture consisting of \_\_\_\_\_.

**Insert Corporation(s): partnerships or individual, as applicable.**

TO: St. Louis Public Library  
1415 Olive St.  
St. Louis, Mo 63103  
Attn: Lawrence Pruitt

The Bidder, in compliance with the advertisements/invitation for Bid's for construction work in accordance with the Drawings and Specifications prepared by RMT Roofing & Waterproofing Consultants Inc., entitled Roofing Replacement for Walnut Park and Machacek Branches, dated March 15, 2024, having carefully examined the Drawings and Specifications with related documents and site of the proposed work and being familiar with all, the conditions pertaining to the construction of the proposed project, including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies to construct, the project in accordance with Contract Documents, within the time set forth herein at the prices stated below. These prices are to cover all expenses, incurred in performing the work required under the Contract Documents, of which this Bid is a part.

Bidder acknowledges receipt of the following addenda:

Addendum No. \_\_\_\_\_ dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ dated \_\_\_\_\_

Addendum No. \_\_\_\_\_ dated \_\_\_\_\_



**BID PRICING**

**A. BASE BID**

The Proposer agrees to furnish all labor, materials, tools, and equipment required for the specified project; as detailed on the Drawings and described in the specifications and associated documents for the of:

Walnut Branch \_\_\_\_\_ Dollars  
(\$\_\_\_\_\_)

Machacek Branch \_\_\_\_\_ Dollars  
(\$\_\_\_\_\_)

**B. PROJECT COMPLETION**

Time is of the essence, assuming receipt of unsigned Contract and the Performance Bond from owner. Contractor agrees to substantially complete.

**C. Contract Period**

The Contract begins on the day the Contractor receives the unsigned Contract and request for a Performance & Payment Bond. The Bidder agrees to complete the project within the time specified in the Contract, from receipt of the aforementioned document. Ten (10) calendar days shall be allocated in the construction schedule for receiving the aforementioned document from the Contractor.

**D. Commencement**

Contractor agrees to commence work on this project after the Notice to Proceed Letter is issued within seven (7) calendar days after the owner receives the properly prepared and executed Contract Documents listed in the previous paragraph B, above.

\*\*Note: Commencement will be based on availability of material\*\*

**MBE/WBE WORKFORCE CONTENT GOALS**

The undersigned proposes to perform the work with the following MBE/WBE participation levels:

MBE: \_\_\_\_\_%

WBE: \_\_\_\_\_%

**SUBCONTRACTOR LIST**

The Bidders hereby certifies the following subcontractors will be used in the performance of work.

NOTE: Failure to list subcontractors for each category of work may be grounds for rejection of bid. List by name, city and state of the designated subcontractor, for each category of work. If work within a category will be performed by more than one subcontractor, the bidder must provide the name, city and state of each, and specify the portion of work to be done by each. If acceptance/non-acceptance of alternates will affect the designation of the subcontractor, the Proposer must provide that information. for each affected category, with this bid form. If the Bidder intends to perform any designated subcontract work with the use of his own employees, the proposer shall list their own name, city and state.

**SUBCONTRACTOR'S LIST**

<b>Work to be performed.</b>	<b>Name</b>	<b>City/Sate</b>

## **BIDDERS ACKNOWLEDGEMENTS**

- A. The Bidder declares that they has had an opportunity to examine the site of work and he has examined the Contract Documents therefore; that they has carefully prepared his Bid upon the basis thereof, that he has carefully examined and checked this Bid and the materials, equipment, and labor required thereunder, the cost thereof, hereby states that the amount, or amounts set forth in this Bid, is or in the Bidder's computations upon which this Bid is based, and the Bidder agrees that he will make no claim for reformation, modifications, revisions, or corrections of this Bid after the scheduled closing time for the receipt of Bid.
- B. In submitting this Bid, it is agreed that it may not be withdrawn for a period of ninety (90) days after the scheduled closing time for receipt of Bids.
- C. The Bidder understands that the St. Louis Public Library reserves the right to reject any or all proposals and to waive any informalities in the proposal.
- D. Accompanying the Bid is the Contractor's Qualification Statement (AIA Document A305-2020, with Exhibits A-D). Failure of Bidder to submit the completed document with the Bid may void the Bid. The owner does not maintain Contractor's Qualification Statement on file.

## **BIDDER'S CERTIFICATE**

### **The Bidder hereby certifies:**

- A\_ That this bid is genuine and is not made in the interest or on behalf of any undisclosed person, firm, or corporation, and is not submitted in conformity with any agreement or rules of any group, association or corporation.
- B. He/she has not directly or indirectly induced or solicited any other Bidder to put in a false proposal.
- C. He/she has not sought or induced any person, firm or corporation to refrain from bidding.
- D. He/she has not sought by collusion or otherwise to obtain for himself any advantage over any other Bidders or over the owner.
- E. He/she will not discriminate against any employee or applicant for employment because of race, color, religion sex, or national origin connection with the performance of work.

A A A

**NON-COLLUSION AFFIDAVIT**

The undersigned being duly sworn on oath, says that the undersigned has not, nor has any other person, member, representative, or agent of the firm, company or corporation or partnership represented by the undersigned, entered into any combination, collusion or agreement with any person relative to the price to be Bid by anyone at such letting nor to prevent any person from Proposing nor to induce anyone to refrain from Proposing, and that this Bid is made without reference to any other Bid and without any agreement, understanding or combination with any other person in reference to such Bid.

Further, the undersigned says that no person or persons, firm, or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such Bid.

Bidder: \_\_\_\_\_

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

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

**E-VERIFY AFFIDAVIT**

Pursuant to Section 285.530 of the Missouri Revised Statutes, as amended, the Bidder 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 Bidder 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 exists.

The undersigned, on behalf of the Bidder, being first duly sworn, deposes and states that the Bidder 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 Bidder will enroll in and agree to verify the work eligibility status of all its newly hired employees through the E-Verify program.

Bidder: \_\_\_\_\_

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

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

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

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, rules 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 assist persons from diverse backgrounds 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 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 reasons be held invalid, the invalidity thereof shall not affect the validity of the other provisions of this Resolution.

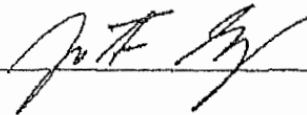
Section 7. Governing Law. This Resolution shall be governed exclusively by and construed in accordance with the applicable laws of the State of Missouri.

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 5th day of April, 2004.

BOARD OF DIRECTORS OF THE  
ST. LOUIS PUBLIC LIBRARY

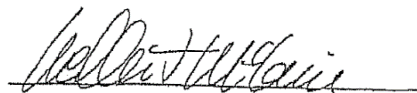
Its President



[SEAL]

ATTEST:

Its Secretary



# SAMPLE CONTRACT

## CONTRACT NUMBER: 24-006320

This agreement made this 24th day of XXXXXXXX 2024, between the **Board of Directors of the City of St Louis Municipal Library District**, DBA St. Louis Public Library, hereinafter called the "Library", and **XXXXXXXXXXXX, Inc.**, hereinafter called the "Contractor".

The Project:

The Consultant:

### General Description of Work:

### Library and Contractor agree as follows:

#### 1. Contract Documents

1.1 The contract documents for this contract consist of this agreement, and any other exhibits attached hereto, the bidding documents for Bid Project 24-006320, all drawings, specifications and addenda issued by the 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. Quoted MBE/WBE/ participation levels:

- MBEPARTICIPATION
- WBE: PARTICIPATION

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

#### 2. Scope of Work

2.1 The 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 Library, and any other specified representative of the 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. The contract work includes:



(a) that shown on any of the contract documents as if 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. The 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 Library.

### 3. Contract Sum and Payments

3.1 In consideration of the complete and timely performance of all contract work, the 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 the Contractor is in default. By the 10th 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 the 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 the 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 Contractor, for any reason, is able to complete the contract work. If the foregoing causes are remedied or adjusted to the Library's satisfaction, the withheld payments shall be promptly made. If the said causes or not so remedied or adjusted, the Library may remedy the same for the Contractor's account.

3.3 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 the 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 acceptance of defective work or improper materials.

3.4 If requested, the 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 shall accurately indicate the value of work performed or services rendered.

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

3.6 Final payment shall be made to the Contractor after completion of contract work and acceptance by the 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.

3.7 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 Library or the Library's surety (if any), which claim or lien arises out of the Contractor's performance, the Library may, but is not required to, retain out of any payments due to Contractor an amount sufficient to protect the 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 Library.

3.8 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 Library is a tax exempt institution.

3.9 In order to take advantage of its sales tax exempt status, the 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 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 the Contractor to purchase machinery, equipment or tools, used in fulfilling this contract, tax exempt. Itemized invoices indicating tax-exempt purchases will be submitted to the Library, monthly, with the certified payroll.

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

4.1 The Contractor agrees, within fifteen (15) calendar days after notification by the Library, to commence in the field, at such points as the 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 Library with scheduling information when requested. The Library and the Consultant shall review the project schedule and may revise such schedule as necessary as the work progresses. Contractor shall comply with instructions given by the Library, including any to suspend, delay or accelerate the contract work.

4.3 Contractor shall furnish the 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 supplier to the requirements set forth in this agreement, the schedule of work and the contract documents.

4.4 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 the Contractor. The Contractor shall also bear any extra cost incurred by the Library due to this failure.

4.5 The Contractor shall prosecute The 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 the Contractor, the 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 Library.

4.6 The 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. The Contractor shall submit to the Library review and approval all shop drawings, product data, samples and tests required by the contract documents.

4.7 The 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 Library, unless the superintendent ceases to be in the Contractor's employ. The superintendent shall attend all coordination, scheduling, progress and safety meetings where the Contractor's work is involved or as required by the Library. The Library may, in writing, require the Contractor to remove from the contract work any employees deemed by the Library to be incompetent, habitually careless, grossly insubordinate or otherwise objectionable.

4.8 The Library or its representatives will furnish basic control points and bench marks. Any further layout necessary for completion of the Contract is the responsibility of the Contractor. The Contractor shall lay out its work from control points supplied by the Library and be responsible for its accuracy and the placement of all inserts, embedments, grounds and blackout, etc. as required to complete the work. The 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.

4.9 The Contractor shall be required, as necessary, to meet with the Library and the Consultant to review and develop a construction schedule for the project.

4.10 The Contractor shall be required to develop and submit to the Library for their review and approval a safety program to be followed during the performance of the Contractor's work.

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

4.12 If the Library agrees at its sole option to allow the Contractor to use the Library's tools or equipment, the Contractor shall do so at its sole risk and shall hold the 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 the Contractor. The Library shall be reasonably compensated by the Contractor for such tools and equipment. In the event that one or more of the Library's personnel operate such tools or equipment for the Contractor, said personnel shall be employees of the Contractor for all purposes while so operating said tools or equipment, whether or not such personnel are placed on the Contractor's payroll. The 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 the Contractor fail to do so, compensate such personnel by placing them on its payroll, the Library may compensate such personnel on behalf of and for the Contractor and deduct such sum from any amounts due to the Contractor.

4.13 The Contractor shall furnish progress reports of the 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 of manufacture.

4.14 The 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 relating to its work.

4.15 The 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 the Contractor's final payment.

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

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

4.18 The 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 the Contractor's work and shall furnish copy of said permits, licenses and inspection reports to the Library prior to start of the Contractor's work.

4.19 The 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 laws insofar as applicable to the performance of this agreement. In this regard, the Contractor shall be 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 Library with said certified payroll records.

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

4.21 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.

4.22 Every part of the 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 Library and Consultant 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.

4.23 The Contractor shall provide the 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.

4.24 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 to the Contractor.

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

**5 Insurance**

5.1 Prior to starting the contract work, the 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 the Contractor's work.

5.2 The 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) the 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) the 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 Library. Before commencing the work, the Contractor shall furnish the 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 the Library. The Contractor shall not cancel any policies of insurance required hereunder prior to completion of the work without written consent of the Library.

5.4 The 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 the Contractor or in any way diminish its liability, by way of indemnity or otherwise, as assumed by it under this agreement. The Library shall furnish, at the Contractor's request, satisfactory evidence of such insurance as the Library may be required to obtain pursuant to the contract documents.

5.6 The Library and the Contractor waive all rights against each other and against the Consultant/engineer, 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**

6.1 To the fullest extent permitted by law, the Contractor agrees to indemnify and hold harmless, the Library, the Consultant 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 the 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.

6.2 In any and all claims against the Library, Consultant 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.

6.3 The obligations of the Contractor under this paragraph 6 shall not extend to the liability of the Consultant, 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 Consultant, their agents or employees, providing such giving or failure to give is the primary cause of the injury or damage.

## **7 Bond**

If required by the Library, the Contractor shall furnish the Library, in a form satisfactory to the Library, full and duly executed performance and payment bonds, underwritten by a surety or sureties satisfactory to the 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 The Contractor agrees that the 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. The Contractor agrees to proceed with the work as changed when so ordered in writing by the Library so as not to delay the progress of the work, and pending any determination of the value thereof unless the Library first requests a proposal of cost before the change is effected. If the Library requests a proposal of cost for a change, the 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 The Contractor shall be paid for changes or alterations in the work the actual amount allowed therefore to the Contractor by the Library. The 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 The 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 Library or any of his representatives unless a change order or written directive therefor has been issued in writing by the Library. If extra work was ordered by the Library and the Contractor performed same but did not receive a written order therefor, the Contractor shall be deemed to have waived any claim for extra compensation therefore, contractor shall be responsible for any increased costs incurred by the Consultant, other contractors and subcontractors that result from the Contractor proceeding with changes without a written order therefor.

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

## **9 Inspection & Approvals**

9.1 The 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 the Contractor's work by the Library, or any other authorized representative. The Contractor shall notify the Library when portions of its work are ready for inspection.

9.2 The Contractor shall, within twenty-four (24) hours after receiving written notice from the 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 the 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 the Contractor shall prepare at its own expense and furnish promptly, whenever requested by the 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 Library for review and approval by the Library or its representative, and for distribution among the other contractors or subcontractors. The 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, the Contractor shall promptly inform the Library.



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

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

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

10.1 Should the Contractor fail in the opinion of the 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 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 the Contractor. The Library shall provide twenty-four (24) hour prior notice to the Contractor except in any emergency.

10.2 If the 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- (2) calendar-day notice of such default, terminate the Contractor's employment by delivering written notice of termination to the Contractor. Thereafter, the Library may take possession of the land and work of the Contractor At the building site, and through itself or others provide labor, equipment and materials to prosecute the 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 the Contractor's failure to perform, from any money then due or thereafter to become due to the Contractor.

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

10.4 Additionally, the Library shall have the right to terminate this contract, by written notice, without the Contractor being at fault, for any cause or for its own convenience, and require the Contractor to immediately stop work. In such event, the Library shall pay the Contractor for that work actually performed in an amount proportionate to this contract sum. The Library shall not be liable to the 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 The 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 Library. The 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 Library be liable or responsible therefor, and likewise for those of its mechanics, laborers, and materialmen, for all of which the Contractor shall be solely responsible. The 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 the 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 the Contractor as part of this contract without any additional compensation. The Contractor agrees to indemnify and save the Library, and Consultant harmless from and against any and all claims, loss or expense caused directly or indirectly by its failure to fully comply herewith.

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

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

13.4 **COVID-19** the Contractor understands the novel coronavirus ("COVID-19") is an extremely contagious disease, which can lead to serious illness. The Contractor is familiar with the Centers for Disease Control and Prevention ("CDC") guidelines regarding COVID-19 and understands those guidelines are subject to change. The 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. The Contractor affirms that no one on the job site has experienced any of the symptoms of COVID-19 within the last 14 days. If the Contractor's onsite workers exhibit any of the symptoms of COVID-19 at any time before, during or within 30 days of working in the Library facilities, the Contractor will immediately notify the Library. The 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. The 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.

#### **14 Patents**

The Contractor agrees to pay all royalties and license fees and to indemnify and hold harmless the 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 the Contractor, unless required by the contract documents and not originated or prepared by the Contractor.

#### **15 Guarantee**

15.1 The Contractor warrants to the 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 The Contractor agrees to promptly make good, without cost to the 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 Library. The Contractor further agrees to execute any special guarantees as provided by the contract documents or required by law. The Contractor shall require similar guarantees from all vendors and subcontractors.

15.3 The 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 The 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. The Contractor shall employ only such labor as, to the 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 The Contractor shall fully comply with all labor agreements and jurisdictional decisions presently in force or subsequently executed with or by the Library. The Contractor's failure to act may be deemed a material breach of this Contract.

16.3 Subcontractors shall comply with this article to the same extent as the Contractor. The Contractor shall include an express provision imposing such obligations on subcontractors in its subcontracts. The Contractor shall indemnify the 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**

The Contractor will furnish those temporary facilities and services required by the Contractor except for those, if any, to be provided by the Library as set forth in the contract documents. Storage areas, if available, will be allocated by the Library for the 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 Library.

## **18 Occupancy of Project**

Whenever it may be useful or necessary for the Library to do so, the Library shall be permitted to occupy and use any portion of the work has been either partially or fully completed by the Contractor before final inspection and acceptance thereof by the Library but such use of occupation shall not relieve the 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 Library.

## **19 Equal Opportunity**

19.1 The Library is an equal employment opportunity employer. The 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 the Contractor with any other person or entity for the performance of services in connection with this agreement. The Contractor agrees to

supply the Library with any documentation requested by the Library and to permit the Library to review The Contractor's records, reports and other documents as necessary to ascertain the Contractor's compliance with the provisions of this subparagraph.

19.2 The 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 the Contractor is requested to provide services, in connection with the performance of its services pursuant to this agreement.

## **20 Inspection of Documents**

The Contractor acknowledges that all of the contract documents are on file in the Library's office and have been made available to the Contractor for inspection and copying. The Contractor represents that it has carefully examined all of such contract documents or waives such examination. The 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 notify the Library in writing within three (3) working days of the Contractor's discovery thereof. Upon receipt of said notice, the Library shall instruct the Contractor as to the measures to be taken and the Contractor shall comply with the 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 Consultants and/or engineers or subcontractors engaged by Contractors prepared or participated in the preparation of, the Contractor will indemnify and hold harmless the Library and Consultant and 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 its Consultant or engineer 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 Library, and Consultant and costs and expenses incurred in modifying the design and work of the Library, and the Library's Consultant rendered directly or indirectly incompatible as a result of such errors or omissions and in redesigning of the Contractor's work affected or rendered incompatible as a consequence of such errors or omissions, all as determined by the Library.

## **23 Miscellaneous**

23.1 Failure by the Library in any instance to insist upon observance or performance by the 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 Library unless the same is in writing signed by the 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 Library to the 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 The Contractor shall not place signs of any kind upon the project site without prior written approval of the 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, the 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 Library. All modifications of this contract must be in writing and signed by the parties hereto to be valid.

Contractor agrees to cooperate with the 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.

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

23.5 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. Attention: Jim Slattery

**CONSULTANT:**

**CONTRACTOR:**

The following exhibits are attached hereto and made part hereof: Exhibit A, B

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

ATTEST:

\_\_\_\_\_

ATTEST:

\_\_\_\_\_

ST. LOUIS PUBLIC LIBRARY

By \_\_\_\_\_

Title: Chief Financial Offices

CONTRACTOR:

BY: \_\_\_\_\_

Title:



## Document 00410 - Bid Form

To: St. Louis Public Library

Projects: St. Louis Public Library  
WALNUT PARK & MACHACEK BRANCHES  
**PROJECT 26-006320**

Contractor’s proposal is to be emailed to St. Louis Public Library, [bids@slpl.org](mailto:bids@slpl.org) before 2:00 pm on May 6, 2024, 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 (WALNUT PARK & MACHACEK BRANCHES)**

**2.1 REQUEST FOR ROOF REPLACEMENT PROPOSAL**

Pursuant to and in compliance with the Project’s Bid Documents, the Project’s Specification dated **February 13, 2024**, 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 “ALL ROOF AREAS – WALNUT PARK LIBRARY:”**

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 “ALL ROOF AREAS – MACHACEK LIBRARY:”**

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 CONTRACT TIME – LOGISTICS AND PLANNING**

**“ALL ROOF AREAS – WALNUT PARK”:** 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 to complete the project on time.

**2.1.4 CONTRACT TIME – LOGISTICS AND PLANNING**

**“ALL ROOF AREAS – MACHACEK”:** 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 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. Metal Deck Replacement / 3 span panel \$ \_\_\_\_\_
- B. Metal Rust Inhibitor / sq.ft. \$ \_\_\_\_\_
- C. Metal Deck Repair / sq.ft. \$ \_\_\_\_\_
- 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 rolls 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
 

2021	_____
2022	_____
2023	_____

**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 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, statues, 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 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 Walnut Park & Machacek Branches 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: Current Missouri 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 1-105 - 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 labeled 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 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 of 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 of 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 bought to the immediate attention of the designated St. Louis Public Library's representative.

### **3.03 DECK BOARD**

- A. Mechanically attach single layer of ½" gypsum board to the steel or concrete decking.
  - 1. Field fastener density: Eight [16] per 4'x 8' board.
  - 2. Perimeter edge fastener density: Twelve [28] per 4'x 8' board, 12' in from perimeter.
  - 3. Perimeter corner fastener density: Sixteen [32] per 4'x 8' board, 12' in from perimeter.
  - 4. Fastener placement: ¾" minimum penetration of top flange only on steel 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 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 1.5" at Walnut Park location and one base layer at Machacek location: adhered with low rise foam adhesive. Machacek: Redundant layers of tapered insulation boards fabricated slope of 1/8-inch per 12 inches adhered with low rise foam to base layer of insulation.
  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 1/2 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 60/80 mil membrane, as indicated in the project specifications, Section 07540.
- B. Install Manufacturers 60/80 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 of it from the job site. The roofing contractor shall provide and install approved pre-manufactured pipe supports for gas piping and electrical conduits located within any of the referenced reroofing areas. 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. 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. Should inclement weather or a postponement in the roofing work occur, while a temporary water stop 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 03100 – CONCRETE FORMS AND ACCESSORIES

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Work includes, but is not necessarily limited to:
  - 1. Furnish all labor, materials, equipment, and services necessary or incidental to completion of formwork for cast-in-place concrete, with shoring, bracing, and anchorage; openings for other work; form accessories, and form stripping.
- 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 03200 – Concrete Reinforcement.
  - 2. Section 03300 – Cast-in-place Concrete

#### 1.02 SUBMITTALS

- A. Submittal Procedures: Procedures for submittals
  - 1. Shop Drawings: Submit formwork and shoring shop drawings; indicate: Pertinent dimensions, openings, methods of construction, types of connections, materials, joint arrangement and details, ties and shores, location of framing, studding, and bracing, and temporary supports.
  - 2. Means of leakage prevention for concrete exposed to view in finished construction.
  - 3. Sequence and timing of erection and stripping assumed compressive strength at time of stripping, height of lift and height of drop during placement.
  - 4. Vertical, horizontal, and special loads in accordance with ACI 347, Section 2.2 and camber diagrams, if applicable.

#### 1.03 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 347, ACI 301, and ACI 318.
- B. For wood products furnished for Work of this Section, comply with applicable provisions of AF&PA National Design Specifications for Wood Construction.
- C. Maintain one copy of each document on site.
- D. Design formwork under direct supervision of a professional engineer experienced in design of this work and licensed in the State of Arizona.

#### 1.04 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.

#### **1.05 REFERENCES**

- A. ACI 117 - Tolerances for Concrete Construction and Materials.
- B. ACI 301 - Structural Concrete for Buildings.
- C. ACI 318 - Building Code Requirements for Reinforced Concrete.
- D. ACI 347 - Recommended Practice For Concrete Formwork.
- E. AF&PA - National Design Specifications for Wood Construction.
- F. ASME A17.1 - Safety Code for Elevators, Dumbwaiters, Escalators, and Moving Walks
- G. ASTM D 1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-Extruding and Resilient Bituminous types).
- H. SPIB - 1994 Standard Grading Rules for Southern Pine Lumber (and Supplements).
- I. WCLIB Rule No. 17 - Standard Grading and Dressing Rules.

#### **1.06 DESIGN REQUIREMENTS**

- A. Design, engineer, and construct formwork, shoring and bracing to conform to design and code requirements; resultant concrete to conform to required shape, line, and dimension.

#### **1.07 COORDINATION**

- A. Coordinate this Section with other sections of work, which require attachment of components to formwork.
- B. If formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement before proceeding, request instructions from Owner Representative.

## **PART 2 PRODUCTS**

### **2.01 WOOD FORM MATERIALS**

- A. Form Materials: At Contractor's discretion.
- B. Plywood: Douglas Fir or Spruce species; solid one side grade; sound undamaged sheets with clean, true edges.
- C. Lumber Forms: Use for edge forms and unexposed finish concrete. Boards shall be 6 inches or 8 inches in width, shiplap or tongue and groove, Standard Grade Douglas Fir, conforming to WCLIB Standard Grading and Dressing Rule No. 17. Surface boards on four sides.
- D. Plywood Forms: Use for exposed finish concrete. Forms shall conform to PS-1. Each panel shall carry the grade trademark of the APA/EWA and shall be full size 4-foot by 8-foot panels. Use release agent at exposed finish concrete.

1. Plywood for surfaces to receive membrane waterproofing shall be a minimum of 5/8-inch thick and shall be APA Exterior grade.
2. Plywood where Smooth Finish is required shall be HD Overlay Plyform Structural I Exterior grade, minimum of 3/4-inch thick.

## **2.02 FORMWORK ACCESSORIES**

- A. Spreaders: Standard, noncorrosive metal form clamp assembly, of type acting as spreaders and leaving no metal within 1 inch of concrete face. No wire ties, wood spreaders or through bolts will be permitted.
- B. Form Anchors and Hangers: Anchors and hangers used for exposed concrete shall not leave exposed metal at surface. Hangers supporting forms from structural steel shall be symmetrically arranged on supporting members to minimize twisting or rotation of member. Penetration of structural steel members will not be permitted.
- C. Form Release Agent: Colorless mineral oil which will not stain concrete, absorb moisture, or impair natural bonding or color characteristics of coating intended for use on concrete.
  1. Arcal Chemical Corporation, "Arcal-80".
  2. Nox-Crete Company, "Nox-Crete Form Coating".
  3. Industrial Synthetics Company, "Synthex".
  4. Owner Approved Equal.

## **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 lines, levels, and centers before proceeding with formwork. Ensure that dimensions agree with Shop Drawings.
- D. 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.
- E. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the Owner.

### **3.02 INSTALLATION**

- A. Formwork - General: Sloped surfaces steeper than 1.5 horizontal to 1 vertical should be provided with a top form to hold the shape of the concrete during placement, unless it can be demonstrated that top forms can be omitted. Construct forms to the correct shape and dimensions, mortar-tight, of sufficient strength, and so braced and tied together that movement of workers, equipment, materials, or the placing and vibrating of concrete shall be strong enough to maintain their shape under all imposed loads. Camber where necessary to assure level finished soffits unless otherwise shown on Drawings. Verify horizontal and vertical positions of forms and correct inaccuracies before placing concrete in any form. Complete wedging and bracing before placing concrete.
- B. Forms for Smooth Finish Concrete: Use steel, plywood, or lined board forms. Clean and smooth plywood and form liners, uniform in size, and free edges and holes from damage. Form lining shall have close-fitting square joints between separate sheets and shall not be sprung into place. Sheets of form lines and plywood shall be full size wherever possible and joints shall be taped to prevent protrusions in concrete. Use special care in forming and stripping wood forms to protect corners and edges. Level and continue all horizontal joints. Wet wood forms at all times until stripping.

- C. Framing, Studding and Bracing: Space studs at 16 inches on center maximum for boards and 12 inches on center maximum for plywood. Framing, bracing, centering, and supporting members shall be of adequate size and strength to carry safely, without deflection, all dead and live loads to which forms may be subjected and shall be spaced sufficiently close to prevent any bulging or sagging of forms. Soffits of all beam forms shall be constructed of material a minimum of 2 inches thick. Distribute bracing loads over base area on which bracing is erected.
- D. Erect formwork, shoring, and bracing to achieve design requirements, in accordance with requirements of ACI 301.
- E. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
- F. Install void forms in accordance with manufacturer's recommendations.
- G. Do not reuse wood formwork more than 3 times for concrete surfaces to be exposed to view. Do not patch formwork.

### **3.03 APPLICATION – FORM RELEASE AGENT**

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.

### **3.04 FIELD QUALITY CONTROL**

- A. Quality Control: Field-testing and inspection.
- B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and that supports, fastenings, wedges, ties, and items are secure.
- C. Notify Owner representative after placement of reinforcing steel in the forms, but prior to placing concrete, so that review may be made.

### **3.05 APPLICATION – FORM RELEASE AGENT**

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.

### **3.06 FORM CLEANING**

- A. Clean forms as erection proceeds, to remove foreign matter within forms.
- B. Clean formed cavities of debris prior to placing concrete.
- C. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.
- D. During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out forms unless formwork and concrete construction proceed within heated enclosure. Use compressed air or other means to remove foreign matter.

### **3.07 FORM REMOVAL**

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads and the removal has been approved by Owner representative.

- B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- C. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms.
- D. Forms shall be left in place for not less than the total number of days as specified in ACI 347.

**3.08 ERECTION TOLERANCES**

- A. Construct formwork to maintain tolerances required by ACI 301.
- B. Tolerances: Construct formwork so that concrete surfaces shall be within construction tolerances specified in ACI 117.

**END OF SECTION 03100**

## SECTION 03200 – CONCRETE REINFORCEMENT

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Work includes, but is not necessarily limited to:
  - 1. Furnish all labor, materials, equipment, and services necessary or incidental to completion of formwork for cast-in-place concrete, with shoring, bracing, and anchorage; openings for other work; form accessories, and form stripping.
- 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 03100 – Concrete Forms and Accessories
  - 2. Section 03300 – Cast-in-place Concrete

#### 1.02 SUBMITTALS

- A. Submittal Procedures: Procedures for submittals
  - 1. Shop Drawings: Indicate bar sizes, spacings, locations, and quantities of reinforcing steel and welded wire fabric, bending and cutting schedules, and supporting and spacing devices.
  - 2. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
  - 3. Submit certified copies of mill test report of reinforcement materials analysis.

#### 1.03 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301, ACI SP-66, and ACI 318.
- B. Maintain one copy of each document on site.
- C. Provide Owner Representative with access to fabrication plant to facilitate review of reinforcement. Provide notification of commencement and duration of shop fabrication in sufficient time to allow review.
- D. Detail reinforcement and prepare shop drawings in accordance with ACI 315.
- E. Welders' Certificates: Submit manufacturer's certificates, certifying welders employed on Work, verifying AWS qualification within previous 12 months.

#### 1.04 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.

#### **1.05 REFERENCES**

- A. ACI 301 - Structural Concrete.
- B. ACI 318 - Building Code Requirements for Structural Concrete.
- C. ACI SP-66 - Detailing Manual.
- D. ASTM A 82 - Steel Wire, Plain, for Concrete Reinforcement.
- E. ASTM A 184 - Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
- F. ASTM A 497 - Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.
- G. ASTM A 615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
- H. ASTM A 617 - Axle-Steel Deformed and Plain Bars for Concrete Reinforcement.
- I. ASTM A 641 - Zinc-Coated (Galvanized) Carbon Steel Wire.
- J. ASTM A 704 - Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement.
- K. ASTM A 706 - Low-Alloy Steel Deformed Bars for Concrete Reinforcement.
- L. ASTM A 767 - Zinc-Coated (Galvanized) Bars for Concrete Reinforcement.
- M. ASTM A 775 - Epoxy-Coated Reinforcing Steel Bars.
- N. ASTM A 884 - Epoxy-Coated Steel Wire and Welded Wire Fabric for Reinforcement.
- O. ASTM A 934 - Epoxy-Coated Prefabricated Reinforcing Bars.
- P. ASTM A 996 - Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement.
- Q. ASTM D 3963 - Practice for Selection of Coating Specimens for Appearance Measurements.
- R. AWS D1.4 - Structural Welding Code - Reinforcing Steel.
- S. CRSI - Manual of Practice.

#### **1.06 DESIGN REQUIREMENTS**

- A. Design, engineer, and construct formwork, shoring and bracing to conform to design and code requirements; resultant concrete to conform to required shape, line, and dimension.

#### **1.07 COORDINATION**

- A. Coordinate with placement of formwork, formed openings and other Work.



## **PART 2 PRODUCTS**

### **2.01 REINFORCEMENT**

- A. Reinforcing Steel: ASTM A 615, 60 ksi yield grade; deformed billet steel bars, unfinished.
- B. Reinforcing Steel Plain Bar and Rod Mats: ASTM A 704, ASTM A 615, Grade 60; steel bars or rods, unfinished.
- C. Stirrups Steel: ASTM A 82, unfinished.
- D. Welded Steel Wire Fabric: ASTM A 497 Deformed Type; in flat sheets; unfinished.

### **2.02 ACCESSORY MATERIALS**

- A. Tie Wire: Minimum 16 gage annealed type, epoxy coated.
- B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions including load bearing pad on bottom to prevent vapor retarder puncture.
- C. Special Chairs, Bolsters, Bar Supports, Spacers Adjacent to Weather Exposed Concrete Surfaces: Plastic-coated steel type; size and shape as required.

### **2.03 FABRICATION**

- A. Fabricate concrete reinforcement in accordance with ACI SP-66, ACI 318 & ASTM A 184.
- B. Where applicable, weld reinforcement in accordance with AWS D1.4.
- C. Locate reinforcement splices not indicated Drawings, at point of minimum stress. Review location of splices with Owner Representative.

## **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 lines, levels, and centers before proceeding with formwork. Ensure that dimensions agree with Shop Drawings.
- D. 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.
- E. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the Owner.

### **3.02 INSTALLATION**

- A. Place, support, and secure reinforcement against displacement. Do not deviate from required position.
- B. Do not displace or damage vapor barrier.
- C. Accommodate placement of formed openings.
- D. Conform to applicable code for concrete cover over reinforcement.

### **3.03 FIELD QUALITY CONTROL**

- A. Quality Control: Field-testing and inspection.
- B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and that supports, fastenings, wedges, ties, and items are secure.
- C. Notify Owner representative after placement of reinforcing steel in the forms, but prior to placing concrete, so that review may be made.

**END OF SECTION 03200**

## SECTION 03300 – CAST-IN-PLACE CONCRETE

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Work includes, but is not necessarily limited to:
  - 1. Furnish all labor, materials, equipment, and services necessary or incidental to completion of the cast-in-place concrete; the engineering of the concrete mix; independent concrete inspection and testing; the openings for other work; and the shoring, bracing, anchorage form products and accessories, and form stripping associated with the concrete work.
- 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 03100 – Concrete Forms and Accessories
  - 2. Section 03200 – Concrete Reinforcement

#### 1.02 SUBMITTALS

- A. Submittal Procedures: Procedures for submittals.
- B. Product Data: Submit data on joint devices, attachment accessories, and admixtures.
- 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 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301, ACI SP-66, and ACI 318.
- B. Maintain one copy of each document on site.
- C. Acquire cement and aggregate from same source for all Work.
- D. Conform to ACI 305R when concreting during hot weather.
- E. Conform to ACI 306.1 when concreting during cold weather.

#### 1.04 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.

#### **1.05 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION**

- A. Section 03100 - Concrete Forms and Accessories

#### **1.06 REFERENCES**

- A. ACI 301 - Structural Concrete for Buildings.
- B. ACI 302 - Concrete Floor and Slab Construction.
- C. ACI 304R - Measuring, Mixing, Transporting and Placing Concrete.
- D. ACI 305R - Hot Weather Concreting.
- E. ACI 306.1 - Cold Weather Concreting.
- F. ACI 308 - Curing Concrete.
- G. ACI 318 - Building Code Requirements for Structural Concrete and Commentary.
- H. ASTM B 221 - Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.
- I. ASTM C 33 - Concrete Aggregates.
- J. ASTM C 94 - Ready-Mixed Concrete.
- K. ASTM C 150 - Portland Cement.
- L. ASTM C 260 - Air Entraining Admixtures for Concrete.
- M. ASTM C 494 - Chemicals Admixtures for Concrete.
- N. ASTM C 595M - Blended Hydraulic Cements (Metric).
- O. ASTM C 618 - Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.
- P. ASTM C 1017 - Chemical Admixtures for Use in Producing Flowing Concrete.
- Q. ASTM C 1107 - Packaged Dry, Hydraulic Cement Grout (Nonshrink).
- R. ASTM D 994 - Preformed Expansion Joint Filler for Concrete (Bituminous Type).
- S. ASTM D 1190 - Concrete Joint Sealer, Hot-Poured Elastic Type.
- T. ASTM D 1751 - Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
- U. ASTM D 1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.

### **1.07 FIELD SAMPLES**

- A. Coordinate with Section 03100.

### **1.08 COORDINATION**

- A. Coordinate with placement of formwork, formed openings and other Work.

## **PART 2 PRODUCTS**

### **2.01 CONCRETE MATERIALS**

- A. Cement: ASTM C 150, Type I - Normal Portland type.
- B. Fine and Coarse Aggregates: ASTM C 33.
- C. Water: Clean and not detrimental to concrete.

### **2.02 ADMIXTURES**

- A. Air Entrainment: ASTM C 260.
- B. Chemical: ASTM C 494, Type A - Water Reducing.
- C. Fly Ash: ASTM C 618, Class C.
- D. Plasticizing: ASTM C 1017.

### **2.03 ACCESSORIES**

- A. Bonding Agent: Polymer resin emulsion.
- B. Non-Shrink Grout: ASTM C 1107, Grade A; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 pounds per square inch in 48 hours and 7,000 pounds per square inch in 28 days.

### **2.04 JOINT DEVICES AND FILLER MATERIALS**

- A. Joint Filler Type A: Asphalt impregnated fiberboard or felt, 1/4-inch thick; tongue and groove profile.
- B. Construction Joint Devices: Integral galvanized steel, formed to tongue and groove profile, with removable top strip exposing sealant trough, knockout holes spaced at 6 inches, ribbed steel spikes with tongue to fit top screed edge.

### **2.05 CONCRETE MIX**

- A. Mix concrete in accordance with ACI 301. Deliver concrete in accordance with ASTM C 94.
- B. Select proportions for normal weight concrete in accordance with ACI 301 trial mixtures.
- C. Select aggregate proportions for light weight concrete in accordance with ASTM C 330, ACI 301 and ACI 318.
- D. Use accelerating admixtures in cold weather only when approved. Use of admixtures will not relax cold weather placement requirements.
- E. Use calcium chloride only when approved.
- F. Use set retarding admixtures during hot weather only when approved.

- G. Add air entraining agent to normal weight concrete mix for work exposed to exterior.
- H. Provide 3,000 PSI concrete minimum for all Concrete and Flatwork (unless otherwise noted on drawings).

### **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 lines, levels, and centers before proceeding with formwork. Ensure that dimensions agree with Shop Drawings.
- D. Verify requirements for concrete cover over reinforcement.
- E. Verify that anchors, seats, plates, reinforcement, and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

#### **3.02 PREPARATION**

- A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent.
- B. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

#### **3.03 PLACING CONCRETE**

- A. Place concrete in accordance with ACI 301 and ACI 318.
- B. Notify Owner Representative a minimum 24 hours prior to commencement of operations.
- C. Ensure reinforcement, inserts, embedded parts, and formed expansion and contraction joints are not disturbed during concrete placement.
- D. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- E. Place concrete continuously between predetermined expansion, control, and construction joints.
- F. Do not interrupt successive placement; do not permit cold joints to occur.
- G. Screed slabs on grade level, maintaining surface flatness of maximum 1/8-inch in 10 feet.

#### **3.04 CONCRETE FINISHING**

- A. Steel trowel surfaces which are scheduled to be exposed.

#### **3.05 CURING AND PROTECTION**

- A. Immediately after placement, protect concrete from premature drying, excessively hot, or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

- C. Cure surfaces in accordance with ACI 301.

### **3.06 FIELD QUALITY CONTROL**

- A. Quality Control: Field-testing and inspection.
- B. Contractor to provide independent testing company field inspection and testing. All field inspection and testing will be performed in accordance with ACI 301.
- C. Provide free access to Work and communicate with independent testing company.
- D. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of Work.
- E. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.
- F. Three concrete test cylinders will be taken for every 75 or less cubic yards of each class of concrete placed.
- G. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.
- H. One slump test will be taken for each set of test cylinders taken.
- I. One air content test will be made for each set of test cylinders taken.

### **3.07 PATCHING**

- A. Allow Owner Representative to review concrete surfaces immediately upon removal of forms.
- B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Owner Representative upon discovery.
- C. Patch imperfections as directed by Owner and/or RMT.

### **3.08 DEFECTIVE CONCRETE**

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances, or specified requirements.
- B. Repair or replacement of defective concrete will be determined by Owner Representative.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Owner Representative for each individual area.

**END OF SECTION 03300**



## 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 gauge) 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-gauge, 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 Teks 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-gauge 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 gauge) 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 07540 –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: WALNUT PARK LIBRARY: SECTIONS A & B:** Remove existing roof system down to the existing metal roof deck. Ensure the deck is clean of all debris. Install 5/8” 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 5/8” DensDeck board with Manufacturer’s primer. Install a self-adhered vapor barrier membrane over primed 5/8” 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 layers of 1.5” polyisocyanurate insulation fully adhered to SA Vapor barrier using FM 1-105 ribbon method. Installation of one (1) layer of 1/2” DensDeck board adhered with FM 1-105 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 80 mil PVC membrane system, separate piece 80 mil PVC membrane flashing installation, and allied metal component installation. New 24 ga. counter flashings. Installation of new drain flashings and related components including new metal drain strainers. Installation of new pitch pockets where needed.
- C. **SCOPE OF WORK: MACHACEK LIBRARY:** Remove existing roof system down to the existing concrete roof deck. Ensure the deck is clean of all debris. Install a self-adhered vapor barrier membrane over primed cleaned concrete deck 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 layers of 1.5” polyisocyanurate insulation fully adhered to SA Vapor barrier using FM 1-105 ribbon method. Installation of one (1) layer of 1/2” DensDeck board adhered with FM 1-105 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 60 mil PVC membrane system, separate piece 60 mil PVC membrane flashing installation, and allied metal component installation. New 24 ga. counter flashings. Installation of new drain flashings and related components including new metal drain strainers. Installation of new pitch pockets where needed.
- D. **SCOPE OF WORK: ALTERNATE: MACHACEK:** Remove existing roof system down to the existing concrete roof deck. Ensure the deck is clean of all debris. Install a self-adhered vapor barrier membrane over primed cleaned concrete deck 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. Installation of one (1) base layer of 1.5” polyisocyanurate insulation with low rise foam to vapor barrier using FM 105 ribbon method. Installation of 1/8” per foot tapered polyisocyanurate insulation adhered with low rise foam over the base layer of 1.5” polyisocyanurate using FM-105 ribbon method followed by the installation of one (1) layer of 1/2” DensDeck board adhered with FM 1-105 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, 60 mil Thermo-Plastic, fully adhered PVC membrane system, separate piece 60 mil PVC membrane flashing installation, and allied metal component installation. New 24 ga. counter flashings. Installation of new drain flashings and related components including new metal drain strainers. Installation of new pitch pockets where needed.
- E. Related Sections include the following:
  - 1. Division 5, Section for “Steel Decks”

2. Division 6, Section "Rough Carpentry for Roofing"
3. Division 7, Section "Sheet Metal Flashing and Trim"
4. 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 Roofing Contractors 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 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 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, the 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 from the applicable testing agency.
  
- F. Pre-installation Conference: Before installing roofing system, conduct conference at Project site. Notify participants at least 10 working days before the conference.
  - 1. Meet with Owner's Representative/General Contractor, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
  - 2. Review methods and procedures related to roofing installation, including 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's 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 the Final Inspection Report to RMT within two days after the 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, 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 the 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 the 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 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 damage shall bear the total cost for the repairs or for the replacement of the 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: 80 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 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: 60/80 mil, flashing membrane is 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 the 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 the 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, 80 mils in thickness, 4 inches wide, and 100 feet in length.
- O. Prefabricated Pipe Flashing prefabricated vent pipe flashing made from 0.080 inch (80 mil/2.3 mm) thick membrane.
- P. Prefabricated Corner Flashing: corners, prefabricated universals corners made of 0.080 inch (80 mil/2.3 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 Manufacturer's 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. Smoke Developed: 0
  - 2. 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. Installation two layers of 1.5” true thickness at Walnut Park and one layer at Machacek library.
  - 2. 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 1/8-inch per 12 inches (1/2:48) 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 ½ -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% deflections.
  - 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® SpotShot.”
  - 2. Carlisle Roofing Products “DASH”

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

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

## **2.09 RELATED 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: 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 1¼ inch (32 mm) and shall be approved 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 by the 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 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 steel deck is securely fastened with no projecting fasteners and no adjacent units in excess of 1/16 inch (1.6 mm) or more out of plane measured to adjoining deck.
- E. Verify 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.
- F. 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.
- G. Other conditions that would prevent proper application of roofing or that would prevent membrane roofing manufacturer's approval of substrate, components, or system.
- H. Verify roofing systems can be installed with positive drainage of minimum slopes indicated at all areas of roof, without ponding after 24 hours.
- I. Verify roofing as completed will discharge to internal roof drains without ponding or inadvertent discharge through secondary roof drains.
- J. Verify final installed curb heights for flashing are a minimum of 8-inches (200 mm) measured above finished roof membrane.
- K. 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.
- L. Verify locations of interior electrical conduits, piping, ducts, and similar items near underside of steel roof decking, to avoid striking with fasteners.
- M. Verify deck and other substrates are dry, free of debris, excess, and foreign materials.



- N. Verify substrates and surfaces to receive flashings are dry, clean, and free of sharp or penetrating projections or other irregularities.
- O. Proceeding: Proceed with installation only after unsatisfactory conditions have been corrected.
- P. 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.
- Q. 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, and moisture from the roof's substrate, i.e., steel 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 overspray affecting other construction.
- J. Fill all gaps and voids between substrate components that are wider than 1/4 inch. Fill all gaps with the same materials as the substrate.
- K. 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.
- L. 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 the 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, 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 feet by 8 feet (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 require 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 the required thickness. Where overall insulation thickness is 1.5 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 laid 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 an FM 1-105 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 eight (8') feet x eight (8') 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 3/4 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 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 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 be not properly adhered to the proceeding layer, Contractor will be 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 low-rise urethane adhesives. The surface of the 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 1/3 of overall length from those of the insulation layer.
  8. The cover board shall be neatly cut to fit within 1/4 inch (6 mm) of nailers, penetrations, and projections.
  9. Fill all gaps exceeding 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 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 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 1/8-inch deviation or rise to the adjacent cover board, the Installer will be 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. dust, gravel, dual component adhesive residue, etc.
  2. The adhesive is roller-applied, using a using solvent-resistant ¾ 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 according 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 used 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 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. The 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 installed 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 another 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 80 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 field 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 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 a 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  $\frac{3}{4}$  inch (19 mm) nap paint rollers, to both the protection layer membrane and the PVC field membrane in the following manner:
    - a. Apply approximately  $\frac{1}{2}$  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 underside 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 placed 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 VISIBLE 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 be 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 addressed 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. Should a postponement in the roofing work occur during inclement weather or while a temporary water stop 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 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 the 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

## 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 workday.
- 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 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. Should during inclement weather a postponement in the roofing work occur while 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 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<sup>®</sup> 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-foot 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 formed 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 field measurements, surfaces, substrates, and conditions 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 enclose 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, 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 prefabricated 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 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 airtight 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 Urexpand, 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. Urexpand 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 form 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**

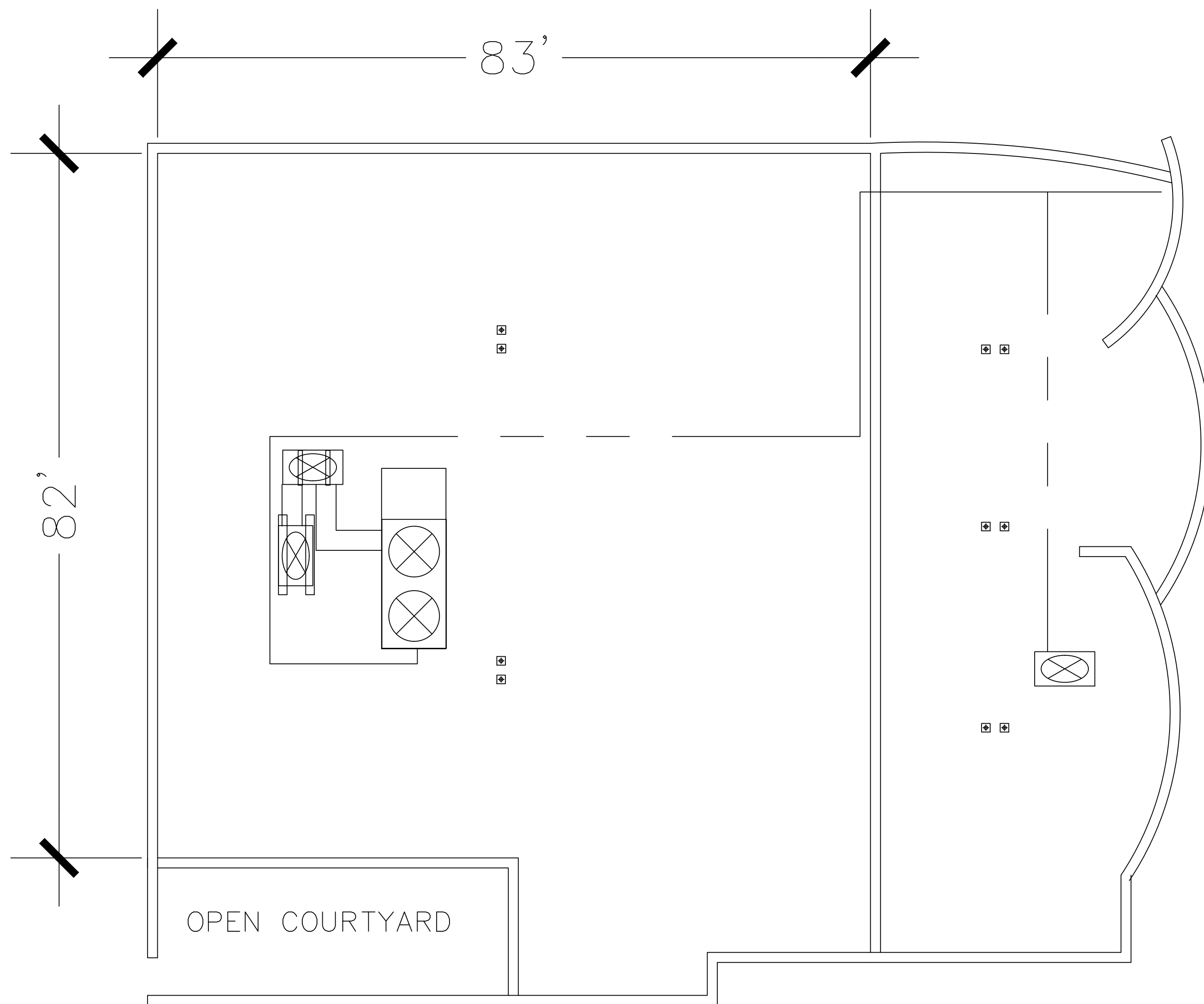
- A. Protect finished installation.
- B. Do not permit traffic over uncured sealant.

### **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**



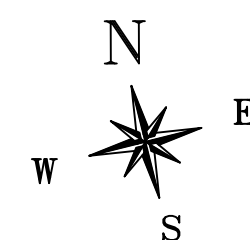
**CORE EXTRACTION DATA:**

- △ 1. METAL DECK, 1.5 ISO, 1.5" ISO 2-PLY APP.

**DEMOLITION NOTES**

1. REMOVE ENTIRE ROOF ASSEMBLY DOWN TO STRUCTURAL DECK.
2. REMOVE ALL DEBRIS FROM DECK SURFACE.
3. REMOVE ALL FLASHING MEMBRANES.
4. REMOVE ALL EXISTING COUNTERFLASHING FROM WALLS, CURBS, AND UNITS.
5. REMOVE ALL PIPE PROJECTION FLASHINGS.
6. COPING METAL TO REMAIN ON PARAPET WALL. DO NOT DISTURB
7. TEMPORARILY SUPPORT GAS LINES.
8. REMOVE ALL DRAIN FLASHINGS AND CLEAR ANY CLOGGED DRAINS.

**D DEMOLITION PLAN**  
 A101 SCALE: 3/32" = 1'



LEGEND	
△	ABANDONED UNIT
⊗	HVAC UNIT
⊕	DRAIN
⊕	AC UNIT ON BLOCKING
⊕	AC UNIT ON CURB
⊗	DUCTING
⊕	LOUVER VENT
⊕	DOMED VENTILATOR
⊕	PLUMBING VENT
⊕	POWER VENT
⊕	SKYLIGHT
△	CORE SAMPLE
●	HEATER STACK
●	PIPE PENETRATION
#	SECTION ID
⊕	SECTION CUT
⊕	WATER SPIGOT
⊕	GOOSENECK DUCTING

LEGEND	
⊕	ROOF DRAIN
⊗	SINGLE FAN HVAC UNIT
⊗	DUAL FAN HVAC UNIT

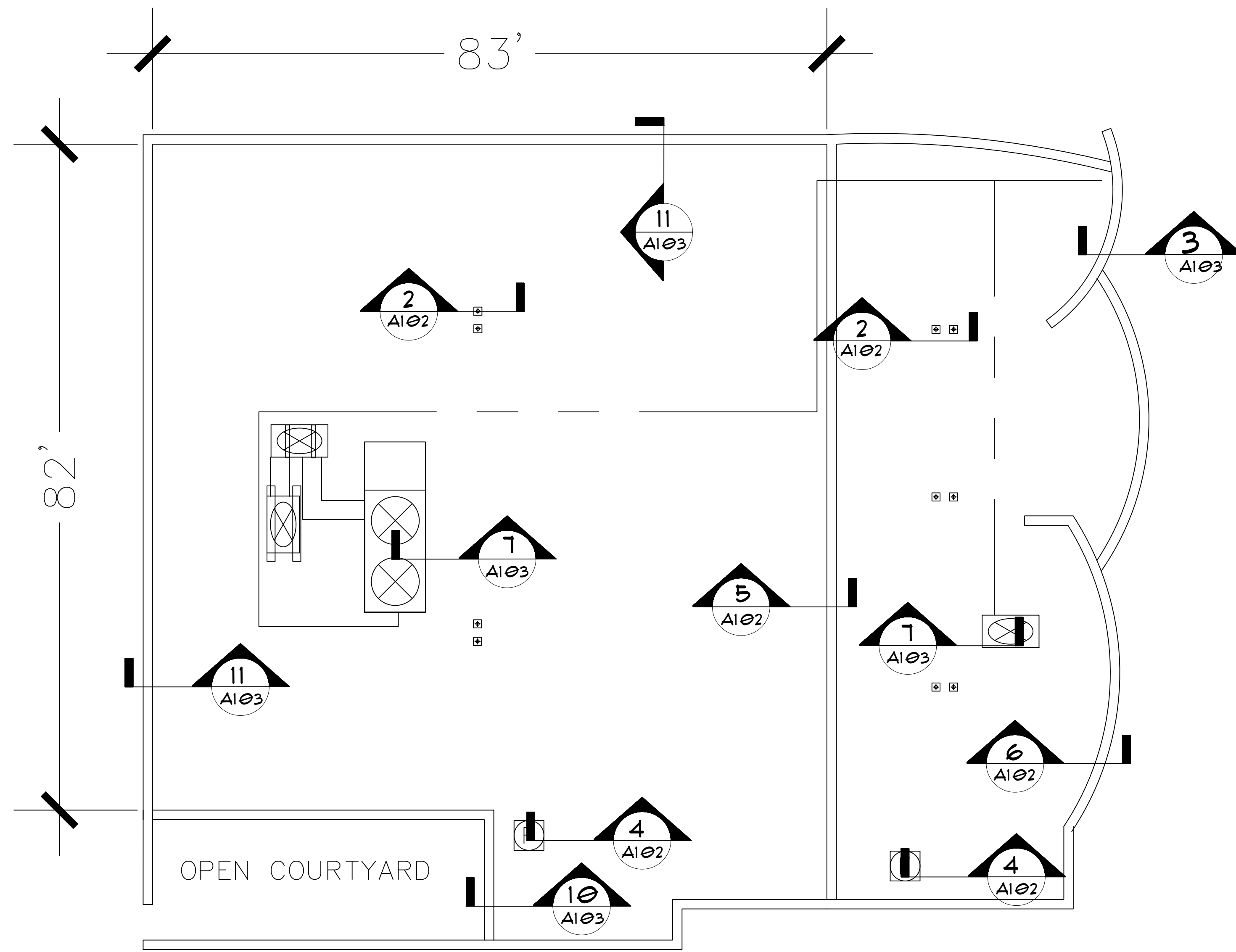
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 DEMOLITION ROOF PLAN

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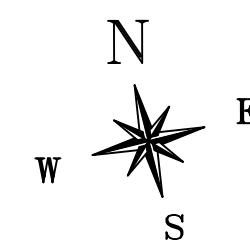
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 DRAWN BY: KFO  
 CHECKED BY: TAW



**REPLACEMENT NOTES:**

1. CLEAN, APPLY RUST INHIBITOR, AND REPLACE METAL DECK WHERE NEEDED.
2. MECHANICALLY ATTACH ONE LAYER OF 5/8" GYPSUM BOARD TO METAL DECK USING FM 105 ATTACHMENT PATTERN.
3. INSTALLATION OF SA VAPOR BARRIER TO PRIMED GYPSUM BOARD.
4. INSTALL BASE LAYER OF 1.5" POLYISO INSULATION FULLY ADHERED TO SA VAPOR BARRIER.
5. INSTALL SECOND LAYER OF 1.5" POLYISO INSULATION LAYER USING AN FM 105 RIBBON PATTERN, STAGGER ALL JOINTS A MIN OF 8".
6. FULLY ADHERE A LAYER OF 1/2" DENSDECK COVERBOARD TO THE POLYISO INSULATION LAYER USING AN FM 105 RIBBON PATTERN.
7. INSTALL 80 MIL PVC MEMBRANE WITH HOT AIR WELD LAPS.
8. INSTALL 80 MIL PVC FLASHING STRIPS AT PROJECTIONS AND PERIMETER FASTENED WITH 1" TERMINATION BAR.
9. INSTALL 24 GA. KYNAR COATED METAL COUNTERFLASHING AT PERIMETER, FASTEN 12" O.C. ON INSIDE FACE.
10. INSTALL TAPERED CRICKETS BETWEEN DRAINS & ENDWALLS. INSTALL DRAIN FLASHING

**R RENOVATION PLAN**  
AI01 SCALE: 3/32" = 1'



LEGEND	
[A]	ABANDONED UNIT
[HVAC]	HVAC UNIT
[DRAIN]	DRAIN
[AC]	AC UNIT ON BLOCKING
[AC]	AC UNIT ON CURB
[DUCTING]	DUCTING
[LOUVER VENT]	LOUVER VENT
[DOMED VENTILATOR]	DOMED VENTILATOR
[PLUMBING VENT]	PLUMBING VENT
[POWER VENT]	POWER VENT
[SKYLIGHT]	SKYLIGHT
[CORE SAMPLE]	CORE SAMPLE
[HEATER STACK]	HEATER STACK
[PIPE PENETRATION]	PIPE PENETRATION
[#]	SECTION ID
[SECTION CUT]	SECTION CUT
[WATER SPIGOT]	WATER SPIGOT
[GOOSENECK DUCTING]	GOOSENECK DUCTING

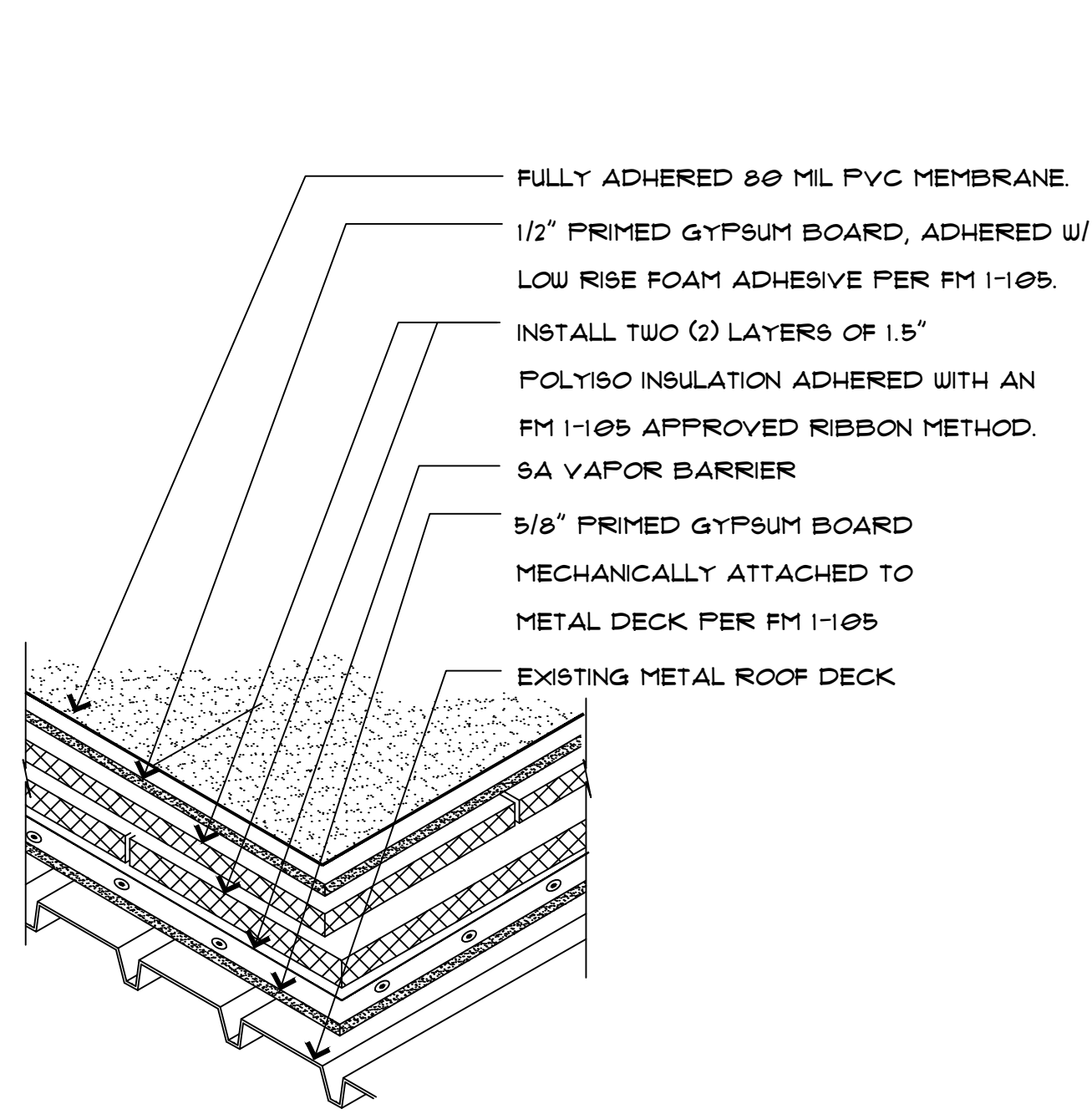
LEGEND	
[+]	ROOF DRAIN
[HVAC]	SINGLE FAN HVAC UNIT
[HVAC]	DUAL FAN HVAC UNIT

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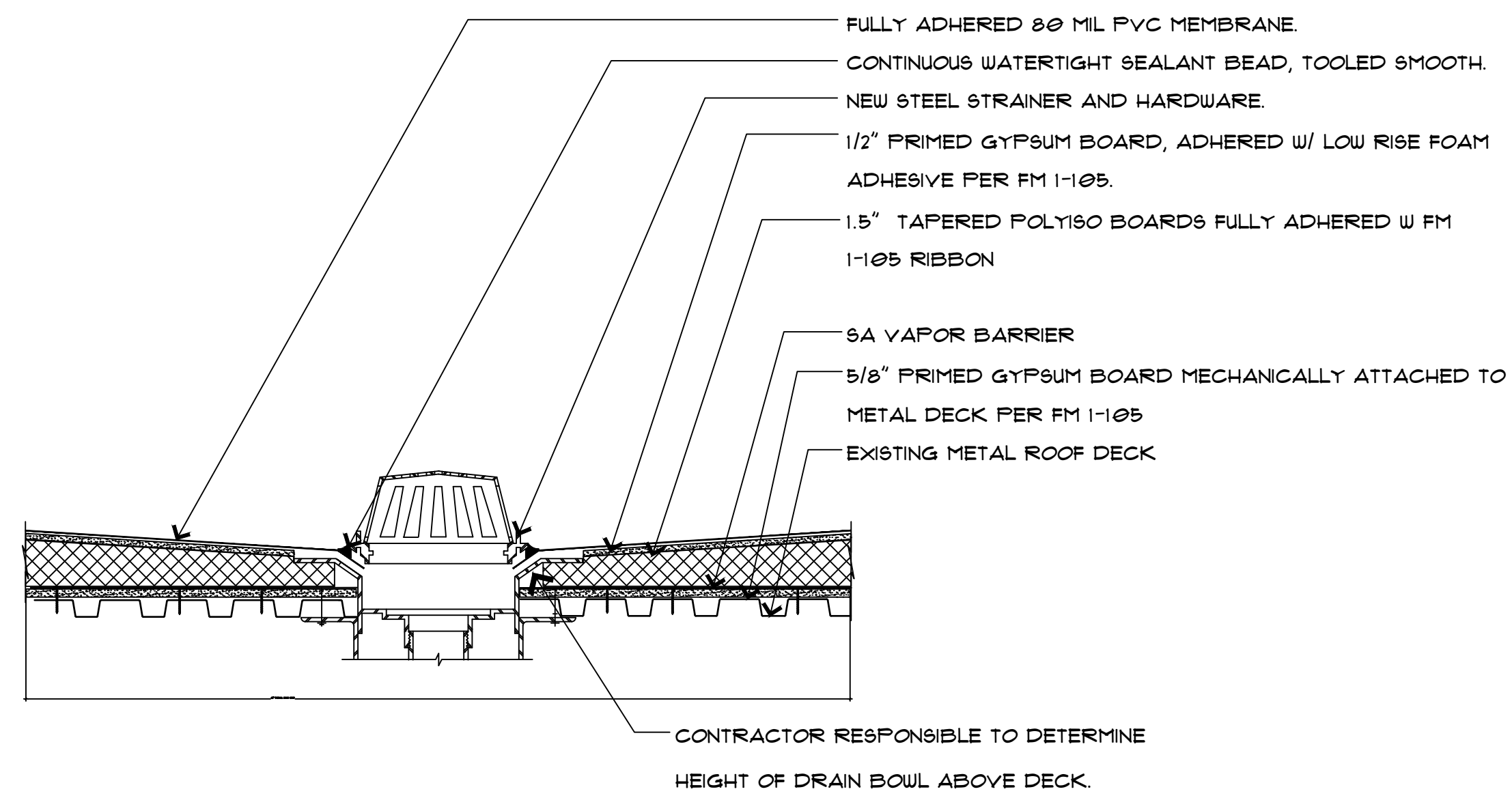
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 RENOVATION ROOF PLAN

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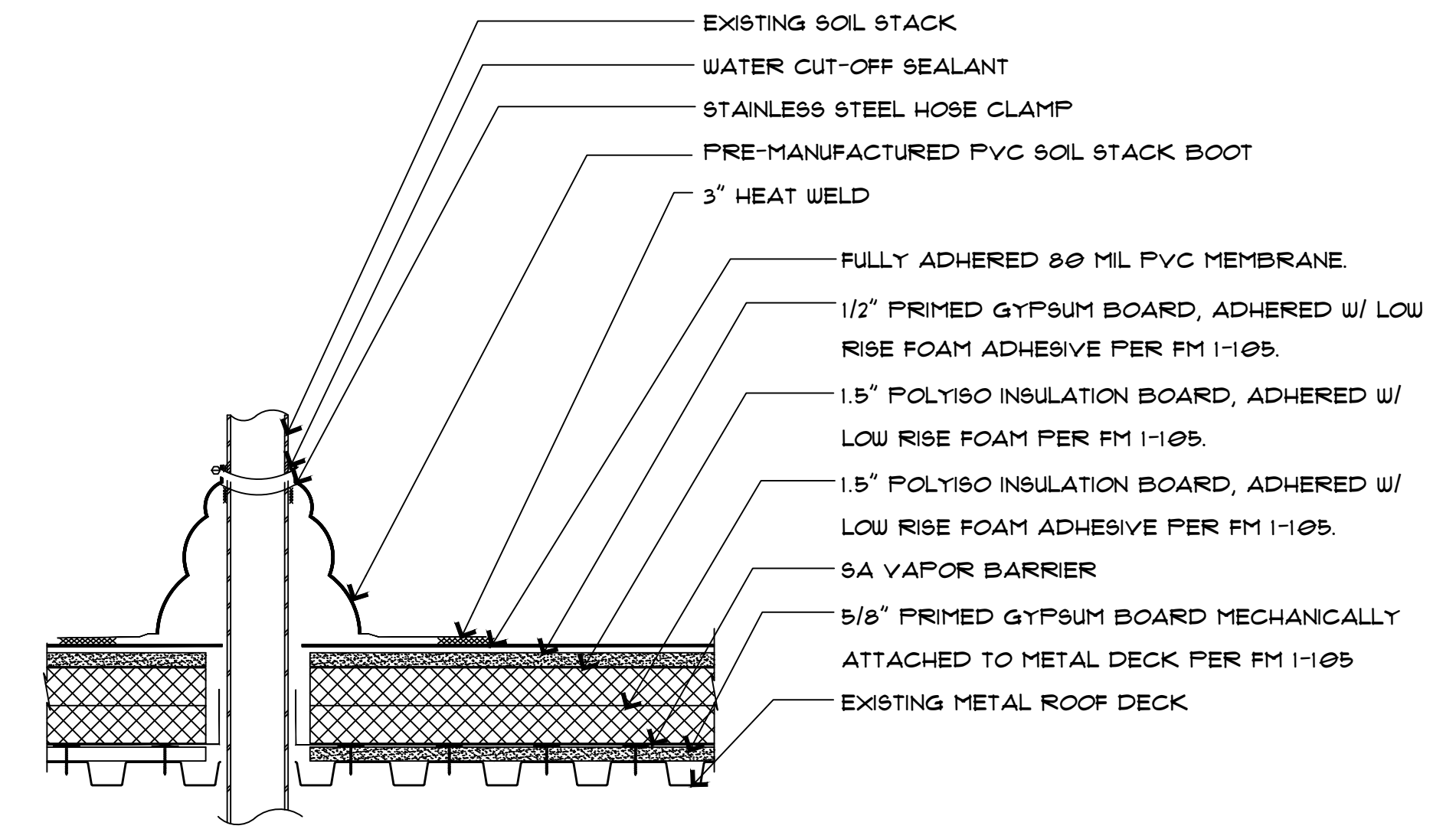




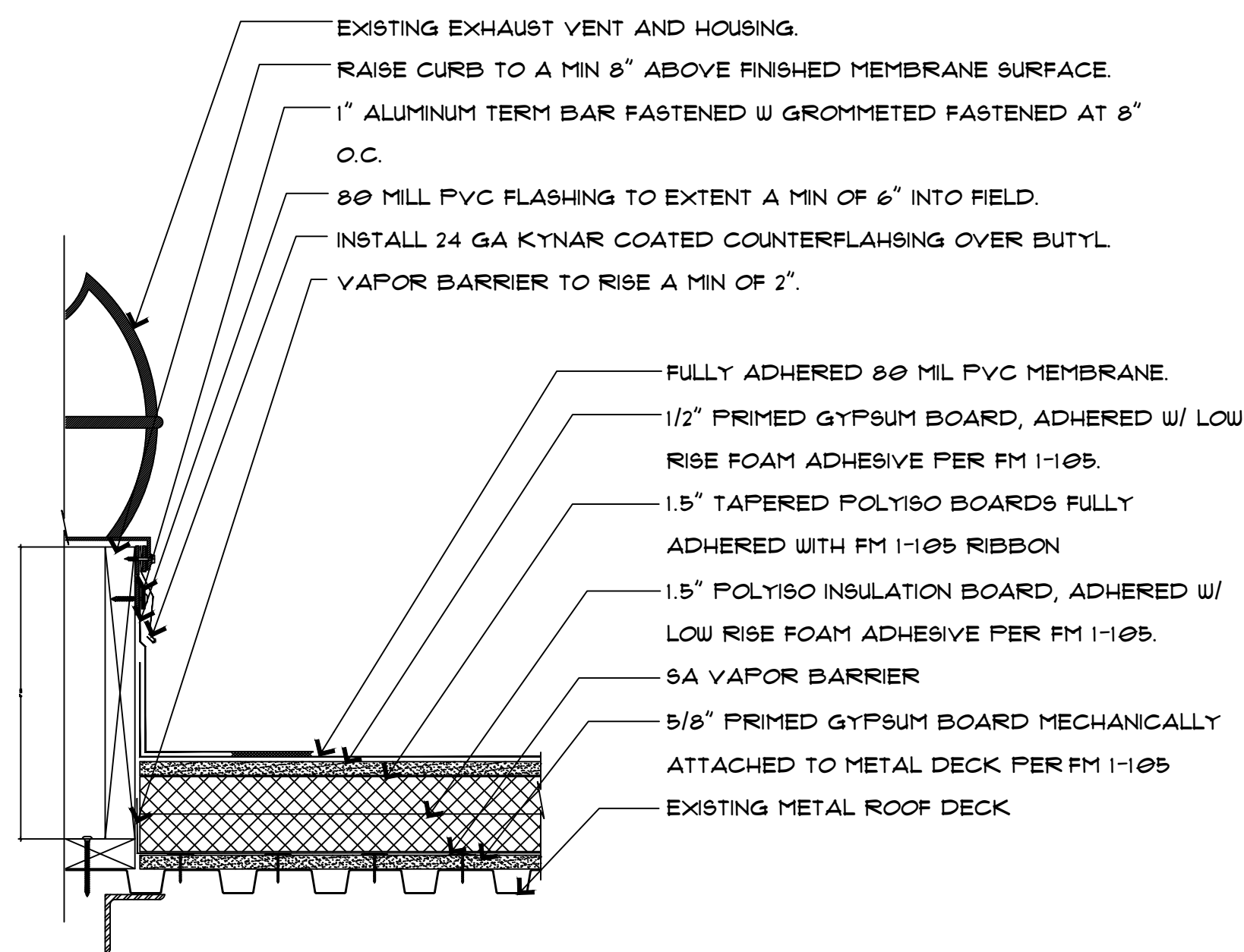
1 FIELD SECTION  
A102 SCALE: 1" = 1' - 0"



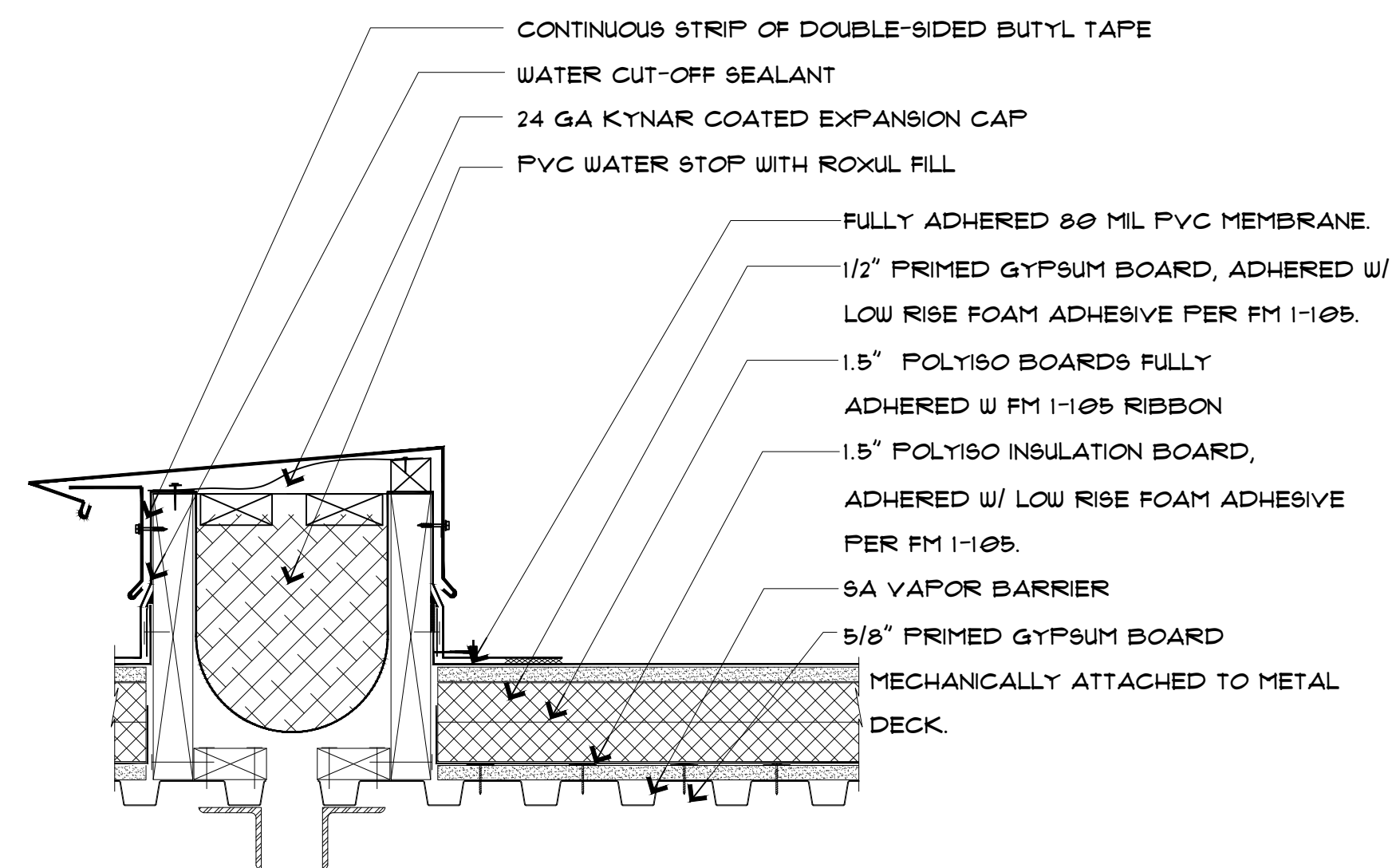
2 DRAIN DETAIL  
A102 SCALE: 1" = 1' - 0"



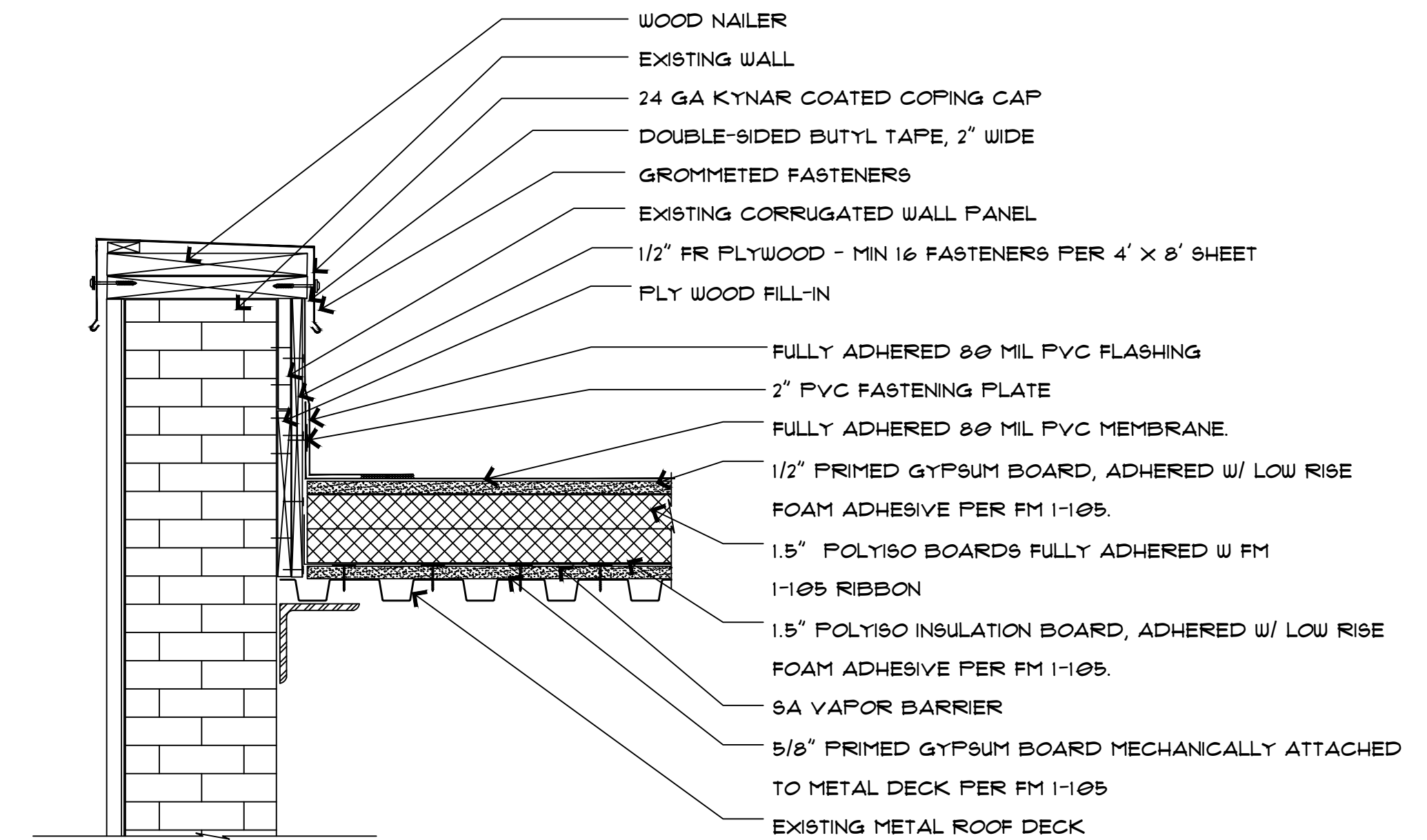
3 SOIL STACK  
A102 SCALE: 1" = 1' - 0"



4 VENT FLASHING  
A102 SCALE: 1" = 1' - 0"



5 EXPANSION JOINT  
A102 SCALE: 1" = 1' - 0"



6 PARAPET WALL  
A102 SCALE: 1" = 1' - 0"

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		DRAWN BY: KFO

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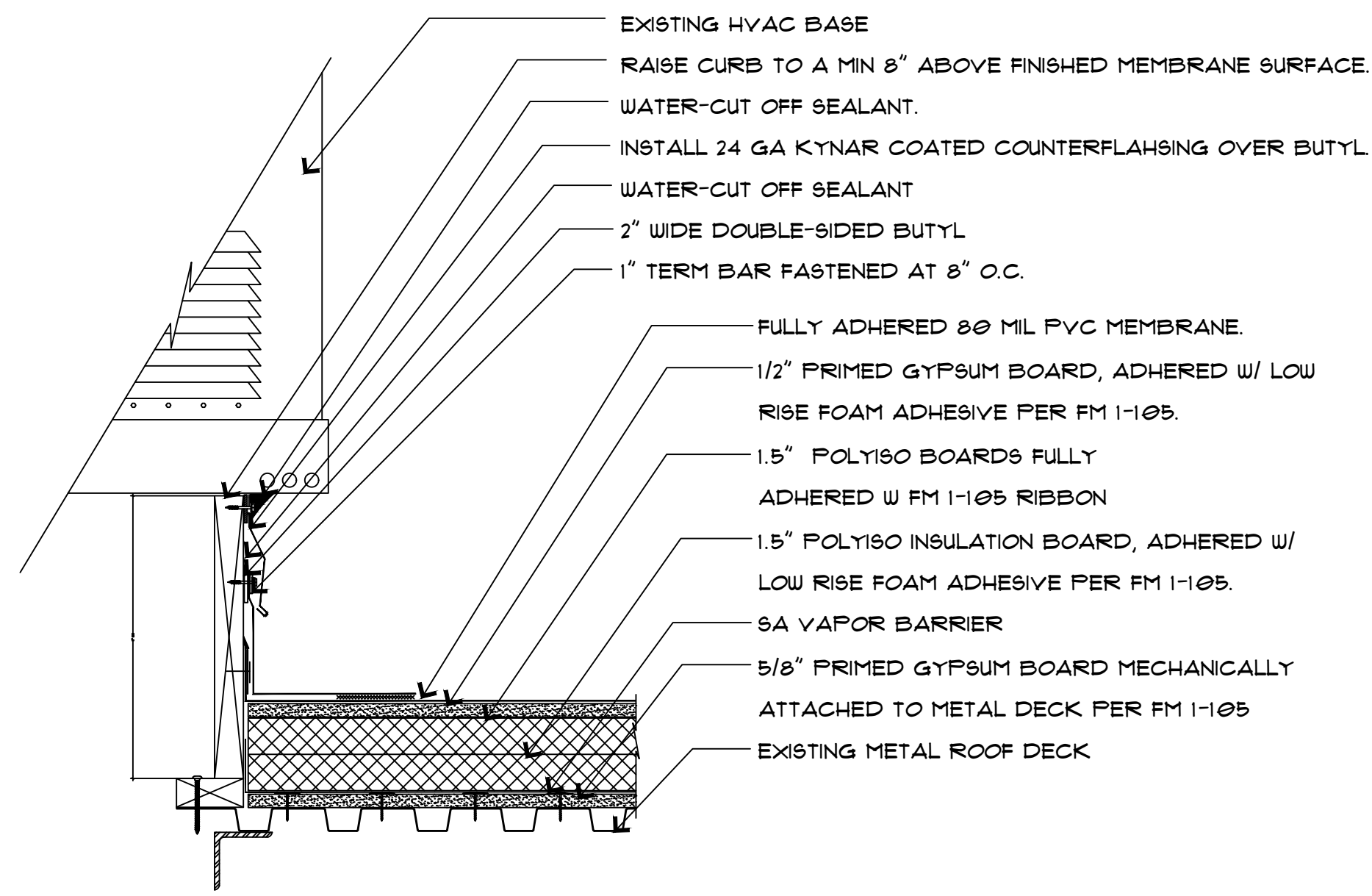
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ROOF DETAILS

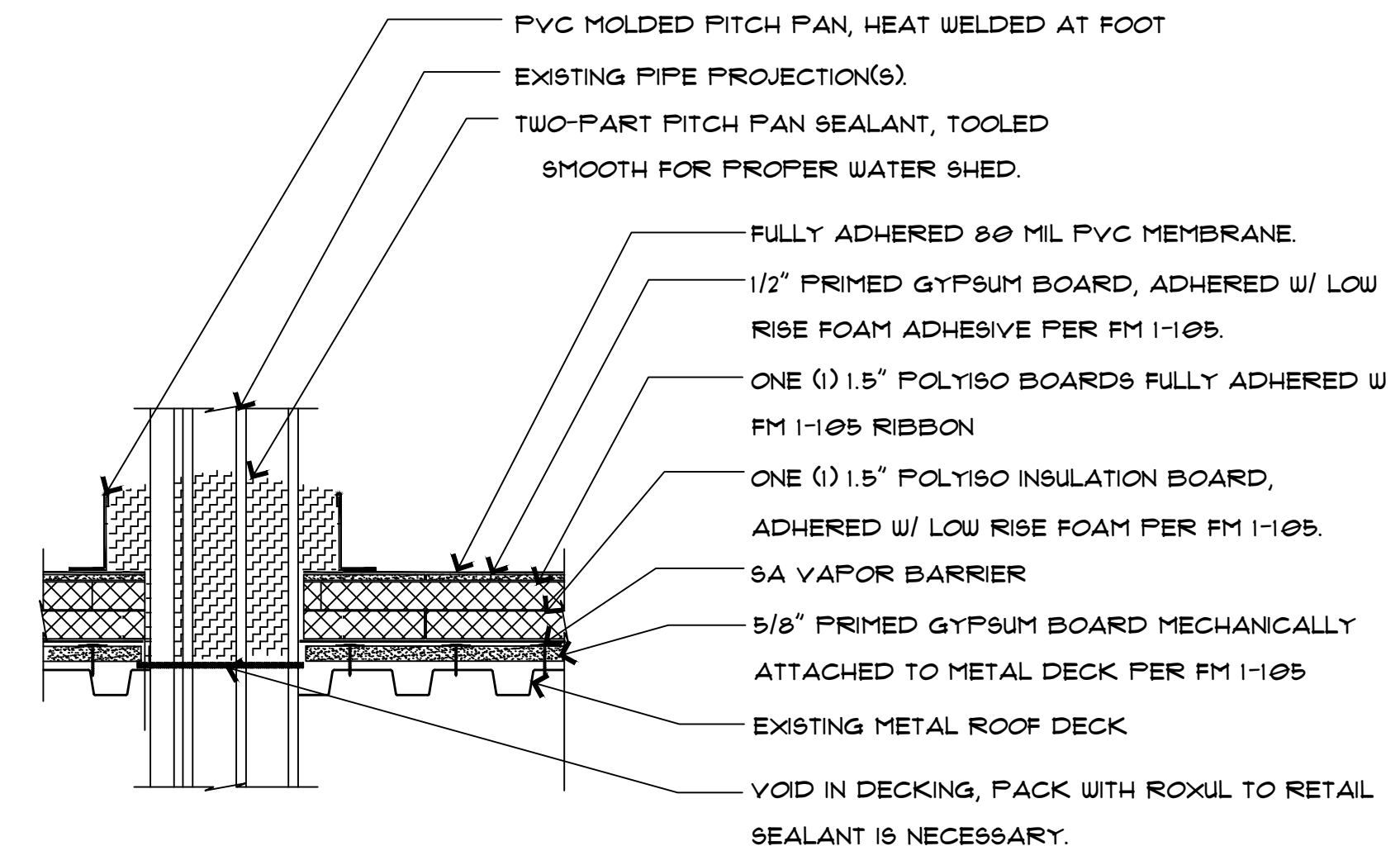
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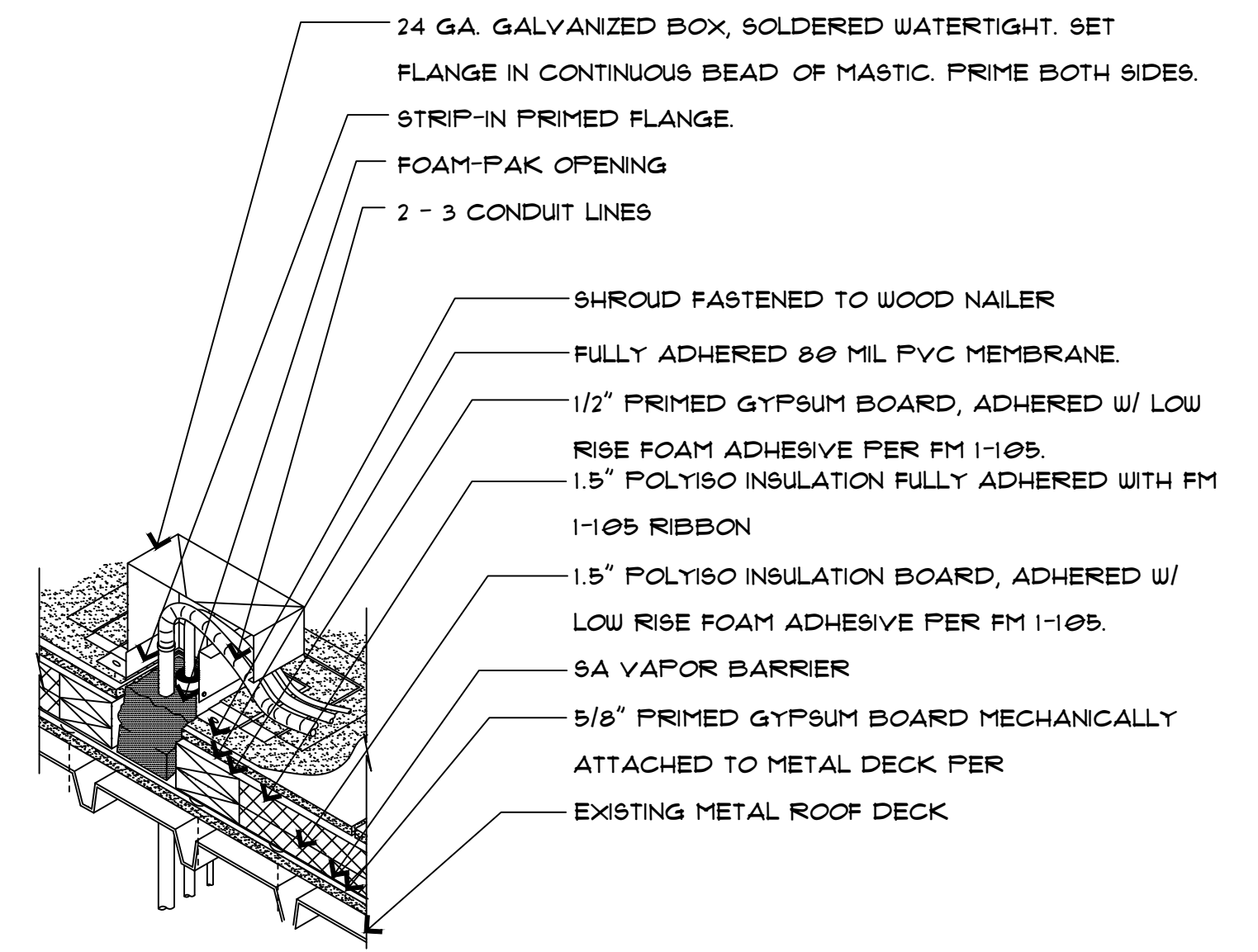


7 HVAC UNIT CURB FLASHING  
 A103 SCALE: 1" = 1' - 0"

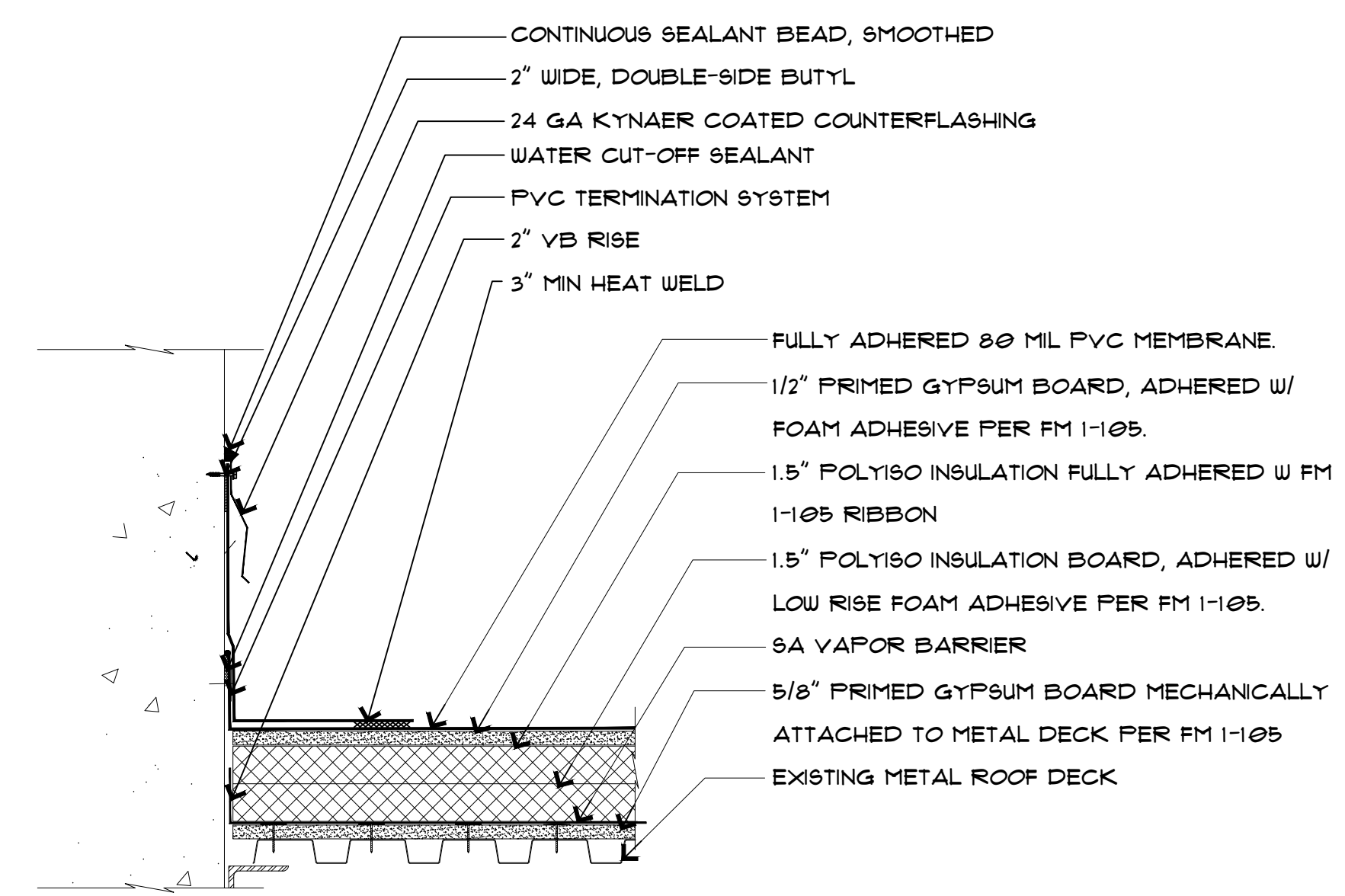


NOTE:  
 PITCH PANS ARE ONLY TO BE INSTALLED IF NEEDED.

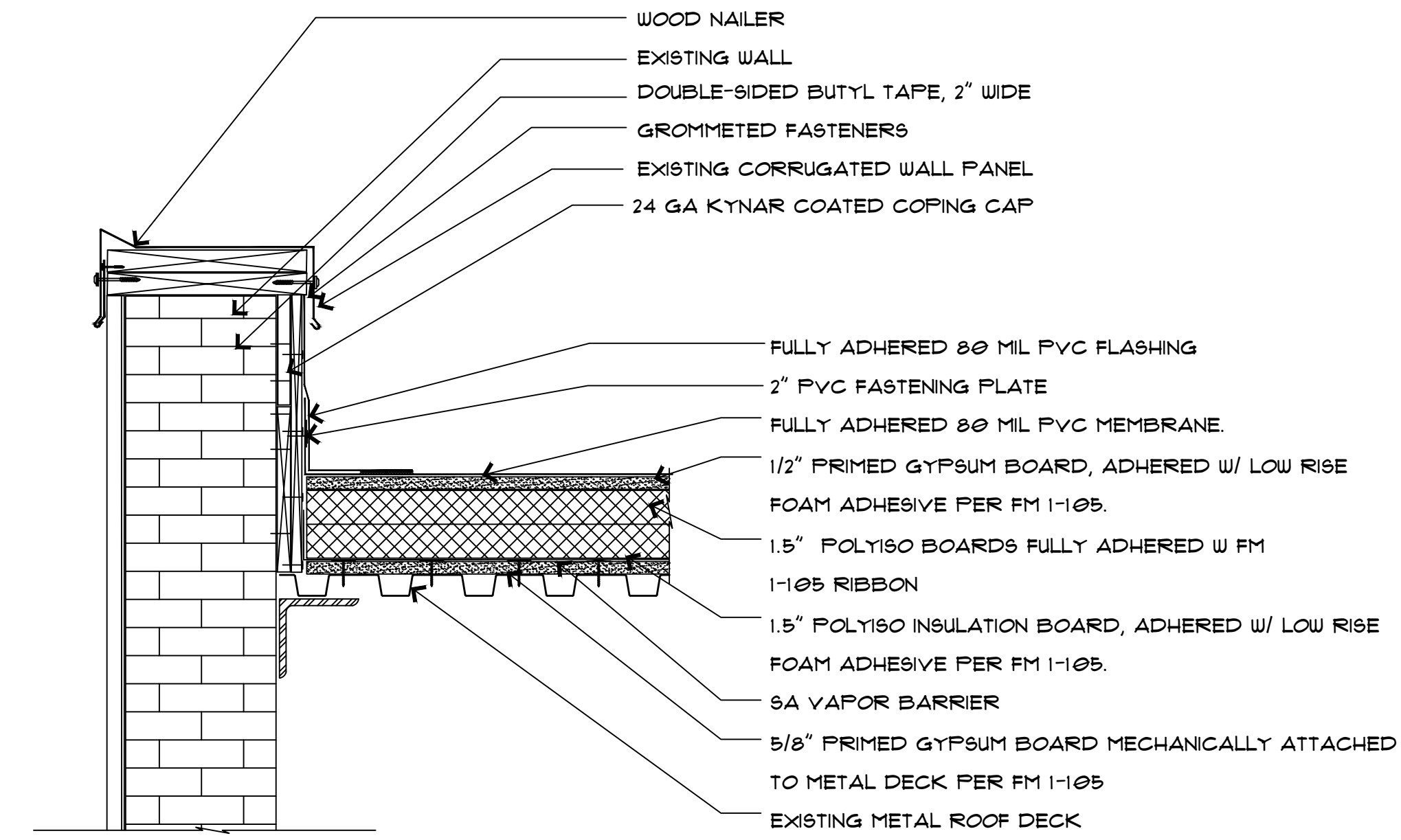
8 PVC PITCH POCKET  
 A103 SCALE: 1" = 1' - 0"



9 CONDUIT HOOD  
 A103 SCALE: 1" = 1' - 0"



10 WALL FLASHING  
 A103 SCALE: 1" = 1' - 0"

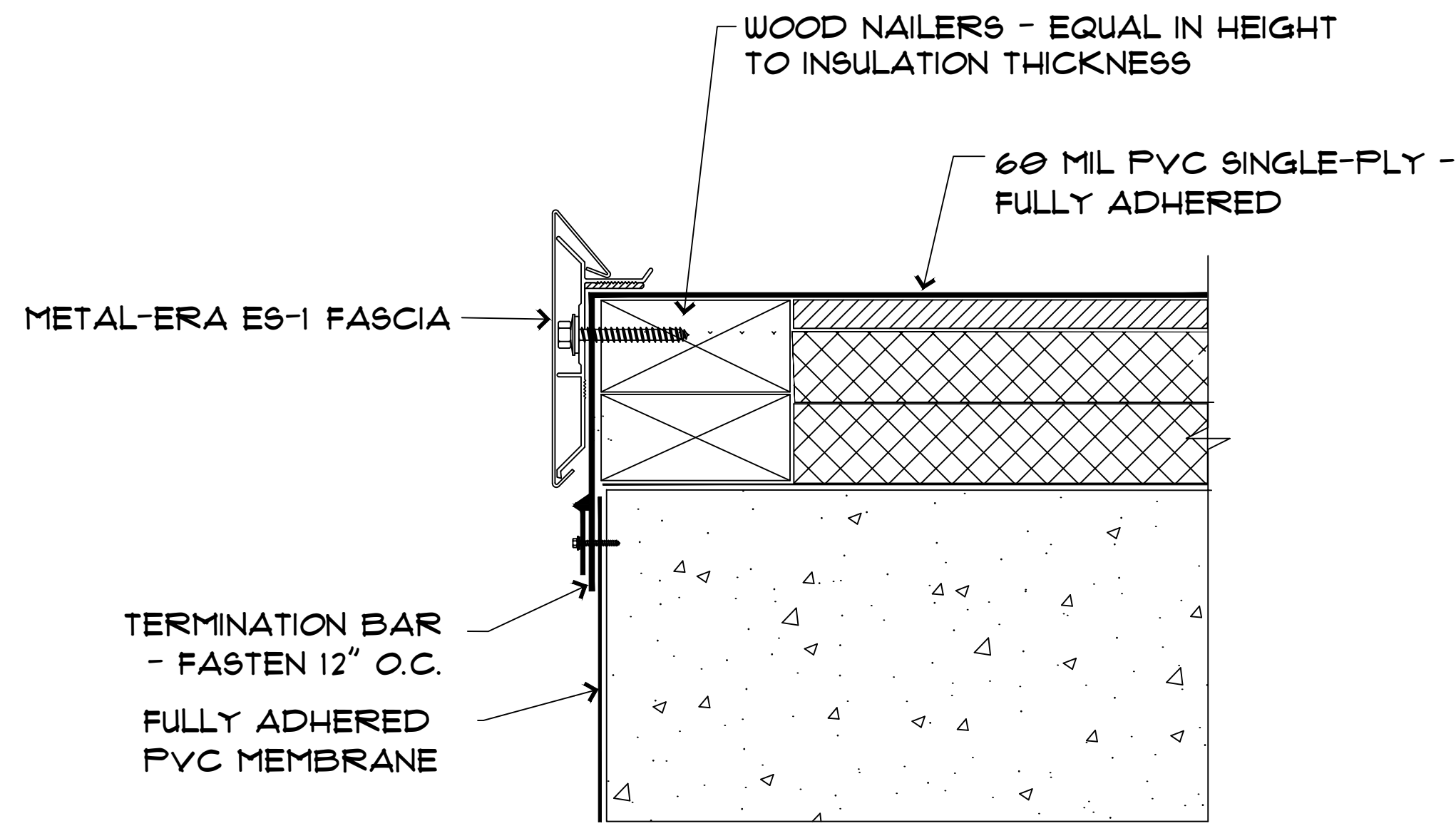


11 PARAPET WALL COPING CAP  
 A103 SCALE: 1" = 1' - 0"

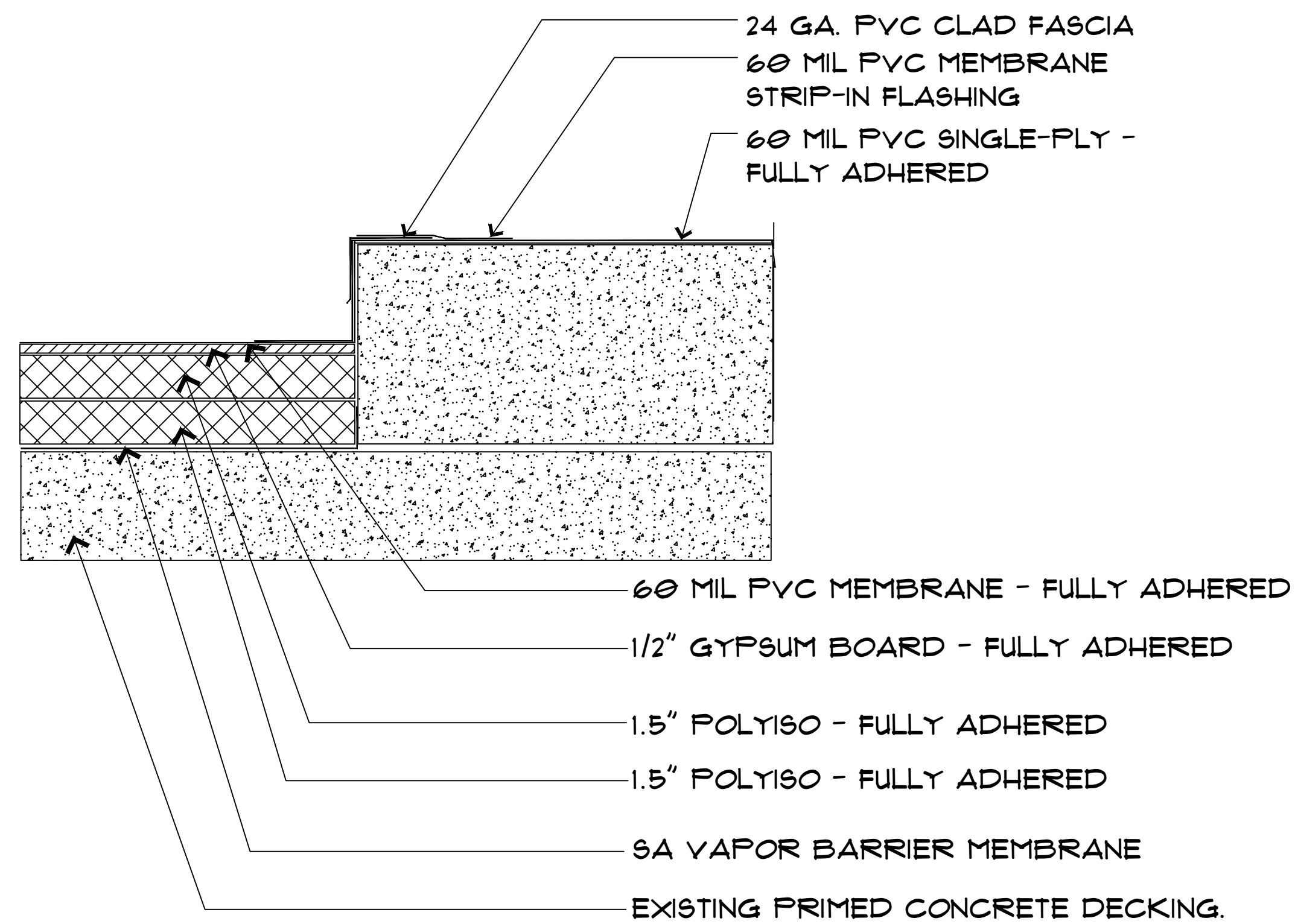
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		DRAWN BY: KFO
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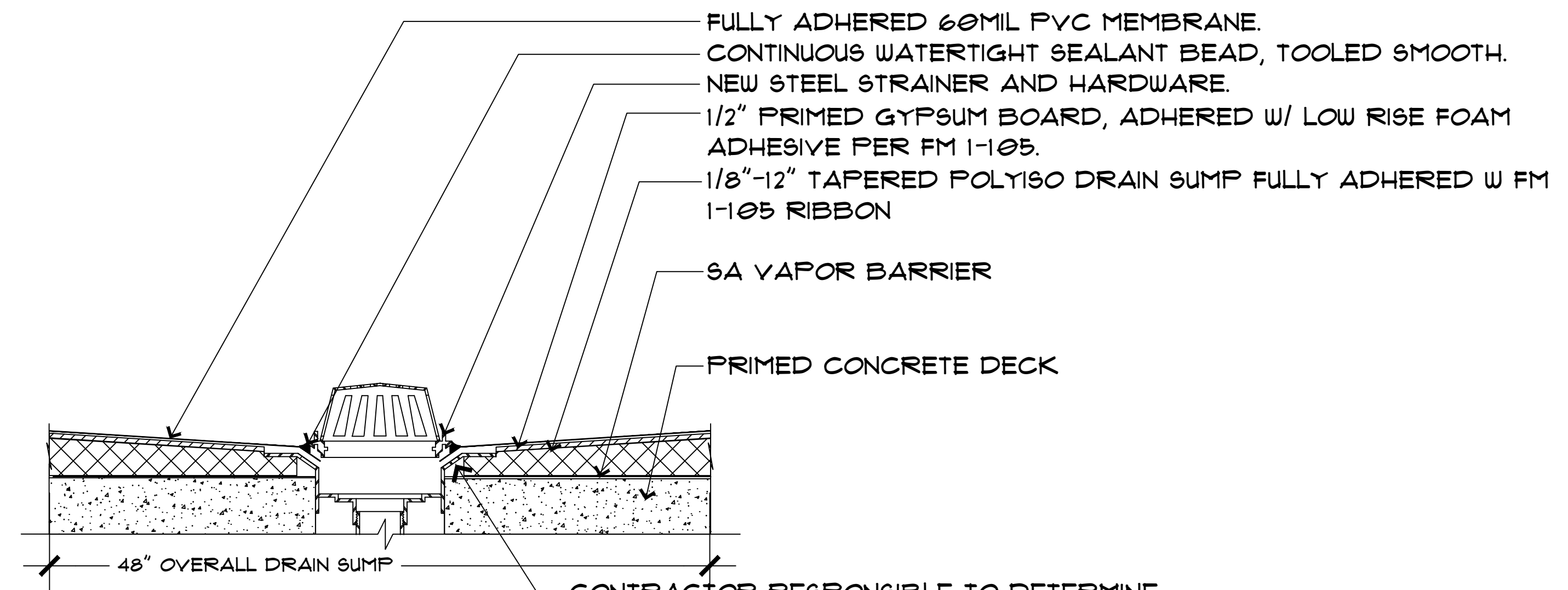
60 MIL PVC FULLY ADHERED  
 1/2" DENSDECK ADHERED W/ LOW RISE FOAM ADHESIVE  
 2 LAYERS 1.5" POLYISO ADHERED W/ LOW RISE FOAM ADHESIVE  
 SA VAPOR BARRIER  
 PRIMED CONCRETE DECK



1 PERIMETER DETAIL  
 A202 SCALE: 1" = 1' - 0"

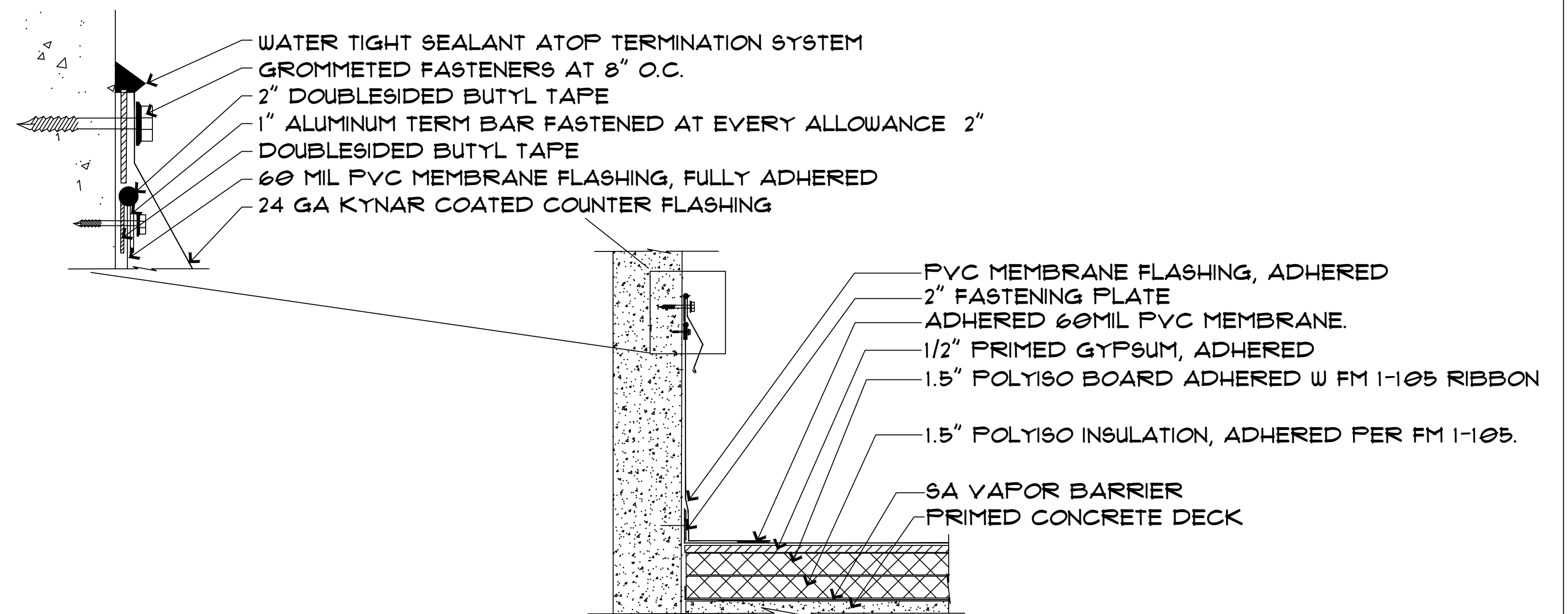


3 RAISED CURB FLASHING  
 A202 SCALE: 1" = 1' - 0"



NOTE:  
 SEE FIELD SECTION FOR SURROUNDING SYSTEM DESIGN.

2 DRAIN DETAIL  
 A202 SCALE: 1" = 1' - 0"



4 SURFACE MOUNTED C.F.  
 A202 SCALE: NTS

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