

# **ROOF REPLACEMENT SPECIFICATIONS**

Prepared For:

**PLYMOUTH TOWNSHIP DPW  
46555 PORT STREET  
PLYMOUTH, MICHIGAN**

Owner:

Charter Township of Plymouth  
9955 North Haggerty Road  
Plymouth, Michigan 48170

Roofing Consultant:

Roofing Technology Associates, Ltd.  
38031 Schoolcraft  
Livonia, Michigan 48150  
RTA Project No. 11-058

September, 2011

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ADVERTISEMENT FOR BIDS  
DPW BUILDING  
ROOFING PROJECT  
PLYMOUTH TOWNSHIP, MICHIGAN

Sealed proposals will be received for the construction of the DPW Building Roofing Project by the Charter Township of Plymouth as Owner, until 3:00 P.M. Local Time on Tuesday, October 25, 2011 at the Office of the Clerk, Plymouth Township Hall, 9955 N. Haggerty Road, Plymouth, Michigan 48170 at which time and place all bids will be publicly opened and read.

Bidders shall review and comply with the instructions to bidders.

Description of Work

The project scope consists of roof replacement at the DPW building located at 46555 Port Street in Plymouth Township.

Plans and Specifications may be examined at the Clerk's Office, Plymouth Township Hall, 9955 N. Haggerty Road, Plymouth, Michigan 48170 on or after October 10, 2011. Drawings and Specifications can be shipped by U.P.S. ground for no fee.

Proposals submitted by Bidders who have been debarred, suspended, or made ineligible by any Federal Agency will be rejected.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, Roofing consultant, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

Each bid proposal shall be submitted on the proposal forms provided. No bid security is required. No bid may be withdrawn after scheduled closing time for receiving bids for sixty (60) days.

The successful bidder may be required to furnish satisfactory Performance, Labor and Material, and Maintenance and Guarantee Bonds.

The Charter Township of Plymouth reserves the right to reject all bids and to waive irregularities in bidding.

No Proposal will be received unless made on bid forms furnished and delivered to the Township Clerk on or before 3:00 p.m. local time Tuesday October 25, 2011, which will be the time and location for the bid opening.

A pre-bid meeting will be held on Friday October 14, 2011 at 10:00 a.m. at the project site with the Roof Consultant and the Owner's Representative to review the scope of work and project conditions. It is recommended that a representative of the bidding contractor attend this meeting.

Joseph Bridgman, Clerk  
Plymouth Charter Township

Published in the Plymouth Observer, on Sunday October 9, 2011 and Thursday October 13, 2011.

BID PROPOSAL FORM

Name of Bidder \_\_\_\_\_

FIRM NAME AND ADDRESS OF BIDDER - This bid is submitted in the name of:

FIRM NAME \_\_\_\_\_

BUSINESS ADDRESS \_\_\_\_\_

\_\_\_\_\_

TELEPHONE NUMBER \_\_\_\_\_

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

*(SIGNATURE)*

TITLE \_\_\_\_\_

SIGNED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20 \_\_\_\_\_

## BID PROPOSAL FORM

Name of Bidder \_\_\_\_\_

The undersigned in submitting this proposal agrees as follows:

1. The entire work shall subject to the requirements of the General Conditions of the Contract for Construction, AIA Document A-201, (2007 Edition).

Prior to execution of the Agreement for this work, the Contractor shall furnish the Owner with copies of Certificates of Insurance.

### Time of Completion

The undersigned agrees to commence work after October 31, 2011 and to fully complete the total project by November 30, 2011.

### Withdrawal of Bid

The undersigned agrees that this bid may not be withdrawn for a period of sixty (60) days after the bid opening date or receipt thereof.

### Rejection of Bid

The undersigned agrees that the Owner reserves the right to accept or reject any total bid, or part thereof, and to award the total contract or part thereof to other than the low bidder. All decisions regarding contract awards will be final.

### Liability

The Contractor shall and does assume liability under the terms of the Workmen's Compensation Law of the State in which the work is being performed.

Contractor assumes all liability for injury to persons or damage to, or loss of property of (a) Contractor, his agents or employees, (b) Owner, its agents or employees, and (c) any other person, firm or corporation arising in any way directly or indirectly out of the performance of this Contract whether or not such injury, damage, or loss is due to the negligence of the Contractor, its agents or employees. This foregoing assumption of liability by Contractor shall include, without limiting the generality of the foregoing, any injury, damage, or loss arising out of the operation of motor vehicles. This assumption of liability by Contractor shall also include, without limiting the generality of the foregoing, any injury, damage or loss (1) arising out of the negligence of Contractor, (2) arising out of the joint or combined negligence of Contractor and Owner, (3) arising out of the negligence of a third party or parties and Contractor, or (4) without limiting in any way the foregoing, arising in any way, directly or indirectly out of the conduct or occurrence not fully limited to the separate sole negligence of the Owner as proven by Contractor or third party.

## BID PROPOSAL FORM

Should the Owner or an agent or employee of the Owner be made a party to any suit or proceeding, even though such suit or proceeding is groundless, false or fraudulent, arising out of injury, damage, or loss for which the Contractor assumes liability under this Contractor, the Contractor will defend such suit or proceeding and shall indemnify and save harmless the Owner, its agents or employees, of and from all liability loss, expenses, judgments (including interest thereon), including Attorney's fees.

Since Contractor hereunder shall be an independent Contractor and not agent, servant, or employee of Owner, Contractor assumes full responsibility for compliance with any and all Federal, State, or municipal laws, ordinances, and regulations, including (but not limited to) those having to do with labor, wages and benefits, or taxes and duties collectible from employees under all applicable provisions of the law.

### Insurance

Unless otherwise specified, the Contractor shall, before commencing work hereunder, procure and thereafter maintain policies of insurance satisfactory to the Owner covering the liabilities assumed above in the following minimum amounts.

Property Damage	\$1,000,000 (each accident)
Bodily Injury	\$1,000,000 (each person)
Workmen's Compensation Insurance	All liabilities imposed by Workmen's Compensation Statutes
Employer's Liability Insurance	\$ 100,000
Contractual Liability Insurance	\$1,000,000
Completed Operations Insurance	\$ 500,000
Owned, Hired and Non-Ownership Vehicle Bodily Injury and Property Damage to the following Limits	
- bodily injury	\$ 500,000 (each person)
- accidental death	\$1,000,000 (each accident)
- property damage	\$1,000,000 (each accident)

The Contractor agrees to file with the Owner before commencing work hereunder, copies of policies of such insurance which shall contain by endorsement, the specific liabilities assumed above, together with certificates of insurance which shall contain a provision that no change in the amount of said insurance, or termination thereof, shall take place without previous 10 days written notice to the Owner and its written consent to such change or termination.

BID PROPOSAL FORM

Name of Bidder \_\_\_\_\_

TO: CHARTER TOWNSHIP OF PLYMOUTH  
9955 NORTH HAGGERTY ROAD  
PLYMOUTH, MICHIGAN 48170

PROPOSAL FOR: ROOF REPLACEMENT FOR  
PLYMOUTH TOWNSHIP DPW  
46555 PORT STREET  
PLYMOUTH, MICHIGAN

The undersigned having examined the Bidding Documents, including the Invitation to Bid, General Conditions, Technical Specifications and Plans, and being familiar with all conditions affecting this proposed Project, hereby proposed to furnish all labor, materials, tools, equipment, utilities, transportation or other facilities and services necessary to perform and complete the construction of the proposed project in accordance with the Bidding Documents, for the sums and under the conditions as follows:

BASE BID - The undersigned agrees to the performance of the Work as Stated for the Base Bid Sum of:

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)

(For the above, the amount shall be in both words and figures with the amount in words governing in the event of discrepancy.)

ALTERNATE PRICES – The undersigned agrees that at the Owner’s discretion, the Base Bid Sum may be altered as follows if the Alternate Prices indicated and defined in the Alternates Section and elsewhere in the Bidding Documents are to be executed. Failure to bid upon requested Alternate Prices shall indicate no change in the Base Bid Sum.

ALTERNATE NO. 1 – Performance, Labor and Material Bonds.

Add the sum of:

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)

UNIT PRICES - The undersigned agrees that at the Owner's discretion, the Base Bid Sum may be altered as follows if the Unit Prices/Alternate Prices indicated and defined in the Unit Price/Alternate Price Section and elsewhere in the bidding Documents are to be executed. (Failure to bid upon requested Unit Prices/Alternate Prices shall indicate no change in the Base Bid Sum).

**UNIT PRICES**

UNIT PRICE NO. 1 - (Steel deck)

Add the sum of:

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
Lump Sum

BID PROPOSAL FORM

UNIT PRICE NO. 2 - (Repair roof deck with plate)

Add the sum of:

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
Per square foot

UNIT PRICE NO. 3

Add the sum of:

1" x 4" \_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
per lineal foot

1" x 6" \_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
Per lineal foot

1" x 8" \_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
Per lineal foot

2" x 4" \_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
Per lineal foot

2" x 6" \_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
Per lineal foot

2" x 8" \_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
Per lineal foot

2" x 10" \_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
Per lineal foot

2" x 12" \_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
Per lineal foot

½" plywood \_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
Per square foot

UNIT PRICE NO. 4 - (Insulation Replacement)

Add the sum of:

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
Per square foot

TAXES - The Contractor affirms that all Federal, State and local taxes of whatever character and description, including Sales and/or Use Tax on property to be transferred to the Owner, are included in this proposal.

## **SECTION 00200 - INSTRUCTIONS TO BIDDERS**

### **THE PROJECT**

- A. In accordance with these instructions, the bidder is requested to submit a Bid for project and Contract work indicated in the Roof Replacement Specifications.
- B. Each bidder is referred to the Advertisement for Bids for this project, which includes instructions and requirements for bidders in addition to those included in this section.

### **CONTRACTS**

- A. The Owner will enter into a single lump sum Contract with the selected bidder.

### **SUBMISSION OF BIDS**

- A. Place for Receiving Bids
  - 1. In accordance with the information provided in the Advertisement for Bids.
- B. Date for Receiving Bids
  - 1. In accordance with the information provided in the Advertisement for Bids.

### **BIDDERS REPRESENTATIONS**

- A. Each bidder by making his Bid represents that:
  - 1. He has read, understands, and makes his Bid in accordance with the Bidding Documents.
  - 2. He has visited the site, has familiarized himself with the local conditions under which the Work is to be performed and has correlated his observations with the requirements of the proposed Bidding Documents.
  - 3. His Bid is based upon the materials, systems, and equipment required by the Bidding Documents without exception.

### **INSPECTION OF SITE**

- A. Before submitting his Bid, each bidder shall personally inspect the site of the proposed work to arrive at a clear understanding of the conditions under which the work is to be done.
- B. Each bidder shall be held to have compared the premises and the site with the Drawings and Specifications, and to have satisfied himself as to the conditions of the premises, the existing obstructions, and any other conditions affecting the completion of his work, all before the delivery of his proposal.
- C. No allowances or extra considerations on behalf of any bidder will be permitted subsequently by reason or error or oversight on the part of the Contractor, or on account of interferences by the activities of the Owner.

### **BIDDING DOCUMENTS**

- A. Bidding Documents which will be issued for the use of bidders and upon which all proposals are to be based, consist of those listed in these specifications.  
Documents consist of:
  - 1. Plans and specifications prepared by Roofing Technology Associates, Ltd.

- B. In the event that additional documents are required to explain revisions which are made during the bidding period or to give additional information to the bidders, the Roof Consultant will prepare such documents in the form of an Addendum with accompanying drawings, if required, and will send copies of the same to all bidders, prior to the date for receipt of proposals. All proposals are to include the work described and indicated on such additional documents.
- C. Interpretation or Correction of Bidding Documents
  - 1. Bidders shall promptly notify the Roof Consultant of any ambiguity, inconsistency or error which they may discover upon examination of the bidding documents or of the site and local conditions of the work.
  - 2. Any interpretation, correction or change of the documents will be made by the Roof Consultant by Addendum. Interpretations, corrections or changes of the bidding documents made in any other manner will not be binding and bidders shall not rely upon such interpretations, corrections and changes.
  - 3. All questions or inquiry relative to this project shall be directed to: Michael Bode, Project Manager, Roofing Technology Associates, Ltd. at (734)-591-4444.

#### **BIDDER'S OPTIONS**

- A. For products specified only by reference standard, select product meeting that standard by any manufacturer.
- B. For products specified by naming several products or manufacturers, select any one of the products and manufacturers named which comply with the technical specifications.
- C. For products specified by naming several products or manufacturers and stating "or approved equivalent" or similar wording, submit a request for approval for review and approval by the Roof Consultant.
- D. For products specified by naming only product and manufacturer, there is no option and no substitutions will be allowed.

#### **SUBSTITUTIONS**

- A. Base Bid shall be in accordance with these Contract Documents.
- B. No substitution of products or roofing systems will be allowed on this project, unless a product or roofing system specified is no longer manufactured.
- C. In the event that a product or roofing system is no longer manufactured, contact the Roof Consultant. An Addendum will be issued with additional documents for acceptable alternate products or roofing systems.

#### **QUALIFICATIONS**

- A. Evidence of Qualifications
  - 1. To demonstrate qualification for performing the Work of this Contract, bidders are required to submit written evidence of previous experience and license to perform work in the State.

#### **BIDDING PROCEDURES**

- A. Form of Bids
  - 1. Bid forms are furnished within the Project Specifications. Each bidder shall submit his bid in duplicate and retain one copy for his files.

2. Bids must be filled out fully and correctly and submitted only on Bid Forms provided. Bids in any other form will be rejected.
  3. All information required to be provided on the Bid Form shall be typewritten or printed manually in ink with a handwritten signature where noted.
- B. Bid Security
1. No bid security is required for this bid.
- C. Modification or Withdrawal of Bid
1. A Bid may not be modified, withdrawn or canceled by the bidder during the stipulated time period following the time and date designated for the receipt of Bids, and bidder so agrees in submitting his bid.
  2. Bidder may withdraw his proposal at any time prior to the time set for opening of proposals.

### **CONSIDERATION OF BIDS**

- A. Opening of Bids
1. The properly identified bids received on time will be opened and read publicly as stated in the Advertisement for Bids.
- B. Acceptance of Bid (Award)
1. The Owner reserves the right to accept or reject any total bid, or part thereof, and to award the total Contract or part thereof to other than the low bidder. All decisions regarding Contract awards will be final.
  2. The Owner shall have the right to accept Alternates in any order or combination, and to determine the low bidder on the basis of the sum of the Base Bid and the Alternates accepted.
- C. Notice of Award
1. The Contract shall be deemed as having been awarded when formal notice of acceptance of his Proposal has been duly served upon the intended awardee by an officer or agent of the Owner duly authorized to give such notice. The Contract Date shall be the date of this notice of acceptance.
  2. The bidder to whom the Contract is awarded by the Owner shall, within seven (7) days after Notice of Award and/or receipt of Agreement forms from the Owner, sign and deliver to the Owner all required copies.
- D. Time of Starting and Completion
1. The successful bidder shall furnish insurance and commence active work on the Project within ten (10) days after receipt of notice of award and shall complete the work within the time stated in the Contract.
- E. Work Week
1. The bidder, if awarded a Contract, shall be required to establish the work week and hours of work as required to properly man the project, maintain the progress schedule, and complete the work within the time stated in the Contract. The Contractor shall provide and pay for any overtime necessary to complete his work within the agreed time, with no change in the Contract Sum or additional costs to the Owner.

**PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND**

- A. Performance bond and labor and materials bonds may be required. The Owner is asking for the cost of providing the bonds appear on a separate line item as an alternate price.
- B. Time of Delivery and Form of Bonds
  - 1. Bidders are required to furnish bonds executed on AIA Document A312, with the amount shown for each part equal to 100 percent of the total amount payable by the terms in the Contract. Premiums for such bonds shall be included in the Base Bid.
  - 2. The bidder shall deliver the required Bonds to the Owner not later than the date of execution of the Contract, or if the Work is commenced prior thereto in response to a Notice of Award, the bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be issued.

**FORM OF CONTRACT BETWEEN OWNER AND CONTRACTOR**

- A. A Contract for the Work will be written on the Standard AIA Document A107, Abbreviated Form of Agreement Between Owner and Contractor for Construction Projects of Limited Scope where the basis of payment is a stipulated sum.

**PERMITS**

- A. Accepted bidder will be required to obtain applicable building permits for the work of this project. There is no cost for the permits.

**END OF INSTRUCTIONS TO BIDDERS**

## **TEMPORARY FACILITIES**

### **1. GENERAL**

- 1.01 This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

### **2. ROADWAYS, DRIVES, PARKING AREAS AND SIDEWALKS**

- 2.01 The Contractor is responsible for the condition of all existing roadways, sidewalks, etc., used during construction operations and shall repair same as required and leave same in good condition at the completion of the job.

### **3. BARRICADES AND PROTECTION**

- 3.01 The property on which work is to be done is in use. This means that employees and other general public may be adjacent to and below the construction operations.
- 3.02 The Contractor will provide and maintain in good repair all barricades, guard railings and temporary protection as required by law and/or to suit job conditions.
- 3.03 The Contractor shall do everything possible to protect the public, the workmen, the premises and adjoining property from injury or damage.
- 3.04 Properly protect all sidewalks, pavements, existing building areas, and replace or repair all parts of same which become damaged or defaced during or as a result of construction operations. Repairing of damaged parts shall be done in strict accordance with all local codes and ordinances and the Owner as conditions require.

### **4. VANDALISM**

- 4.01 The Contractor shall pay for all damage by vandalism to material or equipment that occurs to items finished or installed under this Contract. The Contractor shall be responsible for the work under this Contract during the construction period from the start until the final acceptance of the entire project by the Owner.

### **5. PROTECTION**

- 5.01 Provide and erect all required barricades and safety precautions in accordance with local, State and Federal Codes and other legal requirements.
- 5.02 Provide secure, weatherproof protection for existing buildings, finishes, walks, drives, landscaping, lawns, etc., to remain. Repair any damage to the satisfaction of the Owner.
- 5.03 Remove all protection and guards when work is completed and restore disturbed areas.
- 5.04 Whenever lifting materials or equipment over or near existing or occupied buildings, give advance notice and arrange to have any potentially endangered spaces vacated.

## 6. TEMPORARY WEATHER PROTECTION

- 6.01 The Contractor shall provide, maintain and pay for all temporary weather protection as required to properly protect all parts of the work from damage. This shall include temporary protective coverings.

## 7. RUBBISH DISPOSAL, FIRE SAFETY

- 7.01 During non-construction hours, trash containers shall be covered and sealed to prevent wind blown debris and access into trash containers.
- 7.02 The location of the trash containers shall be subject to the approval of the Owner.
- 7.03 All rubbish and debris shall be removed from the site daily or more often if directed by the Owner's Representative. Burning of trash on-site shall not be allowed.
- 7.04 No open fire shall be permitted on the building site at any time.

## 8. REMOVAL OF TEMPORARY WORK

- 8.01 All temporary structures, barricades, protection and similar work shall be removed by the Contractor at completion of the project or when directed. Any repairs or alterations necessitated by such removal shall be made by the Contractor, and at the Contractor's expense.

## 9. WORK ACTIVITIES

- 9.01 Contractors and subcontractors shall direct their employees to conduct themselves so as not to interfere with or disrupt the building activities. The Contractor shall schedule construction operations to minimize interference with operations, and cooperate with Owner's Representative in maintaining public access to existing building facilities.
- 9.02 All construction operations, delivery and storage of material and movement of equipment shall be governed by applicable local building codes, traffic regulation and safety and fire regulation of local authorities.
- 9.03 Contractors, subcontractors, and their employees or suppliers shall not use or interfere with existing public access, drives, roads or parking lot, except as specifically indicated or by prior arrangement with the Owner's Representative.
- 9.04 Contractor's employee parking, delivery trucks and other construction vehicle parking shall only be at areas designated by the Owner's Representative.

## 10. RESTROOM FACILITIES

- 10.01 Contractors are responsible for providing temporary restroom facilities for their employees during the project. The Contractor shall include the costs for such facilities in their base bid amount.



## ALTERATIONS

### 1. GENERAL

- 1.01 This section is a part of the entire set of Contract Documents and shall be coordinated with the applicable provisions of the other parts.
- 1.02 All bidders shall be held to have thoroughly examined all of the drawings and specifications and to have visited the site to determine the extent of reroofing and alteration work required. All measurements are the responsibility of the bidder.

### 2. GENERAL DESCRIPTION OF REQUIREMENTS

- 2.01 It is the declared and acknowledged intention and meaning of these specifications to repair, reroof and to alter the existing premises as required to provide a watertight roofing system.
- 2.02 The work will include the furnishing of all materials and equipment and the performing of all labor required, whether or not specifically indicated by the plans and specifications, to provide a weather tight roofing system.

### 3. SEQUENCE OF OPERATIONS

- 3.01 The various parts of the work shall be carried on in a manner which will best serve in providing for the continuous operations of all necessary functions of the existing buildings and to cause as little inconvenience to the public as practicable in their occupancy and use of the facilities.

### 4. EXISTING MATERIAL AND EQUIPMENT REMOVED

- 4.01 Contractor shall remove all fixed equipment designated to be removed.
- 4.02 Items of existing equipment which are to be reused, shall be carefully removed, stored and protected, and later reinstalled in original or new locations as required.
- 4.03 Certain materials, particularly specified, shall be reused in the work, such material shall be in good usable condition and shall be cleaned and conditioned as required for reuse.
- 4.04 Contractor shall be responsible for all disconnecting, connecting, cutting, patching, finishing, moving and removing, and repairing, of both new and existing material and equipment as may be required to do all reroofing and alteration work.
- 4.05 All existing material and equipment which is to remain in place or to be reused and has been damaged or defaced during the progress of the work, shall be restored to a condition equal to that which existed prior to the start of the work, or shall be replaced with new materials and equipment equal in all respects, and finished so as to be uniform in appearance to adjacent existing work.

5. SALVAGED MATERIALS

- 5.01 Salvaged materials which are not to be reused will, unless otherwise specified, or verbally requested by the Owner's Representative, become the property of the Contractor and will be removed from the premises by him and legally disposed of off-site by him.

6. EXISTING CONDITIONS

- 6.01 The Contractor shall check all dimensions and verify all conditions shown on the drawings at the site in relation to his work.
- 6.02 Information as shown on the plans is given solely for the convenience of the Contractor, and use of such dimensions, elevations, sizes or information is made at his own risk.
- 6.03 Conditions other than those which are described in these specifications shall be identified in writing to the Owner before proceeding with the work. The Owner will provide approved alternate details as required by changed conditions. The contractor shall be responsible for any unauthorized changes he incorporates in the work.

## UNIT PRICES AND ALTERNATE PRICES

State in the Bid Proposal Form, in the space provided the amount to be added to the Base Bid for each Unit Price and Alternate Price.

### **UNIT PRICES**

Unit Price No. 1 – Replace steel deck 1 ½-inch, as necessary and as directed by the Owner's Representative, to provide a structurally sound deck matching existing deck in configuration and thickness. The price quoted shall be per square foot cost, including replacement labor. Quote the price on the Bid Proposal Form.

Unit Price No. 2 - Repair isolated deck damage of openings not exceeding 6 inches x 6 inches with galvanized 18-gauge flat stock extending a minimum of 12-inches beyond the damaged area in each direction. Secure the plate with appropriate fasteners spaced 6-inches on-center around the perimeters of the plate. The price quoted shall be per square foot of plate installed

Unit Price No. 3 – Replace, as necessary and designated by the Owner's Representative deteriorated wood nailers. The price quoted shall be per lineal foot of new wood nailer and per square foot of plywood installed including replacement labor and fasteners. Quote a price on the Bid Proposal Form for the following sizes:

1" x 4"  
1" x 6"  
1" x 8"  
2" x 4"  
2" x 6"  
2" x 8"  
2" x 10"  
2" x 12"  
1/2" plywood

Unit Price No. 4 - Replace, as necessary and designated by the Owner's Representative, deteriorated, wet or damaged insulation. The price quoted shall be per square foot of 2.0-inch thick polyisocyanurate installed including replacement labor. The base bid shall include replacement of 500 square feet of isocyanurate insulation. Quote a price on the Bid Proposal Form.

## SECTION 07520 - ROOFING AND SHEET METAL

### PART I - GENERAL

#### 1.1 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

#### 1.2 DESCRIPTION

##### A. Work included

Furnished all labor, materials and equipment required, and furnish and install roofing and sheet metal, complete with all accessories and incidentals required, in accordance with the Drawings and these Specifications, including but not limited to the following:

1. Removal of existing roofing and ballast.
2. Roof insulation, including tapered insulation.
3. Single-ply roofing and base flashings.
4. Sheet metal copings, flashings, counterflashing, etc.
5. Wood blocking and nailers.

##### B. Existing Roofing

1. Ballasted EPDM, 2.0" isocyanurate and steel deck

#### 1.3 QUALITY ASSURANCE

##### A. Qualifications of Installers

Roofing installer must be currently approved by the manufacturer of the selected roofing system.

##### B. Standards

1. Accomplish work under this Section in strict accordance with the roofing manufacturer's published specifications and best trade practices to achieve a completely watertight roofing and flashing installation.
2. Provide materials which have been tested, listed and labeled by Underwriters Laboratories (UL).
3. Roof insulation shall be approved components by Factory Mutual for insulated deck construction and shall bear FM approval mark and meet I-60 wind uplift requirements.

##### C. General

1. Be responsible for measurements. Before ordering material, preparing shop drawings, or doing any work, verify at the site all dimensions which may affect the work. Assume full responsibility for the accuracy of figures. No allowance for additional compensation will be considered for discrepancies between dimensions on the drawings and actual field dimensions.

2. Immediately refer to any conflicts among requirements of these specifications on drawings, those of regulatory agencies, material manufacturer's recommendations and good roofing practices to the Roof Consultant or Architect.
  3. Accomplish all work in strict compliance with the roofing manufacturer's latest published specifications and details reviewed by the Roof Consultant and shall follow the best trade practices to achieve a complete watertight roofing and flashing installation.
  4. Final results are the entire responsibility of the roofing contractor.
- D. Installer Qualifications: A single installer ("Roofer") shall perform work of this section; and shall be a firm with not less than 5 years of successful experience in installation of roofing systems similar to those required for this project and which is acceptable to or licensed by manufacturer of primary roofing materials.
1. Installer Certification: Obtain written certification from manufacturer of roofing system certifying that Installer is approved by manufacturer for installation of specified roofing system. The certification shall be submitted with the bid.
  2. Installer's Field Supervision: Installer must maintain full-time supervision on jobsite during times that roofing work is in progress. Supervisor must have a minimum of 5 years experience in roofing work similar in nature and scope to specified roofing.

#### 1.4 SUBMITTALS

##### A. Materials List

Before any materials of this Section are delivered to the jobsite, submit to the Roof Consultant a complete list of all materials, including manufacturer's names, to be furnished and installed under this portion of the work.

##### B. Manufacturer's Documentation

1. Submit copies of manufacturer's field reports and documentation of completion.
2. Submit manufacturer's report that the roof has been inspected and is suitable and acceptable for warranty specified.

##### C. Shop Drawings

1. Before any materials of this Section are delivered to the jobsite, submit complete shop drawings of sheet metal work to the Roof Consultant for review.
2. Submit shop drawings showing tapered insulation.
3. Applicator shall supply the roof system manufacturer with as-built shop drawings for final inspection. As-built shop drawings must be approved by the selected manufacturer.

#### 1.5 INSPECTION

- A. Prior to final payment, and as a condition thereof, the Roofing Installer shall obtain final approval from Roofing Technology Associates, Ltd. indicating proper compliance with the Contract Documents. The Roofing Contractor shall coordinate inspection services during roof application.

- B. Preliminary Roofing Conference: Prior to scheduled commencement of roofing work, the Roofing Contractor, Architect, Roofing Consultant and representatives of other entities directly concerned with performance of roofing system shall have a pre-construction meeting. Review requirements (contract documents), submittals, status of coordinating work, availability of materials and installation facilities and establish preliminary installation schedule. Review requirements for inspections, testing, certifications, forecasted weather conditions, governing regulations, insurance requirements, and proposed installation procedures. The Roof Consultant shall record discussion including agreement or disagreement on matters of significance; furnish copy of recorded discussions to each participant. Review foreseeable methods and procedures related to roofing work, including but not necessarily limited to the following:
1. Tour representative areas of roofing substrates, inspect and discuss conditions of substrate.
  2. Review roofing system requirements (drawings, specifications and other contract documents).
  3. Review required submittals.
  4. Review and finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment and facilities needed to make progress and avoid delays.
  5. Review required inspection, testing, certifying and material usage accounting procedures.
  6. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.
- C. The Roofing Consultant shall perform inspections as work is being performed to insure conformance with manufacturer's recommendations and recognized roofing procedures.
- D. The Roofing Consultant shall review and approve all shop drawing submittals.
- E. Notify Roofing Consultant whenever roofing work is to be done, in sufficient time to arrange inspections. Provide safe access to roof for inspection.
- F. Furnish Roofing Consultant with all pertinent job information prior to beginning work in accordance with Roofing Consultant directions.
- G. The Roofing Consultant shall perform any testing required to verify the integrity of the work and confirm that work is in conformance with manufacturer's recommendations.

#### 1.6 JOB CONDITIONS

- A. Weather Condition Limitations: Proceed with roofing work only when existing and forecasted weather conditions will permit work to be performed in accordance with manufacturer's recommendations and warranty requirements.
1. Do not install materials when rain, cold, moisture, frost, snow or other climatic conditions prevent the adhesion of bitumen or the formation of a homogeneous membrane. Proceed with roofing work only when weather conditions are in compliance with manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with requirements and the manufacturer's recommendations.

## 1.7 PRODUCT HANDLING

- A. Store and handle roofing sheets in a manner which will ensure that there is no possibility of significant moisture pick-up. Store adhesives and flashings in a dry, warm, well-ventilated, weather-tight place. Handle and store materials or equipment in a manner to avoid significant or permanent deflection of deck.

## 1.8 WARRANTIES

- A. The Roofing Contractor, prior to final payment, shall furnish a two (2) year warranty covering insulation, roofing, flashing and sheet metal. Defects in materials or workmanship, which are discovered and made known to the Contractor during the guarantee period, shall be repaired or replaced and/or adjustments shall be made without delay upon written notification from the Owner and at no additional cost to the Owner.
- B. Furnish manufacturer's 20-year unlimited labor and material warranty to the Owner. Manufacturer's warranty shall warrant the new roofing, insulation and base flashing against failure or leakage of any kind for a period of twenty (20) years from date of final acceptance of the roof. All installation and materials installed shall meet the manufacturer's 20-year recommendations and requirements.

# PART II - PRODUCTS

## 2.1 GENERAL

- A. Performance: Provide roofing materials recognized to be of generic type indicated and tested to show compliance with indicated performances, or provide other similar materials certified in writing by manufacturer to be equal or better than specified in every significant respect, and acceptable to Owner's Representative.
- B. Compatibility: Provide products which are recommended by the selected material manufacturer to be fully compatible with indicated substrates, or provide separation materials as required to eliminate contact between incompatible materials.

## 2.2 SINGLE-PLY ROOF SYSTEM

- A. The roofing system to be utilized for this project shall be a fully-adhered EPDM system manufactured by the following manufacturer:
  - Carlisle Syntec System - Sure-Seal Design A Adhered Roofing System
  - Firestone Building Products Co., - Rubbergard Fully-Adhered System
- B. All materials used in the roofing system shall be as furnished by the approved manufacturer.
- C. All details relating to the installation of the roof system shall be approved by the roofing manufacturer and installed in such a manner that the manufacturer will furnish its 20-year total system warranty for the installation. Details must be submitted to the manufacturer for review prior to the start of roofing operations.
- D. Membrane shall be reinforced .060-inch thick, EPDM (Ethylene Propylene Diene Monomer) compounded elastomer. Membrane sheet sized shall be the largest sheet possible as determined by the job conditions.
- E. Roof membrane and base flashing seam tape shall be a minimum of 3-inches wide as manufactured by the selected roofing manufacturer.

## 2.3 ROOF INSULATION

- A. The top layer of insulation shall be one layer of rigid polyisocyanurate roof insulation having a thickness of 1.5-inches. The facer shall be glass fiber. Approved polyisocyanurate insulation manufacturers are:
- Carlisle - Polyisocyanurate HP
  - Firestone Building Products Co., - ISO-95+
- B. The tapered insulation shall be tapered polyisocyanurate insulation as manufactured by one of the following. Insulation shall be precut and tapered to form slopes a minimum of 1/8 or 1/4-inch per foot as noted on the drawings. Tapered insulation shall start at ½-inch thick at the drains.
- Carlisle - Polyisocyanurate HP
  - Firestone Building Products Co., - ISO-95+
- C. Tapered edge strips shall be asphalt-impregnated fiberboard. Tapered edge strips shall be 18-inches wide.

## 2.4 FASTENERS

- A. Fasteners in contact with wood blocking and nailers shall be galvanized. The fasteners shall be zinc-coated in conformance with ASTM A153.
- B. Fasteners for securing the insulation to the steel deck shall be as manufactured by the selected roof manufacturer.

## 2.5 BASE FLASHING

- A. Flashing shall be a reinforced .060-inch thick EPDM flashing sheet as furnished by the approved manufacturer.

## 2.6 WOOD NAILERS

- A. Wood nailers, blocking and plywood shall be construction grade lumber S4S, S-dry moisture content.

## 2.7 SHEET METAL FLASHINGS

- A. Prefinished sheet metal counterflashings and copings shall be 24-gauge galvanized, baked enamel finish sheet metal. The sheet metal shall be PAC-CLAD as manufactured by Peterson Aluminum or approved equal. The colors shall be selected by the Owner's Representative.
- B. Sheet metal continuous cleats shall be formed from 22-gauge galvanized steel.

## 2.8 SEALANT

- A. Sealant for sheet metal flashings shall be a high performance, one-component polyurethane-base, non-sag elastomeric sealant as manufactured by one of the following manufacturers or approved equivalent:
- Sika Corporation, Sikaflex - 15LM
  - Mameco International, Vulkem 921

## 2.9 MISCELLANEOUS

- A. Plumbing vent flashings shall be prefabricated boots as manufactured by the selected roof manufacturer.
- B. Replacement roof drains shall be cast iron and match the existing drains in size. The new drains shall be Zurn Z-125 drains with a cast iron dome and underdeck clamp or an approved equivalent.
- C. Roof walkways/traffic pads shall be constructed from rubber walkpads approved by the selected roof system manufacturer.
- D. Plates for small holes in the deck shall be 18-gauge galvanized steel.

## PART III - EXECUTION

### 3.1 DELIVERY AND STORAGE

- A. Material shall be delivered to the site in the original unopened containers or wrappers, clearly labeled with the manufacturer's name, brand name, and such identifying numbers as are appropriate. Materials damaged in handling or storage shall not be used. Cardboard containers should be stored on pallets in a dry area.
- B. The rigid roof insulation shall be protected from the weather and standing moisture at all times. Completely cover insulation materials stored outside using a waterproof tarpaulin covering. Extend covering down to the pallet so that no material remains exposed and properly secure to resist wind uplift. Unprotected, moist or otherwise damaged materials or materials with evidence of moisture damage, such as staining, will be conspicuously marked for permanent removal from the job.

### 3.2 DEMOLITION AND SUBSTRATE PREPARATION

- A. Existing EPDM membrane, ballast, base flashings, and miscellaneous debris shall be completely removed.
- B. Existing sheet metal coping, termination bars and other sheet metal flashing accessories shall be removed and discarded.
- C. Plumbing vent flashings shall be removed and discarded.
- D. Remove and discard deteriorated, wet or damaged roof insulation. Include in the Base Bid replacing 500 square feet of 2.0-inch thick polyisocyanurate roof insulation. Additional replaced insulation shall be bid as a Unit Price Extra.
- E. Temporarily displace mechanical ventilator unit covers to accommodate the removal and replacement of the existing base flashings and to allow for installation of additional nailers where required to raise the height of the curb.
- F. Deteriorated wood nailers shall be completely removed and discarded. Securely install new treated wood nailers as necessary to match the existing nailers in size and shape, or as directed by the Owner's Representative.
  - 1. Wood nailer replacement shall be bid as a Unit Price extra.

- G. Closely inspect all roof decking where the insulation was removed. Remove deteriorated deck and replace deck with matching material type and thickness as directed by the Owner's Representative to provide a structurally sound roof deck.
  - 1. Roof deck replacement shall be bid as a Unit Price extra.
- H. Remove debris, scrap and rubbish from the roof area and building ground daily. Upon completion of work, remove excess material and waste from site and clean finished surfaces marked by roofing work.
- I. Remove the existing PVC roof drains and discard.
- J. Cut the base flashing at the high wall 6-inches below the metal siding (Detail 2). Readhere the flashing to the substrate with bonding adhesive.
- K. The conduit and light lines shall be removed from the walls to allow for the flashing installation.

### 3.3 INSTALLATION PROCEDURES

- A. General: Comply with manufacturer's instructions, except where more stringent requirements are indicated herein.
- B. Details relating to the installation of the new roof system shall be approved by the selected roofing material manufacturer and the Roof Consultant and installed in such a manner that the manufacturer will furnish a warranty for the installation. Details must be submitted to the Roof Consultant and Manufacturer for approval prior to the start of reroofing operations.
- C. Do not begin roofing work until all decks, walls, curbs, nailers, accessories, and underlying substrates are ready and acceptable to have roofing materials installed. Deck surfaces must be clean, smooth, dry and free of moisture prior to beginning roof application.
- D. Schedule and supervise work crews so that the area of roofing begun one day is completely finished before leaving the job site that day. Included are all flashings within each day's work area and adjoining the membrane.
- E. Do not install any roofing materials during rain or other inclement weather. One exception is that temporary work may be installed during such weather to protect the building interior and new materials that are already installed. Remove all temporary work and materials that have been exposed to such weather, then install permanent materials as specified during acceptable weather conditions.
- F. At the end of each day's roofing installation, protect edge of incomplete work, including membrane and insulation. Provide temporary seal to the adjacent roof; remove at the beginning of next day's work.
- G. Materials must be stored dry and protected with tarps and on pallets at all times. No work shall commence when inclement weather is threatening. Wet or damaged materials will be removed from the job site.

### 3.4 DRAINS

- A. Install new roof drains at locations of existing drains. New drain bowls shall be clamped in the sump pan and insulation installed around the drain bowl. Install new drains and connect to existing drain lines. All plumbing shall be accomplished in accordance with local and state plumbing codes.

### 3.5 INSULATION INSTALLATION

- A. End joints of the boards shall be staggered between rows and layers of insulation boards. Insulation boards shall be neatly cut to fit around penetrations.
- B. The insulation boards shall be closely butted with a maximum joint space of 1/4-inch. Joint spaces which exceed 1/4-inch shall be filled with insulation material. Provide relief cuts in the insulation board as necessary to allow the insulation to conform to irregular deck surfaces. At locations where less than a full-sized sheet of insulation is required, use the largest size practical to fill in the area.
- C. Install the flat stock and tapered rigid isocyanurate roof insulation over the substrate. Mechanically fasten the insulation in accordance with the manufacturer's requirements to the steel deck.
- D. The rigid roof insulation shall be protected from the weather and standing moisture at all times. No more insulation shall be laid than can be completely covered with roofing materials on the same day. At the end of each day's work, temporary water cut-offs shall be installed at the edges of all insulation to provide a watertight seal. Such cut-offs shall be removed when the work is again started.
- E. The 4-foot by 4-foot area around each roof drain shall be recessed 1½-inch. Tapered edge strips shall be installed to provide a smooth transition to the drains.

### 3.6 SINGLE-PLY ROOF MEMBRANE INSTALLATION

- A. Roofing membrane system shall be installed following the application requirements of the selected roof membrane material manufacturer. The latest printed instructions will govern the application procedure. The seams shall be sealed with a minimum of 3-inch wide in-seam tape.

### 3.7 FLASHING INSTALLATION

- A. Vertical walls and curbs shall be neatly flashed in strict compliance with the manufacturer's specifications and attached details utilizing cured and uncured EPDM. The upper edges of the flashings shall be secured 8 inches on-center into wood. Flashings shall extend a minimum of 8 inches above the roof surface on curbs.
- B. Roof drains shall be flashed following the manufacturer's recommendations. The roof membrane shall be tightly secured in the roof drain clamping ring.
- C. Flash all penetrations (pipes, conduits, etc.) passing through the membrane. Factory prefabricated pipe seals shall be used to flash all pipes where installation is possible. Where factory prefabricated pipe seals cannot be installed, field fabricated pipe seals may be used. All flashings and terminations shall be done in accordance with approved manufacturer's details.
- D. Sheet metal pitch pans shall be provided as miscellaneous roof penetrations which cannot be flashed with a boot or field wrap. The pans shall be 16-ounce copper and shall be kept to the minimum size necessary to seal the penetration which is being flashed. Provide corner stiffeners in the flange of the pitch pans (see SMACNA Figure 4-17E). Seams in the pitch pans shall be soldered. The flanges shall be stripped-in to the roof membrane in accordance with the roofing manufacturer's requirements. The bottom half of the pitch pan shall be filled with non-shrink grout and the top half shall be filled with an approved elastomeric sealant.

### 3.8 SHEET METAL INSTALLATION

- A. Sheet metal work shall be performed in accordance with the latest edition of SMACNA "Architectural Sheet Metal Manual".
- B. Prefinished sheet metal counterflashing shall be installed in accordance with the counterflashing details and SMACNA, Figure 4-4. The counterflashing shall be secured 16-inches on-center (maximum). Corners in the counterflashing must be formed, lapped and sealed as necessary to provide a continuous system that is watertight. Adjacent sections of counterflashing shall lap a minimum of 4-inches. The counterflashing shall be caulked as shown. Do not fasten sections of counterflashing together.
- C. Install a prefinished coping on the parapet wall at locations shown on the Roof Plan. Fabricate the coping in accordance with RTA Details and SMACNA Figure 3-1. The coping shall have standing seams. The outside edge of the coping shall have a hemmed edge and be held in place with a continuous 22-gauge galvanized cleat. The continuous cleat shall be secured to the wood blocking with screws spaced 12-inches on-center. The inside face of the coping shall have a hemmed drip edge and shall be secured with EPDM gasketed screws installed through holes spaced 16-inches on-center. Apply a continuous bead of sealant in the standing seams.

### 3.9 MISCELLANEOUS INSTALLATION

- A. Mechanical ventilator units shall be returned to their original positions and secured to the existing curbs with EPDM-gasketed screws, a minimum of one on each side of the curb.
- B. Install rubber walkpad beneath mechanical units set upon the roof and locations designated on the roof plan. The walkpads shall be adhered to the roof membrane in accordance with the manufacturer's requirements. Replace the existing wood nailers with new 4 x 4 treated wood nailers.
- C. Reinstall the conduit and light on the parapet walls. The conduit shall be installed in accordance with the roofing manufacturer's requirements.

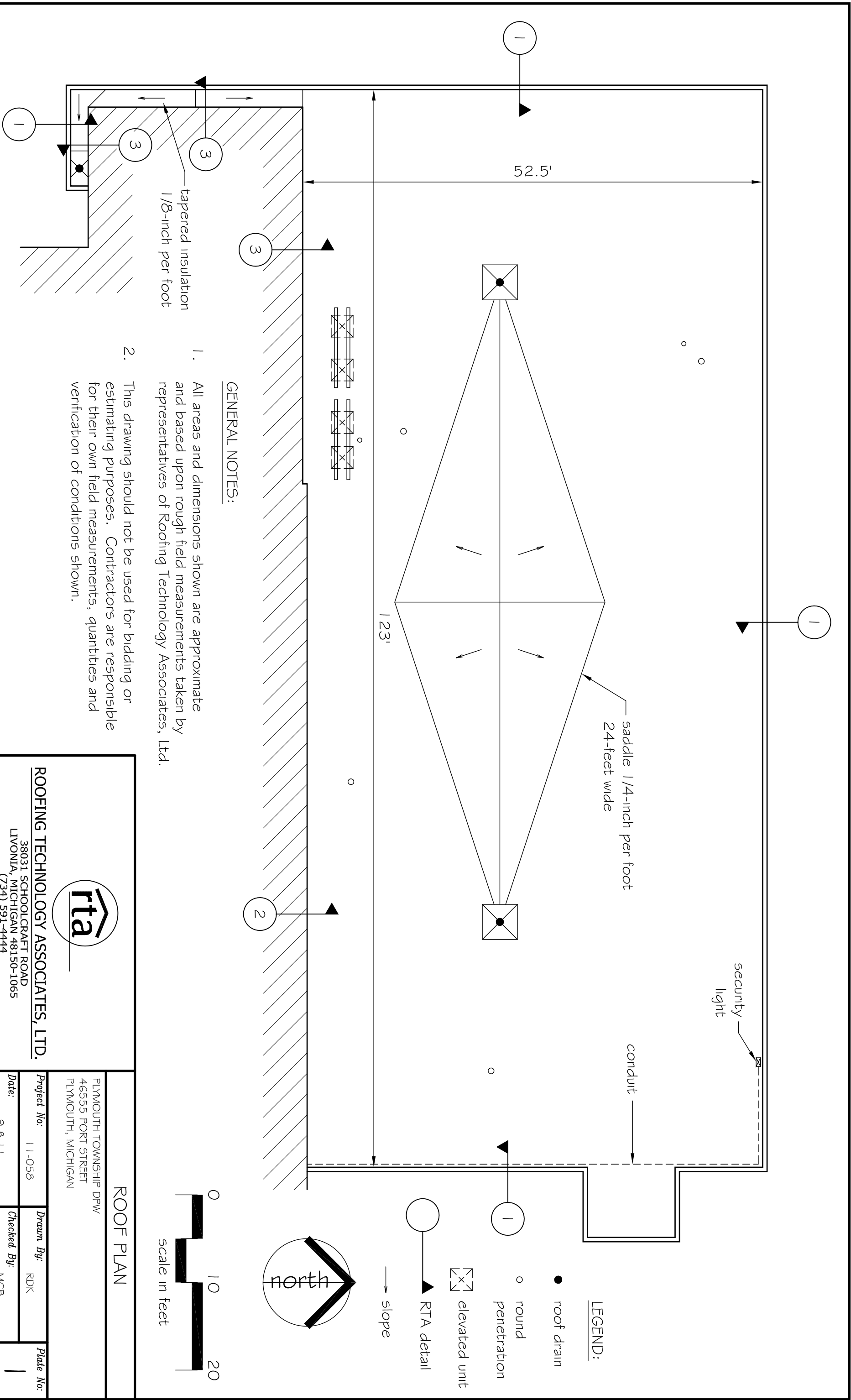
### 3.10 PRECAUTIONS

- A. Do not use oil base or plastic roof cement in conjunction with EPDM materials.
- B. Waste products (petroleum, grease, oil and solvents - vegetable or mineral oil and animal fat - direct contact with steam venting) should not be allowed to come in contact with the EPDM roof membrane system.
- C. Installation of the roofing system is not restricted because of cold temperatures. Follow precautions as stated for storage and expose only enough cement and adhesive to be used within a 4-hour period during cold temperatures.
- D. Splicing and bonding surface must be dry.
- E. Daily Seal: Care should be exercised to ensure that water does not flow beneath any completed sections of roof by temporarily sealing the loose edge of the membrane when the weather is threatening. The manufacturer's requirements should be followed closely.
- F. An open flame may not be used to dry the roof membrane or to heat the flashing materials.

**END OF SECTION**

**APPENDIX**

Roof Plan – Plymouth Township DPW ..... PLATE 1  
Parapet Wall..... Detail 1  
High Wall..... Detail 2  
High Wall..... Detail 3



tapered insulation  
1/8-inch per foot

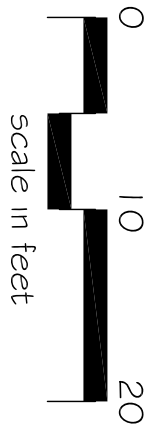
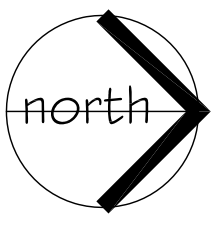
saddle 1/4-inch per foot  
24-feet wide

security light

conduit

**LEGEND:**

- roof drain
- round penetration
- ⊠ elevated unit
- ◀ RTA detail
- slope

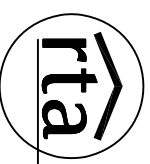


**GENERAL NOTES:**

1. All areas and dimensions shown are approximate and based upon rough field measurements taken by representatives of Roofing Technology Associates, Ltd.
2. This drawing should not be used for bidding or estimating purposes. Contractors are responsible for their own field measurements, quantities and verification of conditions shown.

**ROOF PLAN**

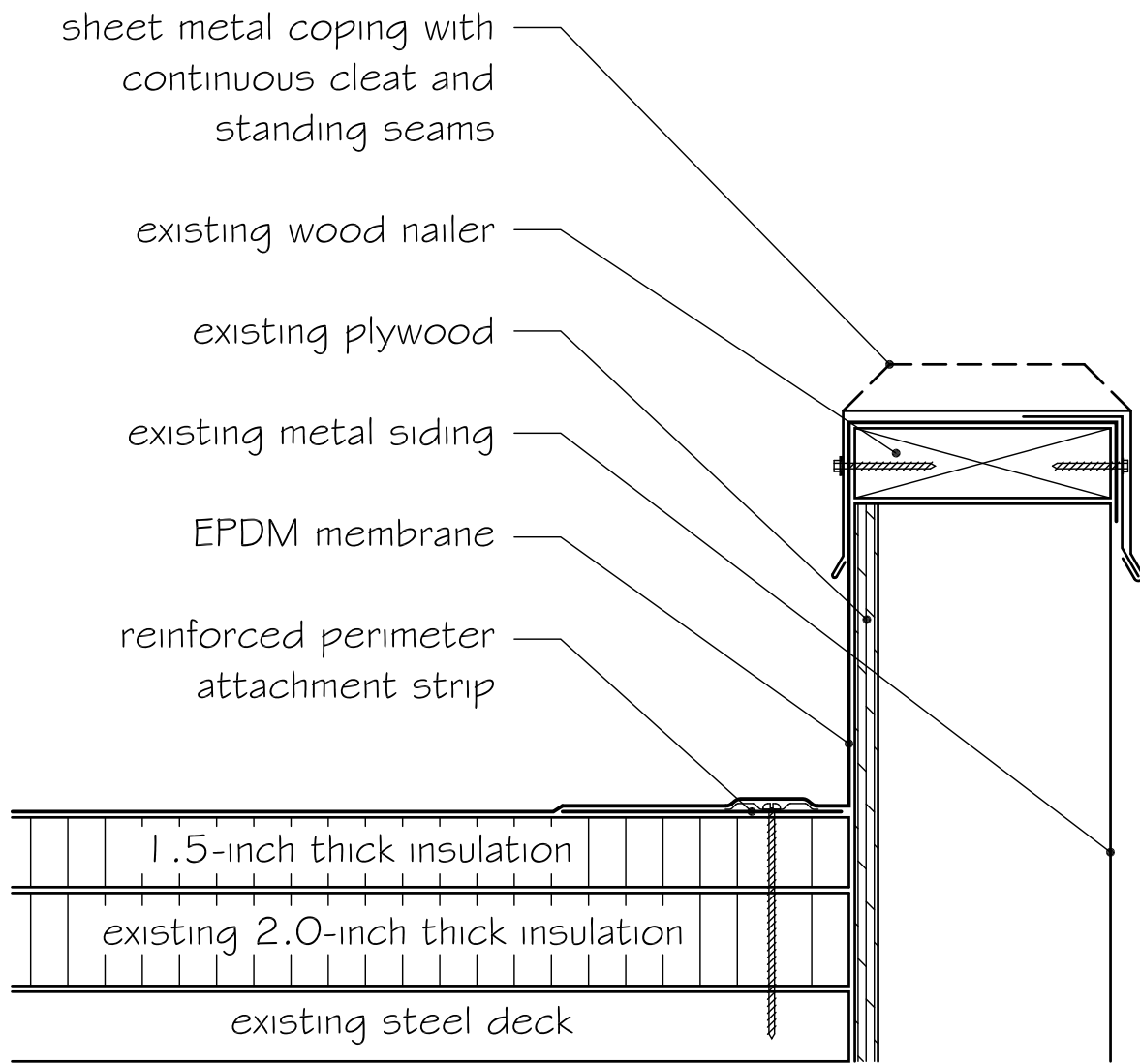
PLYMOUTH TOWNSHIP DPW  
46555 PORT STREET  
PLYMOUTH, MICHIGAN



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LYONIA, MICHIGAN 48150-1065  
(734) 591-4444

Project No:	11-058	Drawn By:	RDK	Plate No:	1
Date:	9-8-11	Checked By:	MCB		



**PARAPET WALL**  
not to scale

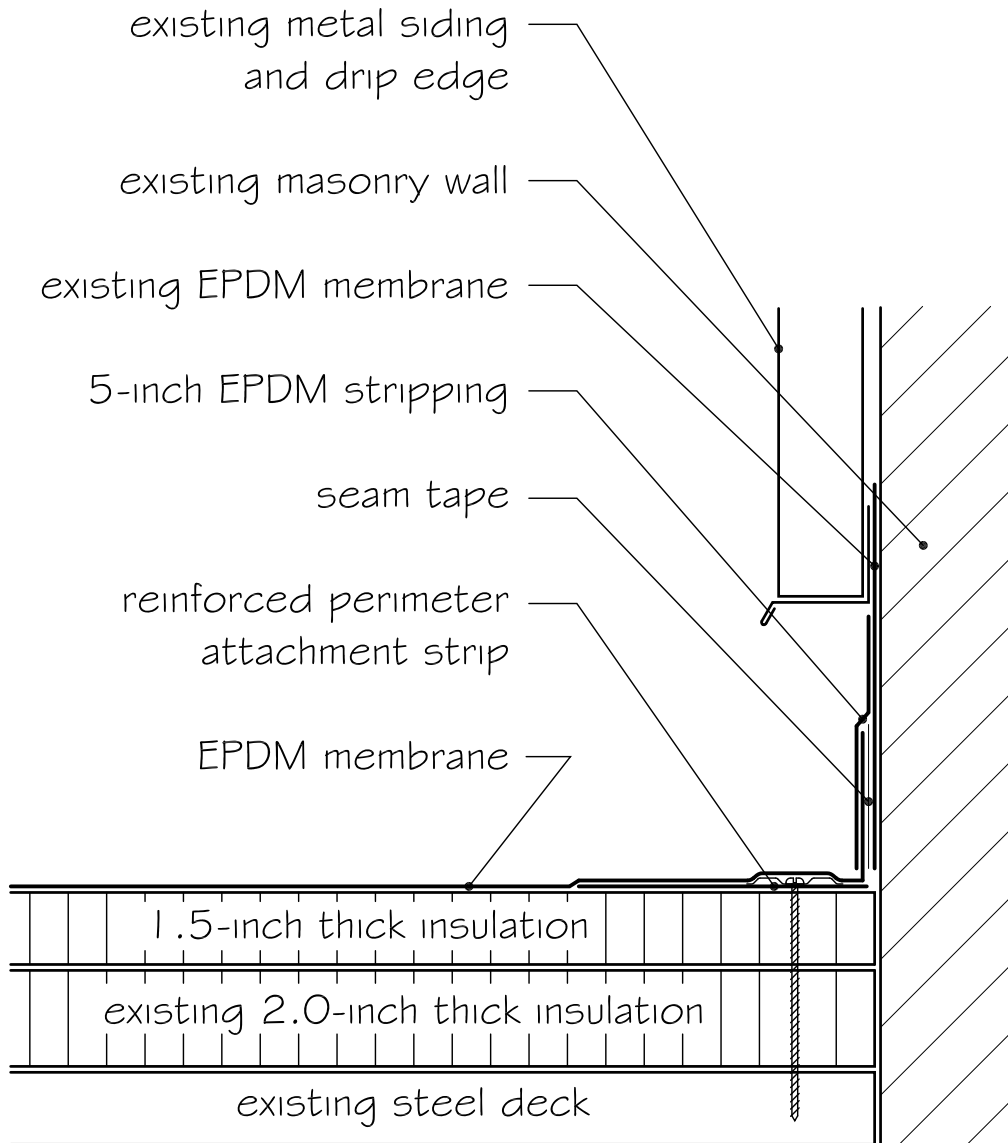
NOTE: components shown are new unless noted as existing



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ADD'L INFO

<i>Project No:</i> 11-058	<i>Drawn By:</i> RDK	<i>Detail No:</i> 
<i>Date:</i> 9-29-11	<i>Checked By:</i> MCB	



HIGH WALL  
not to scale

NOTE: components shown are new unless noted as existing

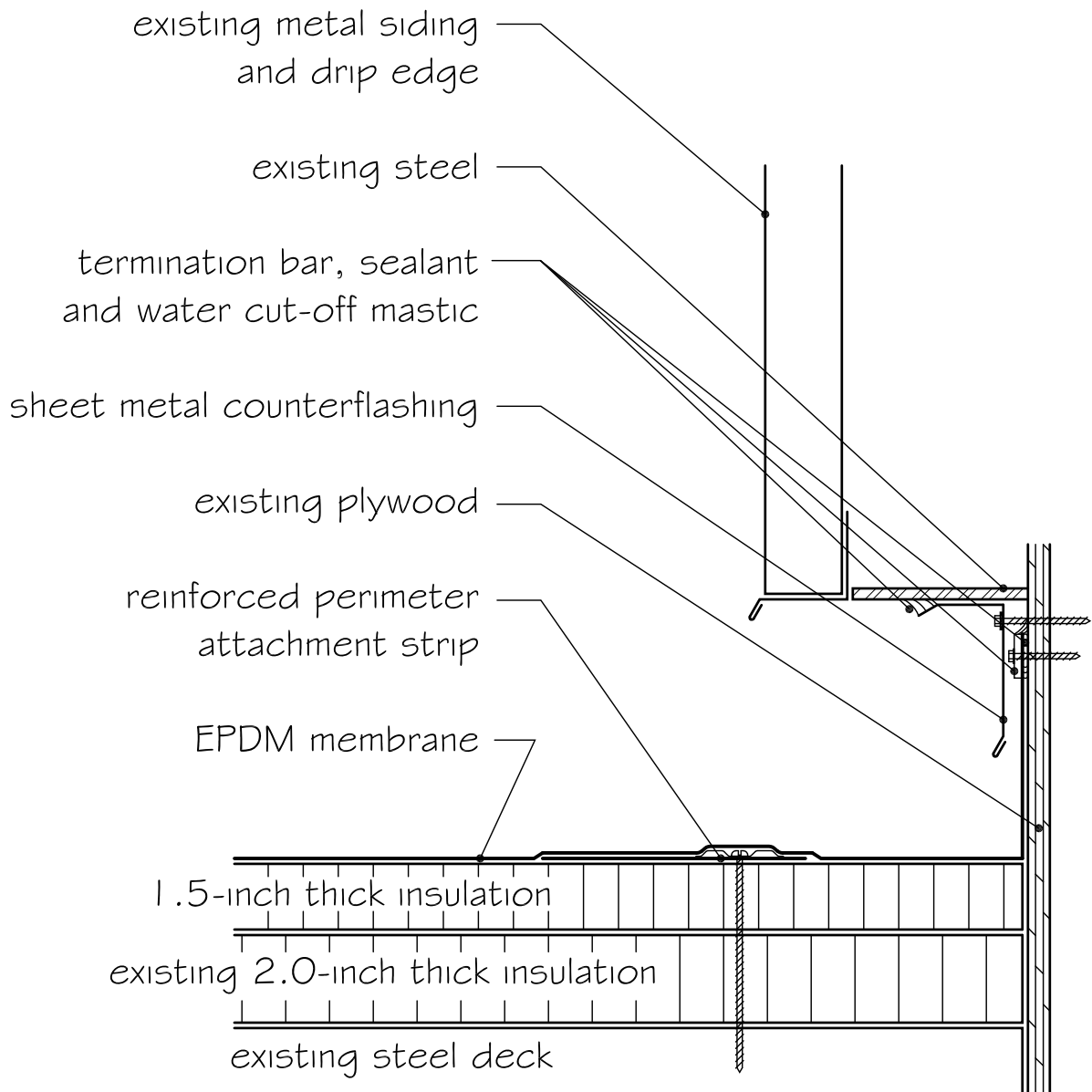


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<i>Project No:</i> 11-058	<i>Drawn By:</i> RDK	<i>Detail No:</i>  2
<i>Date:</i> 9-29-11	<i>Checked By:</i> MCB	



HIGH WALL  
not to scale

NOTE: components shown are new unless noted as existing



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Date: 9-29-11

Checked By: MCB

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