



# REQUEST FOR PROPOSAL

RFP 082016

Bay County Health Department and Court Facility  
Roof Replacement

THOMAS HICKNER  
BAY COUNTY EXECUTIVE

**REQUEST FOR PROPOSAL---THIS IS NOT AN ORDER OR OFFER**

IF FOR ANY REASON YOU CANNOT RETURN THIS BID, PLEASE RETURN THIS FORM INDICATING SO TO INSURE THAT YOUR NAME MAY BE RETAINED ON OUR BIDDER LIST.

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<b>DATE OF REQUEST</b>	MARCH 29, 2016
<b>REFERENCE PROPOSAL NUMBER</b>	RFP 082016
<b>MANDATORY WALK-THROUGH</b>	APRIL 4, 2016 10:00 A.M.
<b>WALK-THROUGH LOCATION</b>	BAY COUNTY COURT FACILITY 1230 WASHINGTON AVE BAY CITY, MI 48708
<b>QUESTIONS FROM PROPOSERS DUE TO PURCHASING:</b>	APRIL 6, 2016
<b>ADDENDUM ISSUED:</b>	APRIL 8, 2016
<b>PROPOSED DATE/TIME REQUIRED</b>	APRIL 14, 2016 2:00 P.M.
<b>SUBMIT PROPOSAL TO</b>	BAY COUNTY FINANCE DEPARTMENT PURCHASING DIVISION BAY COUNTY BUILDING 7 <sup>TH</sup> FLOOR 515 CENTER AVENUE BAY CITY, MI 48708-5128
<b>MARK PROPOSAL</b>	“BAY COUNTY COURT FACILITY/HEALTH DEPARTMENT ROOFING PROJECT” DELIVER TO THE PURCHASING OFFICE IMMEDIATELY

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The Bay County Purchasing Division is soliciting sealed proposals on behalf of the Building & Grounds Division for the installation of a new white .060 mill TPO roof over the Bay County Health Dept. and a portion of the Court Facility located at 1200 & 1230 Washington Ave., Bay City, MI 48708. The area is approximately 56,000 square feet and will be mechanically attached. Allowable roofing manufacturers shall be Firestone, Carlisle and Johns Manville, NO SUBSTITUTIONS ALLOWED.

## **SPECIFICATIONS:**

1. The existing rubber roof and fiber board insulation shall be totally removed down to the original build up roofing system.
2. Disposal areas shall be coordinated with the Project Manager as the project begins. County staff will barricade of specific area on the North and South side of the building for dumping scraps.
3. Roofing material shall be .060 mill TPO and insulation shall be polyisocyanurate board. See **"EXHIBIT A"** for exact installation requirements.
4. New flashing shall be installed at re-roofing area per specifications.
5. Please see **"EXHIBIT B"** for an aerial view of the facility and work area.

## **REQUIREMENTS OF BIDDER:**

1. Each bidder must be present at the **MANDATORY WALK THROUGH** at the Bay County Court Facility on April 4, 2016 at 10:00 a.m. in order to submit a proposal. Failure to attend the walk-through will result in the rejection of your proposal.
2. This project **MUST** be complete 60 days after contract has been signed (weather dependent).
3. Michigan Prevailing Wage is a requirement for this project. Bay County will require a certified payroll to be sent prior to releasing any payment request.
4. Successful bidder will be required to field verify square footage and conditions.
5. Successful bidder will be required to secure a building permit, if required. Permits and associated costs are the contractor's responsibility.
6. Roofing warranty shall be a minimum of 20 years on both material and labor.
7. Successful bidder shall fully restore any damage to grass or landscaping caused by materials being delivered to the roof top.
8. Successful bidder shall commence construction no less than 30 days after signing the contract.
9. All bids shall be good for ninety (90) days after the April 14, 2016 bid opening.
10. All State of Michigan and local building codes shall be followed.
11. A Bid-bond will be required in the form of 5% of the project cost from each bidder.
12. A Performance and Payment body on 100% of the bid will be required by the successful bidder.

## **CONTENTS OF PROPOSAL PACKET:**

1. Pricing. **(ATTACHMENT A)**
2. Each bidder is required to accompany their formal bid with a written sworn statement affirming they have not been a party to a collusive agreement. **(ATTACHMENT B)**

### 3. References (ATTACHMENT C)

#### GENERAL INFORMATION:

1. **CHANGES TO RFP:** All additions, corrections or changes to the solicitation documents will be made in the form of a written Change Form signed by Purchasing Agent, Frances Moore, or an attorney within Bay County's Department of Corporation Counsel only. Bidders shall not rely upon interpretations, corrections, or changes made in any other manner, whether by telephone or in person. Additions, corrections, and changes shall not be binding unless made by such a written, signed Change Form. All written, signed Change Forms issued shall become part of the Agreement documents. Change Forms will be sent to all known potential bidders by e-mail.
2. **CONTACT INFORMATION:** To receive future communications related to this RFP, possible bidders are asked to immediately send contact information by email to Frances Moore, Bay County Purchasing Agent, at [mooref@baycounty.net](mailto:mooref@baycounty.net); failure to do so may limit your ability to submit a complete, competitive Proposal.
3. **RIGHT TO WITHDRAW BIDS:** By submitting a Proposal in response to this RFP, Bidder agrees to be bound by this RFP's terms and conditions. Proposals may be withdrawn by the Bidder without penalty at any time before notification that the Bidder's Proposal has been selected. However, if the Bidder withdraws after selection of its Proposal but before executing the Contract for any reason ("Late Withdrawal"), Bidder shall pay liquidated damages to the County in an amount equal to five percent (5%) of the amount of the Proposal ("Liquidated Damages"). The County and Bidder intend these Liquidated Damages to constitute compensation and not a penalty. The parties acknowledge and agree that the harm caused to the County by such a Late Withdrawal of a Proposal would be impossible or very difficult to accurately estimate at the time of the Late Withdrawal and that the Liquidated Damages are a reasonable estimate of the anticipated or actual harm that might arise from such a Late Withdrawal. Bidder's payment of the Liquidated Damages shall be Bidder's sole liability and entire obligation and County's exclusive remedy for Late Withdrawal of Bidder's Proposal.
4. **RFP, PROPOSALS AND ACCEPTANCE DO NOT OBLIGATE:** The parties agree that they will not consider either distribution of this RFP or receipt of Proposals by the County or even notification of Proposal acceptance by the County as an obligation or commitment by the County to either purchase equipment from the Bidder or to enter into a contractual agreement. Rather, the parties understand that the County will have no binding obligation until it signs the Contract approved by its legal counsel.
5. **TAX-EXEMPT STATUS:** Bay County is a tax exempt entity. A tax exempt form will be provided to the successful bidder.
6. **FOIA:** All bids are confidential until the listed bid opening time and date; however, as a public entity, Bay County is subject to the Michigan Freedom of Information Act (FOIA). Information contained in proposals may be subject to FOIA requests.
7. **RESPONSIBILITY:** Bidder is solely responsible for ensuring its bid is received by the Bay County Purchasing Agent in accordance with the solicitation requirements, before the date and time specified in this Request, and at the place specified.

The Bay County Purchasing Agent shall not be responsible for any delays in mail or by common carrier or mistaken delivery. Delivery of bid shall be made to the Bay County Purchasing Agent, Bay County Building, 7<sup>th</sup> Floor, Bay City, MI 48708.

Deliveries made before the due date and time but to the wrong office will be considered non-responsive unless re-delivery is made to the office specified before the due date and time specified in this Request.

8. **INSURANCE:** The Bidder shall purchase and maintain insurance sufficient to protect it from any and all claims which may arise out of or result from the Bidder's services related to this RFP and any resultant contract, whether such service be by the Bidder individually or by anyone directly or indirectly employed by Bidder, or by anyone for whose acts Bidder may be liable, including independent contractors. Insurance policies purchased and maintained shall include, but are not limited to, the following:
- a. Worker's compensation insurance for claims under Michigan's Workers' Compensation Act or other similar employee benefit act of any other state applicable to an employee in the minimum amount as specified by statute;
  - b. Employer's liability insurance, in conjunction with workers' compensation insurance, for claims for damages because of bodily injury, occupational sickness or disease or death of an employee when workers' compensation may not be an exclusive remedy, subject to a limit of liability of not less than \$100,000 each incident;
  - c. Motor vehicle liability insurance required by Michigan law including no-fault coverage for claims arising from ownership, maintenance or use of a motor vehicle with liability limits of not less than \$1,000,000 per occurrence. Coverage shall include all owned vehicles, all non-owned vehicles, and all hired vehicles.
  - d. Commercial General Liability insurance for claims for damages because of bodily injury or death of any person, other than the Bidder's employees, or damage to tangible property of others, including loss of use, which provides coverage for contractual liability, with a limit of not less than \$1,000,000 each occurrence and a mandatory \$2,000,000 annual aggregate.

Insurance required shall be in force until acceptance by the County of the entire completed work, and shall be written for not less than any limits of liability specified above. Certificates of insurance, acceptable to the County, shall be provided to the County's Department of Corporation Counsel no less than ten (10) working days prior to commencement of the project.

All coverage shall be with insurance carriers licensed and admitted to do business in Michigan, and are subject to the approval of the County.

All Certificates of Insurance and duplicate policies shall contain the following clauses:

- 1. "It is understood and agreed that thirty (30) days advance written notice of cancellation, non-renewal, reduction and/or material change in coverage will be mailed to Bay County's Department of Corporation Counsel, 515 Center Avenue, Suite 402, Bay City, MI 48708"; and
- 2. "It is understood and agreed that the following are listed as additional insureds: The County of Bay, including all elected and appointed officials, all employees and volunteers, all boards, commissions, departments and/or authorities and their board members, employees and volunteers."

9. **COST OF DEVELOPING PROPOSAL:** The Bidder shall be responsible for all costs incurred in the development and submission of its Proposal.
10. **PROPOSAL DELIVERY:** Proposals must be returned no later than **April 14, 2016, 2015, @ 2:00 p.m.** in a sealed envelope clearly marked "**Bay County Court Facility/Health Department Roof Project**"--- **Deliver to Nicole LaDouce in the Purchasing Office immediately.** Please provide three (3) printed copies of the submission will be required and deliver to the Bay County Purchasing Office, Bay County Building, 7<sup>th</sup> Floor, Bay City, Michigan 48708.

**The County will not accept proposals sent by FAX machine or Email.**

11. **NON-DISCRIMINATION:** In the performance of the proposal and resultant contract, bidder agrees not to discriminate against or grant preferential treatment to any individual or group on the basis of race, sex, color, ethnicity, or national origin in the operation of public employment, public education, or public contracting. Bidder shall not discriminate against any employee or applicant for employment to be employed in the submission of this Proposal or in performance of the duties necessitated by an award of the proposed contract with respect to his or her hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of his or her race, color, religion, national origin, ancestry, gender, height, weight, marital status, age, except where a requirement as to age is based on a bona fide occupational qualification, or disability that is unrelated to the individual's ability to perform the duties of a particular job or position. Any breach of this provision will be regarded as a material breach of the contract.
12. **PROPOSAL OPENING:** There will be a public proposal opening immediately following the deadline to receive proposals in the Bay County Finance Department conference room located in the Bay County Building, 7<sup>th</sup> Floor, 515 Center Avenue, Bay City, Michigan. All bidders are invited to attend and hear the proposals read.
13. **PROPOSAL REJECTION/ACCEPTANCE:** The County reserves the right to accept or reject any or all proposals, to waive any irregularities and to make the final determination as to the best low qualified proposal.

The County is not required to accept the lowest cost proposal in all or in part. The proposal award will not be based solely upon cost, but will be evaluated based upon criteria formulated around the most important features of the services, of which qualifications, experience or capacity may be overriding factors. The proposal evaluation criteria should be viewed a standards, which measure how well a bidder's approach meets the desired requirements and needs of the County.

The County reserves the right to waive any informalities or immaterial omissions or defects not involving prices, time or changes in the work and to reject any or all proposal, if to do so is deemed in the best interest of the County. In no event will an award be made until all necessary investigations are made as to the responsibility and qualification of the bidder to whom is it proposed to make such an award. Any contract awarded to a person or company who is discovered to have been in default or disqualified at the time of the awarding of the contract shall be voidable at the discretion of the County.

14. **PROPOSAL AWARD:** In the event the proposal is awarded directly by the Finance Officer, a Notice of Intent to Award will be used to notify all bidders of her intent to award the proposal to the Bidder providing the best value to the County.
15. **CONTRACT:** The County's award of any proposal is subject to and conditioned upon execution of a formal agreement for products and services between the successful bidder and the County. In submitting a proposal, the bidder acknowledges that the contents of the RFP will become incorporated within any formal agreement. This RFP does not include every term and provision which shall be included in the formal agreement. In the event that the bidder fails to execute the formal agreement within 14 days of its presentment by the County, the County may reject the selected bidder, and proceed to accept another qualified proposal, or reject all proposals.

A copy of a bidder's suggested terms and conditions may be submitted with bidder's Proposal, however, neither the County's acceptance of any proposal nor award of any contract pursuant to this RFP shall be construed as any definitive acceptance by the County of Bidder's suggested terms and conditions. In the event of a conflict in terms, the order of precedence to resolve the conflict will be as follows: Michigan State law, the terms and conditions of the signed contract, the terms and conditions of the RFP, and last, the Bidder's Proposal.

16. **DISPUTES:** In the event a bidder disagrees with the recommendation of the Bay County Finance Officer concerning this award, the bidder may obtain a Bid Protest Form from the Purchasing Office which must be completed and returned to Frances Moore, Bay County Purchasing Agent, Bay County Purchasing Division, 7<sup>th</sup> Floor, Bay County Building, 515 Center Avenue, Bay City, MI 48708-5128, **within ten (10) business days from the date of the notice of intent to award.**

17. **QUESTIONS:** All questions about this RFP must be received by April 4, 2016 5:00 p.m. in writing, via email, to:

Frances Moore  
Purchasing Agent  
[mooref@baycounty.net](mailto:mooref@baycounty.net)

Responses to any inquires will be issued in one (1) Addendum no later than April 8, 2016 5:00 p.m. and will be sent to all known bidders. Every attempt to answer your inquiries will be made however Bay County has the right to not answer any questions received after the April 4, 2016 due date.

Correspondence or inquiries made directly to bidders regarding their proposals from all other persons are to be directed to those County employees designated above for appropriate review and response. Contact with other County staff or County Board Commissioner could be reason for disqualification.

Any significant explanation desired by a proposer, regarding the meaning or interpretation of the Request for Proposals must be requested with sufficient time allowed for a reply to reach all prospective proposers to submit their proposals. Any information given to a prospective bidder concerning the Request for Proposal will be furnished to all prospective bidders as an amendment or addendum to the Request for Proposal, if such information would be of significance to uninformed bidders. The County shall make the sole determination as to the significance to uninformed bidders.

**ADA ASSISTANCE:** The County of Bay will provide necessary and reasonable auxiliary aids and services, such as signers for the hearing impaired and audio tapes of printed materials being considered, to individuals with disabilities upon two days' notice to the County of Bay. Individuals with disabilities requiring auxiliary aids or services should contact the County of Bay by writing or calling:

Amber Davis-Johnson  
Corporation Counsel  
Bay County Building  
515 Center Ave. 4th Floor  
Bay City, MI 48708-5128  
(989) 895-4131  
(989) 895-4049 TDD  
[johnsona@baycounty.net](mailto:johnsona@baycounty.net)

Frances Moore, Purchasing Agent  
Bay County Finance Department  
Purchasing Division  
Bay County Building  
515 Center Ave. 7<sup>th</sup> Floor  
Bay City, MI 48708  
989-895-4037  
[mooref@baycounty.net](mailto:mooref@baycounty.net)

**This proposal process will be conducted in conformity with the Bay County Purchasing Policy as found on the Bay County website [www.baycounty-mi.gov](http://www.baycounty-mi.gov).**

## Mechanically Attached Reinforced TPO Roofing System

### 1 Preparation of the Substrate

#### 1.1 Reroofing

##### 1.1.1 General:

- Section A: Existing roofing materials and board to be removed down to the original built up roofing surface. The new roofing system shall contain components as detailed in this specification.
- Section B: Existing EPDM roofing material to be removed; insulation is to remain. The new roofing system shall contain components as detailed in this specification.
- Roof slope should be a minimum of 2% to allow for adequate drainage of the roof taking into account the deflection of the roof. All outlets must be protected to prevent debris entering and causing blockage of down pipes. The roof surface will be made clean, dry, smooth and free of contaminants such as grease, animal fats, coal tar and oil based products.
- All sharp edges, fins and rough surfaces that could damage the membrane will be removed or if they can't be removed isolated from the membrane with a leveling layer.

##### 1.1.2 Substrate Type: Existing Metal Decking:

- Metal decks will be assessed for excessive deflection and their pullout resistance by the installer.
- The County will be notified if deficient areas are found.

##### 1.1.3 Existing Membrane: EPDM Rubber Membrane:

- The existing roofing membrane will be cut at the perimeter and all flashings will be removed from the upstands and penetrations. When necessary, the membrane will be cut at equidistant intervals to release the tension out of the membrane.
- A separation layer of geotextile (min. 200 gr/m<sup>2</sup>) will be installed prior to the installation of the roofing membrane where new ISO board insulation is not being installed.

##### 1.1.4 Allowable Manufacturer's:

- Firestone
- Carlisle
- Johns Manville
- No Substitutions

## 2 Insulation

### 2.1 Insulation Type

#### 2.1.1 General:

- The existing board insulation is to be visually inspected by the contractor and replaced where saturated.
- A new layer of 2" Polyisocyanurate board insulation shall be installed at the entire roofing area.
- The County will be notified if deficient areas are found.

#### 2.1.2 Polyisocyanurate (PIR):

- Replacement Polyisocyanurate boards are to match the existing insulation and have a minimum compressive strength of 120 kPa with an acceptable facer.

#### 2.1.2.1 ISO 95+ GL:

- Manufacturer needs to be ISO 9001:2008 and ISO 14001:2004 certified.
- The polyisocyanurate insulation boards consist of closed-cell polyiso foam core laminated on both sides to a black glass reinforced mat facer of app. 150 g/m<sup>2</sup>. The boards will comply with the following characteristics when tested in accordance with EN 13165:
  - Size: 1.22 m x 2.25 m
  - Thickness: from 25.4 mm to 101.6 mm
  - Compressive strength:  $\geq 138$  kPa
  - Thermal conductivity:  $\leq 0.029$  W/mK
  - Dimensional Stability:  $< 2\%$
  - Water absorption:  $< 1\%$  (by volume)
- Keep insulation dry at all times. Do not install over wet, damp or uneven substrates.
- Replacement and new insulation boards are to comply to following certifications, but not limited to: CE marked according to EN 13165, ASTM C1289 Type II Class 1, UL Classified, FM Class 1 Approved.

### 2.2 Insulation Attachment

#### 2.2.1 Thermal insulation Boards mechanically attached

- Install the boards on above underlay with end joints staggered. When installing two layers of boards, ensure that the joints of both layers do not coincide. Mechanically fix to pattern and frequency advised by manufacturer, all in accordance with national wind uplift standards. Install fully in accordance with manufacturer's instructions. Use insulation plates and fasteners or equivalent.
- Install in any one day only as many boards as can be protected by the completed roofing system that same day.

### 2.3 Cover board alternate (see Attachment A)

#### 2.3.1 High-Density Polyisocyanurate:

- High-density polyisocyanurate technology bonded in-line to mineral-surfaced, fiber glass reinforced facers with greater than 125 lbs of compressive strength. Basis of Design: Invinso Roof Board or architect approved equal.

## 3 Reinforced TPO Roofing Membrane

### 3.1 Products

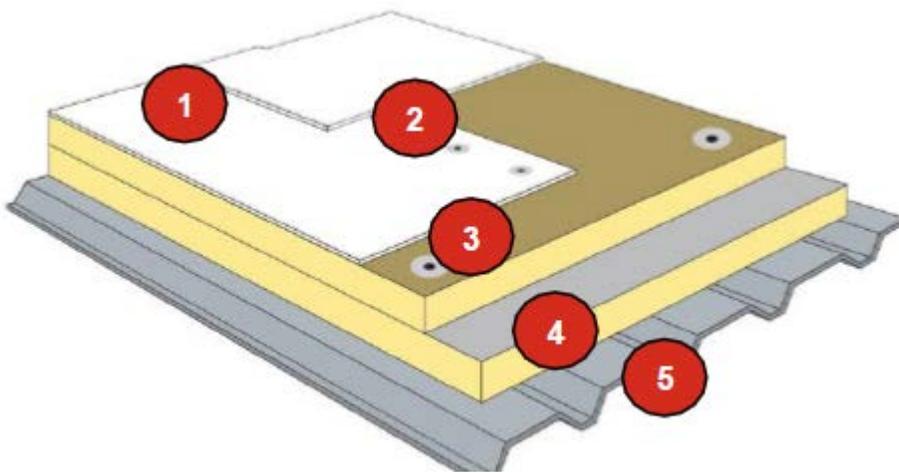
TPO Membranes and accessories need to be supplied from the same manufacturer. Manufacturer needs to be ISO 9001:2008 and ISO 14001:2004 certified.

#### 3.1.1 Roofing membrane: TPO membrane 1.5 mm (0.059")

- The TPO membrane is a flexible thermoplastic polyolefin (FPO) roofing membrane made from the incorporation of an ethylene propylene rubber into a polypropylene matrix and produced with a polyester weft-inserted reinforcement. The membrane can be supplied in the following dimensions and colors:
  - Thickness: .059" (1.5 mm);
  - Weight: 1.525 kg/m<sup>2</sup>;
  - Length: 30.50 m;
  - Width: 1.00 m; 1.50 m; 2.00 m;
  - Color: white
- Dimension of the membrane will be chosen in view of the dimensions, complexity of the roof and in function of a wind uplift calculation as determined by national standards.
- The membrane shall comply with the following characteristics when tested in accordance with EN 13956:
  - Tensile strength (L/T):  $\geq 1200$  N/50 mm
  - Elongation at break:  $\geq 20$  %
  - Tear Resistance (L/T):  $\geq 400$  N
  - Static loading:  $\geq 20$  kg (on soft & hard support)
  - Resistance to impact:  $\geq 2000$  mm (on soft support)  $\geq 800$  mm (on hard support)
  - Cold foldability:  $\leq -40$  °C
  - Durability/UV-exposure: Pass EN 1297 (>7500h)
  - Solar Reflectance Index (initial/3 years): 98/81 (for white membrane)
- The membrane is to be assessed for its properties according to EN 13956 (CE mark), ASTM D-6878, DIN V 20000-201, is FM approved and carries the ETA 12/0419 certification.

### 3.2 Roofing System

- Ponding water, snow, frost and/or ice present in more than trace amounts, must be removed from the work surface prior to installing the system.



1. New TPO Membrane
2. Mechanical Attachment Method
3. Mechanically Attached or Adhered Cover Board (Optional)
4. Existing Mechanically Attached or Adhered Insulation
5. Existing Steel Deck

### 3.2.1 Mechanically Attached System

- The TPO strips are mechanically attached to the substrate using Seam Plates and fasteners or approved plates and fasteners. The plates need to be positioned at least 20 mm in from the edge of the membrane.
- In case of doubt about the selected fastening system and/or the quality of the support, pullout tests need to be conducted on site to determine the actual pullout values of the fasteners applied. Test areas shall include corner and perimeter zones.
- The width of the TPO strips and/or the spacing of the plates and fasteners must be calculated strictly in accordance with local standards. A layout plan shall be provided upon request.
- Install the TPO single-ply roofing membrane loose laid on a suitable substrate as close to its final position as possible, and allow to relax a minimum of 30 minutes before attachment or splicing. Adjoining sheets are overlapped at least 150 mm in case of a seam with mechanical anchoring and 75mm in case of a seam without mechanical anchoring. Layout the TPO membranes in a fashion so that field and flashing seams are installed to shed water. Orient the TPO sheets so that any exposed (cut) edges of a sheet are used as the bottom sheet in splices whenever possible.
- As an alternative to the mechanical anchoring in the seam the TPO membrane panels can be mechanically attached on top of the membrane. These mechanical attachments are covered using a pre-cut TPO 8" Reinforced Cover Strip or a separate TPO strip.
- All TPO strips are to be heat-welded to form a continuous, watertight membrane (see Notes #4).

## 3.3 Roof Details

### 3.3.1 Seaming:

- All splices need to be hot air welded.
- Set-up of the welding equipment is the responsibility of the installer. The air intake, temperature and speed of the machine must be adjusted to provide proper seam strength.

- Seams made with an automatic welder must be a minimum of 38 mm wide. Seams made with hand welders must be a minimum of 50 mm wide. The weld shall be executed and pressured with a pressure roller.
- Any visible cut edges with scrim exposed shall be covered with TPO Cut Edge Sealant or TPO General Purpose Sealant.

### **3.3.2 Base Tie-in:**

- At all changes in angles greater than 15%, the membrane must be restrained using one of the approved 'Base Tie-in' methods as per the manufacturer's specifications.

#### **3.3.2.1 Detail 1: Base Tie-in with Fasteners and Plates**

- The TPO membrane should be mechanically attached with Seam Plates and fasteners or approved plates and fasteners as close as possible at the angle change, max. every 300 mm o.c. The TPO membrane must extend 15 mm beyond the edge of the plates.
- Plates and fasteners are either installed on the flat roof substrate or on the wall. The selection for vertical or horizontal attachment is related to the ease of application (thickness of insulation and nature of the substrate).

#### **3.3.2.2. Detail 2: Base Tie-in with TPO Coated Metal**

- Mechanically fasten the TPO Coated Metal to the supporting structure using appropriate fasteners, all according the manufacturer's guidelines. Position the fasteners not closer than 15 mm from the metal edge.
- Heat weld the field TPO membranes to the TPO Coated Metal flashing. Seams must meet requirements mentioned in Notes #4.

### **3.3.3 Vertical flashings roof edges and penetrations:**

- Vertical facings are either flashed with TPO Coated Metal or with a separate strip of TPO membrane which is fully adhered with TPO Bonding Adhesive and/or mechanically attached, all according the manufacturer's Technical Guidelines. If necessary, install a suitable overlayment to ensure the adherence of the TPO membranes.
- The required height for the TPO flashing should be determined by local regulations. Do not flash over existing through-wall flashings, weep holes and overflow scuppers.
- On top of the upstands, the TPO membrane or TPO Coated Metal is mechanically attached and finished with an applicable detail (see further).

### **3.3.4 Corners:**

- All corners should be finished using the Pre-molded Corners (inside or outside) or field fabricated corners from TPO Unsupported Flashing.
- The corners are heat welded into place according the manufacturer's Technical Guidelines.

### **3.3.5 Wall Termination**

#### **3.3.5.1 Termination Bar Detail:**

- The TPO membrane will be secured with a Termination Bar, used in conjunction with water repellent sealant Water Block between the membrane and the substrate under compression behind the termination bar.
- The termination bar must be installed directly into the wall surface and mechanically fixed at maximum 200 mm centers using appropriate fasteners. A bead of General Purpose Sealant is applied along the top edge of the termination bar.

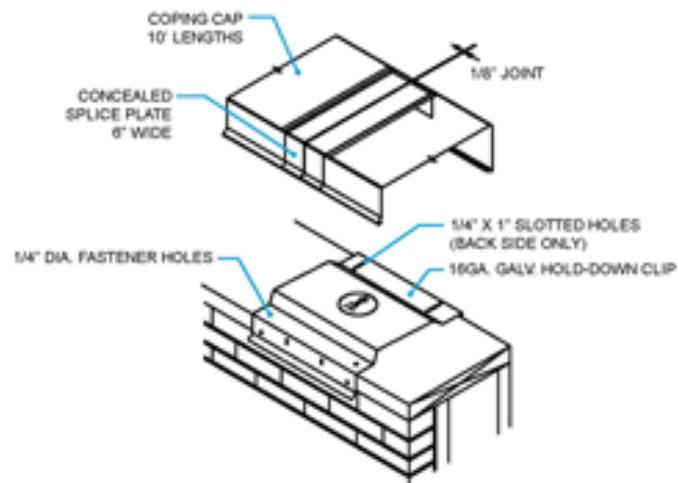
### 3.3.5.2 Counterflashing Detail:

- The TPO membrane will be mechanically fastened with a metal batten strip. A bead of General Purpose Sealant is applied along the top edge of the TPO membrane. A separate metal counterflashing is secured to the vertical face above the membrane termination. The counterflashing will cover the top of the fastening system by a minimum of 100 mm.

### 3.3.6 Roof Edge Termination

#### 3.3.6.1 Metal Coping Terminations:

- The membrane shall be returned over the upstand and secured to the horizontal surface of the parapet. If necessary, a suitable timber plate will be installed, mechanically fixed to the top of the parapet to provide an even substrate. The metal coping will be installed, ensuring full protection of the top of the upstand detail.
- Pre-manufactured cap flashing shall be installed to cover the entire parapet with 6" vertical returns.
  - .050" aluminum flashing, snap in place
  - Kynar 500 finish
  - Color to match existing flashing
  - 20 G. Galvanized anchor plates with spring plate
  - Install per manufacturer's specifications
  - Color matched splice plates, allow for thermal expansion
- Manufacturer's:
  - Hickman
  - Firestone
  - Carlisle
  - Johns Manville
  - No Substitutions



### 3.3.7 Pipe Penetrations

#### 3.3.7.1 General:

- All pipes must be anchored to the deck. Metal edges used at pipe penetrations must have rounded corners.
- All TPO components should be protected from direct contact with steam or heat sources when the in-service temperature of the penetration is in excess of 60 °C. In such cases the flashing can be installed directly to an intermediate insulated cool sleeve.
- All penetrations must allow flashing terminations of a minimum height determined by local regulations.

### **3.3.7.2 Pre-molded Pipe Flashing:**

- Pipe penetrations accessible from the top side and with a maximum diameter of 203 mm, can be flashed in using TPO Pipe Flashing. Heat weld the boot to the surrounding TPO membrane around the base of the penetration and secure on top using a stainless steel clamping ring. Finish by applying a bead of General Purpose Sealant around the entire circumference of the Pipe.

### **3.3.7.3 Field Fabricated Pipe Flashing:**

- Field fabricated flashing of pipes is to be executed using TPO Unsupported Flashing, in accordance with the manufacturer's Technical Guidelines. This method is to be used where the top of the pipe is not accessible and/or the pipes are larger than 203 mm in diameter. The TPO Unsupported Flashing is secured on top using a stainless steel clamping ring. Finish by applying a bead of General Purpose Sealant around the entire circumference of the Pipe.

### **3.3.7.4 Pipe Clusters and Unusual Shaped Penetrations**

- Install pre-fabricated penetration pockets around the penetrations. Up to a pipe diameter or cluster of 90 mm a pre-molded TPO Penetration Pocket can be used, for larger openings a pocket can be made out of TPO Coated Metal. Fill the penetration pockets with manufacturer's Pourable Sealant, so as to shed water. The Pourable Sealant shall be a minimum of 50 mm deep, use filler as required. All installed in accordance with the manufacturer's Technical Guidelines.

### **3.3.8 Water Drains:**

- Number and dimensions of the outlets are in accordance with national regulations.

#### **3.3.8.1 Rainwater Outlets incorporating a Clamping Ring:**

- Install roof outlets, providing a clean even finish on the mating surfaces between the clamping ring and the drain bowl.
- Position the TPO membrane, and then cut a hole for the outlet to allow 10 to 20 mm of membrane to extend inside the clamping ring past the drain bolts. Install water repellent sealant Water Block beneath the membrane, where the clamping ring seats. Install the outlet clamping ring and clamping bolts. Tighten the clamping bolts to achieve constant compression and install gravel/leaves guard.

#### **3.3.8.2 Rainwater Outlet/Scupper incorporating an Insert Piece:**

- The TPO membrane sheet must be in place prior to installation of the insert piece. Cut a hole to the size of the insert piece, over the centre of the outlet.
- Install a pre-fabricated or pre-molded compatible TPO drain insert piece and weld it to the field TPO membrane. The drain insert flanges, or the TPO membrane around it, shall be fastened using Seam Plates and Fasteners or an appropriate fastening system.
- Heat weld a piece of TPO membrane or TPO Unsupported Flashing to the flange and onto the field membrane, covering the fasteners.

### **3.3.9 Roof expansion joints:**

- The membrane is mechanically attached at both sides of the expansion joint using Seam Plates and Fasteners or an appropriate fastening system, maximum 300 mm on center. A compressible tube is added to allow for excess membrane. The expansion joint is then covered with a TPO cover piece onto the TPO membrane. Ensure there is enough excess membrane to accommodate building movement.

### **3.3.10 Walkway Pads:**

- Walkways shall be installed in specific areas such as access points to the roof (doorways, ladders, ...) and on roof parts subjected to traffic more frequent than once per month.
- Prior to heat weld the TPO Walkway Pad (yellow) to the TPO membrane with textured side up. The TPO membrane needs to be clean and free of dirt, dust and debris. Install the TPO Walkway Pads as per manufacturer's specifications.
- The installation of concrete pavers is not acceptable.

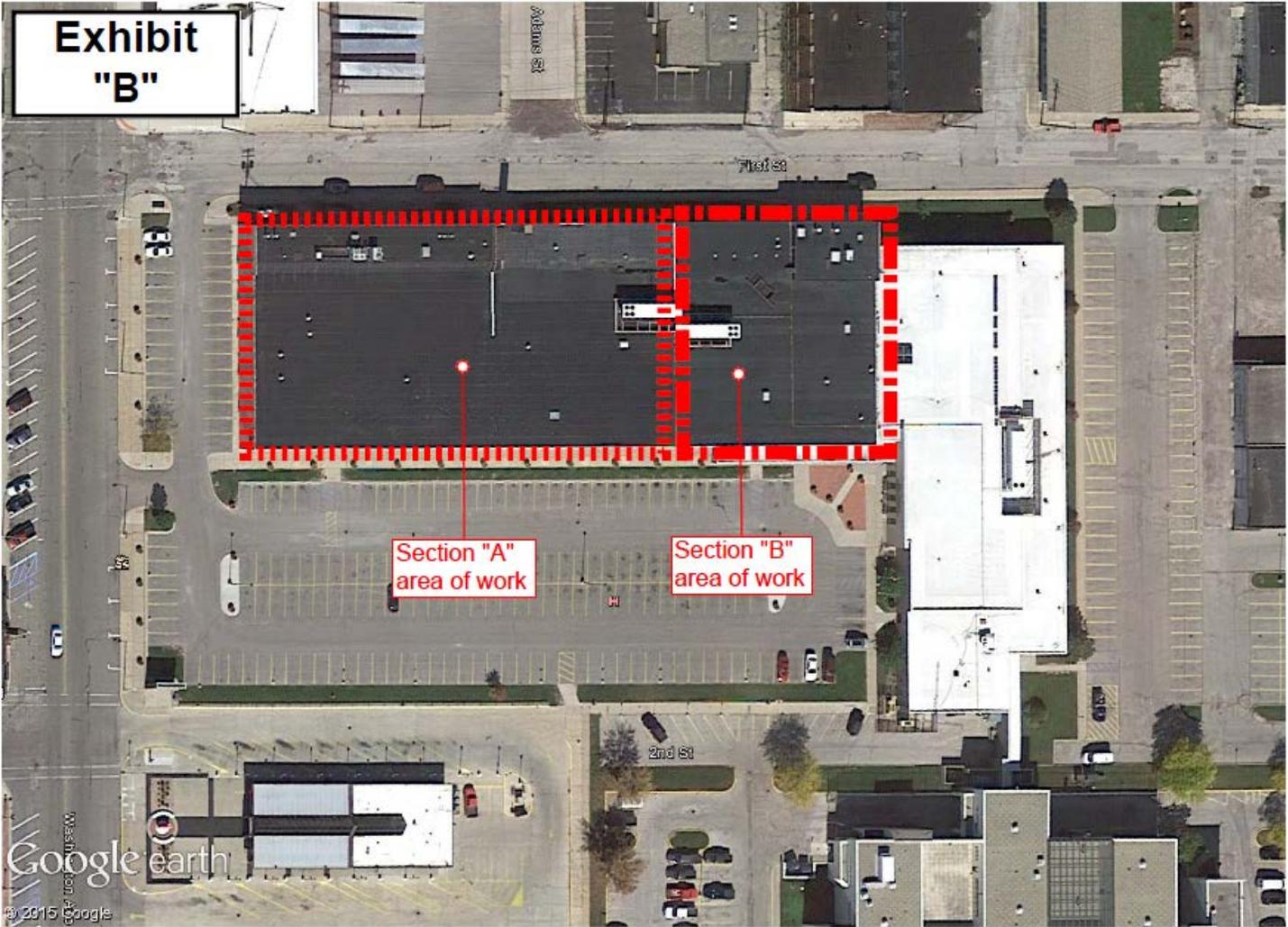
### **3.3.11 Safety perimeter:**

- Areas of caution on the roof such as roof edges, skylights, rooftop equipment, expansion joints, etc. shall be indicated with a safety perimeter by bonding a 140mm wide self-adhering QuickSeam Yellow Safety Strips onto the TPO membranes with Single-Ply Prime, installed in accordance with the manufacturer's Technical Guidelines.

## **4. Notes:**

- The specifications will be strictly followed for all products supplied by the manufacturer. Prior to installation, Products must approve any deviation from the specifications. The works shall only be installed by an authorized contractor.
- Installations must comply with all current relevant standards, codes of practice, and the Building Regulations.
- A 20 year warranty shall be issued to the building owner on completion.
- All materials shall be stored clear of ground and moisture with weather protective covering. Keep all adhesives, sealants and primers away from sources of ignition.
- Do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application.
- At the end of the working day: Temporarily seal the membrane to the deck to prevent any water infiltration. Temporary closures that ensure that moisture does not damage any completed section of the new roofing system are the responsibility of the roofing contractor. Completion of flashings, terminations and temporary closures shall be completed as required to provide a watertight condition. Ensure protection of warm deck insulation by temporary seal. Ensure that the sequence of laying enables temporary sealing of loose membrane edges to be down the slope and not against the flow of water. On resumption of work cut away the tail of the membrane from completed area and remove from roof.
- Adequate temporary protection must be provided over the installed membrane during the works program, particularly at temporary walkways, access points to the roof, roofing material stockpiles, etc. in order to prevent damage.
- Safety scaffolding, rubbish skips, access ladders. etc. should be agreed upon with the County and in accordance with the current Health and Safety regulations.
- The main contractor shall ensure that all areas of the finished roofing system shall be protected from roofing related work traffic and other trades until completion of all works.

**Exhibit  
"B"**



Section "A"  
area of work

Section "B"  
area of work

**PROJECT PRICING**

Cost to remove old rubber roofing & fiberboard insulation and install approximately 56,000 square feet of .060 mill re-enforced white TPO roofing and insulation with a **20 year warranty** on material and labor.

\$ \_\_\_\_\_

Alternate #1 Cover board

\$ \_\_\_\_\_

Replacement Polysio Insulation Board Sq. Ft. Unit Cost

\$ \_\_\_\_\_

**CERTIFICATION**

The individual signing below certifies:

1. He/She is fully authorized to submit this Proposal, including all assurances, understanding and representations contained within it which shall be enforceable as specified.
2. He/She has been duly authorized to act as the official representative of the bidder, to provide additional information as required and, if selected, to consummate the transaction subject to additional, reasonable standard terms and conditions presented by County.
3. This Proposal was developed solely by the Bidder indicated below and was prepared without any collusion with any competing bidder or County employee and Bidder has not entered into any type of agreement of any nature to fix, maintain, increase or reduce prices or competition regarding the items covered by the Proposal.
4. The content of this Proposal has not and will not knowingly be disclosed to any competing or potentially competing bidder prior to the proposal opening date, time, and location indicated.
5. No action to persuade any person, partnership, or corporation to submit or withhold a Proposal has been made.

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

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

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

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

Company Address: \_\_\_\_\_  
\_\_\_\_\_

Phone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

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

REFERENCES

1.	<b>Customer Name:</b>	<b>Contact:</b>	<b>Title:</b>
<b>Project:</b>			<b>Phone Number:</b>
<b>Address:</b> _____ _____ _____			<b>Project Date:</b>

2.	<b>Customer Name:</b>	<b>Contact:</b>	<b>Title:</b>
<b>Project:</b>			<b>Phone Number:</b>
<b>Address:</b> _____ _____ _____			<b>Project Date:</b>

3.	<b>Customer Name:</b>	<b>Contact:</b>	<b>Title:</b>
<b>Project:</b>			<b>Phone Number:</b>
<b>Address:</b> _____ _____ _____			<b>Project Date:</b>