

CITY OF MUSKEGON
CITY HALL & FIRE STATION #5

“Addendum 1” – 5/2/2023

Updates made:

- Summary of Work – 001000
 - Changes in scope of work on the following roof sections. See updated Summary of Work 001000
 - City Hall:
 - Section B
 - Section C
 - Section D
- Bid Form – 004100
 - Unit costs were added to bid form
 - Material Quantities were edited per scope of work change. Contractor is still responsible for including any additional material needed into their labor bid.
- Details and Drawings:
 - Core Cuts have been included into the details and drawings portion of the specification on page T1 for City Hall
 - Safe Built has approved the following minimum insulation requirements for the following roof sections:
 - Section C: Re-use current (dry) insulation
 - ADD (2) THROUGH-WALL SCUPPERS through nailers / edge metal
 - Section B: 1” base layer
 - ADD (2) THROUGH-WALL SCUPPERS through nailers / edge metal
 - Section E: 1-layer of 2.6”
 - For Mancered roof area around Section E, the base scope of work is still going to be a Polyurea coating. There has been an alternate allowable for retrofitting area with standing seam metal.
 - Any mechanical disconnects needed will be at the expense of the City.
- Fire Station #5:
 - City has agreed to pay for an asbestos test as well as a structural evaluation.

SECTION 00 10 00 - SUMMARY OF WORK

PART 1 GENERAL

1.1 PROJECT RELATED:

- A. Manufacturer's representative must be present at least 3 days per week during the duration of the project and for all pre-determined milestones.
- B. All contractors are responsible for roof cores, removing existing coping, metal wall panels, etc., at time of the pre-bid review for verification of existing roof system and building structure and wall composition before proceeding with their project bid.

1.2 SUMMARY OF WORK: City Hall – Section B – Concrete Deck

- A. Remove any and all existing roofing material, from sections exposing the decking substrate.
- B. Prime existing concrete deck with Garla-Prime asphalt primer and install a torch applied SBS vapor barrier.
- C. Install 1-layer of 1" Polyisocyanurate in high rise foam.
- D. Install a 1/8:12 tapered system to ensure positive drainage with 1/4:12 saddles and crickets. Around the drains, install a 8' x 8' sump at a 1/4":12 slope prior to the tapered system and / or saddles.
- E. Install 1/4" primed DensDeck cover board over newly installed insulation.
- F. Install cants at the base of the penetration and perimeter flashings prior to the installation of the new base sheet.
- G. Install HPR Torch Base sheet over entire roofing surface and flashings.
- H. Install StressPly IV cap sheet over entire roofing surface and StressPly IV Mineral on the flashings.
- I. Any flashing that is terminated prior to passing over the top edge of the perimeter wall or penetration is to receive a termination bar, sealant along the top edge and a surface-mounted counterflashing detail per provided detail drawing.
- J. 3-course all vertical flashings with Silver-Flash Mastic and Garmesh.
- K. Install new stainless or copper gravel guards around all roof drains per manufacturer's detail specification. Coat the roof membrane inside gravel guard with Garla-Brite reflective coating.
- L. Install a Black-Knight Flood and Gravel over the entire field at a rate of 5 gal./ sq. and embed 3/8" washed stone as the aggregate protective surfacing.
- M. Garla-Brite all vertical flashings at a rate of 1 gal./ sq.
- N. All sections are to receive new edge metal meeting ANSI-SPRI ES1 standards.

1.3 SUMMARY OF WORK: City Hall – Section C

- A. Remove existing ballasted stone, EPDM Membrane, and any and all edge metal and termination bars exposing the existing insulation. Contractor is to verify condition of existing insulation and replace any and all damaged and / or wet insulation in kind and thickness.

PROJECT NO.
CITY OF MUSKEGON – ROOF REPLACEMENT
CITY HALL & FIRE STATION #5

SUMMARY OF WORK
00 1000 - 2
4/18/2023

- B. Mechanically fasten ¼" primed densdeck recovery board over existing insulation.
- C. Install cants at the base of the penetration and perimeter flashings prior to the installation of the new base sheet.
- D. Install HPR Torch Base sheet over entire roofing surface and flashings.
- E. Install StressPly IV cap sheet over entire roofing surface and StressPly IV Mineral on the flashings.
- F. Any flashing that is terminated prior to passing over the top edge of the perimeter wall or penetration is to receive a termination bar, sealant along the top edge and a surface-mounted counterflashing detail per provided detail drawing.
- G. 3-course all vertical flashings with Silver-Flash Mastic and Garmesh.
- H. Install new stainless or copper gravel guards around all roof drains per manufacturer's detail specification. Coat the roof membrane inside gravel guard with Garla-Brite reflective coating.
- I. Install a Black-Knight Flood and Gravel over the entire field at a rate of 5 gal./ sq. and embed 3/8" washed stone as the aggregate protective surfacing.
- J. Garla-Brite all vertical flashings at a rate of 1 gal./ sq.
- K. Roof Sections are to receive new edge metal meeting ANSI-SPRI ES1 standards.

1.4 SUMMARY OF WORK: City Hall – Section E

- A. Remove any and all existing roofing material from sections exposing the concrete decking substrate.
- B. Prime existing concrete deck with Garla-Prime asphalt primer and install a torch applied SBS vapor barrier.
- C. Install 1-layer of 2.6" Polyisocyanurate in high rise foam.
- D. Install a 1/8:12 tapered system to ensure positive drainage with ¼:12 saddles and crickets. Around the drains, install a 8' x 8' sump at a ¼":12 slope prior to the tapered system and / or saddles.
- E. Install ¼" primed DensDeck cover board over newly installed insulation.
- F. Install cants at the base of the penetration and perimeter flashings prior to the installation of the new base sheet.
- G. Install HPR Torch Base sheet over entire roofing surface and flashings.
- H. Install StressPly IV mineral cap sheet over entire roofing surface and on the flashings.
- I. Any flashing that is terminated prior to passing over the top edge of the perimeter wall or penetration is to receive a termination bar, sealant along the top edge and a surface-mounted counterflashing detail per provided detail drawing.
- J. 3-course all vertical flashings with Silver-Flash Mastic and Garmesh.
- K. All sections are to receive new edge metal meeting ANSI-SPRI ES1 standards.
- L. On the upper mansard roof area, the membrane is to be cleaned and prepped. Install LiquiTec over the existing EPDM at a rate of 2 gal/sq. Multiple coats will be required to ensure coating does not drip or run off the surface of the roof.

PROJECT NO.
CITY OF MUSKEGON – ROOF REPLACEMENT
CITY HALL & FIRE STATION #5

SUMMARY OF WORK
00 1000 - 3
4/18/2023

1.5 SUMMARY OF WORK: Fire Station #5

- A. Remove and replace any wet or damaged insulation and return the roof to watertight condition.
- B. Mechanically fasten 1/4" dens deck primed over existing roofing system per manufacturer's guidelines.
- C. Add new nailers around the perimeter to match or exceed the new roofing height.
- D. Install cants at the base of the penetration and perimeter flashings prior to the installation of the new base sheet.
- E. Install HPR Torch Base sheet over the entire roofing surface and flashings.
- F. Install new Stressply IV Mineral Cap sheet over the entire roofing surface and flashings.
- G. Any flashing that is terminated prior to passing over the top edge of the perimeter wall or penetration is to receive a termination bar, sealant along the top edge and a surface-mounted counterflashing detail per provided detail drawing.
- H. 3-course all vertical flashings with Silver-Flash Mastic and Garmesh.
- I. All sections are to receive new edge metal meeting ANSI-SPRI ES1 standards.

1.6 INTENT OF THE SPECIFICATIONS

- A. The intent of these specifications is to describe the material and methods of construction required for the performance of the work. In general, it is intended that the drawings shall delineate the detailed extent of the work. When there is a discrepancy between drawings, referenced specifications, and standards and this specification, this specification shall govern.

1.7 PROTECTION

- A. The contractor shall use every available precaution to provide for the safety of the property owner, visitors to the site, and all connected with the work under the Contract.
- B. All existing facilities both above and below ground shall be protected and maintained free of damage. Existing facilities shall remain operating during the period of construction unless otherwise permitted. All access roadways must remain open to traffic unless otherwise permitted.
- C. Barricades shall be erected to fence off all construction areas from operations personnel.
- D. Safety Requirements:
 - 1. All application, material handling, and associated equipment shall conform to and be operated in conformance with OSHA safety requirements.
 - 2. Comply with federal, state, and local and owner fire and safety requirements.
 - 3. Advise owner whenever work is expected to be hazardous to owner employees and/or operations.
 - 4. Maintain a crewman as a floor guard whenever roof decking is being repaired or replaced and whenever any roofing is being removed.
 - 5. Maintain proper fire extinguisher within easy access whenever power tools, roofing kettles, and torches are being used. A MINIMUM OF A 2 HOUR FIRE WATER SHALL BE STRICTLY ADHERED TO WHENEVER PROPANE TORCHES ARE IN USE.
 - 6. ALL SAFETY REQUIREMENTS OF THE BUILDING OWNER MUST BE FOLLOWED. NO EXCEPTIONS WILL BE PERMITTED. SAFETY ORIENTATION MEETING REQUIRED PRIOR TO PERFORMING ANY WORK.

1.8 HOUSEKEEPING

**PROJECT NO.
CITY OF MUSKEGON – ROOF REPLACEMENT
CITY HALL & FIRE STATION #5**

**SUMMARY OF WORK
00 1000 - 4
4/18/2023**

- A. Keep materials neat and orderly.
- B. Remove scrap, waste and debris from the project area.
- C. Maintenance of clean conditions while work is in progress and cleanup when work is completed shall be in strict accordance with the “General Conditions” of this contract.

1.9 FIRE PROTECTION DURING CONSTRUCTION

- A. Follow all requirements established by the building owner.

END OF DOCUMENT 00 1000

**PROJECT NO.
CITY OF MUSKEGON – ROOF REPLACEMENT
CITY HALL & FIRE STATION #5**

**BID FORM
00 4100 - 1
4/18/2023**

SECTION 00 4100 - BID FORM

THE PROJECT AND THE PARTIES:

TO: City of Muskegon (the Owner)
933 Terrace St.
Muskegon, MI 49440

FOR: 2023 Roof Projects

DATE: _____(Bidder to enter date)

SUBMITTED BY: (Bidder to enter name and address)

Bidders Full Name _____

Address _____

City, State, and Zip _____

Phone Number _____

Email address _____

OFFER: City Hall

Having examined the Place of the Work and all matters referred to in the Instructions to Bidders and the Contract Documents for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:

_____ Dollars (\$ _____)
in lawful money of the United States of America.

- ☐ We have included the required security as required by the Instruction to Bidders.
- ☐ All applicable taxes are included in the Bid Sum.
- ☐ Fully executed Document 00 4519 – Noncollusion Affidavit is attached.

OFFER: Fire Station #5

Having examined the Place of the Work and all matters referred to in the Instructions to Bidders and the Contract Documents for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:

_____ Dollars (\$ _____)
in lawful money of the United States of America.

- ☐ We have included the required security as required by the Instruction to Bidders.
- ☐ All applicable taxes are included in the Bid Sum.
- ☐ Fully executed Document 00 4519 – Noncollusion Affidavit is attached.

**PROJECT NO.
CITY OF MUSKEGON – ROOF REPLACEMENT
CITY HALL & FIRE STATION #5**

**BID FORM
00 4100 - 2
4/18/2023**

ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for thirty days from the bid closing date. If this bid is accepted by the Owner within the time period stated above, we will:

Execute the Agreement within seven days of receipt of Notice of Award.
Furnish the required bonds within seven days of receipt of Notice of Award.
Commence work within seven days after written Notice to Proceed of this bid.

If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to the Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.

In the event our bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

CONTRACT TIME

If this Bid is accepted, work can begin as soon as:
July 15,2023.

Work shall be completed by:
June 30,2023.

ALTERNATES

Alternate No. 1 – City Hall – Section E Only

_____ Dollars (\$_____)
(circle one)

Alternate No. 2 – City Hall – Section B & C Only

_____ Dollars (\$_____)
(circle one)

UNIT COSTS:

Replacement of wet insulation: _____ Per Square Foot

** Above and Beyond what was shown in the thermal scans **

Replacement of Metal Deck: _____ Per Square Foot

Repair of Concrete Deck: _____ Per Square Foot

Replacement of damaged nailers: _____ Per Linear Foot

Add alternate to install standing seam metal
in lieu of coating on Mancered Roof
attached to Section E at City Hall: _____ Add (additional above and beyond coating)

ADDENDA

The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.

U.S. Communities / OMNIA Government Purchasing Alliance

It is the intent of Otsego Public Schools (“Agency”) to purchase materials for the 2023 Roof Replacement at City Hall and Fire Station #5 (“Project”) located at 933 Terrace St. Muskegon, MI 49440 and 1477 Marquette Ave. Muskegon, MI 49442 directly from Garland Inc., based upon the Agency’s participation in the U.S. Communities / OMNIA Government Purchasing Alliance’s program for Roofing Supplies and Related Products and Services, as priced by and awarded to Garland/DBS, Inc., resulting from the competitively solicited Sealed Bid # PW1925 issued by the Racine County Board of Commissioners.

The district has agreed to purchase the below breakdown of materials direct. Per the agreement, if the contractor needs additional material, it will be solely the contractor’s responsibility and should be included in their Labor bid.

Below is a Garland breakdown of the materials that will be purchased as part of the OMNIA Partners / US Communities contract per building:

Material	Quantity	Coverage	Supplied
<i>City Hall (Section E)</i>			
Garla-Prime	5 gallon bucket	.5 gal / 100 SF	9
Ultra-Shield Torch Base (Vapor Barrier)	Roll	100 sqft	92
HPR Torch Base	roll	100 sqft	100
StressPly IV Mineral	roll	75 sqft	130
Silver Flash	5 gallon bucket	7-8 lnft/gallon	5
GarMesh - 6"	roll	150 ft	2
LiquiTec	4.5 gallon bucket	2 gal/sq	22
<i>City Hall (Section B)</i>			
Garla-Prime	5-gal	.5 gal / 100 SF	4
Ultra-Shield Torch Base (Vapor Barrier)	Roll	100 SF	45
HPR Torch Base	Roll	100 SF	50
StressPly IV (Field Cap)	Roll	75 SF	60
StressPly IV Mineral (Flashing Cap)	Roll	75 SF	5
Black-Knight Cold	5-gal	5-gal / 100 SF	45
Silver-Flash	5-gal	1 gal / 7 lnr ft.	5
GarMesh – 6"	Roll	6" x 75'	2
Garla-Brite	5-gal	1 gal / 100 SF	3
<i>City Hall (Section C)</i>			
HPR Torch Base	Roll	100 SF	30
StressPly IV (Field Cap)	Roll	75 SF	28
StressPly IV Mineral (Flashing Cap)	Roll	75 SF	5
Black-Knight Cold	5-gal	5-gal / 100 SF	21

PROJECT NO.
CITY OF MUSKEGON – ROOF REPLACEMENT
CITY HALL & FIRE STATION #5

BID FORM
00 4100 - 4
4/18/2023

Silver-Flash	5-gal	1 gal / 7 lnr ft	3
Gar-Mesh	Roll	6" x 75'	1
Garla-Brite	5-gal	1 gal / 100 SF	2
<i>Fire Station #5</i>			
HPR Torch Base	Roll	100 sqft	35
StressPly IV Mineral	Roll	75 sqft	45
Silver Flash	5-gal	1 gal / 7 lnr ft	3
GarMesh - 6"	Roll	6" x 75'	1

BID FORM SUPPLEMENTS

We agree to submit the following Supplements to Bid Forms if requested by the Architect within 48 hours after submission of this bid for additional bid information:

Schedule of Values: Include the names of all Subcontractors BID FORM SIGNATURE(S)

The Corporate Seal of

.....

(Bidder - print the full name of your firm)

was hereunto affixed in the presence of:

.....

(Authorized signing officer, Title)

(Seal)

.....

(Authorized signing officer, Title)

IF THE BID IS A JOINT VENTURE OR PARTNERSHIP ADD ADDITIONAL FORMS OF EXECUTION FOR EACH MEMBER OF THE JOINT VENTURE IN THE APPROPRIATE FORM OR FORMS AS ABOVE.

END OF DOCUMENT 00 4100

This page intentionally left blank.

SCOPE OF WORK		LOCATION MAP		CITY OF MUSKEGON 2023 ROOFING		<div>MUSKEGON</div> <div>West Michigan's Shoreline City www.shorelinecity.com</div>	
<div>SUMMARY OF WORK: CITY HALL</div> <div>SEE SUMMARY OF WORK 001000</div> <div>SUMMARY OF WORK: FIRE STATION #5</div> <div>SEE SUMMARY OF WORK 001000</div>				<div>CITY HALL</div> <div>933 TERRACE ST.</div> <div>MUSKEGON, MI 49440</div> <div>FIRE STATION #5</div> <div>1477 MARQUETTE AVE.</div> <div>MUSKEGON, MI 49442</div> <div>Visit Muskegon RENEW • RECONNECT • REVISIT</div>		DETAILS AND DRAWINGS	
		NOTES		BUILDING OVERVIEW			
SITE MAP							
<div>ROOFING SECTIONS INCLUDED</div> <div></div> <div></div>		DRAWING INDEX					
		<div>A1 - COVER SHEET</div> <div>A2 – ROOF PLAN – SYSTEM OVERVIEW</div> <div>A3 – ROOF PLAN – SCHEDULE</div> <div>A4 – ROOF PLAN – SOLUTION OVERVIEW</div> <div>A5 – CITY HALL DRAWINGS</div> <div>A6 – FIRE STATION #5 DRAWINGS</div> <div>T1 – CITY HALL CORES</div> <div>T2 – FIRE STATION #5 THERMAL & CORES</div> <div>D1 – DETAILS</div> <div>D2 – DETAILS</div>					
				SHEET TITLE: COVER SHEET			
				SHEET NO. A1			

CITY OF MUSKEGON

FIRE STATION #5

1477 MARQUETTE AVE.

MUSKEGON, MI 49442

CITY HALL

933 TERRACE ST.

MUSKEGON, MI 49440

SHEET TITLE:

COVER SHEET

SHEET NO.

A1

CITY OF MUSKEGON
ROOF SECTION OVERVIEW

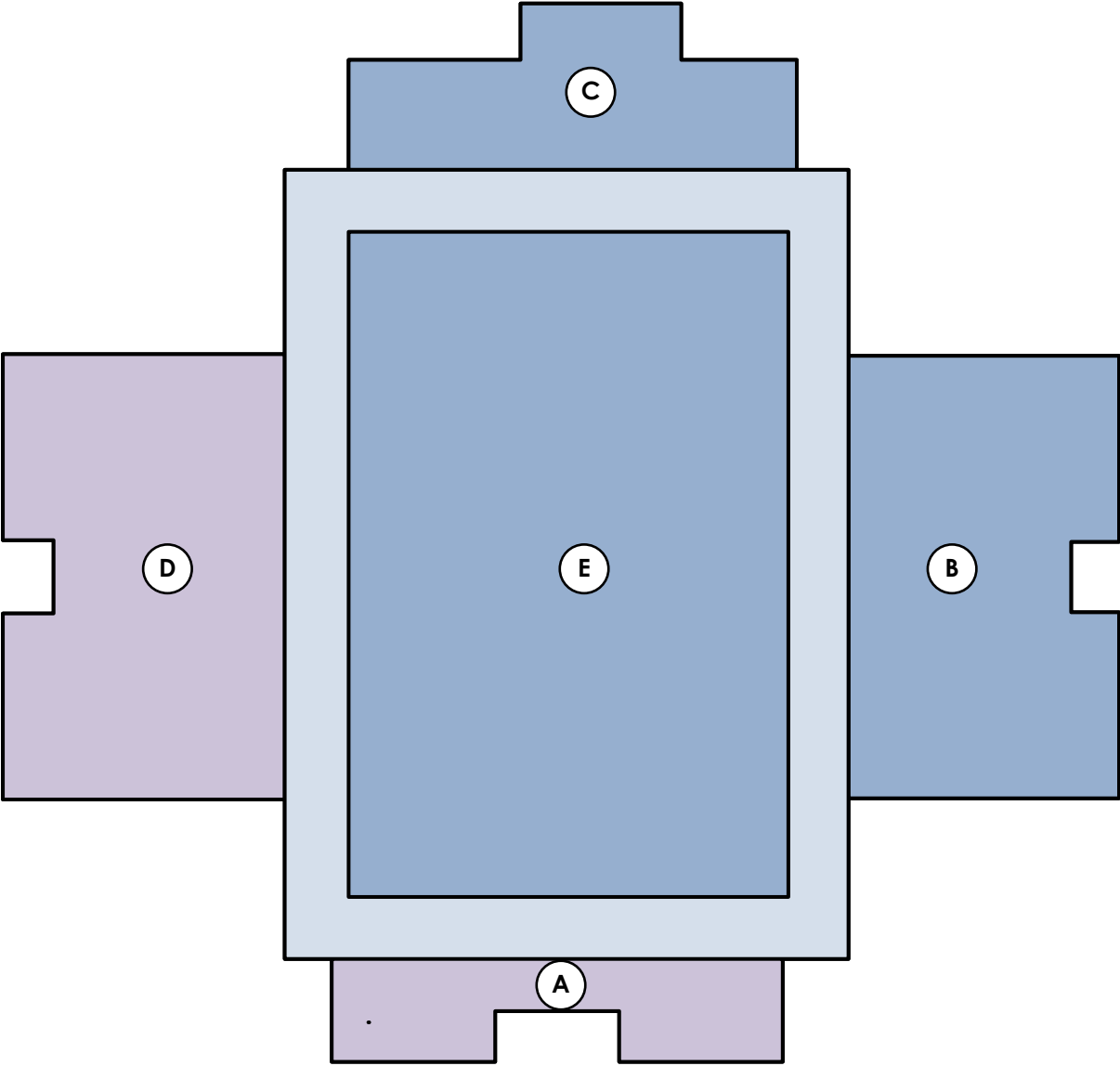
BALLASTED EPDM

COATED MOD BIT

MOD BIT F&G

EPDM

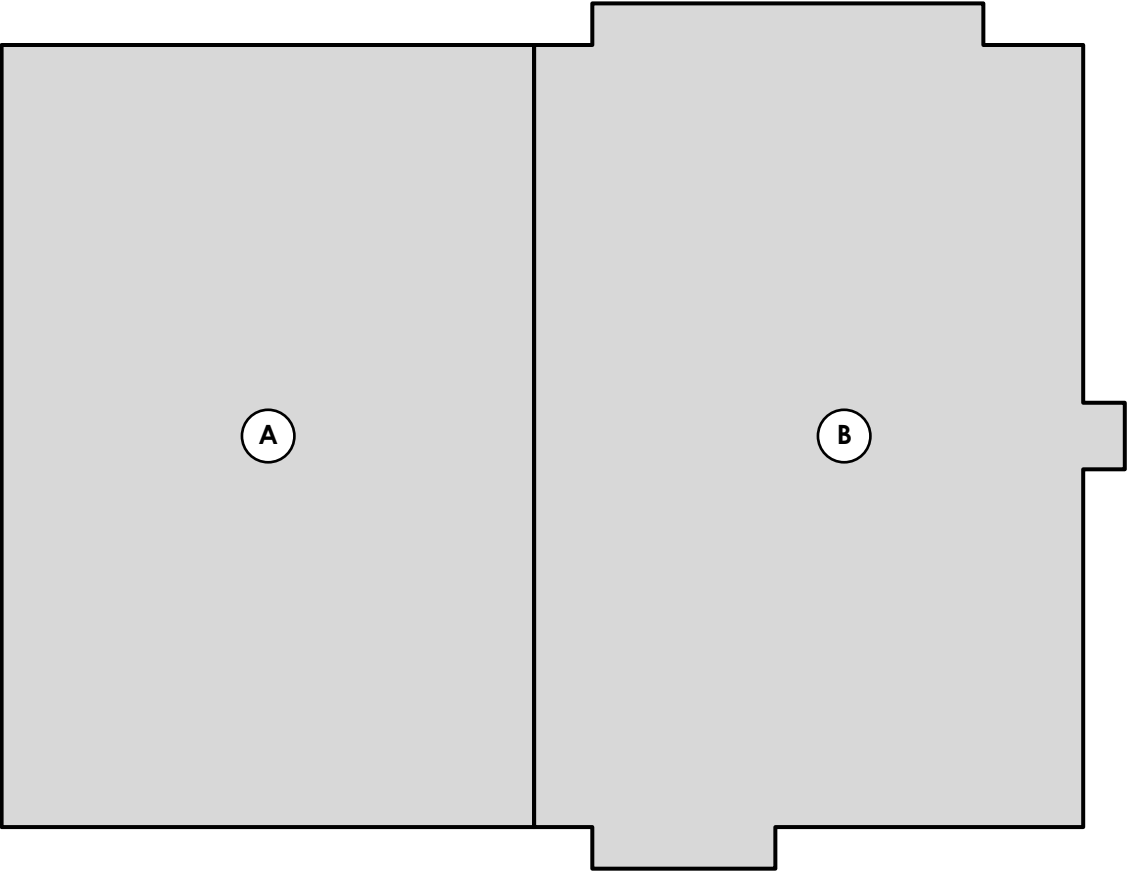
CITY HALL



CITY HALL

SECTION A:	1,600 SF
SECTION B:	4,500 SF
SECTION C:	2,100 SF
SECTION D:	3,700 SF
SECTION E:	9,200 SF
TOTAL:	21,100 SF

FIRE STATION #5



FIRE STATION #5

SECTION A:	1,600 SF
SECTION B:	1,600 SF
TOTAL:	3,200 SF



DETAILS AND
DRAWINGS

CITY OF MUSKEGON
CITY HALL
933 TERRACE ST.
MUSKEGON, MI 49440

FIRE STATION #5
1477 MARQUETTE AVE.
MUSKEGON, MI 49442

SHEET TITLE:

ROOF
PLAN

SHEET NO.

A2

CITY OF MUSKEGON
2023 ROOFING SCHEDULE

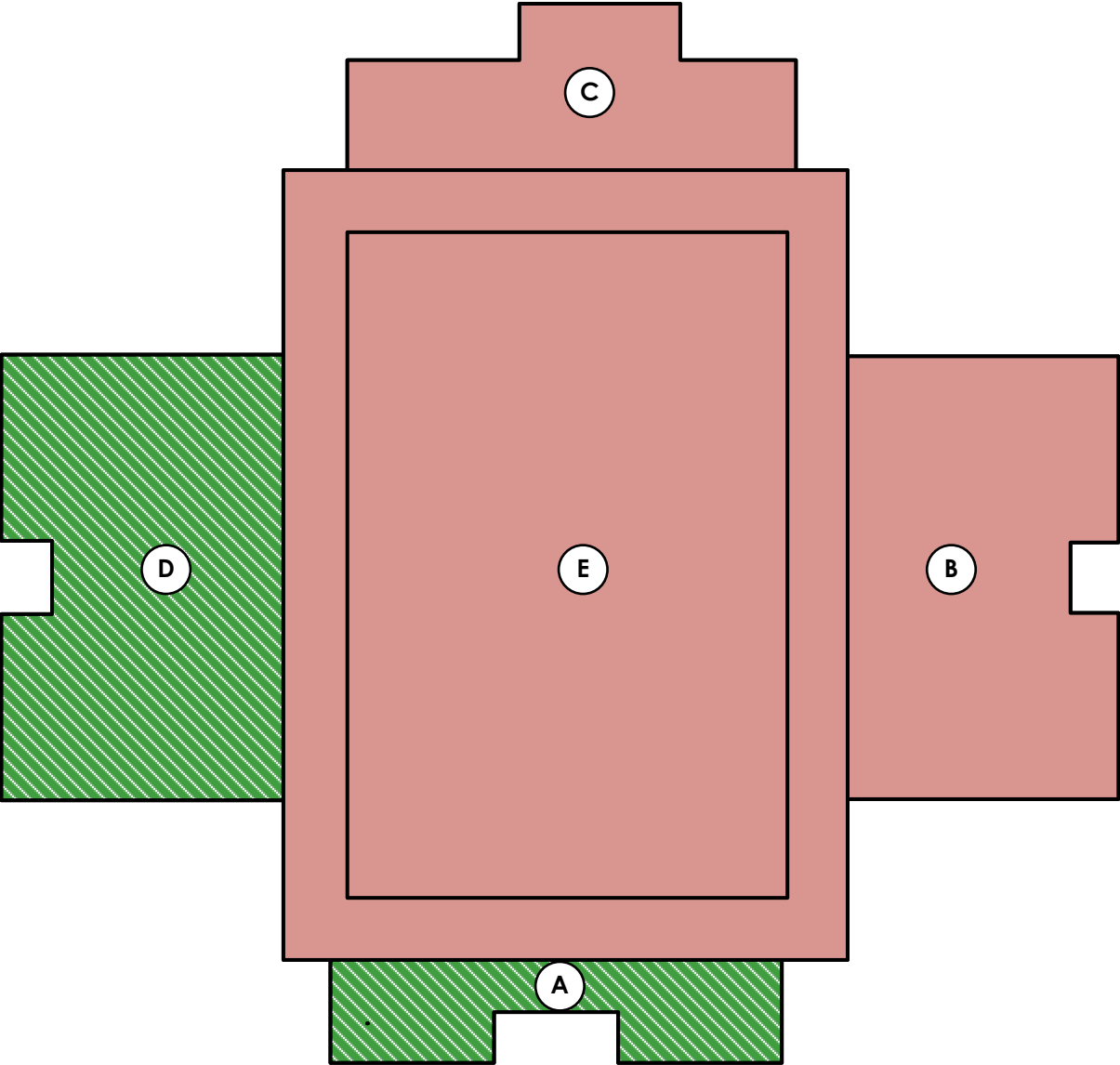
2023 ROOFING

19,000 SF

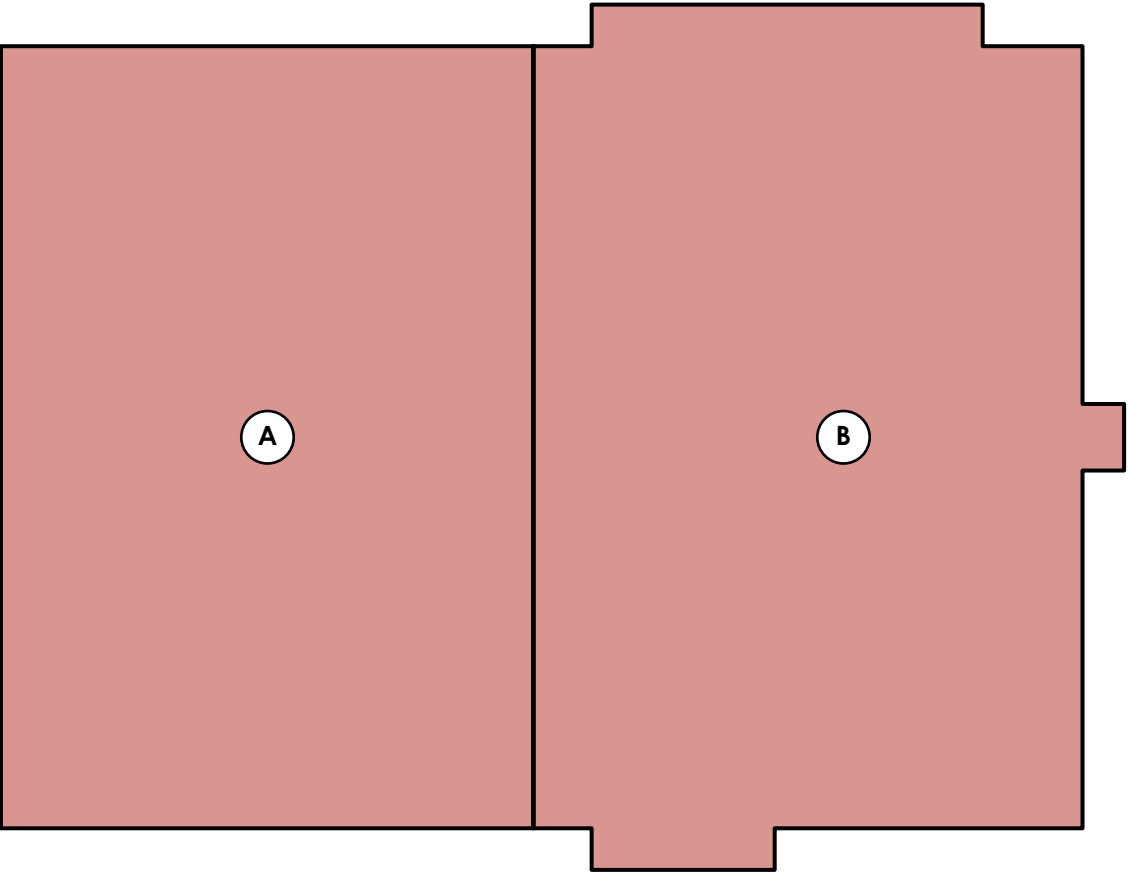
NOT IN SCOPE

5,300 SF

CITY HALL



FIRE STATION #5



DETAILS AND
DRAWINGS

CITY OF MUSKEGON
CITY HALL
933 TERRACE ST.
MUSKEGON, MI 49440

FIRE STATION #5
1477 MARQUETTE AVE.
MUSKEGON, MI 49442

SHEET TITLE:

**ROOF
PLAN**

SHEET NO.

A3

CITY OF MUSKEGON
2023 ROOFING SCOPE OF WORK

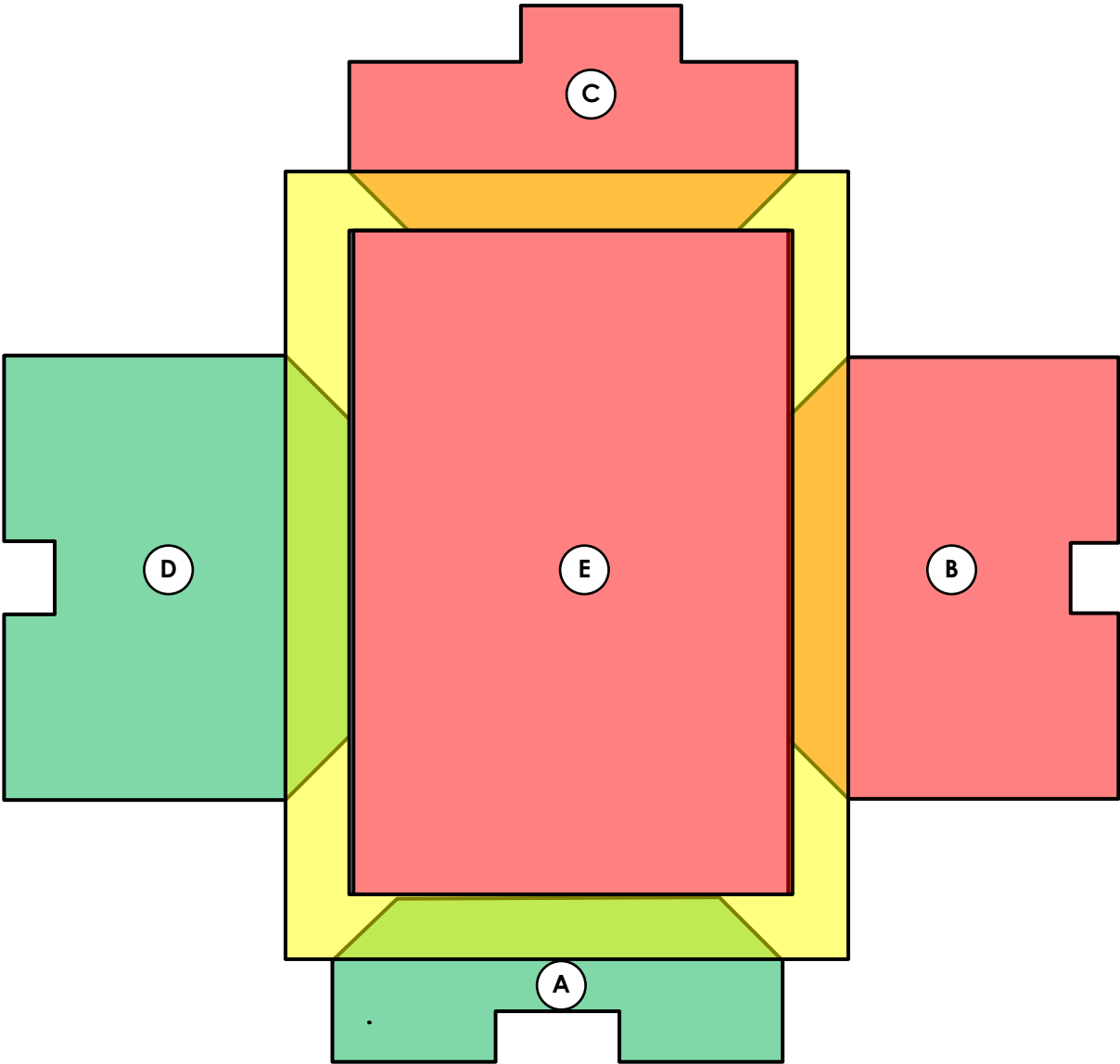
NO WORK

RESTORATION

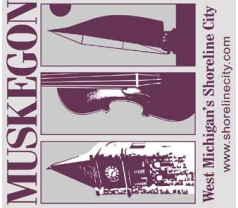
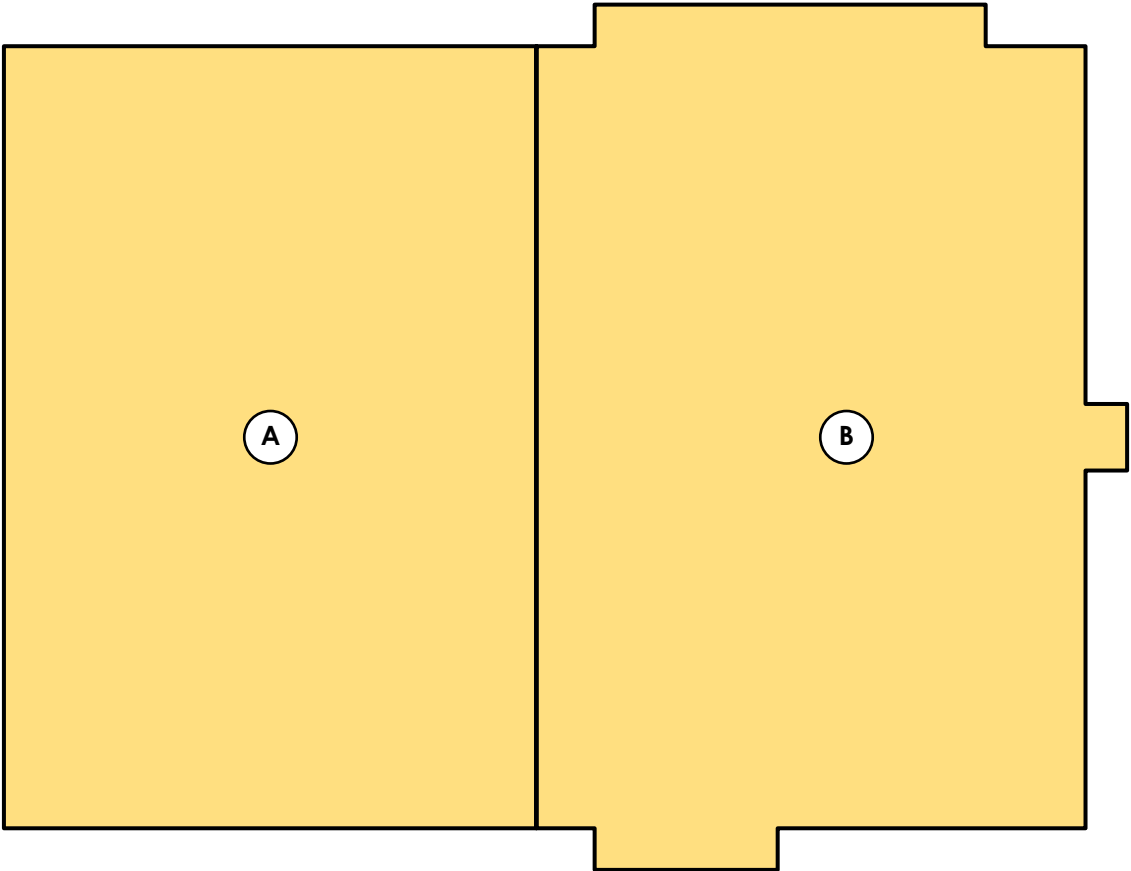
RETROFIT

REPLACEMENT

CITY HALL



FIRE STATION #5



DETAILS AND
DRAWINGS

CITY OF MUSKEGON
CITY HALL
933 TERRACE ST.
MUSKEGON, MI 49440

FIRE STATION #5
1477 MARQUETTE AVE.
MUSKEGON, MI 49442

SHEET TITLE:

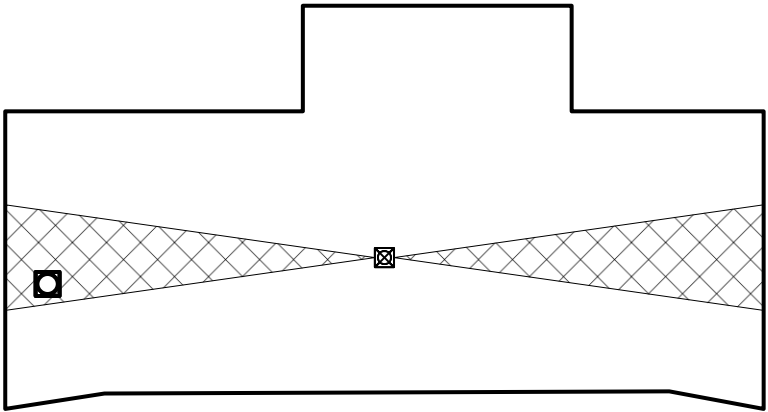
ROOF
PLAN

SHEET NO.

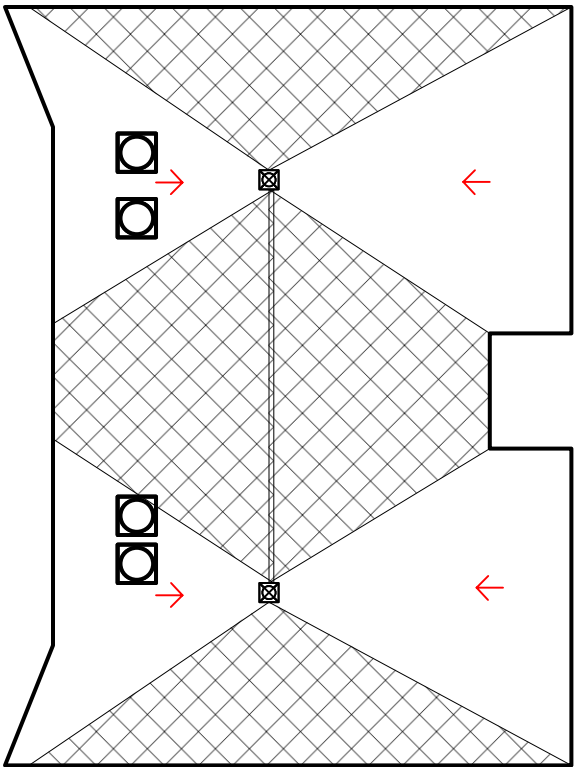
A4

CITY OF MUSKEGON
CITY HALL
ROOF OVERVIEW & DETAILS

RE-USE EXISTING DRY
INSULATION. ONLY REMOVE
BALLAST STONE AND EPDM
MEMBRANE

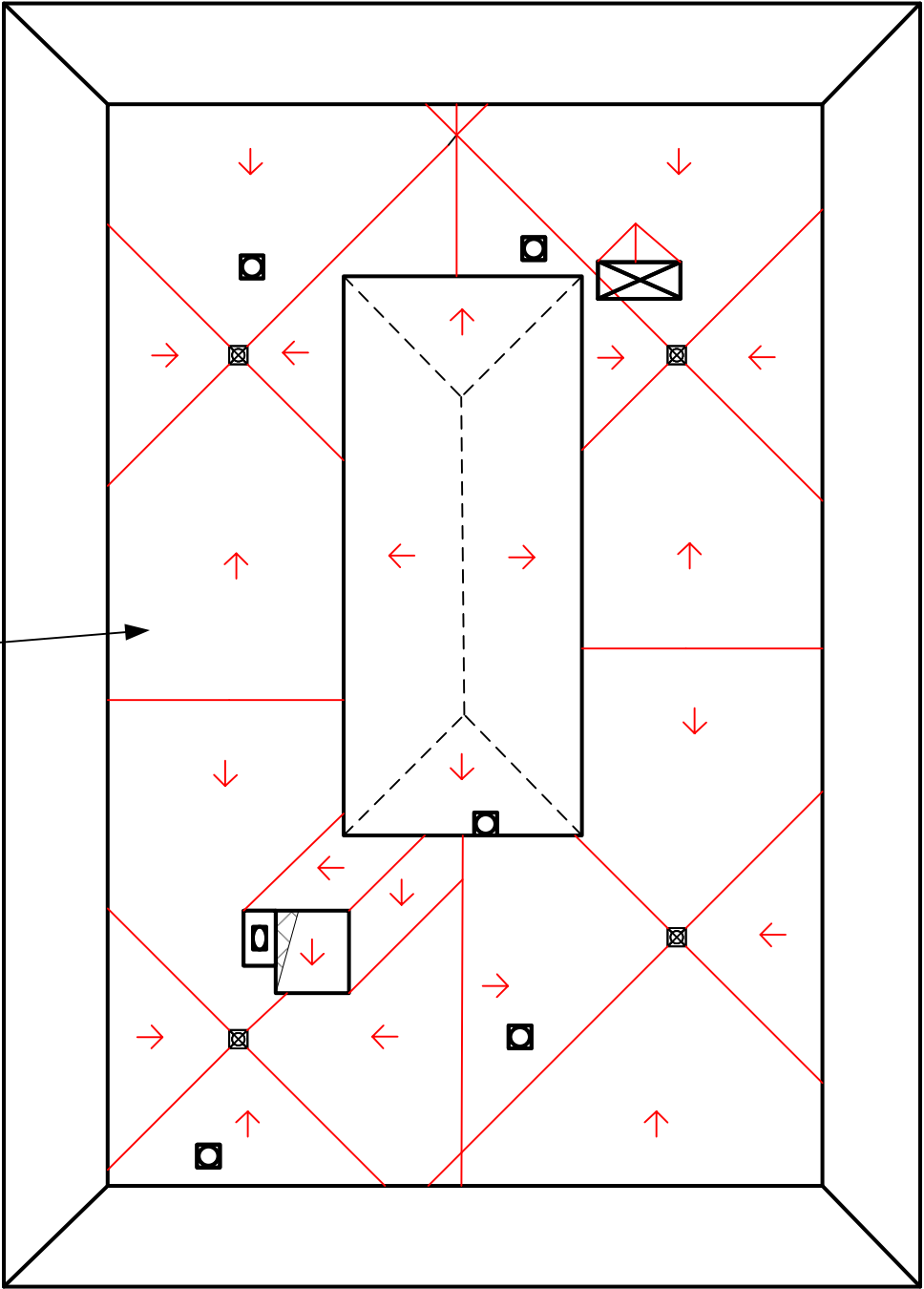


ADD (2) THROUGH-WALL
SCUPPERS ON ROOF
SECTIONS B & C



BASE LAYER = 1" ISO
1/8":12 SLOPED TAPERED
1/4":12 SLOPED SADDLES
8' x 8' SUMPS AROUND
DRAINS

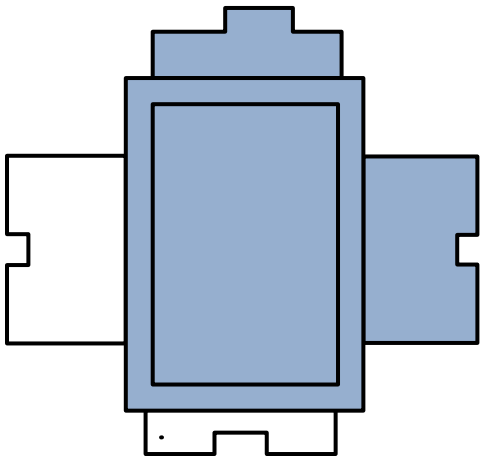
1-LAYERS OF 2.6" ISO
8' x 8' SUMPS AROUND
DRAINS
1/8":12 SLOPED TAPERED
1/4":12 SLOPED SADDLES /
CRICKETS



LEGEND

- DRAIN
- EXHAUST
- CHIMNEY
- LADDER
- CURB
- PIPE / PENETRATION
- ROUND CURB PENETRATION
- TAPERED INSULATION
- RTU HVAC UNIT

KEY PLAN - 1" = 20'



DETAILS AND
DRAWINGS

CITY OF MUSKEGON
FIRE STATION #5
1477 MARQUETTE AVE.
MUSKEGON, MI 49442

CITY HALL
933 TERRACE ST.
MUSKEGON, MI 49440

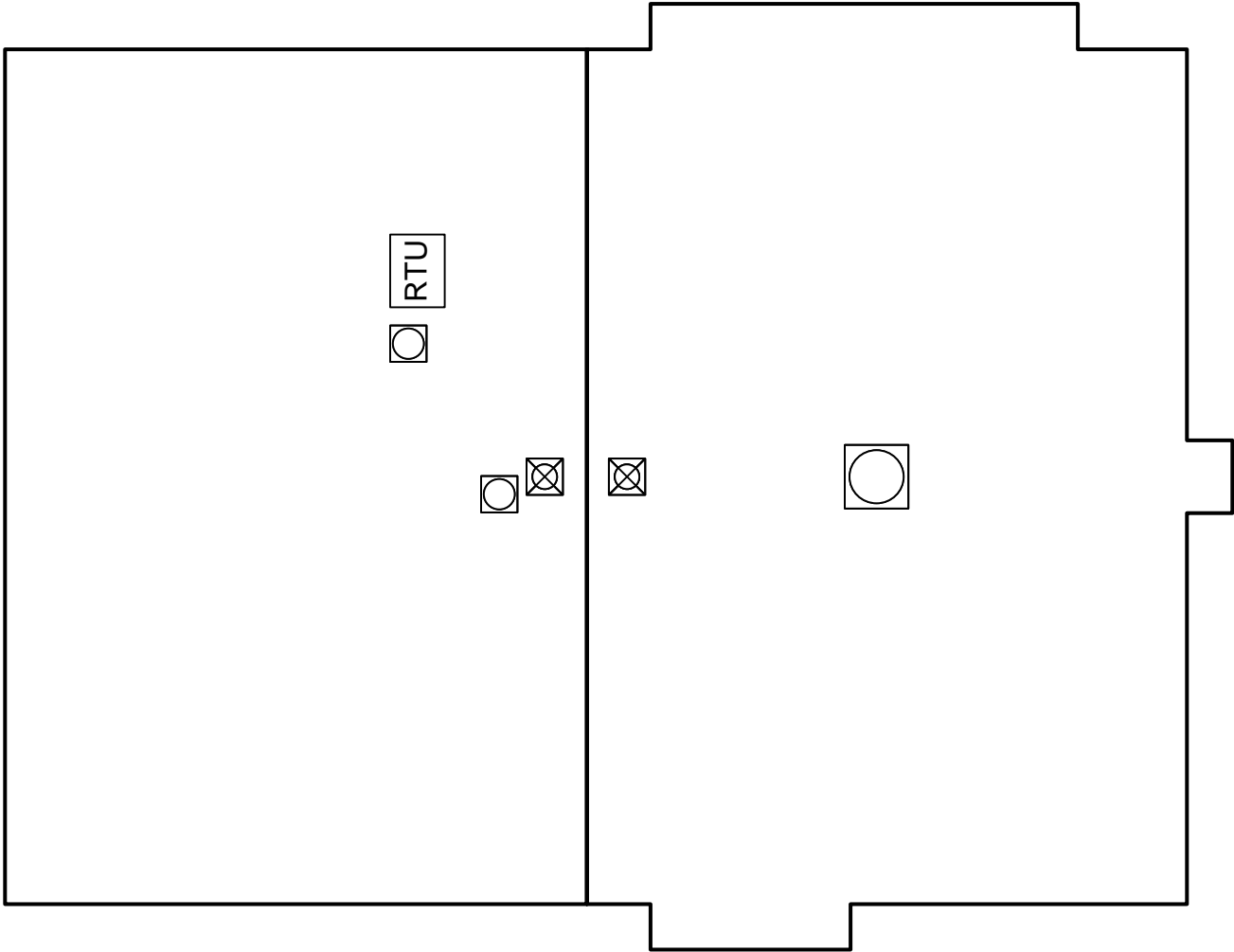
SHEET TITLE:

ROOF
PLAN

SHEET NO.

A5

CITY OF MUSKEGON
FIRE STATION #5
ROOF OVERVIEW & DETAILS



LEGEND

DRAIN

EXHAUST

CHIMNEY

LADDER

CURB

PIPE / PENETRATION

ROUND CURB PENETRATION

TAPERED INSULATION

RTU

HVAC UNIT

KEY PLAN - 1" = 10'

CITY OF MUSKEGON

CITY HALL

933 TERRACE ST.

MUSKEGON, MI 49440

DETAILS AND DRAWINGS

ROOF PLAN

SHEET NO.

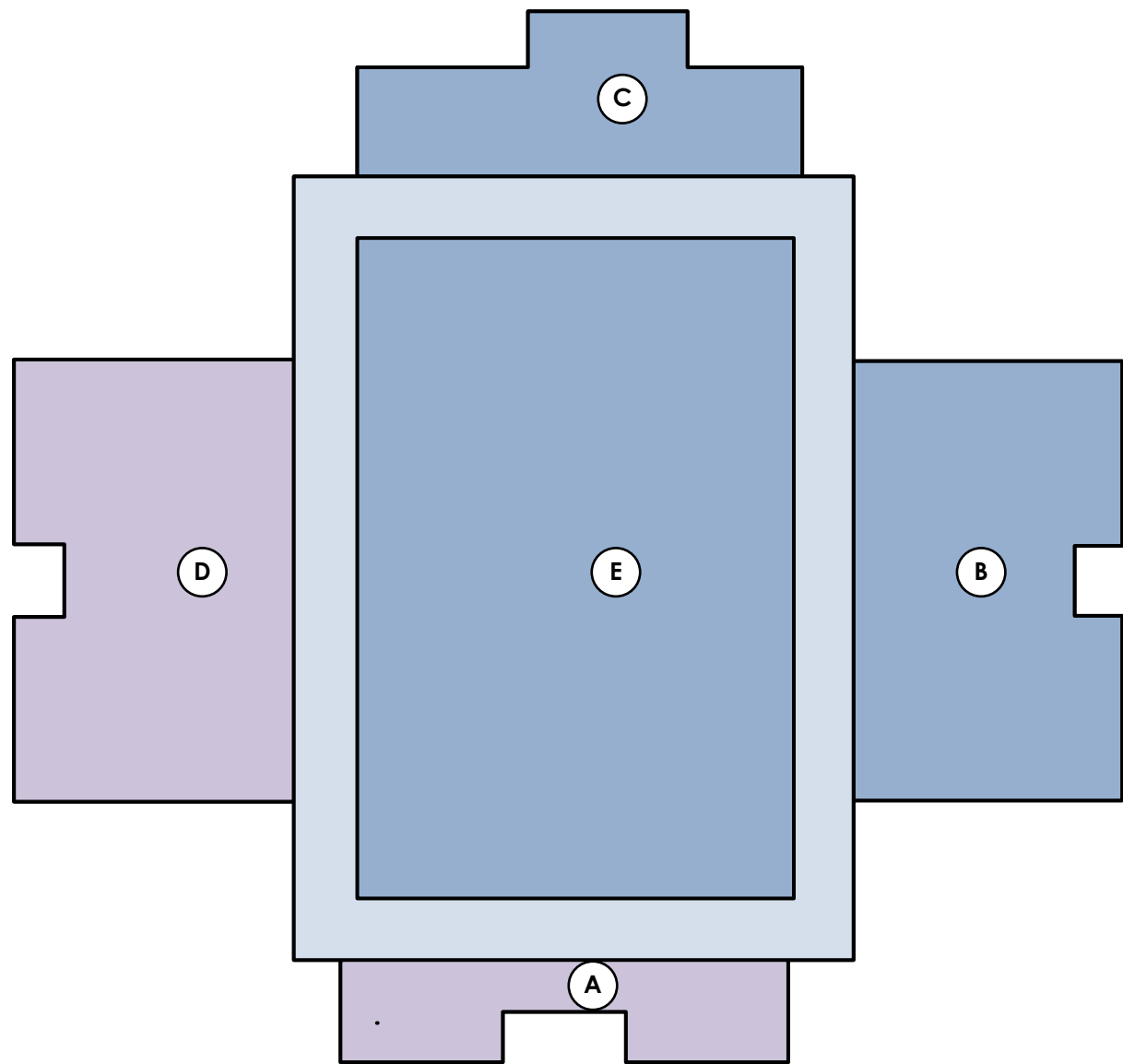
A5

FIRE STATION #5

1477 MARQUETTE AVE.

MUSKEGON, MI 49442

CITY OF MUSKEGON
CITY HALL
ROOF SECTION CORE ANALYSIS



A

NOT NEEDED

B



CONCRETE DECK
2" ISO
BALLASTED EPDM

C



METAL DECK
TAPERED + ISO
BALLASTED EPDM

D

NOT NEEDED

E

DUE TO ATTACKING SEAGULLS, CORES AT THIS TIME WERE UNAVAILABLE.. FOR BIDDING PURPOSES FIGURE THE EXISTING ROOF AT 2-LAYERS OF 1.5" POLYISOCYANURATE INSTALLED CURRENTLY



MUSKEGON
West Michigan's Shoreline City
www.shorelinecity.com

DETAILS AND DRAWINGS

CITY OF MUSKEGON

FIRE STATION #5
1477 MARQUETTE AVE.
MUSKEGON, MI 49442

CITY HALL
933 TERRACE ST.
MUSKEGON, MI 49440

SHEET TITLE:

THERMAL & CORE ANALYSIS

SHEET NO.

T1

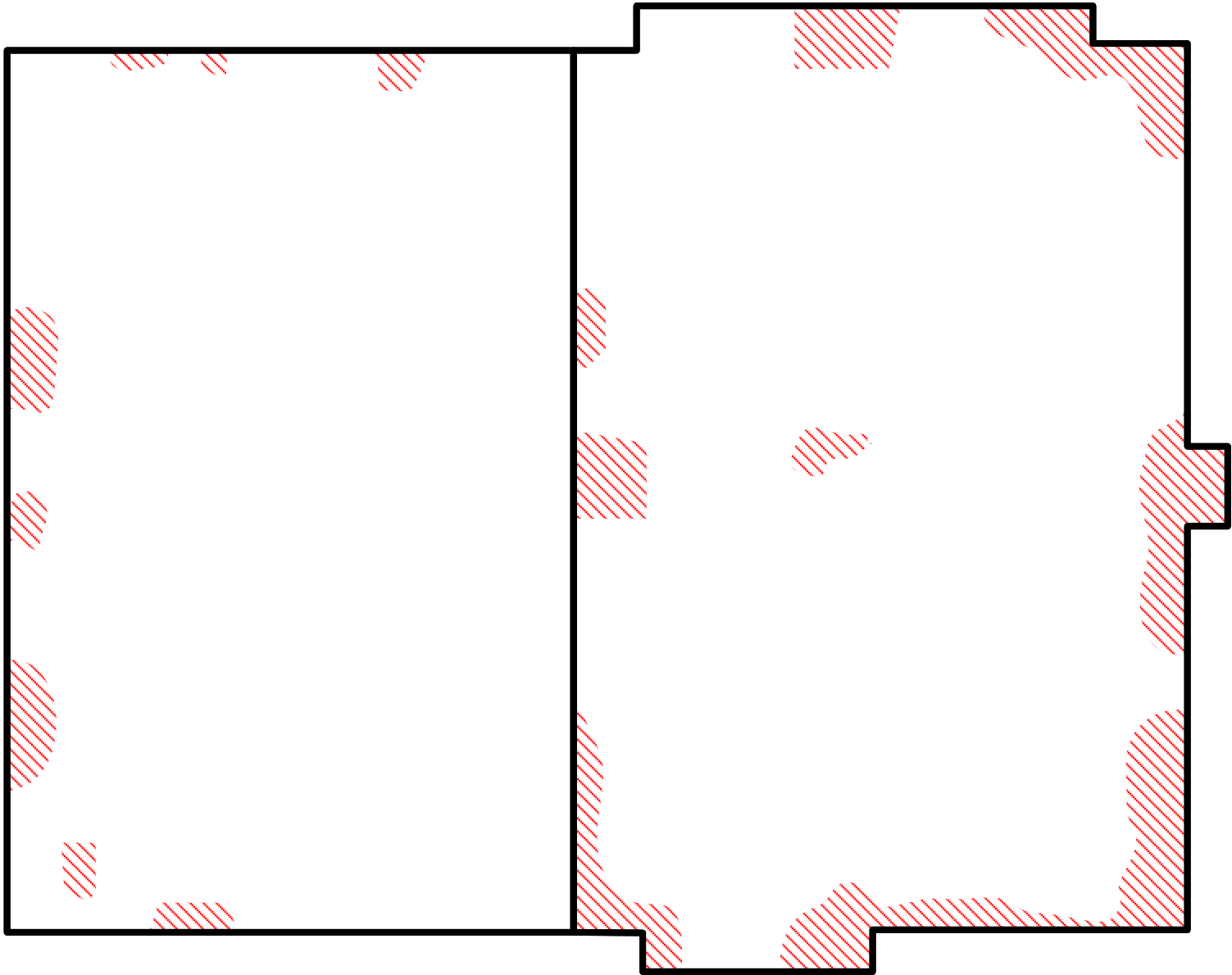
CITY OF MUSKEGON
FIRE STATION #5
ROOF SECTION THERMAL & CORE ANALYSIS

THERMAL SCAN INFORMATION:

SECTION:	WET INSULATION SQUARE FOOTAGE
TOTAL:	200 SF
TOTAL:	6.25%



THERMAL SCAN RESULTS - 2023



A



METAL DECK
1.5" PERLITE
MOD BIT
COATING

B



METAL DECK
1.5" PERLITE
MOD BIT
COATING



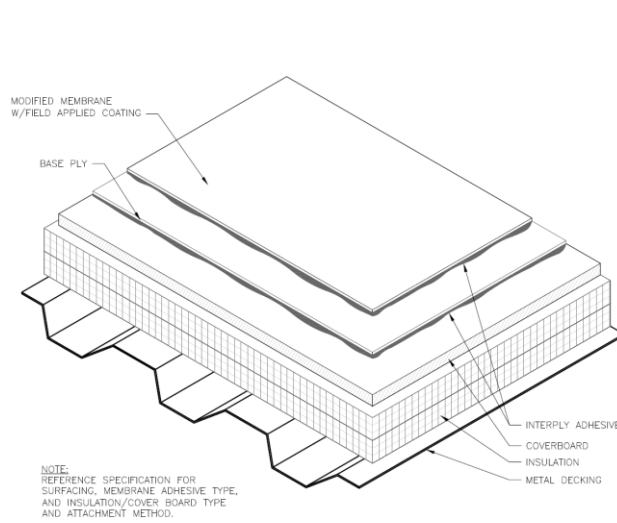
DETAILS AND
DRAWINGS

CITY OF MUSKEGON
CITY HALL
933 TERRACE ST.
MUSKEGON, MI 49440
FIRE STATION #5
1477 MARQUETTE AVE.
MUSKEGON, MI 49442

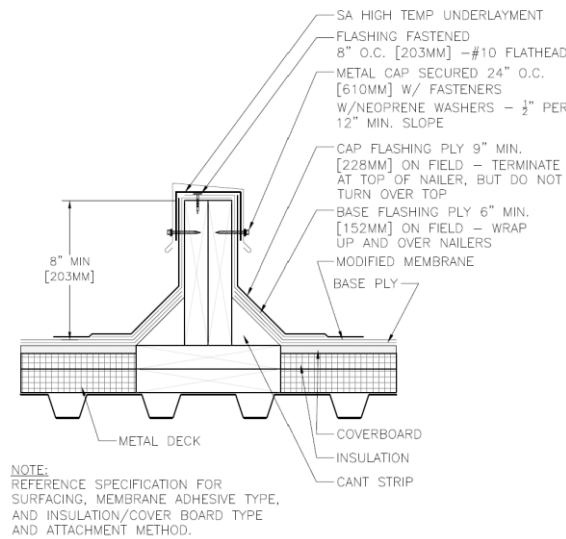
SHEET TITLE:
**THERMAL &
CORE
ANALYSIS**

SHEET NO.

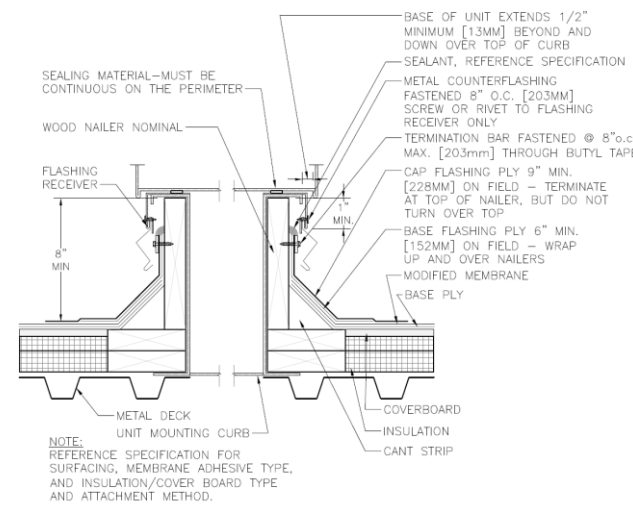
T2



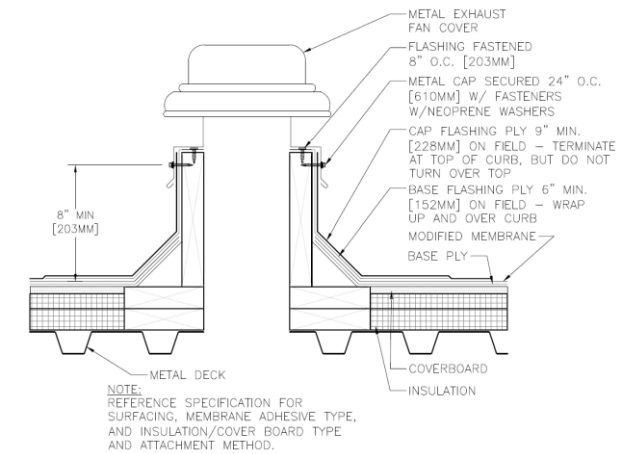
1
D1 TYPICAL COATED FIELD MEMBRANE DETAIL
N.T.S.



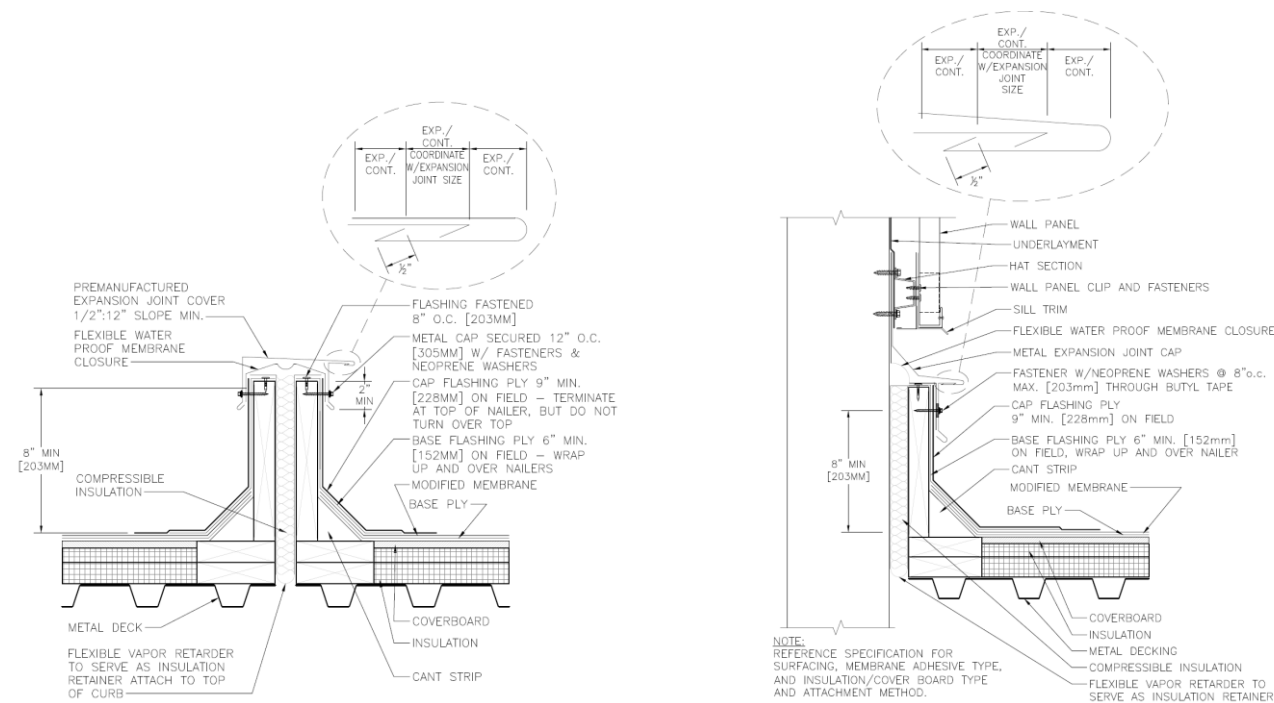
2
D1 AREA DIVIDER DETAIL
N.T.S.



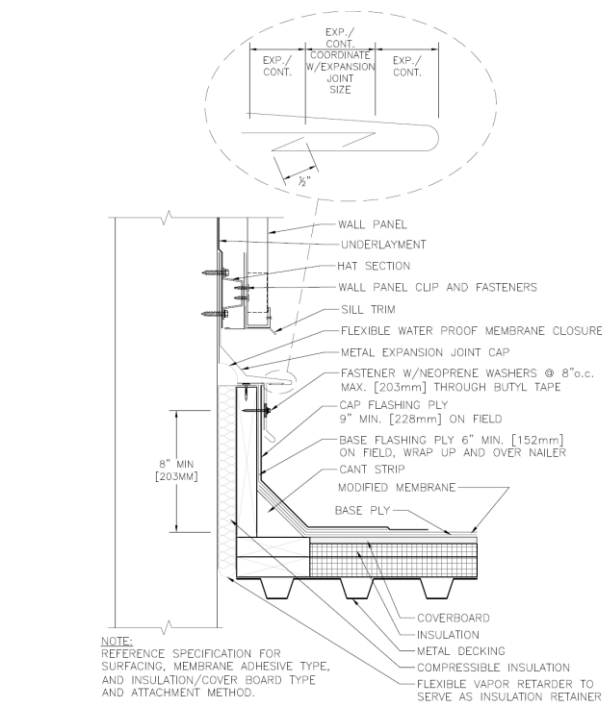
3
D1 CURB / AIR STATION DETAIL
N.T.S.



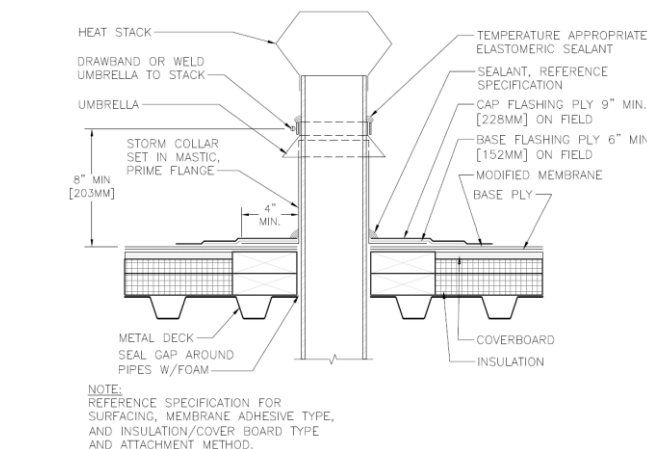
4
D1 EXHAUST FAN DETAIL
N.T.S.



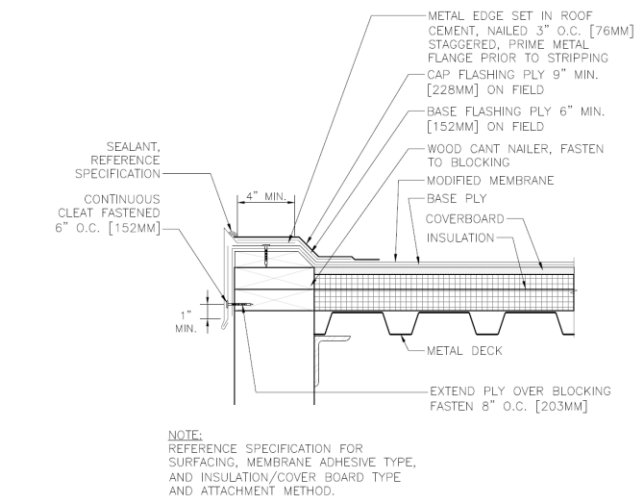
5
D1 ROOF - ROOF EXPANSION JOINT DETAIL
N.T.S.



6
D1 ROOF - WALL EXPANSION JOINT DETAIL
N.T.S.



7
D1 HEAT STACK DETAIL
N.T.S.



8
D1 RAISED METAL EDGE DETAIL
N.T.S.

Detail Requirements

- Details shown are representative of finished details. Contractors shall take into account existing insulation, new insulation, and the new roof system. Wood blocking shall be added to achieve the minimum flashing heights shown.
- Deck types vary between roof areas and buildings. Contractor must verify roof decks and apply details accordingly.



DETAILS AND DRAWINGS

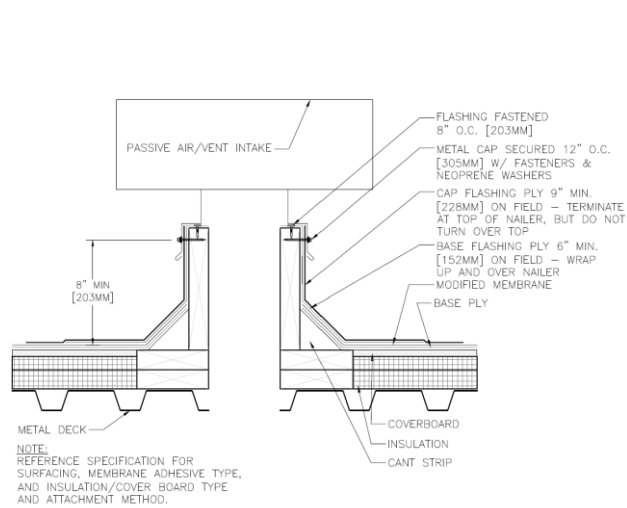
CITY OF MUSKEGON
CITY HALL
FIRE STATION #5
1477 MARQUETTE AVE.
MUSKEGON, MI 49442

SHEET TITLE:

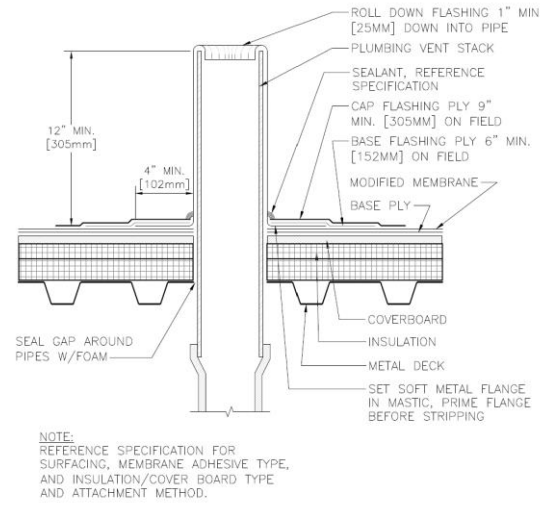
DETAILS

SHEET NO.

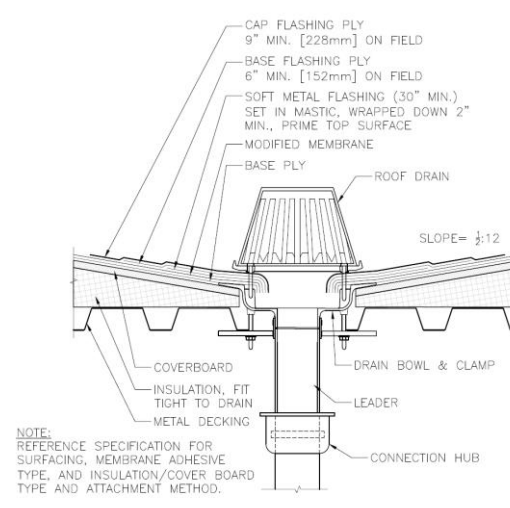
D1



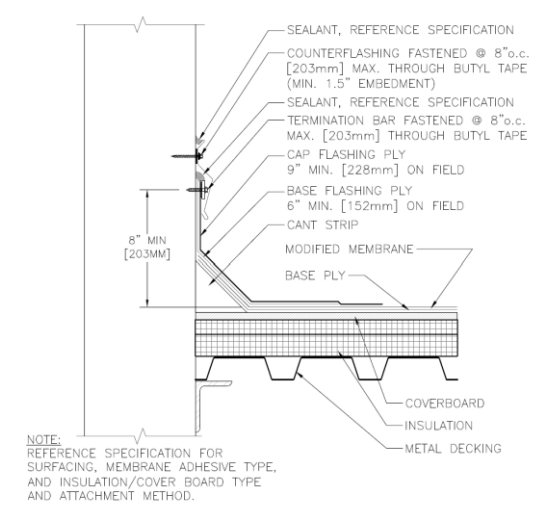
1 PASSIVE AIR / VENT INTAKE DETAIL
D1 N.T.S.



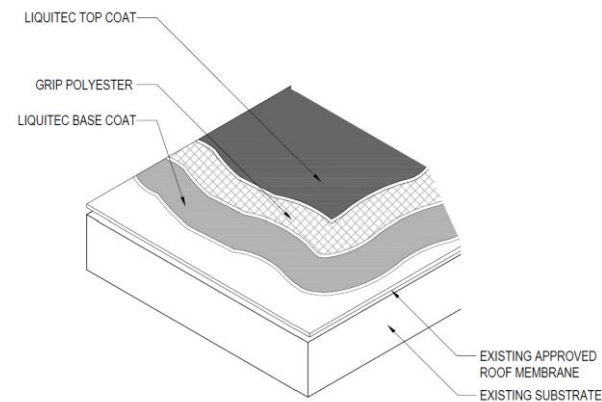
2 PLUMBING STACK DETAIL
D1 N.T.S.



3 ROOF DRAIN DETAIL
D1 N.T.S.



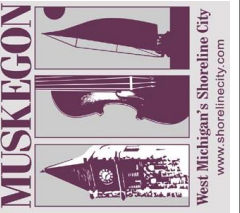
4 WALL FLASHING – SURFACE MOUNTED COUNTERFLASHING DETAIL
D1 N.T.S.



5 FAS – FIELD DETAIL
D1 N.T.S.

Detail Requirements

- Details shown are representative of finished details. Contractors shall take into account existing insulation, new insulation, and the new roof system. Wood blocking shall be added to achieve the minimum flashing heights shown.
- Deck types vary between roof areas and buildings. Contractor must verify roof decks and apply details accordingly.



DETAILS AND DRAWINGS

CITY OF MUSKEGON
CITY HALL
933 TERRACE ST.
MUSKEGON, MI 49440

FIRE STATION #5
1477 MARQUETTE AVE.
MUSKEGON, MI 49442

SHEET TITLE:

DETAILS

SHEET NO.

D2

Mandatory Pre-Bid

[illegible]