

Project Manual

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PROJECT SUMMARY

SUMMARY OF WORK: Ref. Section 00 02 00

General: Troy School District (TSD) 2024 Roof Program work for three (3) schools and two (2) district buildings covering approximately 68,100 sq. ft. Roofing work includes roof replacement required to remediate all work identified in the specifications and drawings inclusive of all Bid Documents requirements.

Schedules: Ref. "PROJECT WORK SCHEDULE" on this Sheet A1.0 - Cover Page.

BID SUMMARY:

- Sealed bids should be submitted through Buildingconnect.com with the following link: <https://app.buildingconnect.com/public/5cc9d7f637c1a90018cb55dc>. No physical bids will be accepted in person or via delivery service. Bids are to be submitted no later than 11am on Tuesday, November 14, 2023. The District will not consider or accept a bid received after the date and time specified for bid submission. Bids will be publicly opened immediately following the close of receiving bids with the following virtual meeting link: <meet.google.com/hdj-tcue-ago> or phone number 314-474-6096 PIN 481334893. No oral, email, telephonic or telegraphic proposals shall be considered.
- A mandatory pre-bid meeting has been scheduled for 10:00 A.M., Wednesday, November 1, 2023 at Troy School District Administration Building, 4400 Livernois, Troy, Michigan 48098. The roofing contractors will have access to walk the roofs post bid meeting.
- Allowances Section 012100: Allowances will be defined on individual school roof plans under "Allowances". These allowances will be stated on the bid form.
- Unit Pricing Section 004322: Unit Pricing for unit work is defined on the Unit Price Bid Form in Section 000301. Unit Pricing bid values are entered by unit price individually on form.
- Alternates Section 012300: Alternates are individually listed on school roof plans and bids for Alternates. Alternated bid value are to be entered on Bid Form (Section 000300) as enumerated.
- TSD reserves the right to issue contracts to multiple contractors.
- Any questions regarding bid specifications must be received by 12pm, Wednesday, November 8, 2023. Questions must be submitted in writing to: acrippen@wtcg.net. No response will be made to oral questions.

EXISTING ROOF SYSTEM CONSTRUCTION:

Ref. Roof Plans All existing roof system constructions were determined by test cuts and observation; conditions may vary. Contractor responsible for confirming all existing roof system constructions and conditions.

NEW ROOF ASSEMBLY SUMMARY: Reference Roof Plans

1. Roof System: Ref. Roof Plan Schedules

- Roof Membrane: EPDM, 60 mil, unreinforced and fully adhered.
- Insulation: To meet a R-30 minimum, Min. two layers. Top layer must be adhered: Bottom layer mechanically- attached (unless otherwise stated on individual roof plans)
- Underlayment: (as required) Modified base sheet, **Ref. individual Roof Plans.**
- Deck: Multiple types, **Ref. individual Roof Plans.**

2. Roof System Performance:

- Warranty: 20 yr. Materials manufacturer, No Dollar Limit (NDL) materials and installation.
- Contractor to provide a 5-year contractor guarantee.
- Wind: FM Global (FMG): FM Standard 4470 Meets - Windstorm Classification FMG 90.
- Fire: Underwriters Laboratory External Fire Resistance - Class "A".
- Energy: Michigan Uniform Energy Code: R30 condition dependent
- Drainage: Drainage Performance Acknowledgement"

GENERAL SHEET NOTES

- All work shall be executed in accordance with the appropriate document of the Contract Documents.
- Any conflicts between specifications and drawings shall be brought to the attention of the Owner and Consultant immediately. In all situations the more restrictive and higher quality shall govern.
- All dimensions to, of, and in existing building and roof shall be verified in the field by contractor. Field measure existing conditions to verify material quantities and dimensions prior to fabrication on component material.
- Details shown are typical. Similar details apply to similar conditions unless otherwise indicated.
- The drawings herein are related to an alteration/ restoration to an existing structure. The specified work was based upon as much observation, destructive testing, etc. as circumstances permitted.

Project Work Schedule

School	Address	Reroofing Sq. Ft.	TSD 2024 Roof Work	Project Time Frame
Morse Elementary School	475 Cherry Ave, Troy, MI 48083	8,000	Roof Area D	6/14/24 - 8/16/24
Bemis Elementary School	3571 Northfield Pkwy, Troy, MI 48084	8,650	Roof Area D	6/14/24 - 8/16/24
Service Building	4420 Livernois Rd, Troy, MI 48098	4,600	Roof Area A	6/14/24 - 8/16/24
Transportation Building	120 Hart Ave, Troy, Michigan 48098	7,450	Roof Area B	6/14/24 - 8/16/24
Wattles Elementary School	3555 Ellenboro Ave, Troy, MI 48083	39,000	Roof Area(s) A, C and E	6/14/24 - 8/16/24
Total Roof Area (Sq. Ft.)		67,700		

GENERAL CONSTRUCTION DETAIL NOTES

Use the General Construction Details on Sheet A1.0 for detail construction description as applicable when any detail is not specifically called out in Key Notes for the applicable Roof Area and Section. Detail drawings called out in General Construction Details can be found on Sheets A2.0 - A7.0. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

A. Flashing Heights: Perimeters, curbs, penetrations shall be raised as necessary to meet the new insulation heights, tapered edge strip and tapered insulation height to meet typical industry standard of 8 in. base flashing height.

B. Drains Existing: Remove existing drain flashings. Furnish and install ½ inch per foot sloped tapered insulation sump area (8 ft. x 8 ft. minimum) as detailed. Clean and reuse existing drains and accessories, replace all damaged, nonfunctional, incompatible, missing and broken drain components. Replace all plastic strainers with new cast iron. All replacement bowls, strainers, and clamping rings shall be cast iron. Provide new stainless-steel bolts. All nonmetallic drains strainers shall be replaced with fitted. **Ref. Details 1.09, 1.10, 1.11 and 1.12.**

C. Tapered Insulation: Furnish and install new tapered insulation, crickets, saddles and kick-backs as designated on roof plan to provide a finished slope of 1/4 in/ ft. slope and a min length to width ratio of 3:1. All equipment w/ curb size greater than 24 in. shall have cricket install on up slope side. Contractor responsible for identifying and notifying Consultant and Owner all existing tapered insulation not called out on plans for determination of unit costing. Verify in Pre-bid Conference additional ponded areas identified on the roof and install as noted.

D. Curbs - Movable Equipment: Lift equipment from curbs; run new fully adhered membrane flashing up and over top of curb; install continuous sealing material over top of curb. Reset equipment and mechanically fasten to curb. Coordinate with Owner prior to moving equipment to install new flashings. Metal equipment flashing and/or counter flashing must extend a minimum of 3 in. past the termination of the base flashing; add metal counter flashing as required. **Ref. Details 1.17 and 1.18.**

E. Curbs - Non-Movable Equipment: Terminate new fully adhered membrane flashing at unit framing member. Metal equipment flashing and/or counter flashing must extend a minimum of 3 in. past the termination of the base flashing; add metal counter flashing as required. **Ref. Detail 2.01.**

F. Equipment on Support Curbs - Non-Movable Equipment: Cut corners of metal flashing cap, terminate new adhered membrane flashing to curb nailer. Reposition metal; install new shop fabricated corner metal, riveted and set in sealant. Wire brush and apply rust inhibitive paint to rusted cap metal. **Ref. Detail 3.02.**

G. Equipment on Support Curbs - Movable Equipment: Raise or move equipment to furnish and install new metal cap on curb. **Ref. Detail 2.18.**

H. Round Penetrations: All penetrations shall be cleaned down to surface where any sealant will contact; Install new prefabricated pipe boots or field wrap with membrane. Install draw band, sealants and rain collars as detailed. **Ref. Details 2.03 and 2.04.**

I. Heat Stacks: Install new metal jacks and collars. Clean surfaces and apply new field wrapped EPDM flashing. Reattach and reseal storm collars with high temperature sealant. **Ref. Detail 2.05.**

J. Steel Support Posts: Install split pipe boot or field wrap flashing with membrane. Terminate with draw band and sealant. **Ref. Detail 2.02.**

K. Prefabricated Pipe Chase Cover: Reuse existing pipe cover. Replace any damaged or missing clamping bands or sealants. **Ref. Detail 3.01.**

L. Gas Line and Condult Support Blocks: Provide prefabricated pipe supports set on walkpads. **Ref. Details 3.03 and 3.11.**

M. Condensate Drain Lines: Reuse, repair or replace all damaged or unusable drain lines. Add additional drain line to extend minimum 4 ft. from equipment or to any drains within 20 ft. Provide manufacturer's approved splash pan/pad/block where condensate drainage water would contact the roof membrane.

N. All utility service lines (gas, water, electric, cable, etc.) to be raised as necessary to accommodate new insulation height and meet code requirements.

O. Abandoned Curbs and Penetrations: Owner will mark all equipment to be removed. Remove all equipment and curbs as designated by owner and identified at the prebid conference. Where directed, remove curbs flush to deck surface, install framing and matching decking material. For abandoned curbs to remain in place, install new base flashing and install new 24 gauge sloped metal cap. Provide interior protection when removing any equipment or penetration. All small round abandoned penetrations that have no utility service as confirmed by Owner shall be removed to deck patched according to deck type.

P. Pitch Pans: Pitch pans can only be used when approved by Consultant. In the event they are to be used, furnish and install new pitch pans, clean all penetrations down to original surface, blocking required at all pitch pans. **Ref. Detail 2.09.**

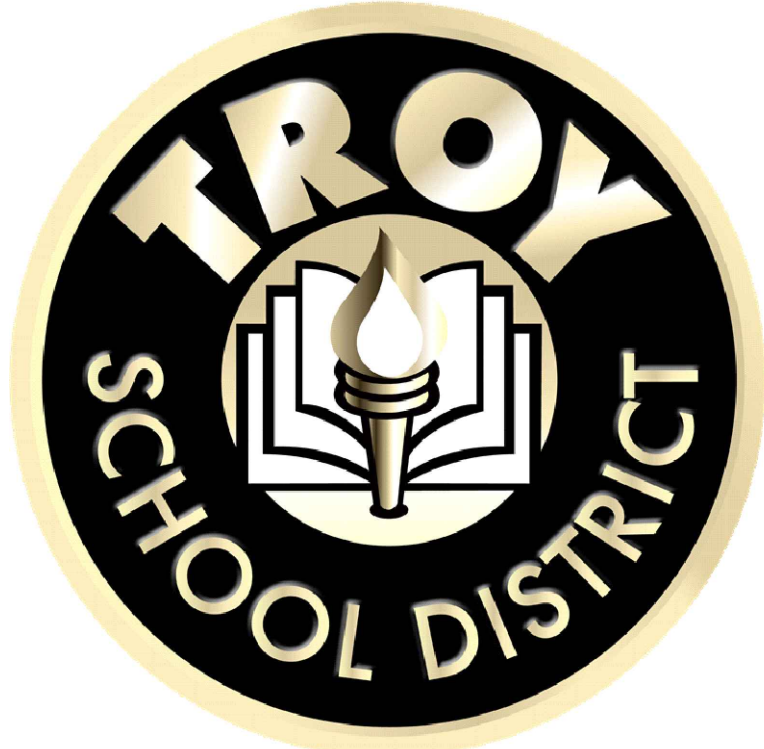
Q. Door Threshold: Remove threshold plate and carry flashing up over and set in water block. Before resetting threshold, mechanically attach termination bar, fasten min. 6 in. o.c. Door Threshold: Remove and dispose of existing counter flashing. Roof flashing to extend up and under existing threshold plate. Furnish and install new metal counter flashing and sealant.

R. Downspout Outlets: Provide concrete splash blocks set on walkpad at all roof downspout conductors.

S. Vent Thru Roof Piping: Install PVC pipe extensions to all VTR piping prior to installation of new pipe boot flashing as needed to allow a minimum 8-inch flashing height. Attach screen wire mesh over the top of the pipe. **Ref. Detail 2.06, PER CODE.**

T. Walk Pads: Provide walk pads at roof access hatches and ladder access locations. Use walk pads approved by the roofing membrane manufacturer.

U. Existing Expansion Joint: Install wood as needed to provide a minimum 8-inch flashing height; Replace existing batt insulation and liner if needed; Re-install if able or furnish and install new 24-gauge prefinished metal expansion joint cover. **Ref. Detail 3.05.**



Troy School District
BID No. 2324-02
2024 Roofing Program

DIRECTORY

OWNER:
Troy School District
4400 Livernois
Troy, MI 48098

PROJECT LOCATION:
See Project List

ROOFING CONSULTANTS:
WeatherTech Consulting Group, Inc.
7747 Auburn Rd.
Utica, MI 48317

CONTACT:
Rob Carson
Director of Operations
Phone: (248) 823-4067
E-Mail: RCarson@troy.k12.mi.us

CONTACT:
Michelle Kerns
Bond Representative
Phone: (248) 921-3929
E-Mail: mkerns@troy.k12.mi.us

CONTACT:
Ann Crippen
Project Manager
Phone: (586) 731-3095 x12
E-Mail: acrippen@wtcg.net

John McCaig, RRO
Site Contact

Paul Dombrowski, RRC and RRO
Technical Designer
ERA Consulting & Construction

PROJECT LIST

Wattles Elementary School	3555 Ellenboro Ave. Troy, MI 48083
Bemis Elementary School	3571 Northfield Pkwy. Troy, MI 48084
Morse Elementary School	475 Cherry Ave. Troy, MI 48083
Service Building	4420 Livernois Rd. Troy, MI 48098
Transportation Building	120 Hart Ave. Troy, MI 48098

STATE OF MICHIGAN LARA RECORD LOCATOR

PR2023BCC-002931	Wattles Elementary School
PR2023BCC-002933	Bemis Elementary School
PR2023BCC-002932	Morse Elementary School
PR2023BCC-002934	Service Building
PR2023BCC-002935	Transportation Building

SHEET INDEX

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A1.0	Cover Sheet
A2.0	Wattles Elementary School, Roof Area A, Sections 1, 2, and 3
A2.1	Wattles Elementary School, Roof Area C
A2.2	Wattles Elementary School, Roof Area E
A3.0	Bemis Elementary School School - Roof Area D
A4.0	Morse Elementary School - Roof Area D
A5.0	Service Building - Roof Area A
A6.0	Transportation Building - Roof Area B
A7.0	Detail Sheet
A7.1	Detail Sheet
A7.2	Detail Sheet

PROFESSIONAL



WeatherTech

Consulting Group, Inc.
Roofing/Waterproofing Consultants
Corporate Office:
7747 Auburn Road
Utica, MI 48317

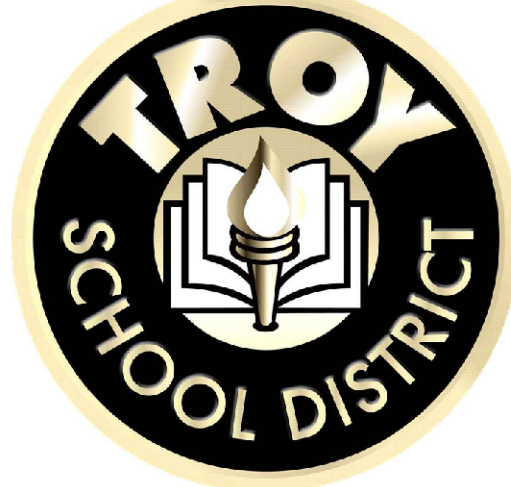
Phone #: 586-731-3095

Fax #: 586-731-6863

Email: weathertech@wtcg.net

Web Site: www.wtcg.net

CLIENT



Troy School District
4400 Livernois
Troy, MI 48098

PROJECT

Troy School District
BID No. 2324-02
2024 Roofing Program

WTProject No: TSD-R102-24

ISSUE

DATE	DESCRIPTION
10/20/2023	Review
10/27/2023	OTB
11/09/2023	Addendum 3

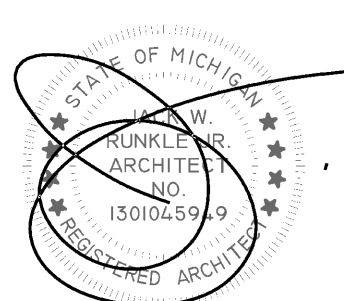
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Drawn By: MD

Checked By: PD, AC, AW, JM

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ELECTRONIC STAMP



SHEET TITLE

Cover Sheet

A1.0

SHEET 1 OF 11

Symbol Legend			
Symbol	Notes	Symbol	Notes
●	Conduit, Vent Pipe or Other Penetration	⊙	Insulated Pipe or Heat Stack Penetration
⊠	Equipment Unit on Curb	□	Ductwork or Flanged
H	Roof Hatch on Curb	A	Abandoned Equipment Curb
⋈	Roof Ladder	W	Walkway Pad
⋈	Screen Support Stanchion	⋈	Railing or Fencing
—○—	Gas Line	—○—	Area Divider
---	Roof Ridges and Valleys	↗	Roof Slope
⊗	Roof Drain	⊕	New Roof Drain
	Overflow Scupper	#	Key Notes
△	Tapered Insulation or Saddles	▨	Metal Roof
		▩	Pitch-Pan Pocket
		⊠	Equip. on Wood Sleeper or Support Curb
		S	Skylight on Curb
		⋈	Satellite Dish
		⋈	Pipe or Conduit on Support Block
		—○—	Expansion Joint
		---	Elevation Change
		⊗	Scupper
		△	Revision
		▨	Shingles or Clay Tiles

Photos



8362



8390

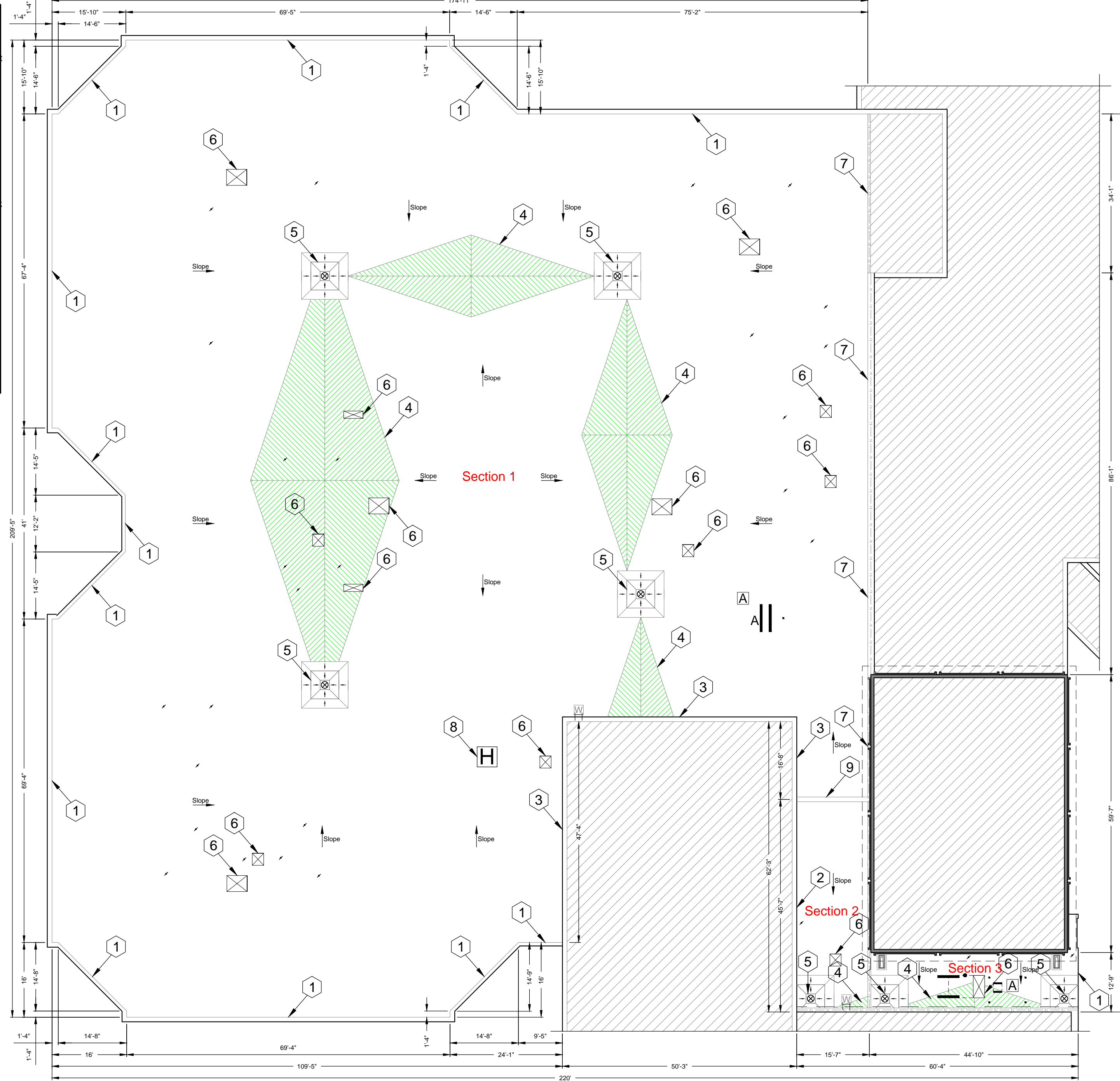
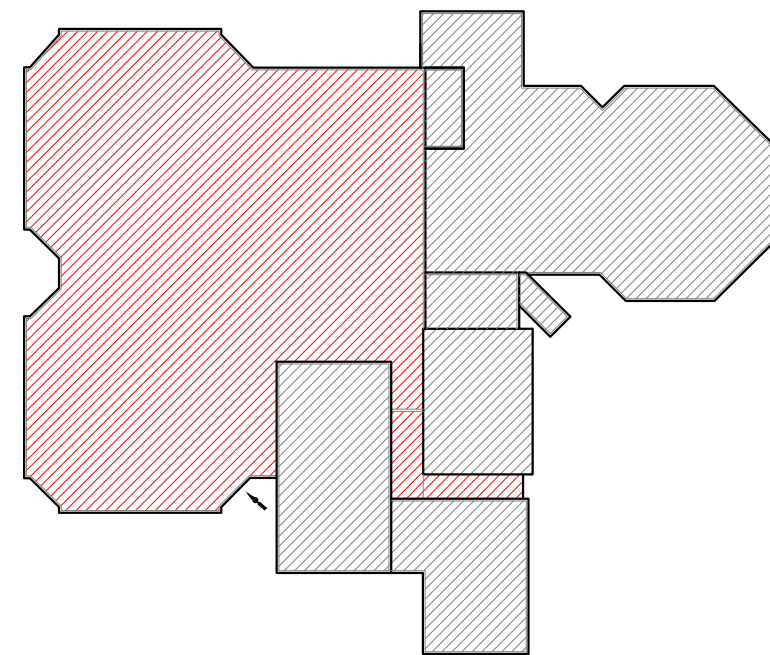


8395



8397

KEY PLAN



Wattles Elementary School Roof Area A

Scale: 1/16" = 1'



8404



8405



8411



8415



8421



8423



8435



8523

Wattles Elementary School - Troy School District Sheet Notes - Roof Area(s) A1, A2 and A3 Schedule

WORK DESCRIPTION - ROOF REPLACEMENT

1. EXISTING ROOF SYSTEM CONSTRUCTION

All existing roof system constructions were determined by **limited test cuts** and observation; conditions may vary. Contractor is responsible for confirming all existing roof system constructions, conditions, and dimensions.

Roof Area A1 - Core Sample Results

a. **Roof Membrane:** BUR w/Gravel in Asphalt

b. **Insulation:**

1) **Top Layer:** 3/4" Fiber Board;

2) **Base Layer:** 2" polyisocyanurate Insulation and 2" Fiberglass

c. **Deck:** Metal; Slope in deck

Roof Area A2 - Core Sample Results

a. **Roof Membrane:** BUR w/Gravel in Asphalt

b. **Insulation:**

1) **Top Layer:** 1/2" Fiber Board;

2) **Base Layer:** 1 1/4" polyisocyanurate Insulation

c. **Deck:** Metal; Slope in deck

Roof Area A3 - Core Sample Results

a. **Roof Membrane:** BUR w/Gravel in Asphalt

b. **Insulation:**

1) **Top Layer:** 1" Perlite

c. **Deck:** Metal; Slope in deck

2. ROOF SYSTEM CONSTRUCTION

Work includes: Removal and disposal of existing roofing, insulation, flashing systems and all sheet metal flashings down to the surface of the deck, repair deteriorated decking, install new roof insulation, fully adhered EPDM single ply roof membrane including all flashing, new roof related sheet metal, and accessories as detailed in the specifications and drawings. **Roof Replacement Area A approx. 32,000 sf.**

3. New Roof System: Roof Areas A1, A2 and A3 - Ref. Detail 1.01a.

a. **Roof Membrane:** EPDM, 60 mil, adhered to insulation.

b. **Insulation:** R30:

1) Top layer set-in low-rise foam adhesive.

2) Base layer mechanically attached to deck.

c. **Deck:** Metal; Repair as necessary to comply w/ building codes.

d. **Interior Ceiling:** Drop ceiling in most locations, open ceiling in storage rooms and maintenance rooms. Interior protection in open deck locations.

e. **Building Height:** Ground to building edge: 20 ft.

4. Warranty/Guarantee:

a. Manufacturer to provide a 20 year "No-Dollar-Limit" material and installation warranty covering the roof system, flashings and manufacturer's accessories.

b. Roofing installer to provide a five (5) year Performance Agreement - see Specification Attachment C.

5. Allowances: \$10,000 to be added to Base Bid.

6. **Asbestos:** Ref. to **Section 024119** and **Appendix 1:** Asbestos testing results to be supplied by TSD selected 3rd party firm and will be incorporated into Appendix 1. Refer to Appendix 1 for asbestos testing results. No ACM.

General Construction Details: Ref. A1.0

Use the **General Construction Details** on Sheet A1.0 for detail construction description as applicable when any detail is not specifically called out in **Key Notes** for the applicable **Roof Area** and **Section**. Detail drawings called out in **General Construction Details** can be found on Sheets A7.0 to A7.2. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

Key Notes:

All detail references in **Key Notes** are considered typical and applicable to like conditions except as specifically amended on this Sheet. Refer to Sheet A1.0 General Construction Detail Notes for applicable construction detail descriptions and Sheets A7.0 to A7.2 for construction detail drawings. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

1. **Perimeter Edge:** Provide new 24-gauge prefinished metal edge flashing with a continuous face cleat; color as selected by owner. **Ref. Details 1.02, 1.03; Roof Area A3**

2. **Slip Metal Counter Flashing:** Existing Receiver flashing to remain, Install termination bar and new 24-gauge prefinished metal counter flashings. **Ref. Detail 1.14 and Photo 8421.**

3. **Masonry Reglet:** Reuse cut in metal receiver or one-piece reglet/receiver, furnish and install new two-piece counter flashing over new base flashing. **Ref. Photo 8423.**

4. **Saddle & Crickets:** Contractor to provide saddle and crickets where indicated on roof plan and other areas as required by the roofing membrane system manufacturer. **Ref. Photos 8362, 8390, 8395, and 8397.**

5. **Roof Sumps:** Furnish and install tapered roof sumps (16ft) to ensure proper drainage. **Ref. Photo 8415.**

6. **Curbs:** Raise all curbs to achieve regulated base flashing requirements. **Ref. Photo 8411.**

7. **Expansion:** Furnish and install new expansion joints along the entire East perimeter. **Ref. Photos 8404, 8405 and 8435.**

8. **Roof Hatch:** Furnish and install new roof hatch, safety rails, ladder up and rung grips. **Ref. Photo 8523.**

9. **Parapet Wall:** Ref. Detail 1.04.

PROFESSIONAL



WeatherTech

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Roofing/Waterproofing Consultants
Corporate Office:
7747 Auburn Road
Utica, MI 48317

Phone #: 586-731-3095

Fax #: 586-731-6863

Email: weathertech@wtcg.net

Web Site: www.wtcg.net

CLIENT



Troy School District
4400 Livernois
Troy, MI 48098

PROJECT



Wattles Elementary School
3555 Ellenboro Ave.
Troy, MI 48083

Troy School District
BID No. 2324-02
2024 Roofing Program

WTProject No: TSD-R102-24

ISSUE

DATE	DESCRIPTION
10/20/2023	Review
10/27/2023	OTB
11/09/2023	Addendum 3

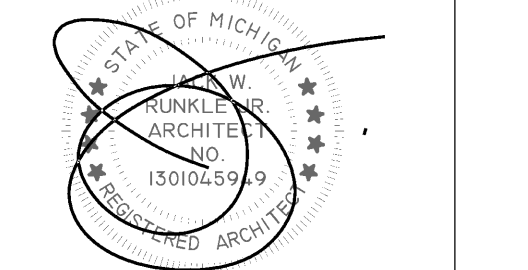
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Drawn By: MD

Checked By: PD, AC, AW, JM

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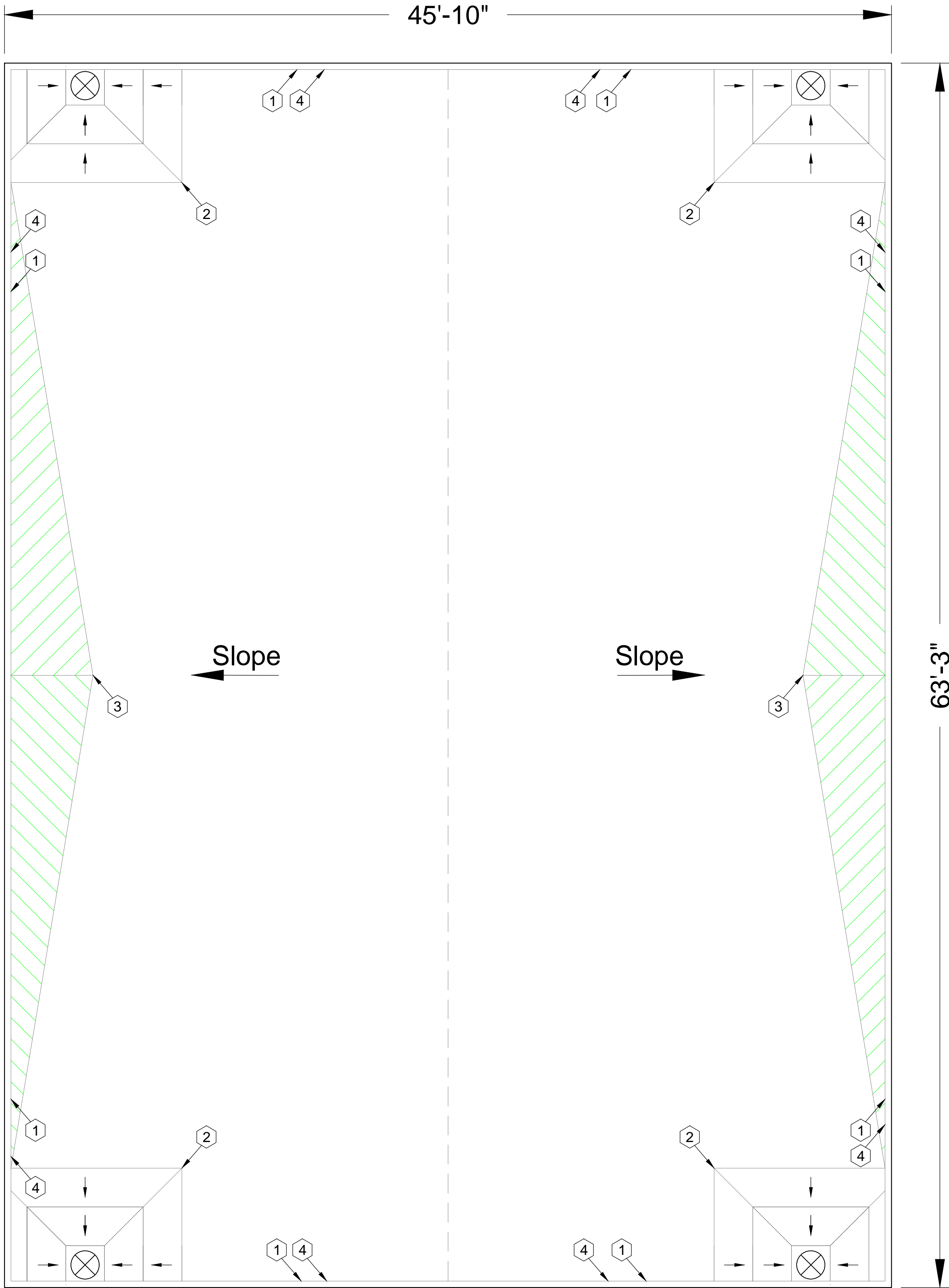


SHEET TITLE Roof Plan

Wattles Elementary School
Roof Area A
Sections 1, 2 and 3

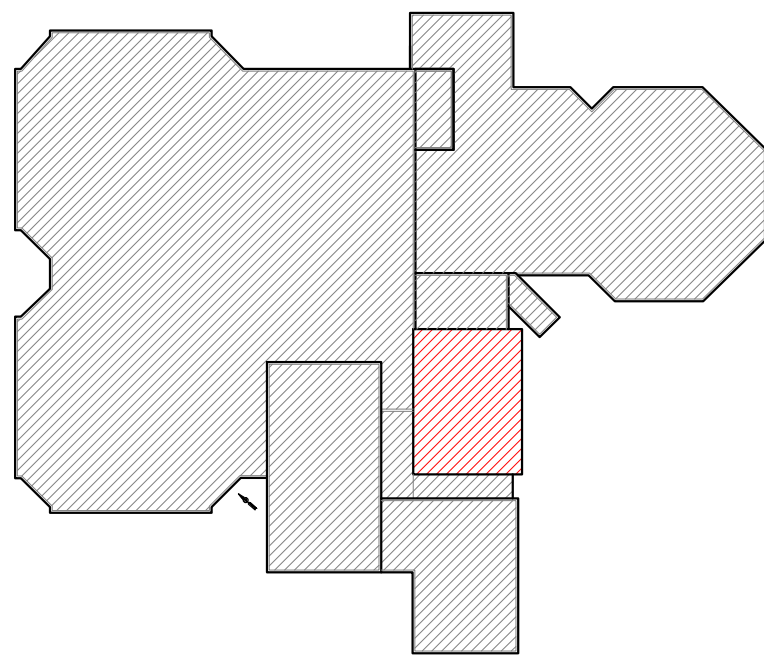
A2.0

SHEET 2 OF 11



Wattles Elementary School
Roof Area C
Scale: 1/4" = 1'

KEY PLAN



Photos



8513



8514

Wattles Elementary School - Troy School District
Sheet Notes - Roof Area C
Schedule

WORK DESCRIPTION - ROOF REPLACEMENT

1. EXISTING ROOF SYSTEM CONSTRUCTION

All existing roof system constructions were determined by **limited test cuts** and observation; conditions may vary. Contractor is responsible for confirming all existing roof system constructions, conditions, and dimensions.

Roof Area C Core Sample Results

- a. **Roof Membrane:** BUR w/Gravel in asphalt
- b. **Insulation:** 3/4" Perlite
- c. **Deck:** Metal; Slope in deck

2. ROOF SYSTEM CONSTRUCTION

Work includes: Removal and disposal of existing roofing, insulation, flashing systems and all sheet metal flashings down to the surface of the deck, repair deteriorated decking, furnish and install batten stripping in deck, if needed, install new vapor barrier, install new roof insulation and tapered roof sumps, fully adhered EPDM single ply roof membrane including all flashing, new roof related sheet metal, and accessories as detailed in the specifications and drawings. **Roof Replacement Area C, approx. 3,000 sf.**

3. New Roof System: Roof Area C - Ref. Detail 1.01b.

- a. **Roof Membrane:** EPDM, 60 mil, adhered to insulation.
- b. **Insulation:** R30:
 - 1) Top layer set-in low-rise foam adhesive.
 - 2) Base layer mechanically attached to the deck.
- c. **Deck:** Metal: Repair as necessary to comply w/ building codes. (acoustic deck flutes may require new batten fill - verify by contractor)
- d. **Interior Ceiling:** Drop ceiling (tectum), may be some small areas of exposed roof deck interior conditions exist.
- e. **Building Height:** Ground to building edge: 30 ft.

4. Warranty/Guarantee:

- a. Manufacturer to provide a 20 year "No-Dollar-Limit" material and installation warranty covering the roof system, flashings and manufacturer's accessories.
- b. Roofing installer to provide a five (5) year Performance Agreement - see Specification Attachment C.

5. Allowances: \$2,000 to be added to Base Bid.

6. Asbestos: Ref. to Section 024119 and Appendix 1: Asbestos testing results to be supplied by TSD selected 3rd party firm and will be incorporated into Appendix 1. Refer to Appendix 1 for asbestos testing results. No ACM.

General Construction Details: Ref. A1.0

Use the General Construction Details on Sheet A1.0 for detail construction description as applicable when any detail is not specifically called out in Key Notes for the applicable Roof Area and Section. Detail drawings called out in General Construction Details can be found on Sheets A7.0 to A7.2. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

Key Notes:

All detail references in Key Notes are considered typical and applicable to like conditions except as specifically amended on this Sheet. Refer to Sheet A1.0 General Construction Detail Notes for applicable construction detail descriptions and Sheets A7.0 to A7.2 for construction detail drawings. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

- 1. **Wood Nailer:** Furnish and install wood nailer to achieve required height.
- 2. **Roof Sumps:** Furnish and install roof sumps (8ft) at roof drain locations. **Ref. Photo 8513.**
- 3. **Saddles Between Drains:** Furnish and install tapered saddles between roof drains.
- 4. **Perimeter Edge Metal:** Furnish and install perimeter edge and continuous cleat metal to meet manufacturers specifications. Color to be selected by owner. **Ref. Photo 8514.**

Symbol Legend					
Symbol	Notes	Symbol	Notes	Symbol	Notes
●	Conduit, Vent Pipe or Other Penetration	⊙	Insulated Pipe or Heat Stack Penetration	■	Pitch-Pan Pocket
⊠	Equipment Unit on Curb	□	Ductwork or Flanged	⊞	Equip. on Wood Sleeper or Support Curb
[H]	Roof Hatch on Curb	[A]	Abandoned Equipment Curb	[S]	Skylight on Curb
⋈	Roof Ladder	[W]	Walkway Pad	⌒	Satellite Dish
⬮	Screen Support Stanchion	⬮	Railing or Fencing	⬮	Pipe or Conduit on Support Block
—○—	Gas Line	—X—	Area Divider	—E—	Expansion Joint
---	Roof Ridges and Valleys	↗	Roof Slope	⬮	Elevation Change
⊗	Roof Drain	⊕	New Roof Drain		Scupper
	Overflow Scupper	⬮	Key Notes	⬮	Revision
⬮	Tapered Insulation or Saddles		Metal Roof	⬮	Shingles or Clay Tiles

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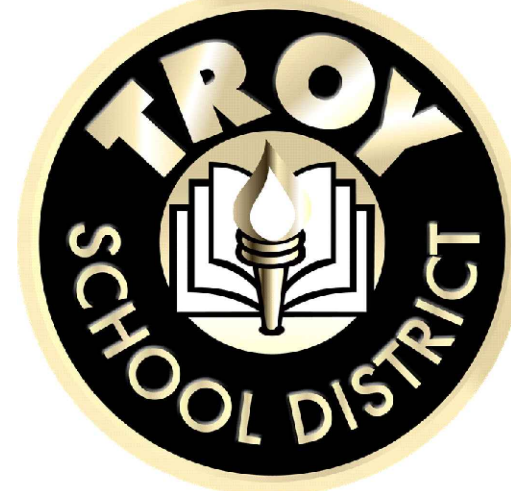
Phone #: 586-731-3095

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Web Site: www.wtcg.net

CLIENT



Troy School District
4400 Livernois
Troy, MI 48098

PROJECT



Wattles Elementary School
3555 Ellenboro Ave.
Troy, MI 48083

Troy School District
BID No. 2324-02
2024 Roofing Program

WTPProject No: TSD-R102-24

ISSUE

DATE	DESCRIPTION
10/20/2023	Review
10/27/2023	OTB
11/09/2023	Addendum 3

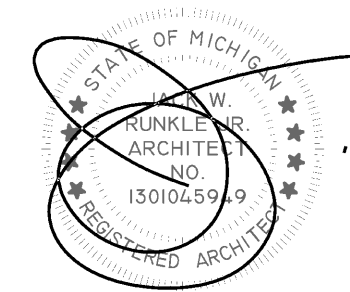
File Name: TSD 2024 - A2.0 Wattles Elementary School

Drawn By: MD

Checked By: PD, AC, AW, JM

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SHEET TITLE

Roof Plan
Wattles Elementary School
Roof Area C

A2.1

SHEET 3 OF 11

Photos



8536



8556



8559



8562

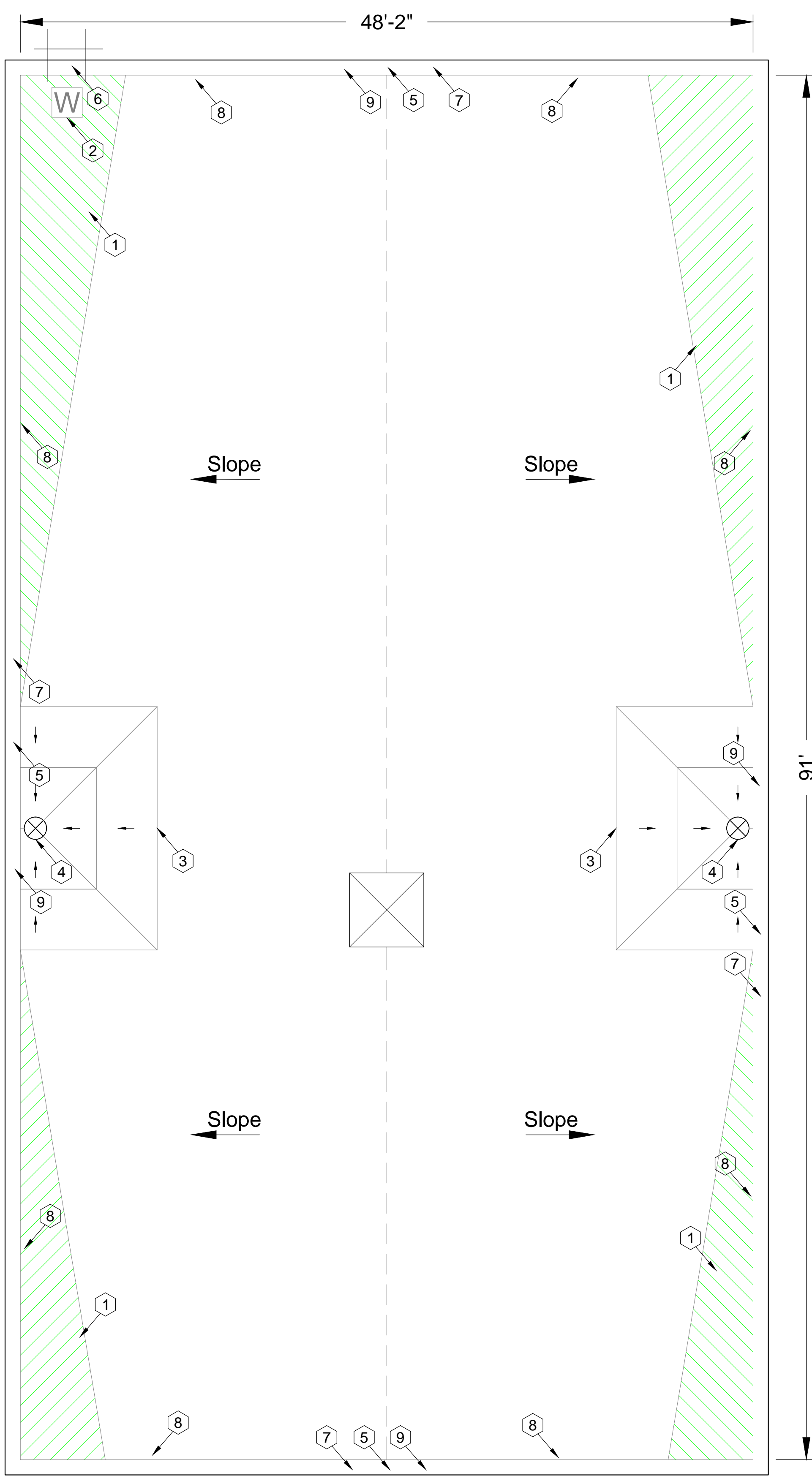
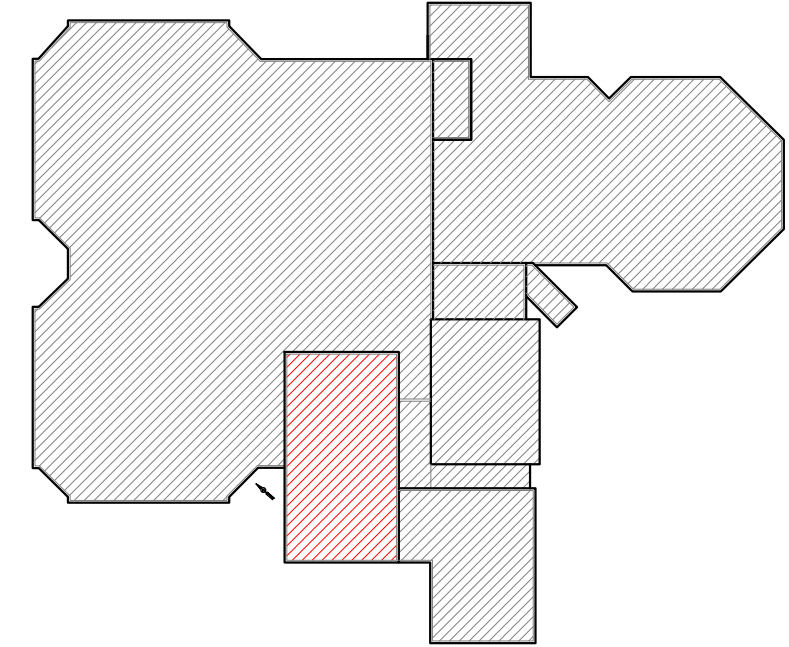


8563



8565

KEY PLAN



Wattles Elementary School
Roof Area E
Scale: $\frac{3}{16}$ " = 1'

Wattles Elementary School - Troy School District
Sheet Notes - Roof Area E
Schedule

WORK DESCRIPTION - ROOF REPLACEMENT
1. EXISTING ROOF SYSTEM CONSTRUCTION

All existing roof system constructions were determined by **limited test cuts** and observation; conditions may vary. Contractor is responsible for confirming all existing roof system constructions, conditions, and dimensions.

Roof Area E Core Sample Results

- a. **Roof Membrane:** Gravel BUR Plies w/asphalt
b. **Insulation:** Top layer 1 inch Fiber Board; **Base Layer:** Approx. 2-inch polyisocyanurate insulation
c. **Deck:** Tectum; Slope in deck

2. ROOF SYSTEM CONSTRUCTION

Work includes: Removal and disposal of existing roofing, insulation, flashing systems and all sheet metal flashings down to the surface of the deck, repair deteriorated decking, install new roof insulation, fully adhered EPDM single ply roof membrane including all flashing, new roof related sheet metal, and accessories as detailed in the specifications and drawings. **Roof Replacement Areas E, approx. 4,500 sf.**

3. New Roof System: Roof Area E - Ref. Detail 1.01b.

- a. **Roof Membrane:** EPDM, 60 mil, adhered to insulation.
b. **Insulation:** R30:
1) Top layer set-in low-rise foam adhesive.
2) Base layer adhered to vapor barrier.
3) Vapor Barrier mechanically attached to deck.
c. **Deck:** Tectum: Repair as necessary to comply w/ building codes.
d. **Interior Ceiling:** Open ceiling, Interior Protection Needed over gym floor.
e. **Building Height:** Ground to building edge: 35 ft.

4. Warranty/Guarantee:

- a. Manufacturer to provide a 20 year "No-Dollar-Limit" material and installation warranty covering the roof system, flashings and manufacturer's accessories.
b. Roofing installer to provide a five (5) year Performance Agreement - see Specification Attachment C.

5. Allowances: \$4,000 to be added to Base Bid.

6. Asbestos: Ref. to Section 024119 and Appendix 1: Asbestos testing results to be supplied by TSD selected 3rd party firm and will be incorporated into Appendix 1. Refer to Appendix 1 for asbestos testing results. No ACM.

General Construction Details: Ref. A1.0

Use the General Construction Details on Sheet A1.0 for detail construction description as applicable when any detail is not specifically called out in Key Notes for the applicable Roof Area and Section. Detail drawings called out in General Construction Details can be found on Sheets A7.0 to A7.2. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

Key Notes:

All detail references in Key Notes are considered typical and applicable to like conditions except as specifically amended on this Sheet. Refer to Sheet A1.0 General Construction Detail Notes for applicable construction detail descriptions and Sheets A7.0 to A7.2 for construction detail drawings. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

1. **Saddle & Crickets:** Contractor to provide saddle and crickets where indicated on roof plan and other areas as required by the roofing membrane system manufacturer. (Tapered)
2. **Walkway Pad:** Furnish and install walkway pad at ladder. Ref. Photo 8565
3. **Drain Sumps:** Furnish and install tapered roof sumps (8ft) to assure proper drainage. Ref. Photos 8556, 8559; Details 1.09, and 1.11.
4. **Metal Strainers:** Furnish and install metal strainers to replace plastic strainers. Ref. Photos 8556, 8559
5. **Metal Copings:** Furnish and install metal copings with continuous metal cleats and standing seam joints. Colored to determine by owner. Ref. Photo 8563, and Detail 1.08.
6. **Wall Ladder Rung Covers:** Furnish and install ladder rung covers, to wall ladder. Ref. Photo 8536
7. **Perimeter Nailers:** Furnish and install new wood nailers in deteriorated locations.
8. **Deteriorated Deck at Perimeter:** Furnish install new decking where existing is deteriorated.
9. **Lightning Protection:** Remove and dispose of existing lightning protection cables and air terminals. Ref. Photo 8562

Symbol Legend					
Symbol	Notes	Symbol	Notes	Symbol	Notes
●	Conduit, Vent Pipe or Other Penetration	⊙	Insulated Pipe or Heat Stack Penetration	■	Pitch-Pan Pocket
⊠	Equipment Unit on Curb	□	Ductwork or Flanged	⊞	Equip. on Wood Sleeper or Support Curb
H	Roof Hatch on Curb	A	Abandoned Equipment Curb	S	Skylight on Curb
†	Roof Ladder	W	Walkway Pad	⌂	Satellite Dish
⬮	Screen Support Stanchion	⬮	Railing or Fencing	⬮	Pipe or Conduit on Support Block
—○—	Gas Line	—AD—	Area Divider	—EJ—	Expansion Joint
---	Roof Ridges and Valleys	→	Roof Slope	⌈	Elevation Change
⊗	Roof Drain	⊕	New Roof Drain		Scupper
	Overflow Scupper	⊙	Key Notes	⚠	Revision
△	Tapered Insulation or Saddles	▨	Metal Roof	▨	Shingles or Clay Tiles

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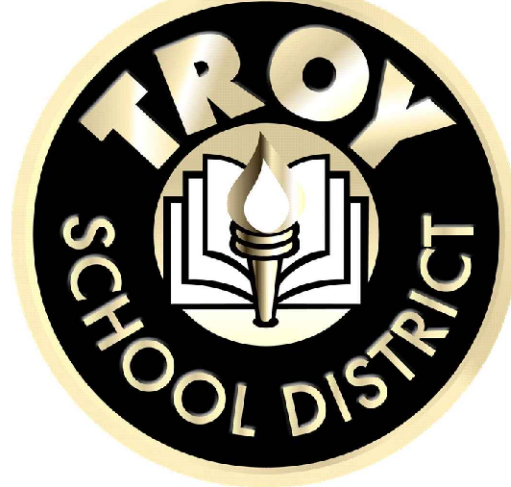


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PROJECT



Wattles Elementary School
3555 Ellenboro Ave.
Troy, MI 48083

Troy School District
BID No. 2324-02
2024 Roofing Program

WTPProject No: TSD-R102-24

ISSUE

DATE	DESCRIPTION
10/20/2023	Review
10/27/2023	OTB
11/09/2023	Addendum 3

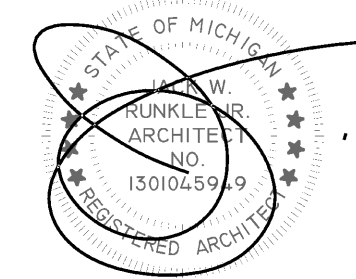
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Drawn By: MD

Checked By: PD, AC, AW, JM

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ELECTRONIC STAMP



SHEET TITLE

Roof Plan
Wattles Elementary School
Roof Area E

A2.2

SHEET 4 OF 11

Photos



8899



8907



8915



8916



8917

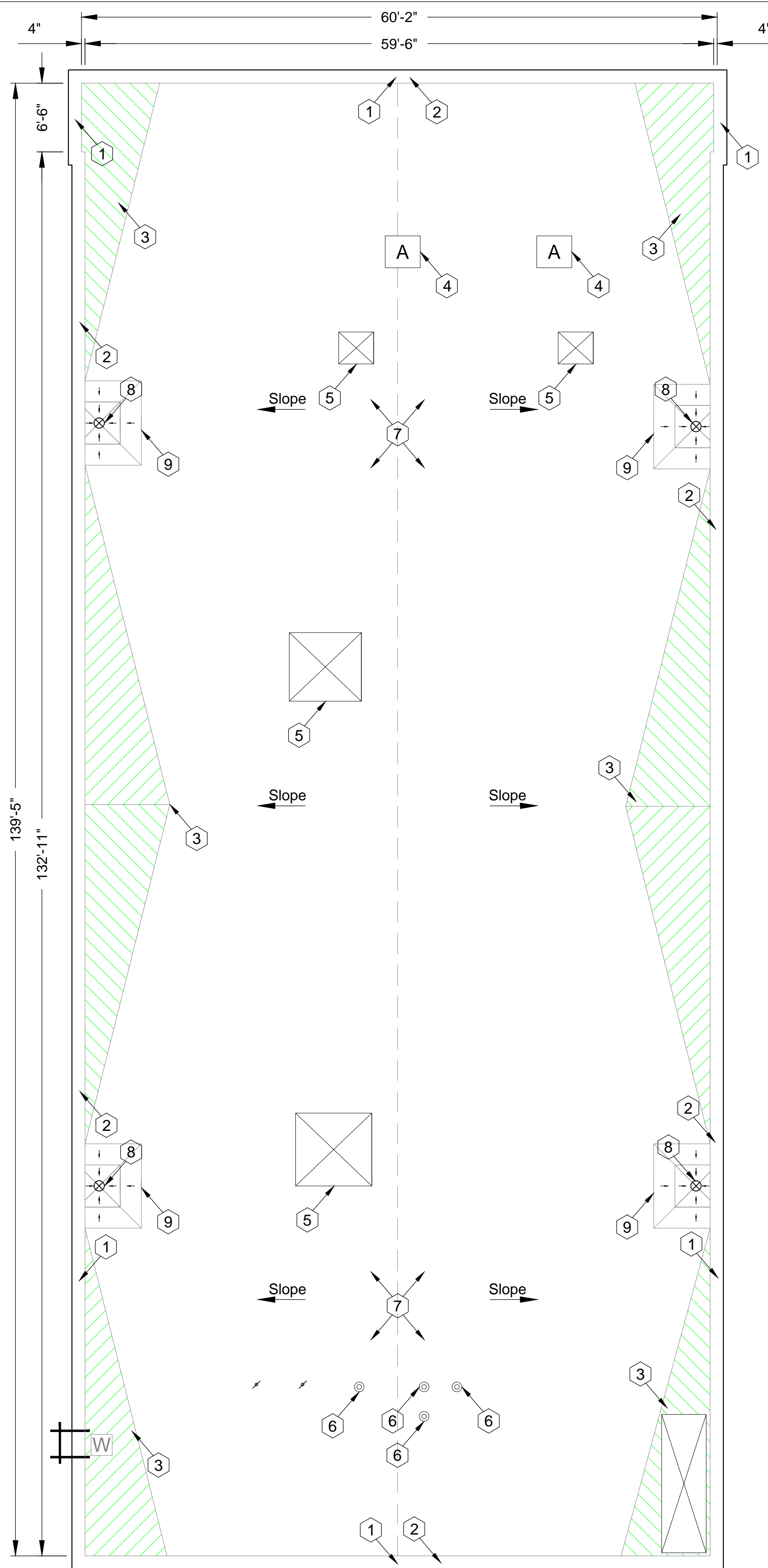
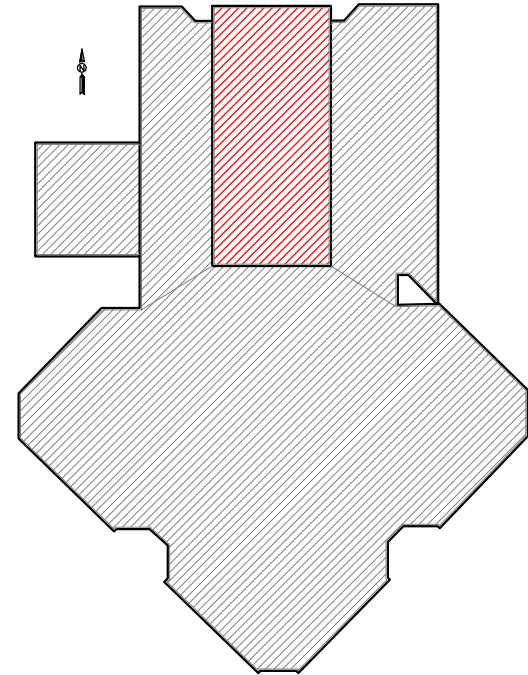


8921



8926

KEY PLAN



Bemis Elementary School
Roof Area D

Scale: 1/8" = 1'

Bemis Elementary School - Troy School District
Sheet Notes - Roof Area D
Schedule
WORK DESCRIPTION - ROOF REPLACEMENT

- EXISTING ROOF SYSTEM CONSTRUCTION**
All existing roof system constructions were determined by **limited test cuts** and observation; conditions may vary. Contractor responsible for confirming all existing roof system constructions and conditions.

Roof Area E Core Sample Results
a. Roof Membrane: Gravel BUR
b. Insulation:
1) Top Layer: Insulation 1/2" Fiberglass Insulation
2) Base Layer: Approx. 2.75-inch polyisocyanurate insulation.
c. Deck: Metal: Slope on deck (Contractor to verify)

2. ROOF SYSTEM CONSTRUCTION
Work includes: Removal and disposal of existing roofing, insulation, flashing systems and all sheet metal flashings down to the surface of the deck, repair deteriorated decking, install new roof insulation, fully adhered EPDM single ply roof membrane including all flashing, new roof related sheet metal, and accessories as detailed in the specifications and drawings. **Approx. Roof Area E 8,650 sq. ft.**

3. New Roof System: Roof Area D - Ref. Detail 1.01b.
a. Roof Membrane: EPDM, 60 mil, adhered to insulation.
b. Insulation: R30:
1) Top layer set-in low-rise foam adhesive.
2) Bottom layer set-in low-rise foam adhesive to vapor barrier.
3) Vapor Barrier to be installed over metal deck. (Carlisle VapAir Seal MD or equivalent)
c. Tapered Insulation: Roof Drains, see roof plan and details.
d. Deck: Metal B: Repair as necessary to comply w/ building codes.
e. Interior Ceiling: Exposed under deck
f. Building Height: Ground to building edge: 40 ft.

4. Warranty/Guarantee:
a. Manufacturer to provide a 20 year "No-Dollar-Limit" material and installation warranty covering the roof system, flashings and manufacturer's accessories.
b. Roofing installer to provide a five (5) year Performance Agreement - see Specification Attachment C.

5. Allowances: \$4,000.00 to be added to Base Bid.

6. Asbestos: Ref. to Section 024119 and Appendix 1: Asbestos testing results to be supplied by TSD selected 3rd party firm and will be incorporated into Appendix 1. Refer to Appendix 1 for asbestos testing results. No ACM.

General Construction Details: Ref. A1.0
Use the General Construction Details on Sheet A1.0 for detail construction description as applicable when any detail is not specifically called out in Key Notes for the applicable Roof Area and Section. Detail drawings called out in General Construction Details can be found on Sheets A7.0 to A7.2. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

Key Notes:
All detail references in Key Notes are considered typical and applicable to like conditions except as specifically amended on this Sheet. Refer to Sheet A1.0 General Construction Detail Notes for applicable construction detail descriptions and Sheets A7.0 to A7.2 for construction detail drawings. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

- Metal Coping:** Remove existing metal coping and install new 24 gauge prefinished galvanized metal with continuous face cleat and standing seam joints; color as selected by Owner. Ref. Details 1.04, 1.05, 1.06, 1.07 and 1.08; Photo 8926
- Lightning Protection:** Remove and dispose of existing lightning protection cables and air terminals. Ref. Photo 8899.
- Saddle & Crickets:** Contractor to provide saddle and crickets where indicated on roof plan and other areas as required by the roofing membrane system manufacturer.
- Deleted Curbs:** Remove deleted items, fill-in deck and roof over. Ref. Photos 8907, 8917.
- Curbs Raised:** Raise penetrations to achieve warranty. Ref. Detail 1.18; Photo 8916.
- Stack Flanges:** Reinstall stack flanges down to the deck and roof accordingly. Ref. Detail 2.05; Photo 8921.
- Deck Flutes:** All debris to be removed from deck flutes.
- Metal Roof Strainers:** Furnish and install correct metal strainers. Ref. Photo 8915.
- Drain Sumps:** Furnish and install tapered roof sumps (8ft) to assure proper drainage. Ref. Details 1.09, and 1.11.

Symbol Legend					
Symbol	Notes	Symbol	Notes	Symbol	Notes
●	Conduit, Vent Pipe or Other Penetration	⊙	Insulated Pipe or Heat Stack Penetration	■	Pitch-Pan Pocket
⊗	Equipment Unit on Curb	□	Ductwork or Flanged	⊞	Equip. on Wood Sleeper or Support Curb
H	Roof Hatch on Curb	A	Abandoned Equipment Curb	S	Skylight on Curb
†	Roof Ladder	W	Walkway Pad	⌒	Satellite Dish
⊞	Screen Support Stanchion	⊞	Railing or Fencing	⊞	Pipe or Conduit on Support Block
—GAS—	Gas Line	—AD—	Area Divider	—EJ—	Expansion Joint
---	Roof Ridges and Valleys	→	Roof Slope	⌒	Elevation Change
⊗	Roof Drain	⊕	New Roof Drain		Scupper
	Overflow Scupper	#	Key Notes	⬮	Revision
⬮	Tapered Insulation or Saddles		Metal Roof	⬮	Shingles or Clay Tiles

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Web Site: www.wtcg.net

CLIENT



Troy School District
4400 Livernois
Troy, MI 48098

PROJECT



Bemis Elementary School
3571 Northfield Pkwy.
Troy, MI 48084

Troy School District
BID No. 2324-02
2024 Roofing Program

WTPProject No: TSD-R102-24

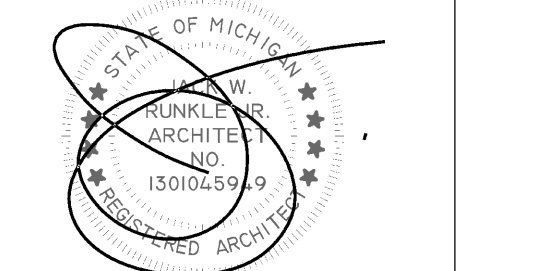
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DATE	DESCRIPTION
10/20/2023	Review
10/27/2023	OTB
11/09/2023	Addendum 3

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ELECTRONIC STAMP



SHEET TITLE
Roof Plan

Bemis Elementary School
Roof Area D

A3.0

SHEET 5 OF 11

Photos



8857



8862



8863



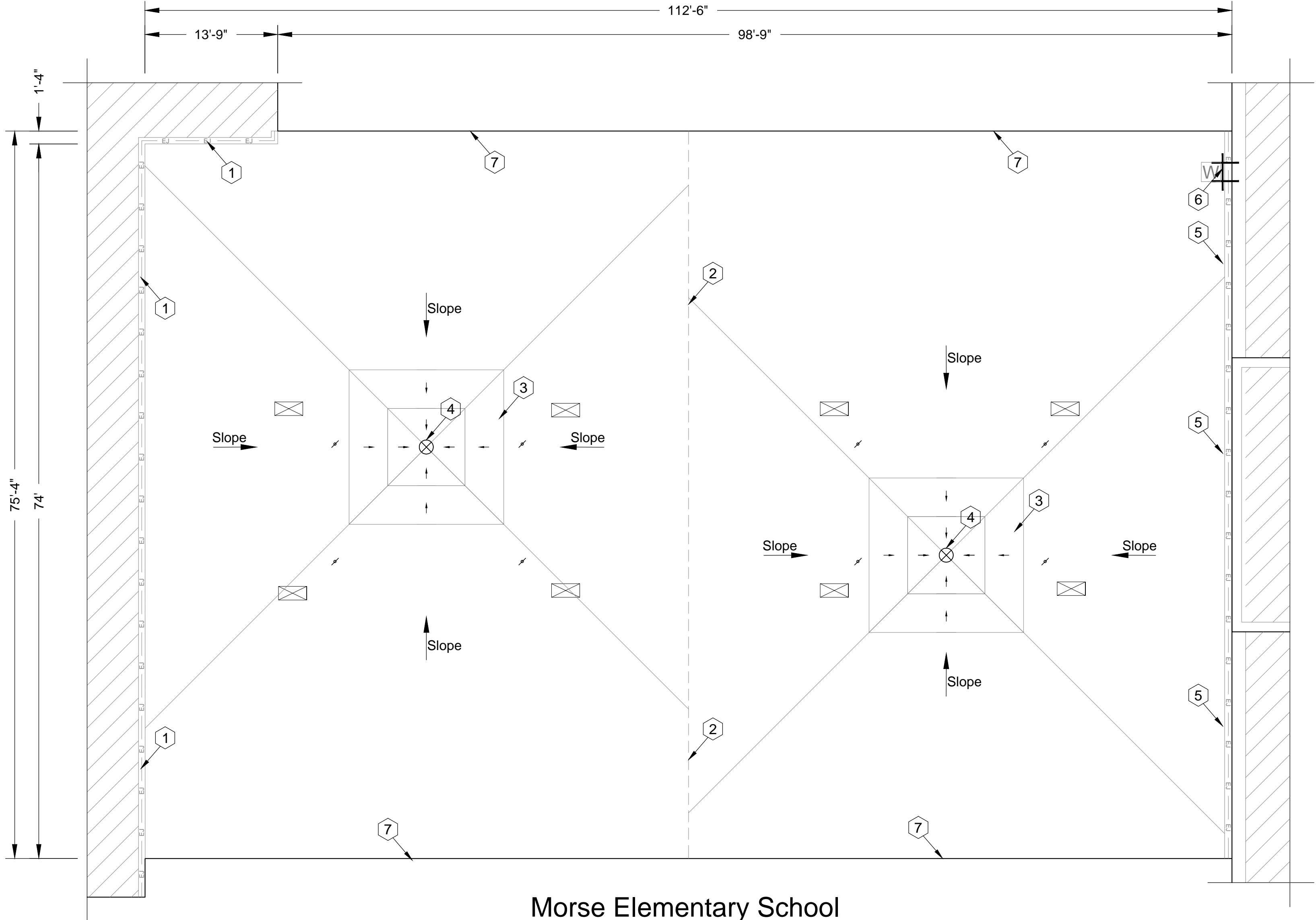
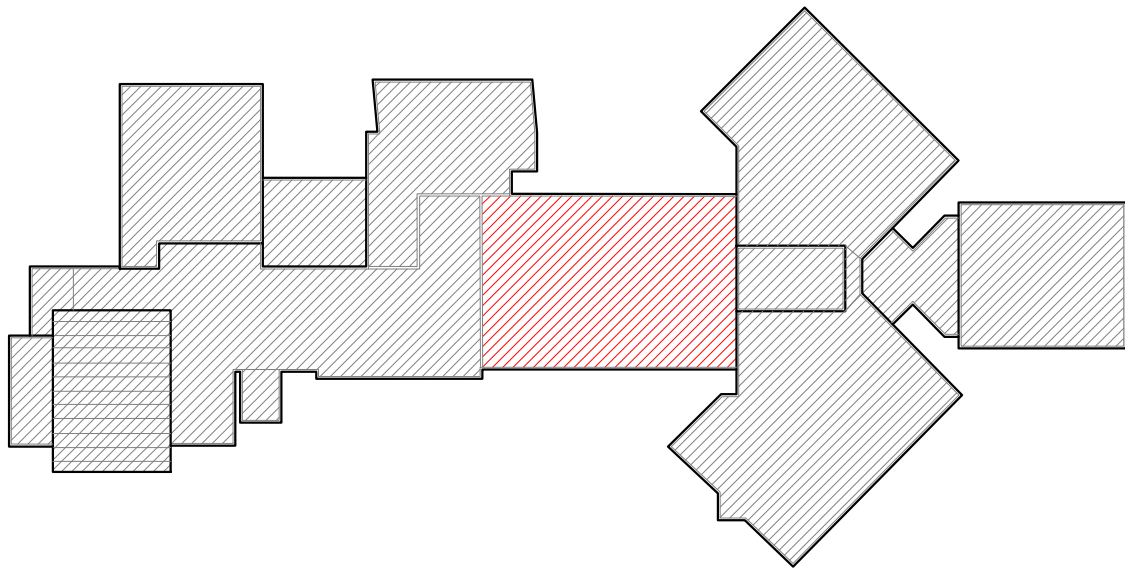
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Symbol Legend					
Symbol	Notes	Symbol	Notes	Symbol	Notes
●	Conduit, Vent Pipe or Other Penetration	⊙	Insulated Pipe or Heat Stack Penetration	■	Pitch-Pan Pocket
⊗	Equipment Unit on Curb	□	Ductwork or Flanged	⊞	Equip. on Wood Sleeper or Support Curb
H	Roof Hatch on Curb	A	Abandoned Equipment Curb	S	Skylight on Curb
⋈	Roof Ladder	W	Walkway Pad	⌂	Satellite Dish
⋈	Screen Support Stanchion	⋈	Railing or Fencing	⋈	Pipe or Conduit on Support Block
—○—	Gas Line	—AD—	Area Divider	—EJ—	Expansion Joint
---	Roof Ridges and Valleys	→	Roof Slope	⋈	Elevation Change
⊗	Roof Drain	⊕	New Roof Drain		Scupper
	Overflow Scupper	Ⓚ	Key Notes	⬮	Revision
△	Tapered Insulation or Saddles	▨	Metal Roof	▨	Shingles or Clay Tiles

KEY PLAN



Morse Elementary School

Roof Area D

Scale: 1/8" = 1'

Morse Elementary School - Troy School District
Sheet Notes - Roof Area D
Schedule
WORK DESCRIPTION - ROOF REPLACEMENT

1. EXISTING ROOF SYSTEM CONSTRUCTION

All existing roof system constructions were determined by **limited test cuts** and observation; conditions may vary. Contractor responsible for confirming all existing roof system constructions and conditions.

Roof Area E Core Sample Results

a. **Roof Membrane:** BUR w/gravel in asphalt

b. **Insulation:**

1) **Top Layer:** Insulation 1/2" Fiberboard Insulation.

2) **Base Layer:** Approx. 1.5-inch polyisocyanurate insulation.

c. **Deck:** Tectum

2. ROOF SYSTEM CONSTRUCTION

Work includes: Removal and disposal of existing roofing, insulation, flashing systems and all sheet metal flashings down to the surface of the deck, repair deteriorated decking, install new roof insulation, fully adhered EPDM single ply roof membrane including all flashing, new roof related sheet metal, and accessories as detailed in the specifications and drawings. Approx. Roof Area D 8,400 sq. ft.

3. New Roof System: Roof Area D - Ref. Detail 1.01a.

a. **Roof Membrane:** EPDM, 60 mil, adhered to insulation.

b. **Insulation:** R30:

1) Top layer set-in low-rise foam adhesive

2) Bottom layer set-in low-rise foam adhesive.

c. **Tapered Insulation:** Furnish and install a tapered system to comply with manufacturer's requirements. *Tapered Insulation system is to include 16ft sumps.*

d. **Vapor Barrier:** Furnish and adhere vapor barrier over decking, to meet manufacturer's specifications.

e. **Deck:** Tectum: Repair as necessary to comply w/ building codes.

f. **Interior Ceiling:** Drop ceiling, may be some small areas of exposed deck where interior conditions exist.

g. **Building Height:** Ground to building edge: 15 ft.

4. Warranty/Guarantee:

a. Manufacturer to provide a 20 year "No-Dollar-Limit" material and installation warranty covering the roof system, flashings and manufacturer's accessories.

b. Roofing installer to provide a five (5) year Performance Agreement - see Specification Attachment C.

5. Allowances: \$3,000.00 to be added to Base Bid.

6. **Asbestos:** Ref. to Section 024119 and Appendix 1: Asbestos testing results to be supplied by TSD selected 3rd party firm and will be incorporated into Appendix 1. Refer to Appendix 1 for asbestos testing results. No ACM.

General Construction Details: Ref. A1.0

Use the General Construction Details on Sheet A1.0 for detail construction description as applicable when any detail is not specifically called out in Key Notes for the applicable Roof Area and Section. Detail drawings called out in General Construction Details can be found on Sheets A7.0 to A7.2. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

Key Notes:

All detail references in Key Notes are considered typical and applicable to like conditions except as specifically amended on this Sheet. Refer to Sheet A1.0 General Construction Detail Notes for applicable construction detail descriptions and Sheets A7.0 to A7.2 for construction detail drawings. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

1. **Roof Expansion Joint:** Furnish and install wood nailer as needed to allow proper flashing height; install 6 mil polyethylene liner, compressible batt insulation, foam rod stock and fully adhered EPDM. Ref. Detail 3.04 and Photos 8864, 8873.

2. **Saddle & Crickets:** Contractor to provide saddle and crickets where indicated on roof plan and other areas as required by the roofing membrane system manufacturer. Ref. Photo 8857.

3. **Roof Sumps:** Furnish and install tapered roof sumps (16ft) to ensure proper drainage. Ref. Photo 8862.

4. **Metal Drain Strainers:** Furnish and install correct metal strainers. Ref. Photo 8862.

5. **New Expansion Joints:** Furnish and install new expansion joints at rise wall. Ref. Photos 8863, 8873.

6. **Wall Ladder:** Furnish and install new wall ladder on east wall. Ref. Photo 8863.

7. **Perimeter Nailers:** Furnish and install additional wood nailers to achieve base flashing height.

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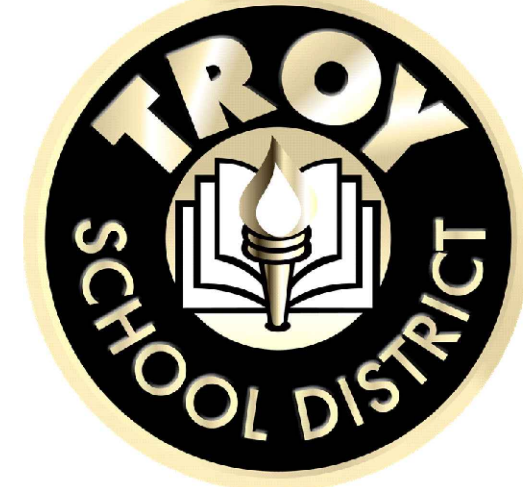
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Troy School District
4400 Livernois
Troy, MI 48098

PROJECT



Morse Elementary School
475 Cherry Dr.
Troy, MI 48083

Troy School District
BID No. 2324-02
2024 Roofing Program

WTProject No: TSD-R102-24

ISSUE

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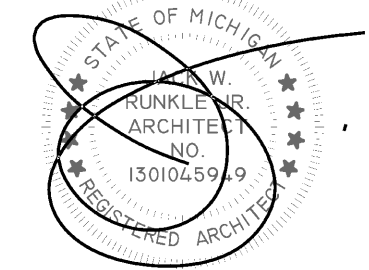
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Checked By: PD, AC, AW, JM

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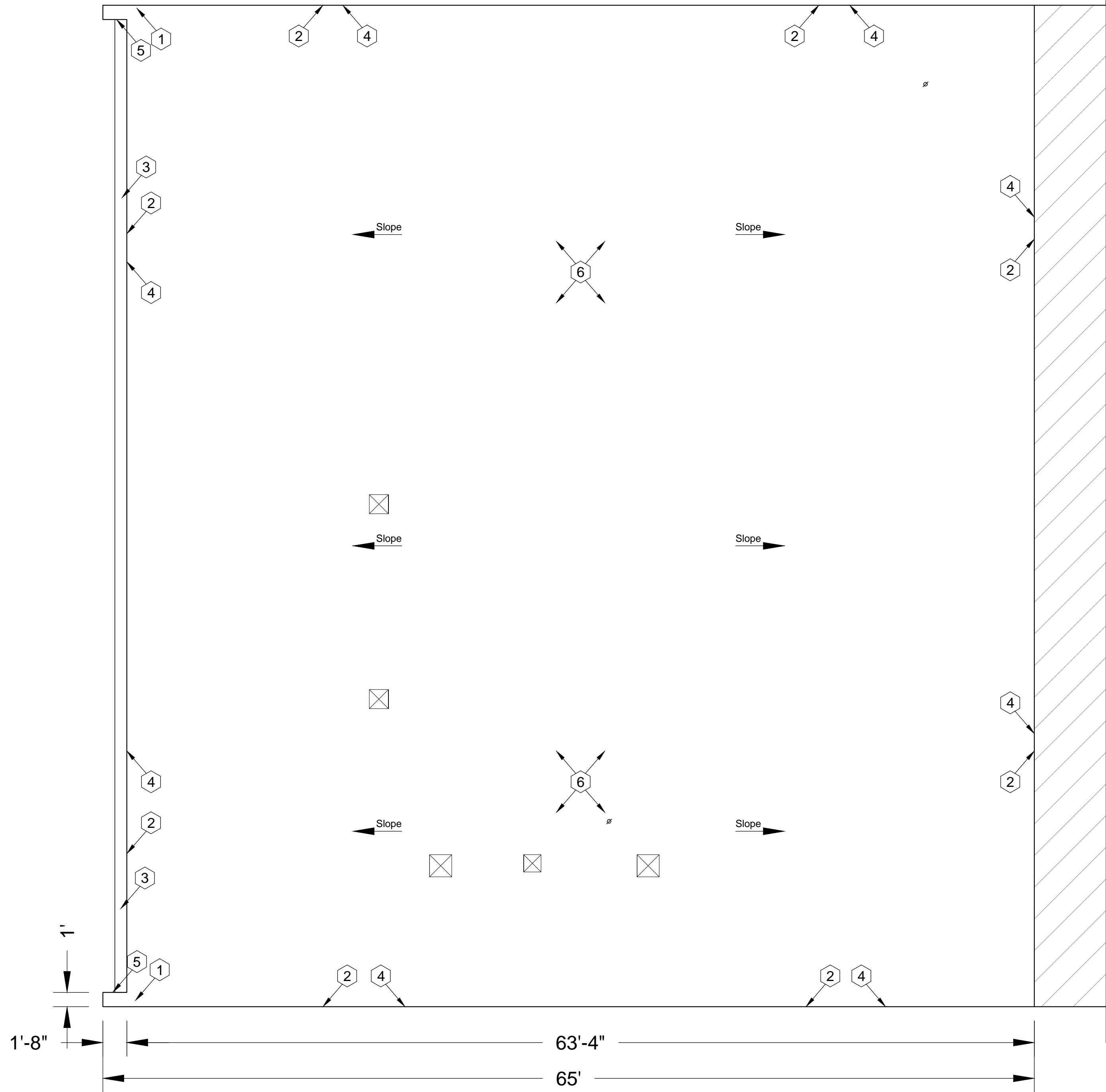
SHEET TITLE

Roof Plan

Morse Elementary School
Roof Area D

A4.0

SHEET 6 OF 11



Service Building
Roof Area A
Scale: $\frac{3}{16}$ " = 1'

Photos



8783



8789

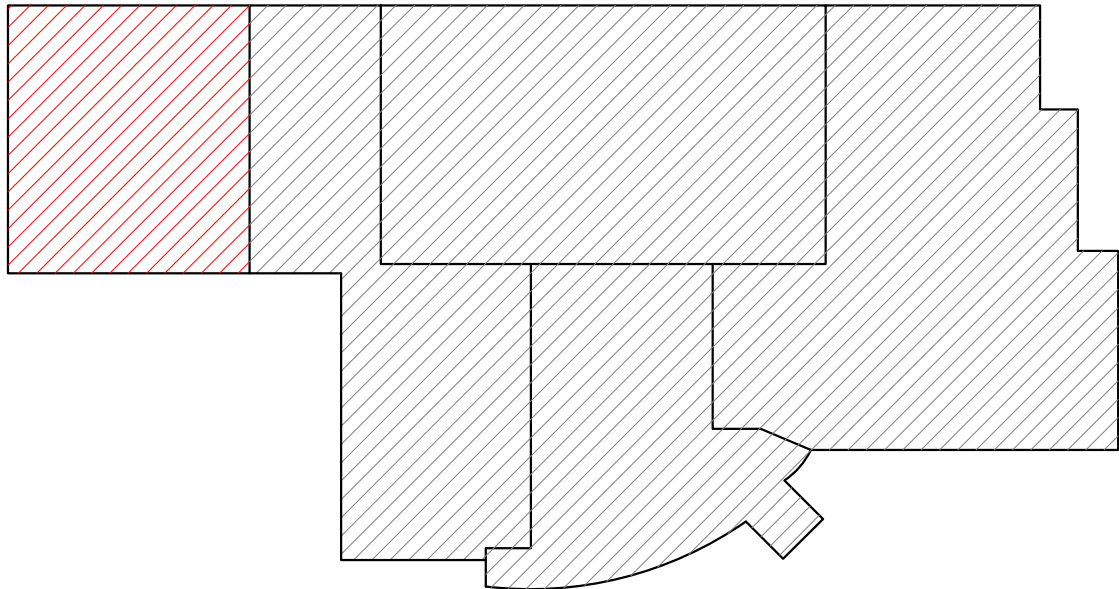


8795



8809

KEY PLAN



Service Building - Troy School District
Sheet Notes - Roof Area A (Barrow Roof)
Schedule
WORK DESCRIPTION - ROOF RECOVER

1. EXISTING ROOF SYSTEM CONSTRUCTION
All existing roof system constructions were determined by **limited test cuts** and observation; conditions may vary. Contractor responsible for confirming all existing roof system constructions and conditions.

Roof Area A Core Sample Results
a. Roof Membrane: PVC
b. Insulation:
1) **Top Layer:** 1 1/2" Polyisocyanurate Insulation.
2) **Base Layer:** 1 1/2" Polyisocyanurate insulation.
c. Deck: Metal B; Slope in deck (Contractor to verify.)

2. ROOF SYSTEM CONSTRUCTION
Work includes: Removal and disposal of existing roof membrane. The existing insulation is to remain. Remove and replace any deteriorated rigid insulation. Add new roof insulation to achieve R30. Remove all flashing systems and all sheet metal flashings, repair any deteriorated decking found, install new wood nailers, where required. Fully adhered EPDM single ply roof membrane including all flashing, new roof related sheet metal, and accessories as detailed in the specifications and drawings. **Approx. Roof Area A 4,600 sq. ft.**

3. New Roof System: Roof Area A - Ref. Detail 1.01c.
a. Roof Membrane: EPDM, 60 mil, adhered to insulation.
b. Insulation: R30:
1) Top layer mechanically attached over existing layers.
c. Deck: Metal B: Repair as necessary to comply w/ building codes. (if needed)
d. Interior Ceiling: Exposed Deck; Interior Protection, as necessary
e. Building Height: Ground to building edge: 25-30 ft.

4. Warranty/Guarantee:
a. Manufacturer to provide a 20 year "No-Dollar-Limit" material and installation warranty covering the roof system, flashings and manufacturer's accessories.
b. Roofing installer to provide a five (5) year Performance Agreement - see Specification Attachment C.

5. Allowances: \$2,000.00 to be added to Base Bid.

6. Asbestos: Ref. to Section 024119 and Appendix 1: Asbestos testing results to be supplied by TSD selected 3rd party firm and will be incorporated into Appendix 1. Refer to Appendix 1 for asbestos testing results. No ACM.

General Construction Details: Ref. A1.0
Use the General Construction Details on Sheet A1.0 for detail construction description as applicable when any detail is not specifically called out in Key Notes for the applicable Roof Area and Section. Detail drawings called out in General Construction Details can be found on Sheets A7.0 to A7.2. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

Key Notes:
All detail references in Key Notes are considered typical and applicable to like conditions except as specifically amended on this Sheet. Refer to Sheet A1.0 General Construction Detail Notes for applicable construction detail descriptions and Sheets A7.0 to A7.2 for construction detail drawings. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

- Saddle & Crickets:** Contractor to provide saddle and crickets where indicated on roof plan and other areas as required by the roofing membrane system manufacturer.
- Wood Nailers:** Furnish and install wood nailers around perimeters.
- Gutter:** Gutter and accessories to be installed at North and South Elevation. Ref. Details 1.13, 1.14, and Ref. Photo 8789.
- Metal:** Furnish and install new sheet metal to match existing color. Ref. Photo 8783.
- Water Diverters:** Water diverters on N/W & N/E corners of roof to promote drainage into gutter. Ref. Photo 8795.
- Interior Protection** - Furnish and install interior protection under exposed decking. Apply as needed. Ref. Photo 8809.

Symbol Legend					
Symbol	Notes	Symbol	Notes	Symbol	Notes
●	Conduit, Vent Pipe or Other Penetration	⊙	Insulated Pipe or Heat Stack Penetration	■	Pitch-Pan Pocket
⊠	Equipment Unit on Curb	□	Ductwork or Flanged	⊞	Equip. on Wood Sill or Support Curb
H	Roof Hatch on Curb	A	Abandoned Equipment Curb	S	Skylight on Curb
†	Roof Ladder	W	Walkway Pad	⌂	Satellite Dish
⬮	Screen Support Stanchion	⬮	Railing or Fencing	⬮	Pipe or Conduit on Support Block
---	Gas Line	---	Area Divider	---	Expansion Joint
---	Roof Ridges and Valleys	→	Roof Slope	⌂	Elevation Change
⊗	Roof Drain	⊕	New Roof Drain		Scupper
	Overflow Scupper	#	Key Notes	△	Revision
▲	Tapered Insulation or Saddles	▨	Metal Roof	▨	Shingles or Clay Tiles

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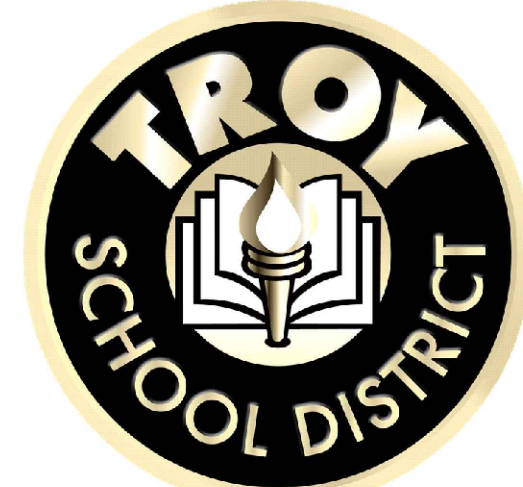


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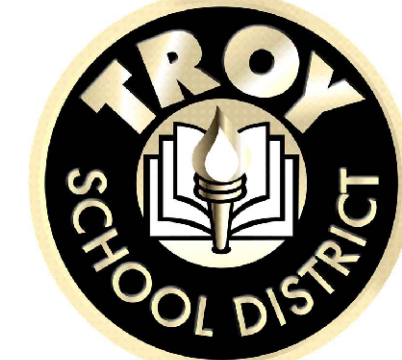
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Troy School District
4400 Livernois
Troy, MI 48098

PROJECT



Troy School District
Service Building
4420 Livernois Rd.
Troy, MI 48098

Troy School District
BID No. 2324-02
2024 Roofing Program

WTPProject No: TSD-R102-24

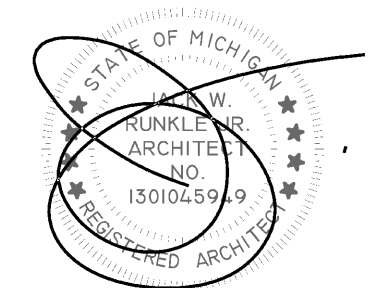
ISSUE

DATE	DESCRIPTION
10/20/2023	Review
10/27/2023	OTB
11/09/2023	Addendum 3

File Name: TSD 2024 - A5.0 Troy School District Services Building
Drawn By: MD
Checked By: PD, AC, AW, JM

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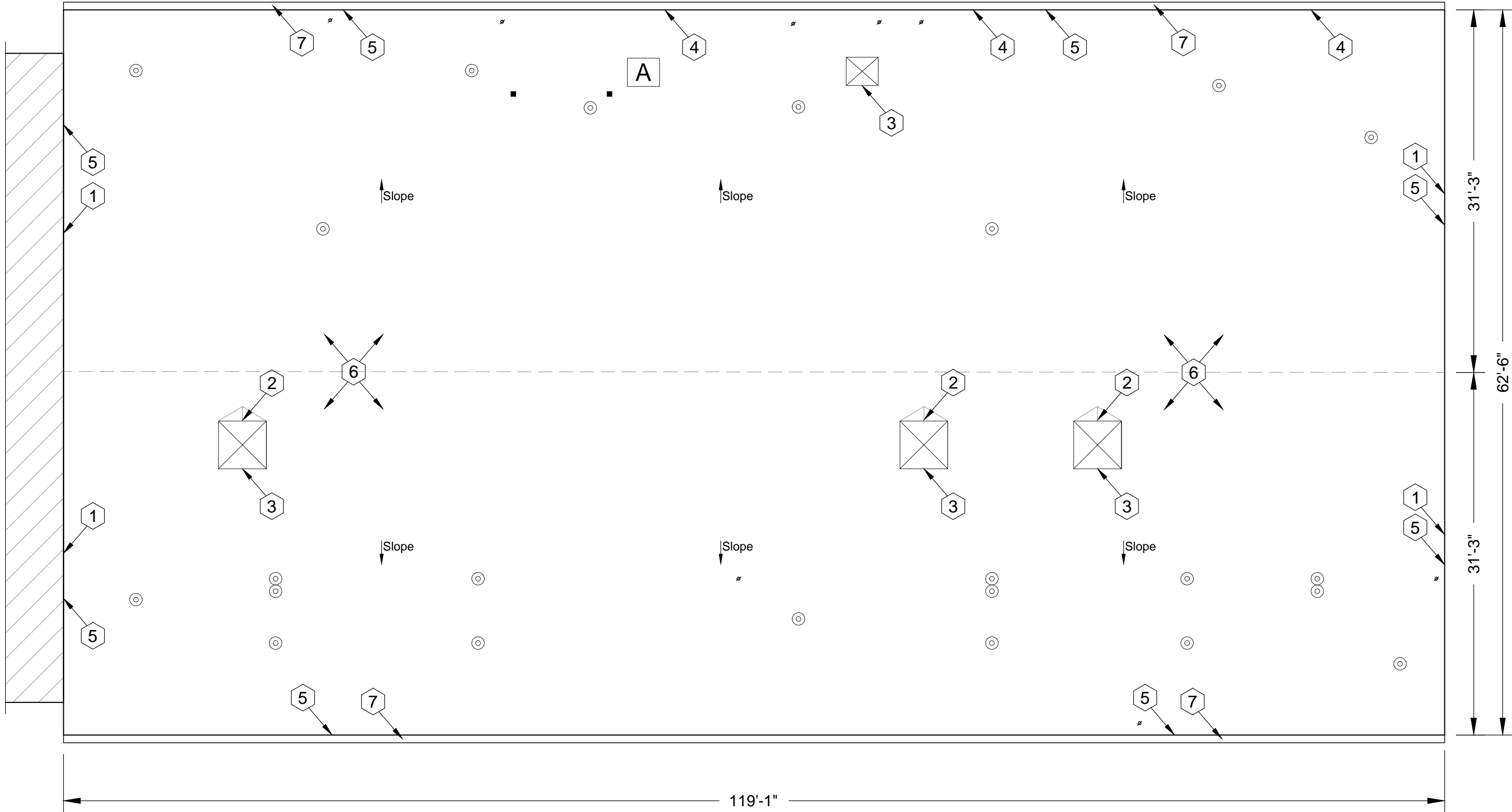


SHEET TITLE

Roof Plan
Service Building
Roof Area A

A5.0

SHEET 7 OF 11



Transportation Building
Roof Area B
Scale: 1/8" = 1'

Photos



8695



8731



8734

Transportation Building - Troy School District
Sheet Notes - Roof Area B
Schedule
WORK DESCRIPTION - ROOF REPLACEMENT

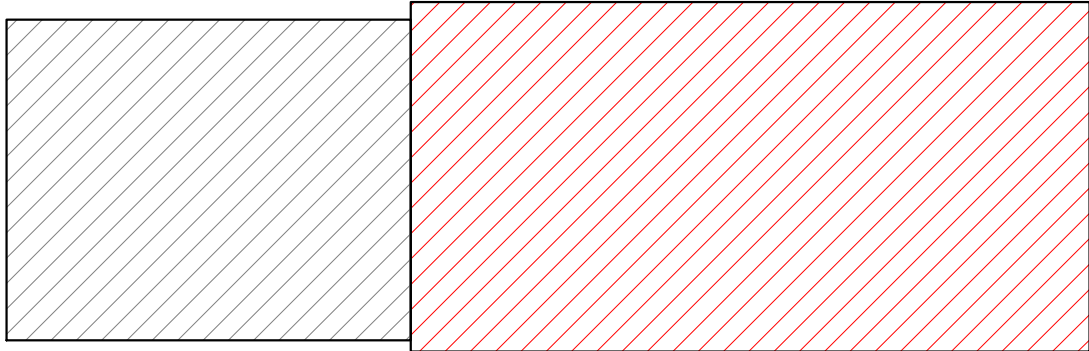
- 1. EXISTING ROOF SYSTEM CONSTRUCTION**
All existing roof system constructions were determined by **limited test cuts** and observation; conditions may vary. Contractor responsible for confirming all existing roof system constructions and conditions.
- Roof Area B Core Sample Results**
a. Roof Membrane: Insulated Modified Bitumen
b. Insulation:
c. Top Layer: 1/2" Fiberglass insulation
d. Bottom Layer: 1-inch perlite insulation
e. Vapor Barrier: Base Sheet
f. Deck: 1/2" Plywood (painted exposed underdeck); Slope in deck. (Contractor to verify.)
- 2. ROOF SYSTEM CONSTRUCTION**
Work includes: Removal and disposal of existing roofing, insulation, flashing systems and all sheet metal flashings down to the surface of the deck, replace all deteriorated decking, wood nailers added to all perimeter edges, install new roof insulation, fully adhered EPDM single ply roof membrane including all flashing, new roof related sheet metal, and accessories as detailed in the specifications and drawings. **Approx. Roof Area B 7,450 sq. ft.**
- 3. New Roof System: Roof Area B - Ref. Detail 1.01a.**
a. Roof Membrane: EPDM, 60 mil, adhered to insulation.
b. Insulation: R30:
1) Top layer set-in low-rise foam adhesive.
2) Base layer mechanically attached to deck.
c. Deck: 1/2" Plywood: Repair as necessary to comply w/ building codes.
d. Interior Ceiling: Garage Setting - No Ceiling, Open deck
e. Building Height: Ground to building edge: 22 ft.
- 4. Warranty/Guarantee:**
a. Manufacturer to provide a 20 year "No-Dollar-Limit" material and installation warranty covering the roof system, flashings and manufacturer's accessories.
b. Roofing installer to provide a five (5) year Performance Agreement - see Specification Attachment C.
- 5. Allowances:** \$4,000.00 to be added to Base Bid.
- 6. Asbestos:** Ref. to Section 024119 and Appendix 1: Asbestos testing results to be supplied by TSD selected 3rd party firm and will be incorporated into Appendix 1. Refer to Appendix 1 for asbestos testing results. No ACM.

General Construction Details: Ref. A1.0
Use the General Construction Details on Sheet A1.0 for detail construction description as applicable when any detail is not specifically called out in Key Notes for the applicable Roof Area and Section. Detail drawings called out in General Construction Details can be found on Sheets A7.0 to A7.2. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.

- Key Notes:**
All detail references in Key Notes are considered typical and applicable to like conditions except as specifically amended on this Sheet. Refer to Sheet A1.0 General Construction Detail Notes for applicable construction detail descriptions and Sheets A7.0 to A7.2 for construction detail drawings. Contractor to provide Shop Drawing as necessary for field conditions not directly identified in Contract Documents.
- 1. Perimeter Edge Metal:** Furnish and install perimeter edge and continuous cleat metal to meet manufacturers specifications. Color to be selected by owner. **Ref. Detail 1.03**
- 2. Saddle & Crickets:** Contractor to provide saddle and crickets where indicated on roof plan and other areas as required by the roofing membrane system manufacturer.
- 3. Roof Curb:** Remove deleted curb, frame and deck and roof over. **Ref. Photo 8695.**
- 4. Additional Sheetmetal Repair:** Add Flanges/water diverters to through wall power vents on rear of building. **Ref. Photos 8731 and 8734.**
- 5. Wood Nailer:** Furnish and install wood nailer to achieve required height.
- 6. Deck:** Repair any/all deteriorated wood deck. **Ref. Photo 8642**
- 7. Gutter:** Gutter and accessories to be installed at North and South Elevation. **Ref. Details 1.13, 1.14.**

Symbol Legend					
Symbol	Notes	Symbol	Notes	Symbol	Notes
●	Conduit, Vent Pipe or Other Penetration	⊙	Insulated Pipe or Heat Stack Penetration	■	Pitch-Pan Pocket
⊠	Equipment Unit on Curb	□	Ductwork or Flanged	⊞	Equip. on Wood Sleeper or Support Curb
H	Roof Hatch on Curb	A	Abandoned Equipment Curb	S	Skylight on Curb
†	Roof Ladder	W	Walkway Pad	☼	Satellite Dish
⬮	Screen Support Stanchion	⬮	Railing or Fencing	⬮	Pipe or Conduit on Support Block
⬮	Gas Line	⬮	Area Divider	⬮	Expansion Joint
---	Roof Ridges and Valleys	⬮	Roof Slope	⬮	Elevation Change
⊗	Roof Drain	⊕	New Roof Drain		Scupper
	Overflow Scupper	⬮	Key Notes	⬮	Revision
⬮	Tapered Insulation or Saddles		Metal Roof	⬮	Shingles or Clay Tiles

KEY PLAN



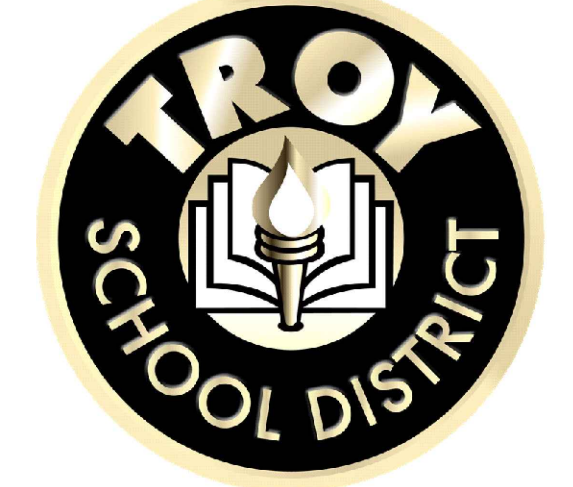
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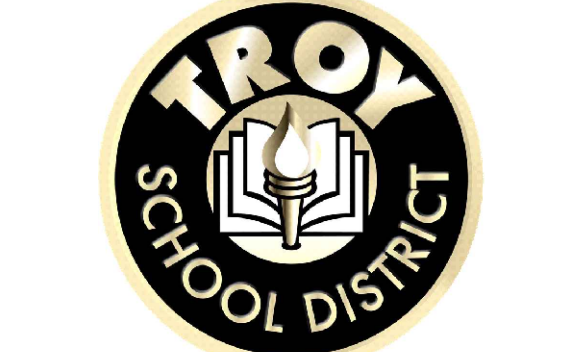
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Troy School District
4400 Livernois
Troy, MI 48098

PROJECT



Troy School District
Transportation Building
120 Hart Ave.
Troy, MI 48098

Troy School District
BID No. 2324-02
2024 Roofing Program

WTPProject No: TSD-R102-24

ISSUE	
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10/20/2023	Review
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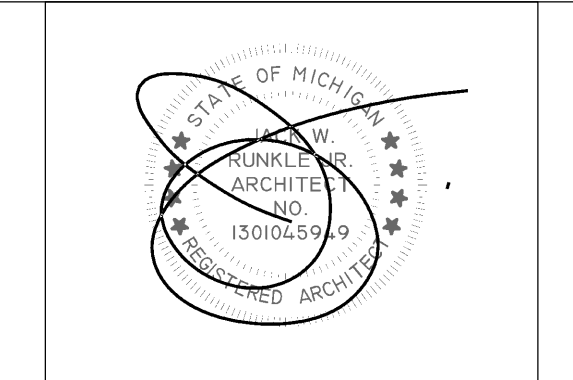
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Drawn By: MD

Checked By: PD, AC, AW, JM

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SHEET TITLE
Roof Plan
Transportation Building
Roof Area B

A6.0

SHEET 8 OF 11

NOTE 1 - ROOF MEMBRANE 60 MIL EPDM - FULLY ADHERED IN BONDING ADHESIVE; FIELD SEAMS ADHERED WITH 6\"/>	NOTE 1 - ROOF MEMBRANE 60 MIL EPDM - FULLY ADHERED IN BONDING ADHESIVE; FIELD SEAMS ADHERED WITH 6\"/>	NOTE 1 - ROOF MEMBRANE 60 MIL EPDM - FULLY ADHERED IN BONDING ADHESIVE; FIELD SEAMS ADHERED WITH 6\"/>		
NOTE 2 - APPLY LOW RISE FOAM ADHESIVE IN 3/4\"/>	NOTE 2 - APPLY LOW RISE FOAM ADHESIVE IN 3/4\"/>	NOTE 2 - ONE LAYERS OF 4 FT. X 4 FT. INSULATION MECHANICALLY ATTACHED THROUGH EXISTING INSULATION TO DECK - SEE SCHEDULE ON ROOF PLAN(S) FOR R-VALUES, TYPE AND THICKNESS OF THE INSULATION LAYER REQUIRED IN EACH ROOF AREA. TAPERED INSULATION ALSO MAY BE REQUIRED ON SOME ROOF AREAS OR FOR CRICKETS AND SADDLES - SEE SCHEDULE AND LAYOUT DRAWINGS ON ROOF PLAN(S) FOR TYPE AND FINISHED SLOPE OF TAPERED INSULATION. STAGGER ALL INSULATION JOINTS		
NOTE 3 - TWO LAYERS OF 4 FT. X 4 FT. INSULATION ADHERED IN LOW RISE FOAM ADHESIVE SHOWN FOR CLARITY - SEE SCHEDULE ON ROOF PLAN(S) FOR R-VALUES, TYPE AND THICKNESS OF EACH INSULATION LAYER REQUIRED IN EACH ROOF AREA. TAPERED INSULATION ALSO MAY BE REQUIRED ON SOME ROOF AREAS OR FOR CRICKETS AND SADDLES - SEE SCHEDULE AND LAYOUT DRAWINGS ON ROOF PLAN(S) FOR TYPE AND FINISHED SLOPE OF TAPERED INSULATION. STAGGER ALL INSULATION JOINTS	NOTE 3 - TWO LAYERS OF 4 FT. X 4 FT. INSULATION ADHERED IN LOW RISE FOAM ADHESIVE SHOWN FOR CLARITY - SEE SCHEDULE ON ROOF PLAN(S) FOR R-VALUES, TYPE AND THICKNESS OF EACH INSULATION LAYER REQUIRED IN EACH ROOF AREA. TAPERED INSULATION ALSO MAY BE REQUIRED ON SOME ROOF AREAS OR FOR CRICKETS AND SADDLES - SEE SCHEDULE AND LAYOUT DRAWINGS ON ROOF PLAN(S) FOR TYPE AND FINISHED SLOPE OF TAPERED INSULATION. STAGGER ALL INSULATION JOINTS			
NEW ROOF CONSTRUCTION PROFILE FULLY ADHERED SYSTEMS W/ NAILABLE DECK SCALE: N.T.S	NEW ROOF CONSTRUCTION PROFILE FULLY ADHERED SYSTEMS W/ VAPOR BARRIER SCALE: N.T.S	OVERLAY ROOF CONSTRUCTION PROFILE FULLY ADHERED SYSTEMS W/ NAILABLE DECK SCALE: N.T.S	CANT-DAM W/ FASCIA SCALE: N.T.S	RAISED EDGE METAL AND FLASHING SCALE: N.T.S
NOTE 1 - DIMENSIONS NOT GIVEN TO BE VERIFIED IN FIELD.				
NOTE 2 - CONTINUOUS CLEAT NOT TO EXCEED 12 LF.				
NOTE 3 - ALLOW 1/4\"/>				
TYPICAL PARAPET/COPING CAP SCALE: N.T.S	PARAPET METAL COPING SCALE: N.T.S	PARAPET COPING CAP CORNERS SCALE: N.T.S	WALL TERMINATION SCALE: N.T.S	COPING CAP W/ DOUBLE LOCK STANDING SEAM SCALE: N.T.S
NOTE - CONTRACTORS TO INSTALL TAPERED INSULATION. DO NOT SHAVE ROOF INSULATION TO MATCH DRAIN INSULATION HEIGHT TO DRAIN BOWL HEIGHT.	NOTE - CONTRACTORS TO INSTALL TAPERED INSULATION. DO NOT SHAVE ROOF INSULATION TO MATCH DRAIN INSULATION HEIGHT TO DRAIN BOWL HEIGHT.			
NOTE 1 - GUTTER OUTLETS AND DOWNSPOUTS TO BE 24 GA. GALV. STEEL, 24 GA. STAINLESS STEEL 16 O.Z. COLD ROLLED COPPER - SEE THE SCHEDULE(S) ON THE ROOF PLAN(S) FOR SPECIFIC REQUIREMENTS FOR EACH ROOF AREA				
NOTE 2 - PROVIDE 1 OUTLET MIN. IN EACH SECTION OF GUTTER.				
NOTE 3 - GUTTER HEIGHT AND WIDTH OUTLET/DOWNSPOUT SIZE TO BE CALCULATED PER SMOGNA RECOMMENDATIONS BASED ON SIZE OF ROOF TO BE DRAINED.				
ROOF DRAIN SCALE: N.T.S	OVERFLOW DRAIN SCALE: N.T.S	ROOF DRAIN SUMP SCALE: N.T.S	ROOF AND OVERFLOW DRAIN SUMP SCALE: N.T.S	GUTTER SCALE: N.T.S

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CLIENT

Troy School District
4400 Livernois
Troy, MI 48098

PROJECT

Troy School District
BID No. 2324-02
2024 Roofing Program

WTProject No: TSD-R102-24

ISSUE

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10/27/2023	OTB
11/09/2023	Addendum 3

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Detail Sheet

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SHEET 9 OF 11

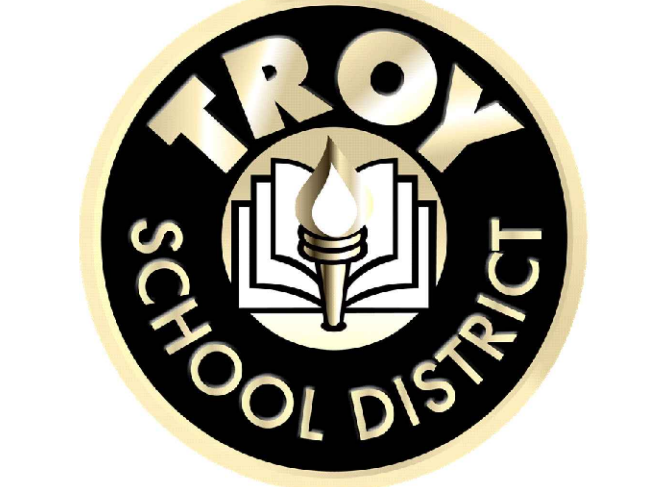
<p>BASE FLASHING W/ TERMINATION BAR AND COUNTERFLASHING ON NAILABLE DECK SCALE: N.T.S</p> <p>1.14</p> <p>2.01</p>	<p>FIELD FABRICATED PIPE FLASHING SCALE: N.T.S</p> <p>2.02</p> <p>2.02</p>	<p>THROUGH ROOF CONDUIT/PIPE FLASHING 2 PC COLLAR SCALE: N.T.S</p> <p>2.03</p> <p>2.03</p>	<p>THROUGH ROOF CONDUIT/PIPE FLASHING SCALE: N.T.S</p> <p>2.04</p> <p>2.04</p>	<p>HEAT STACK FLASHING SCALE: N.T.S</p> <p>2.05</p> <p>2.05</p>
<p>PRE-FABRICATED PIPE FLASHING SCALE: N.T.S</p> <p>2.06</p> <p>2.06</p>	<p>PITCH-PAN POCKET TO NAILER SCALE: N.T.S</p> <p>2.09</p> <p>2.09</p>	<p>EQUIPMENT SUPPORT CURB SCALE: N.T.S</p> <p>2.18</p> <p>2.18</p>	<p>MULTIPLE PENETRATION CLOSURE BOX SCALE: N.T.S</p> <p>3.01</p> <p>3.01</p>	<p>CURB COUNTERFLASHING (SKIRT FLASHING) SCALE: N.T.S</p> <p>3.02</p> <p>3.02</p>

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4400 Livernois
Troy, MI 48098

PROJECT

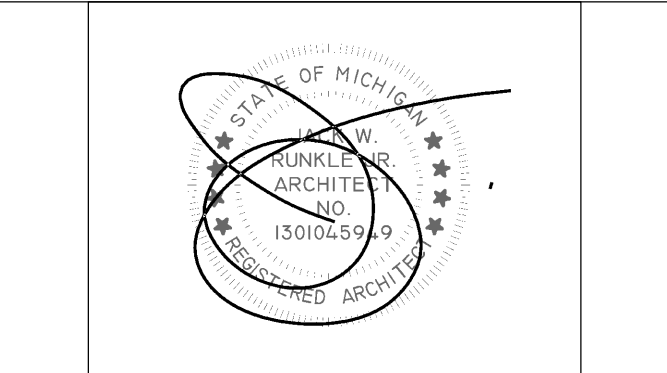
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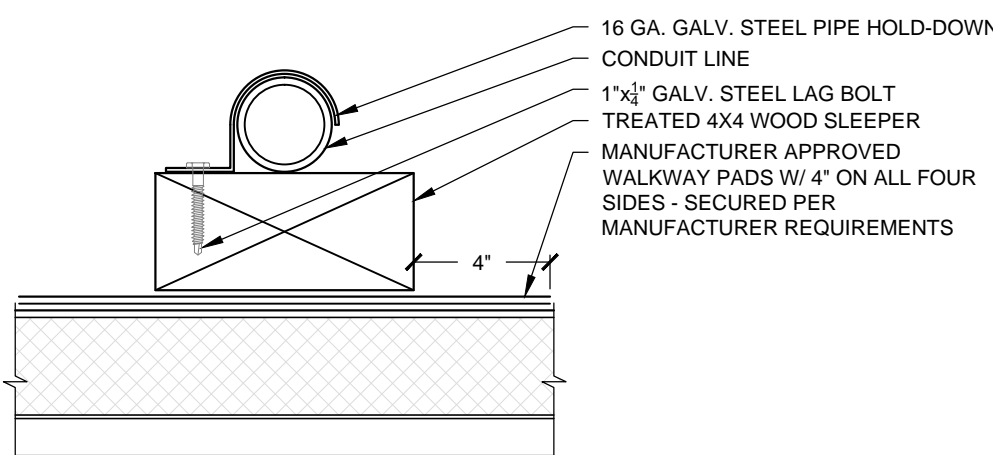
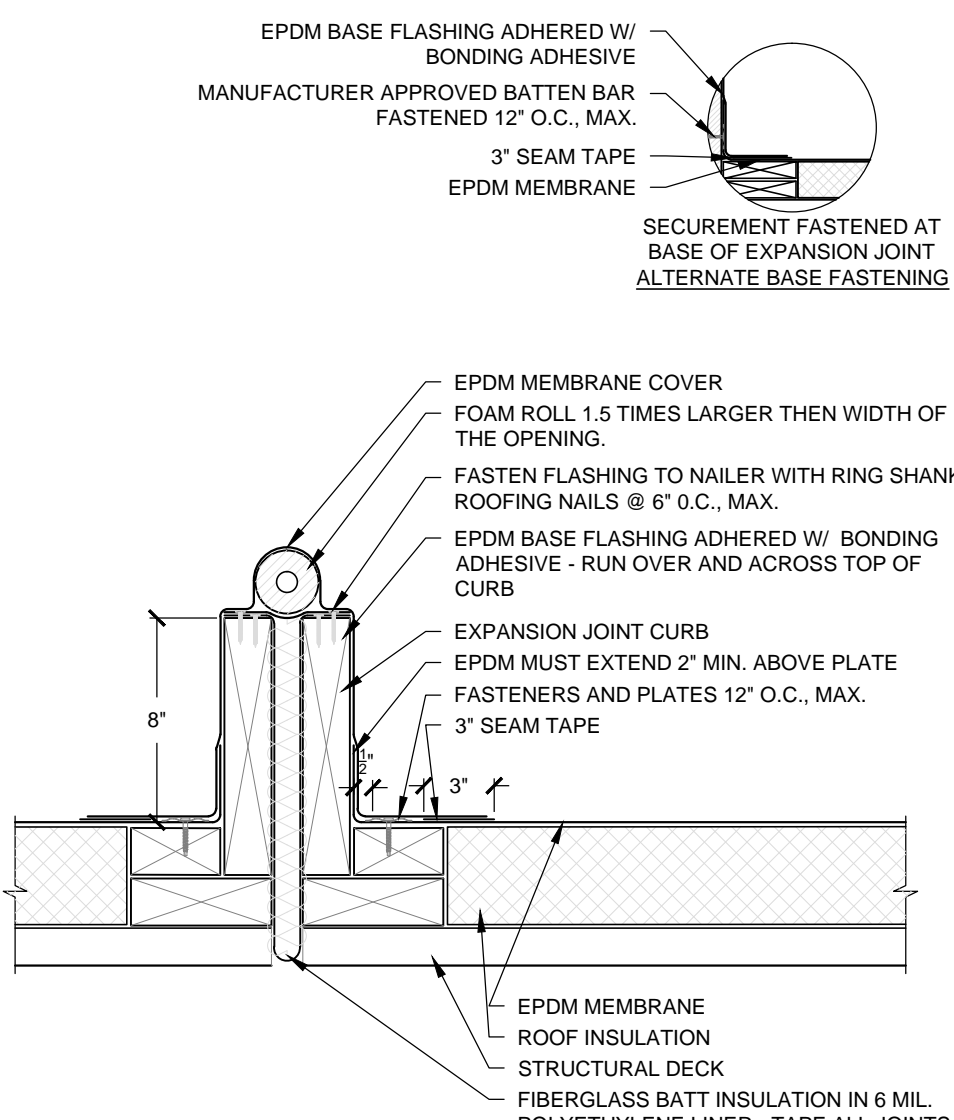
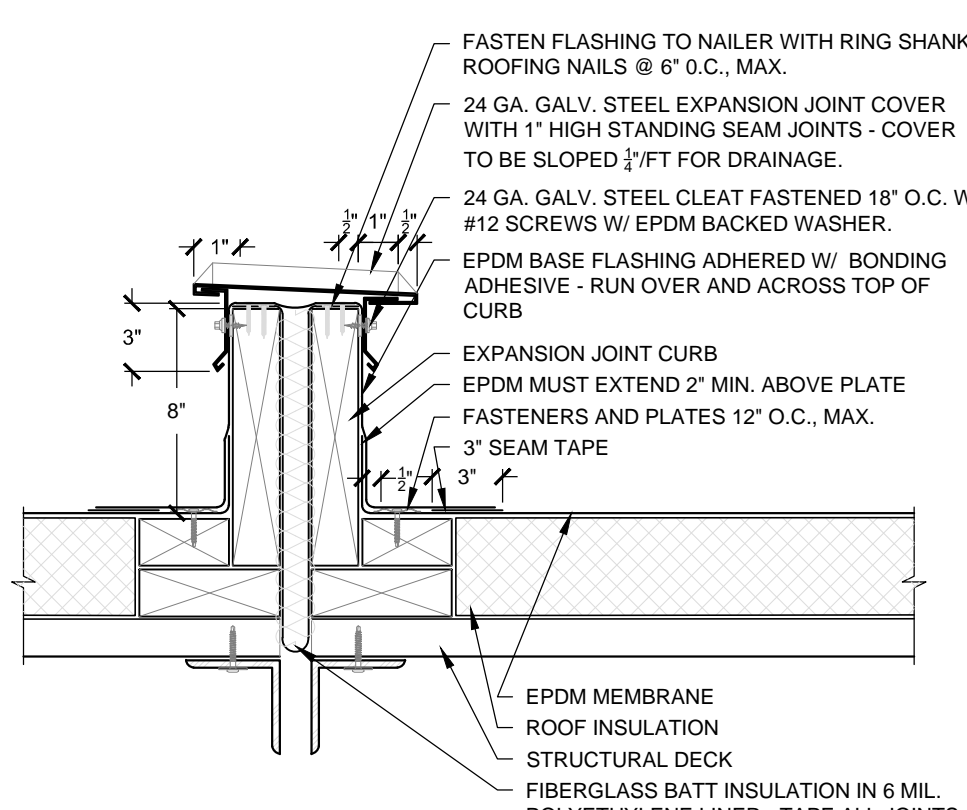
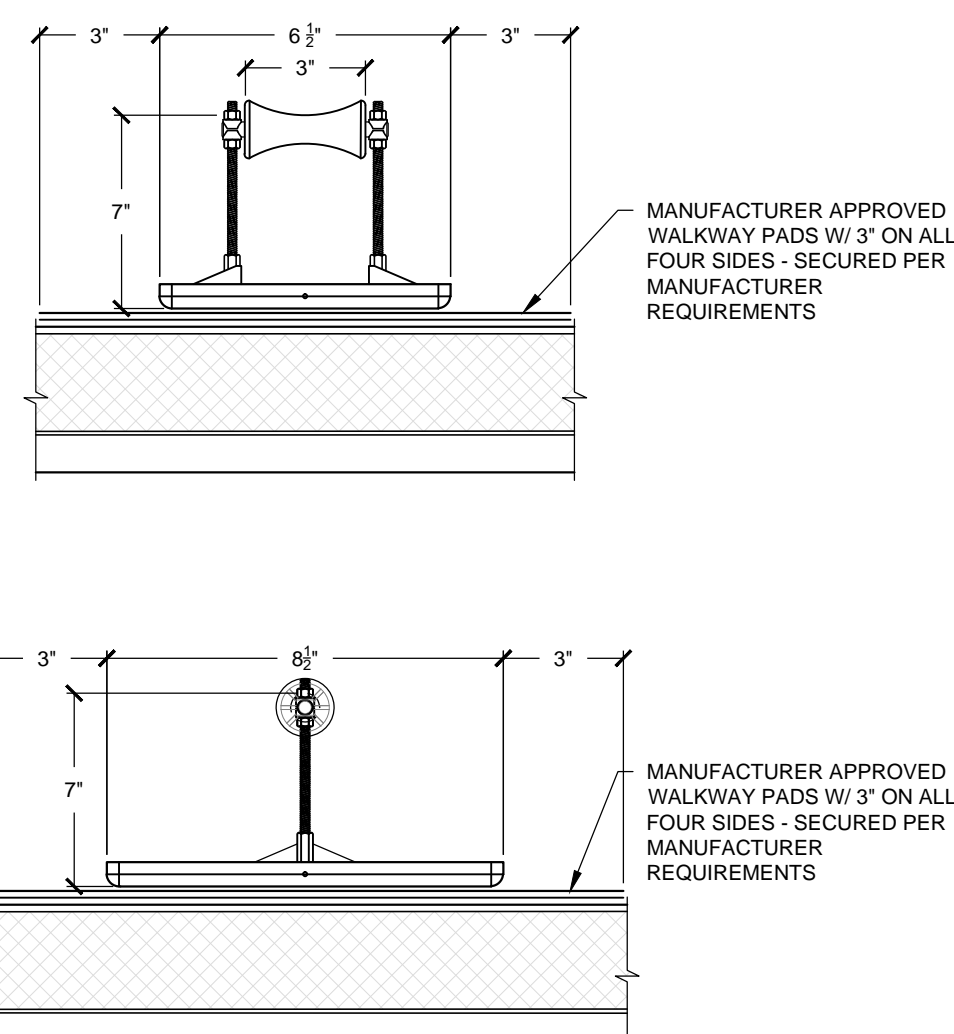
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Detail Sheet

A7.1
SHEET 10 OF 11

	3.03		3.04		3.05		3.11

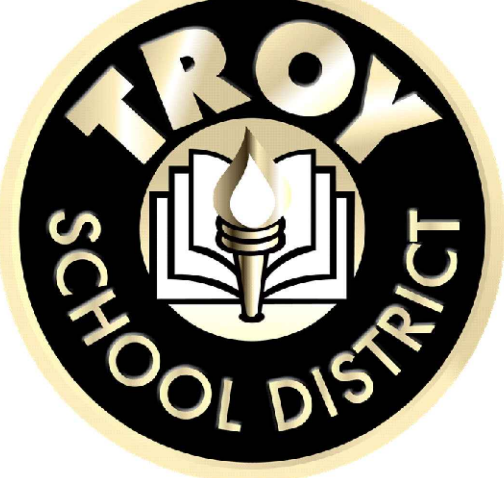
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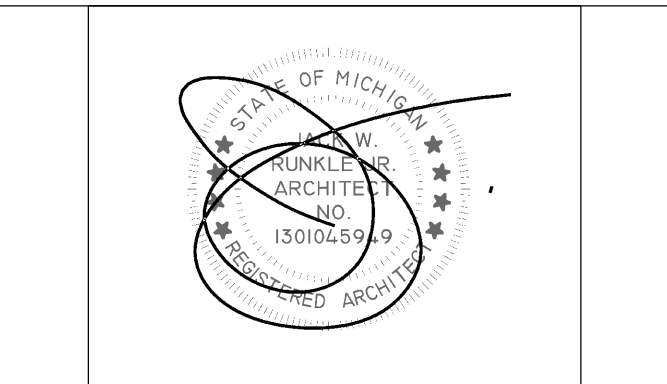
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