OFFICE OF COUNTY MAYOR GLENN JACOBS

Procurement Division, 1000 N. Central Street, Suite 100, Knoxville, TN 37917

Knox County Procurement Division
Addendum II to Invitation for Bid 3503
Farragut High School Roof Replacement

Addendum Date: **January 18, 2024** **Buyer:** **Ben Sharbel**

Opening Date: **February 6, 2024 at 4:00 PM** **Total Page(s):** **Forty-one (41)**

Notes and Clarifications:

1. Please see Addendum II from MBI.

2. The Bid Opening has been extended to February 6, 2024 at 4:00 p.m. Questions may be submitted until January 24, 2024 at 4:30 p.m.

End of Addendum II.

Ben Sharbel, CPPO, CPPB
Supervisor of Property Development & Asset Management
Knox County Procurement Division

MBI

Addendum 02 **Friday, January 12, 2024**

Farragut High School Roof Replacement
Knox County Schools
Bid #3503
MBI #231315

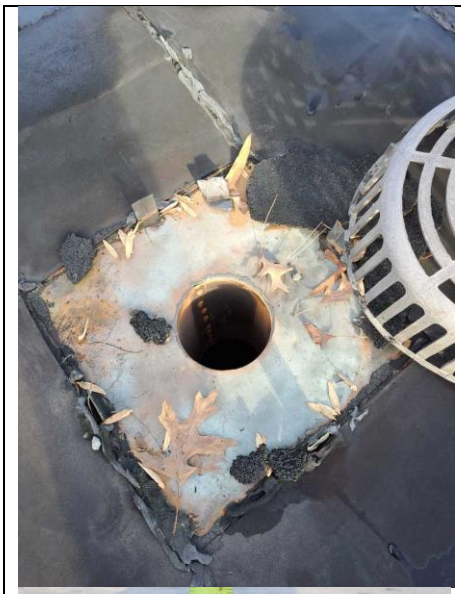
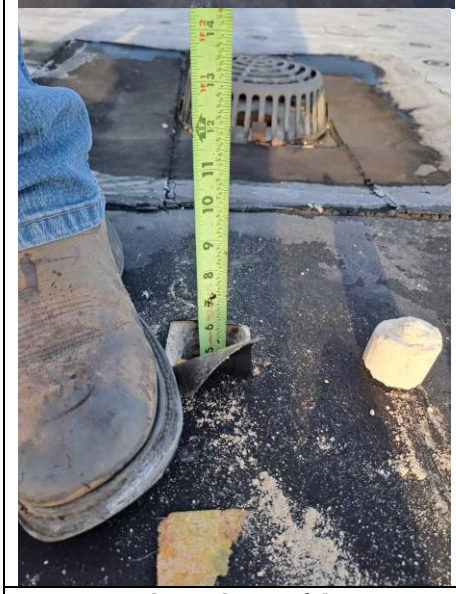
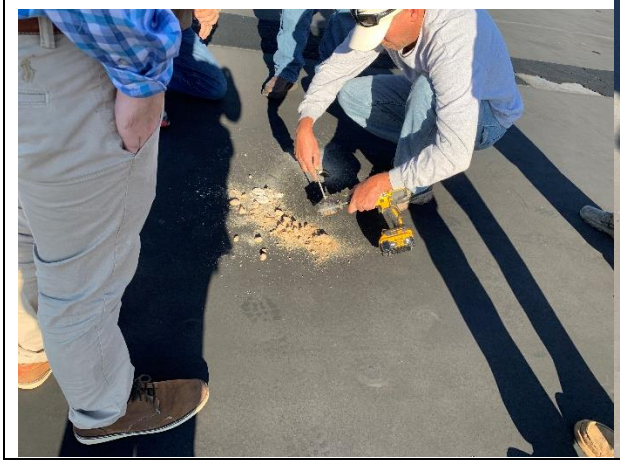
To: Prime contractors and all others to whom drawings and specifications have been issued. This Addendum forms part of the Contract Documents. It supplements and modifies them as follows:

A. Clarifications:

1. Only 3 walk pads per RTU are required at access panels on RTUs. Placement to be coordinated with the contractor during construction. See attached revised Roof Plan drawings.
2. Moving HVAC units and electrical conduit needs to be included in the Prime Contractor's price.

B. Response to bidder's questions are as follows:

General Questions	
Bidder Question:	**Response:**
1. The entire school has a light weight concrete roof deck on top of sloped nonstructural steel form deck or perforated acoustical steel deck. The existing light weight concrete deck system is the structural component to the deck and needs to remain in place. Some of the deck could have light moisture, but installation of a vented base sheet over the entire roof area beneath the new ISO will allow any damp areas to dry over time. Will a vented base sheet be installed? If so, will you provide a product specification? Or will you allow us to use manufacturer required products?	Use manufacturer required products as the basis of design in the drawings and specifications have been modified for these conditions.
2. Most of the roofs have multiple objects such as mechanical equipment, gas lines, sky lights, doors, etc…, that prevent the installation of R30 minimum ISO. It is my understanding that the insulating value of ceiling tiles, attic insulation, and even light weight concrete deck can be counted towards the r value requirements. Will the r value requirement of r 30 be relaxed on this project due to the insulation value of other existing components within the structure? If so, what will the new ISO r value requirement be?	The existing roof components have an R value that reduces the amount of new insulation required.
3. Pull test will be required on all roof areas to determine the appropriate amount and type of fasteners that are needed to achieve design intent. Will the pull test be performed by the owner or designer and provided to the contractor prior to bid date? Or will the contractor be responsible for acquiring this information on their own prior to bid date?	A third party testing allowance has been added.
4. Will there be a light weight concrete deck unit price on the bid form? If so, can you provide plans and specs accordingly?	Yes, see unit prices on bid form.
5. After contacting Harvey, we had a team go out on Saturday to core these roofs. It appears that a majority of this project has lightweight concrete. The scope is currently to tear off to the deck, I wanted to clarify that you all knew that these roofs had lightweight concrete. The roof is 6" deep at the drains, and the current scope will be very expensive. Please see attached photos.	Our intent is to remove the damaged roof membrane and assess the amount of damaged existing substrate. The existing lightweight insulating concrete (LWIC) deck should be evaluated for its condition and strength prior to the commencement of reroofing. After evaluation, if the existing LWIC is found to be a suitable substrate for reroofing, then the old membrane is

 	removed, any holes in the LWIC are patched with gypsum-concrete patch, and the installation of the new roof membrane system may commence.
6. Do you have photos of the core sample of the roof?	Yes, See attached photos.
 	

7. Are the parapet walls going to stay the same on the CTE building, or will they be getting cut down to match the other roofs? I remember alleging being said about those walls in the bid meeting.	The existing parapet walls are to remain, see detail 7/A801.
8. Is the entire project steel deck? If not, what roof areas are not and what type are they?	Yes, metal deck supporting lightweight insulating concrete including built up roof system and an existing single-ply EPDM membrane.
9. Are all roof decks structurally sloped? If not, what roof areas require full tapered insulation?	Yes.
10. Is the base layer of insulation to be screwed or adhered?	Screwed.
11. If the base layer can be screwed should all additional layers of insulation be screwed or adhered?	Adhered.
12. Could you verify if the new roof system will be sloped with insulation taper or structural sloped?	The existing roof is light weight insulating concrete on a sloped metal form deck.

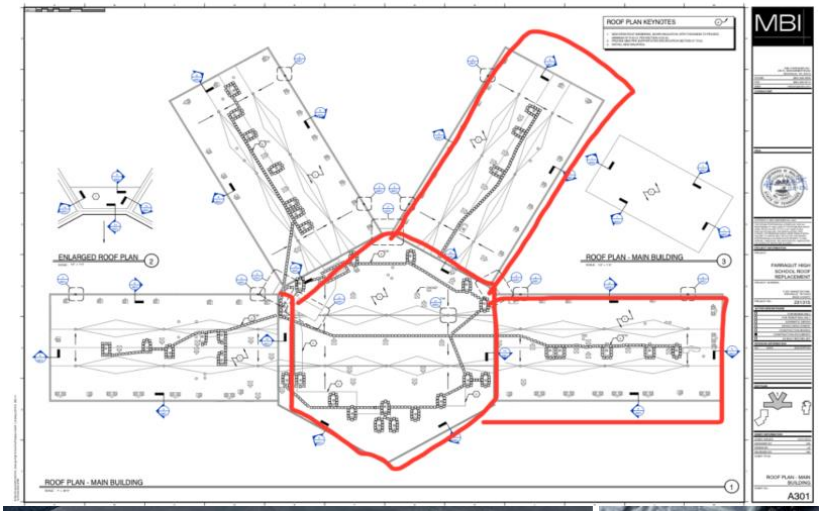
Main Roof Area Questions	
Bidder Question:	**Response:**
1. The existing roof system has 2 configurations:	

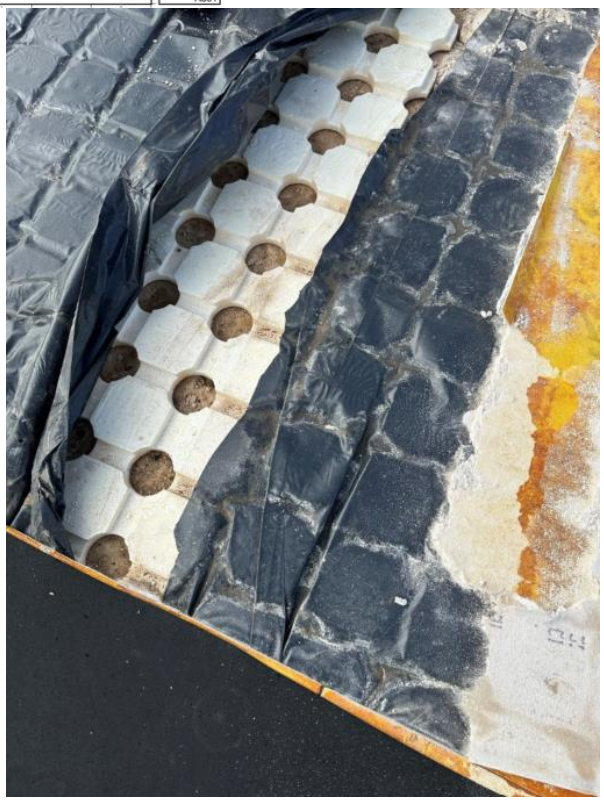
1st roof configuration: (see pic below of the 2 wings not highlighted in red) consist of EPDM adhered to ½" densdeck that is either adhered or mechanically fastened over top of a sloped light weight concrete roof deck, through the structural light weight concrete and into the metal form deck. The deck in these areas appears sound and dry. 2nd roof configuration: (see pic below highlighted in red) consist of EPDM adhered to ¼" densdeck over a plastic vapor barrier over top of a vented Expanded Polystyrene base insulation board, installed over sloped light weight concrete roof deck on top of a nonstructural steel form deck. (see additional pics below of configuration.

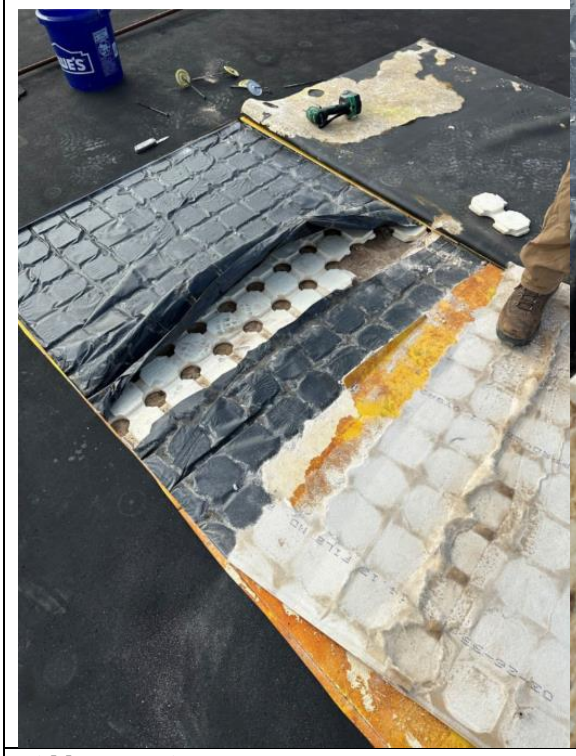
• These areas at some point had some wet or damp light weight concrete roof deck and they attempted to vent it with the vented EPS board. It was unfortunately installed upside down and dis not work as efficiently as intended.

• There was condensation on the underside of the plastic vapor barrier and there was some very light surface moisture on the surface of the deck.

• The light weight concrete deck at this location was sound enough to leave and reroof over.

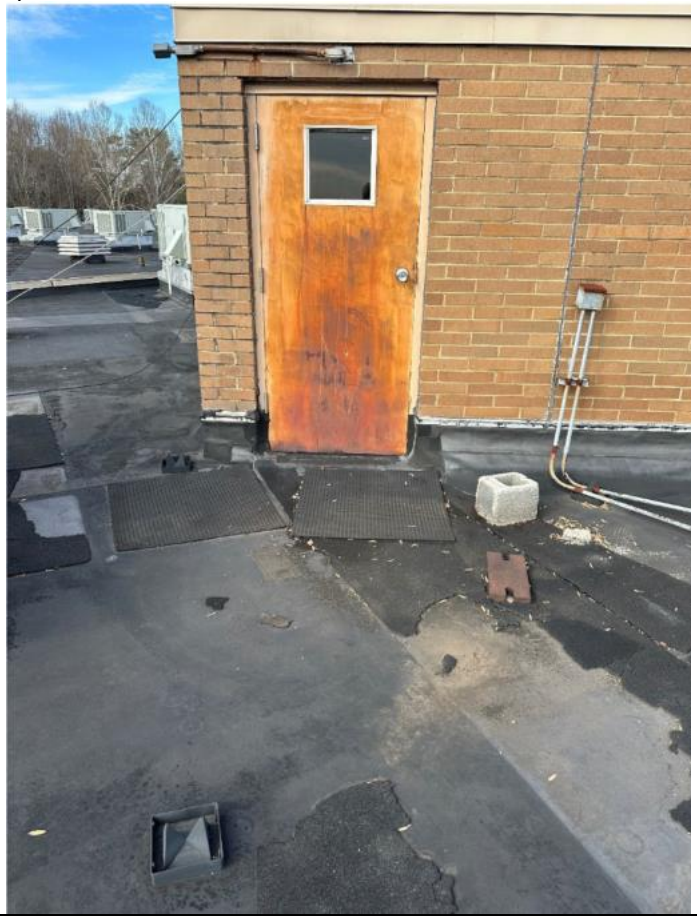




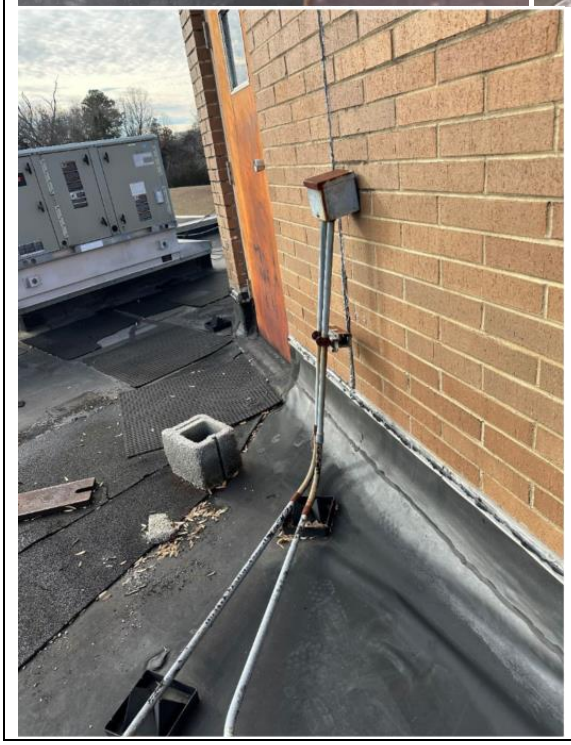


Bidder Question:	**Response:**
Question 1: The pictures above are from the areas highlighted in red. The vented EPS was installed upside down and did not allow the deck to vent like intended. The light weight concrete deck has to remain in place and repairs made where necessary. We believe that if the vented EPS is dry enough that it could be reused by turning it over properly where it will allow it to vent like it is supposed to. On the main roof area not highlighted in red above, we believe that a vented base sheet should be installed over top of the existing light weight concrete roof deck. Then install the base layers of ISO (thickness TBD) mechanically attach all of these components through the light weight concrete into the nonstructural steel form deck. Then adhere the new coverboard to the top of the mechanically attached ISO base layer/s adhere the new EPDM membrane. On the area highlighted in red above, we believe we a vented base sheet should be installed over top of the existing light weight concrete roof deck. (if the vented EPS is reusable, then reinstall it over top of the vented base sheet if desired). Then install the base layers of ISO (thickness TBD) mechanically attach all of these components through the light weight concrete into the nonstructural steel form deck. Then adhere the new coverboard to the top of the mechanically attached ISO base layer/s. 1A – Can you provide direction on how you intend to address these issues?	All existing roof system to be removed down to the existing lightweight insulating concrete on metal deck structure. The manufacturer may not provide a warranty for a partially installed existing system to remain in place.
2. The light weight concrete roof deck is poured on a light gauge nonstructural steel form deck and pull test are required to determine the number of fasteners needed to meet the specifications. Will pull test be provided by the designer prior to bid date or will contractor be responsible for administering their own pull test? Will Knox County allow for additional funding to investigate pull values after award to determine how many fasteners are needed? Or will it be required to investigate and perform pull test prior to bid submittal?	Third party testing allowance has been included on the bid form.

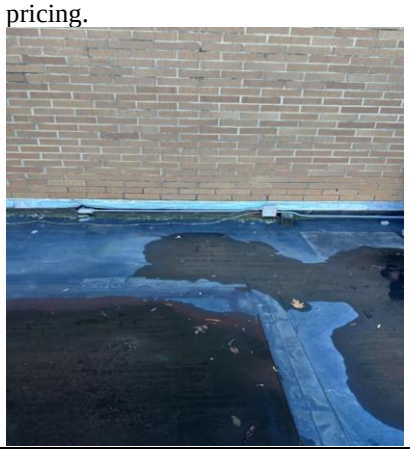
3. Sheet A001 Demolition Key Notes number 1 states, "remove existing layers of roof membrane, protection board, and board insulation to metal roof deck." The roof deck is a light weight concrete roof deck, there is no board insulation. If we remove the entire roof system down to the metal form deck it will be required to replace the form deck with a new structural steel deck or we will have to pour new light weight concrete on top of the existing steel form deck which will add millions of dollars to the cost of construction and likely shut the school completely down for 6 plus months. 3A - If we are to tear off down to the metal form deck, will we be required to replace it all with new structural steel deck or pour new light weight concrete on the existing steel form deck? If so, please provide the proper specifications and details. 3B - Or will be required to only tear off down to the light weight concrete roof deck? 3C - Will we be required to provide unit cost to replace bad light weight concrete roof deck? If so, please provide a material to use and details. There is a product called pyrofil that is about the best material suited for replacing small areas of bad light weight concrete. 3D - In the event we have some bad light weight concrete roof deck, will it acceptable to replace a section with structural steel deck that spans from bar joist to bar joist? This option will be much more accommodating to a reroof project due to its availability and speed of replacement verses having to wait on Pyrofil to cure. It would require matching up the existing deck thickness with new tapered ISO as closely as possible. 3E – the existing light weight concrete offers some existing R value that can be deducted from the R30 requirement. We believe the R value of the existing light weight is between 6 -8 R points, possibly more. Can you provide us with the R value of the existing light weight concrete roof deck? Or can you provide us with the thickness and R value of the insulation we need to provide on each roof area?	All existing roof system to be removed down to the existing lightweight insulating concrete on metal deck structure. See specifications for Gypsum Patching material for replacing bad lightweight insulating concrete. The existing lightweight insulating concrete can be subtracted from the R30 requirement. We estimate the exiting insulating value to be an average of R8.
4. The metal vents that are installed are there for the purpose of venting the roof deck to help it dry out. The drawings indicate to remove and dispose of them. Leaving those in place, in conjunction with a new vented base sheet and properly installed vented EPS (if EPS is reused) will allow the roof deck to properly dry over time. Will these roof vents still be required to be replaced or reused? The addition of new 1 way roof vents would help ventilate the roof deck. Will new roof vents be installed? If so, will you provide a product to use? Or should we use manufacturer suggested one way roof vents?	Use manufacturer suggested vent system to replace the existing vents.
5. The majority of the roof drains on the main building are not complete drains. They each have a shop fabricated metal sleeve installed in them. There is no evidence apparent that any of the existing drain parts are present. Will drain inserts be required in these locations? Or will we be required to add new roof drains? If adding new roof drains, then we need details and specifications including existing plumbing design and installation.	Use drain inserts.

	
6. There are elevation issues with many items on the main building that currently will not allow for the addition of R30 ISO. Will the door be required to be replaced or altered? If so, can you please provide a specification and detail? 	The existing door is to remain, adjust door and frame as required. The bottom of the door and door frame may need to be modified to maintain the sill height above the roof level.

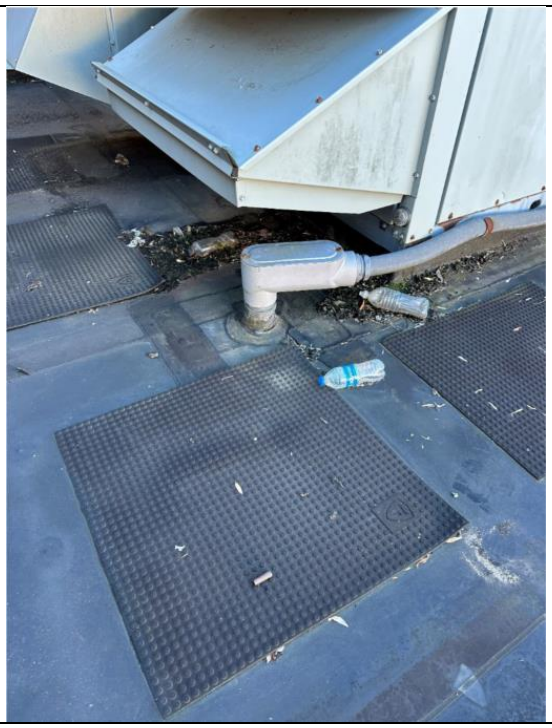
7. There are numerous locations where electrical conduit, panels and junction boxes are at an elevation that would require modification to accommodate R30. Will Knox County School utilize their own maintenance department to relocate electrical conduits, boxes, panels, etc…? If not, then who will be responsible for relocation of these items? If the contractor is responsible for relocation, then we need an electrical bid package and scope of work provided that gives pertinent information such as breaker panel locations etc…	It is the Contractor's responsibility for lifting HVAC, piping, gas piping, and electrical as required.

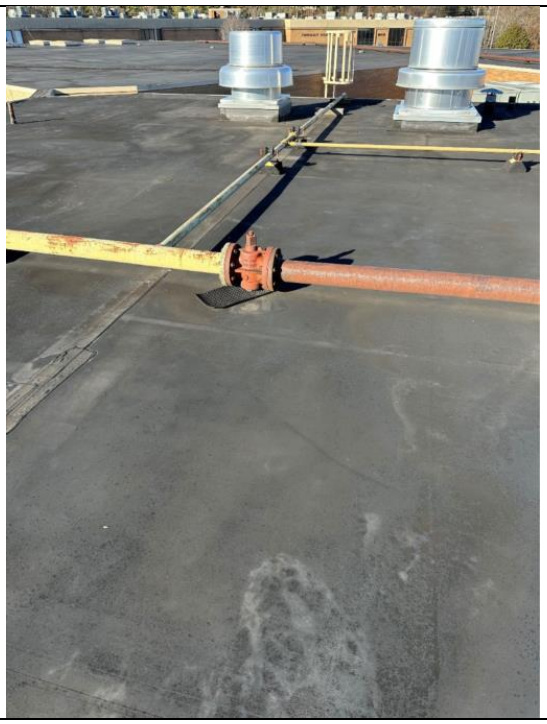
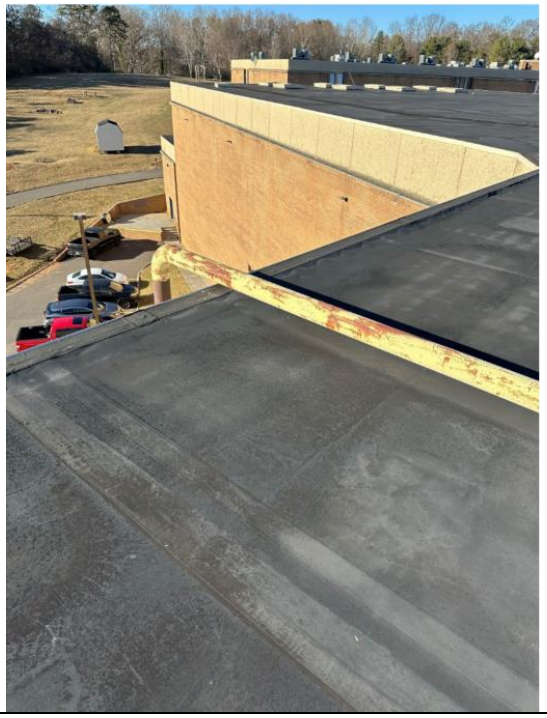


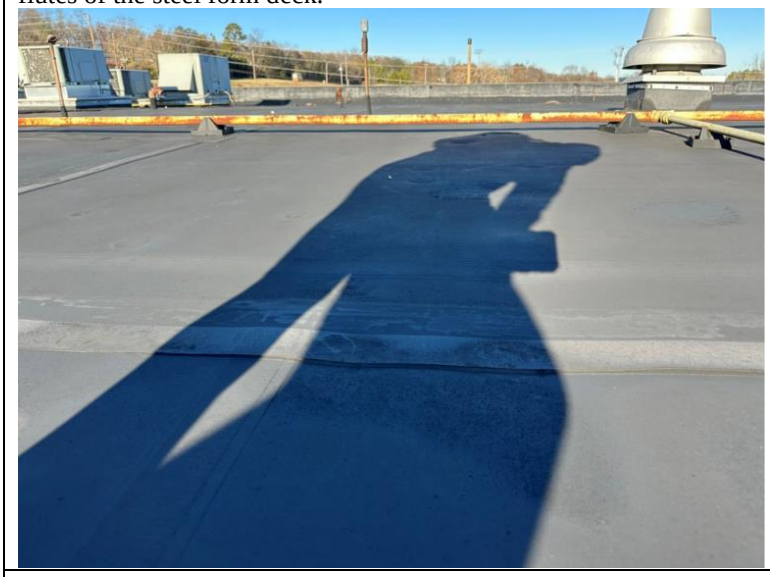
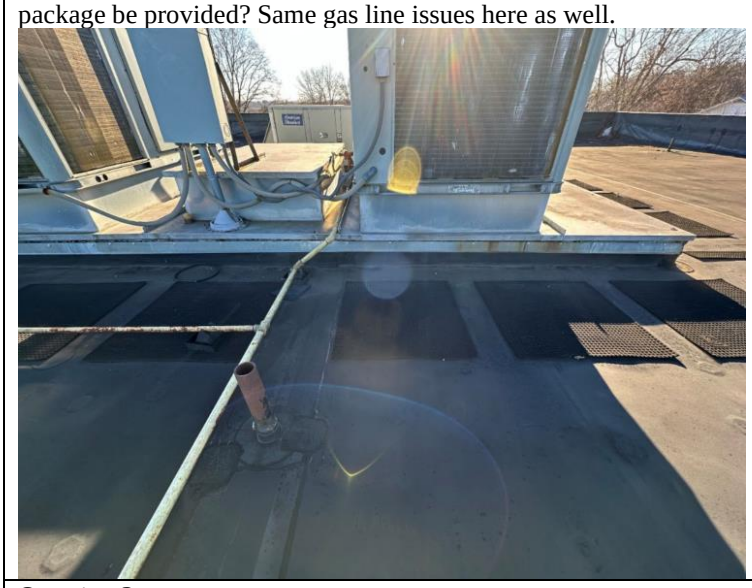
8. There are multiple existing mechanical supports and curbs that will not accommodate the designed R30 requirement. Will Knox County utilize their own mechanical department to raise these curbs and supports? If not, who will be responsible? If the contractor will be responsible, will a mechanical bid package be provided? 	It is the Contractor's responsibility for lifting HVAC, piping, gas piping, and electrical as required.
9. It appears that on the main building and auditorium that the existing perimeter wood blocking has been installed or cut on a cant. Are we to remove it and make it level before installing the new wood blocking? Or leave the existing in place and shim as needed to make the new wood as level as possible? 	Leave the existing perimeter wood blocking in place and shim as needed to make the new wood as level as possible.

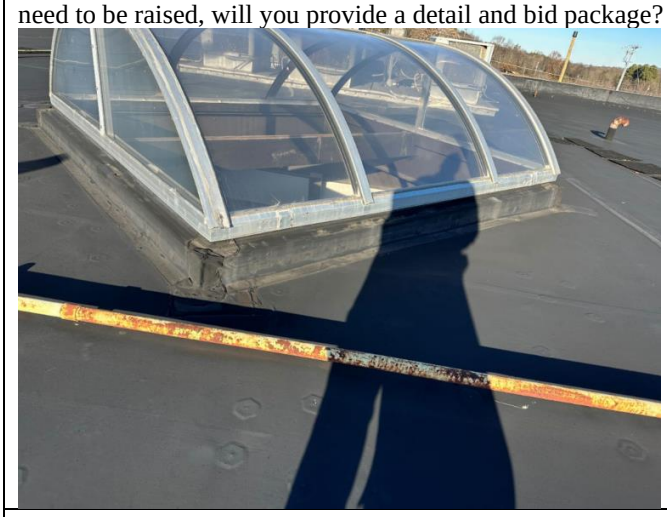
Auditorium Questions	
Bidder Question:	**Response:**
1. The existing roof system consist of ½" densdeck either adhered or mechanically fastened over top of a light weight concrete roof deck. The light weight concrete roof deck is poured on a light gauge nonstructural steel form deck. We believe some of this building could be a perforated acoustical steel deck with light weight concrete poured over it. Sheet A002 Demolition Key Notes number 1 states, "remove existing layers of roof membrane, protection board, and board insulation to metal roof deck." The roof deck is a light weight concrete roof deck, there is no board insulation. If we remove the entire roof system down to the metal form deck it will be required to replace the form deck with a new structural steel deck or we will have to pour new light weight concrete on top of the existing steel form deck. 1A - If we are tear off down to the metal form deck, will we be required to replace it all with new structural steel deck or pour new light weight concrete on the existing steel form deck? 1B - Or will be required to only tear off down to the light weight concrete roof deck? 1C - Will we be required to provide unit cost to replace bad light weight concrete roof deck? 1D - In the event we have some bad light weight concrete roof deck, will it acceptable to replace a section with structural steel deck that spans from bar joist to bar joist? This option will be much more accommodating to a reroof project due to its availability and speed of replacement verses having to wait on light weight concrete to cure. 1E – the existing light weight concrete offers some existing R value that can be deducted from the R30 requirement. We believe the R value of the existing light weight is between 6 -8 R points. Can you provide us with the R value of the existing light weight concrete roof deck? Or can you provide us with the thickness and R value of the insulation we need to provide on each roof area?	All existing roof system to be removed down to the existing lightweight insulating concrete on metal deck structure. See specifications for Gypsum Patching material for replacing bad lightweight insulating concrete. The existing lightweight insulating concrete can be subtracted from the R30 requirement. We estimate the exiting insulating value to be an average of R8.
2. There are elevation issues with the electrical conduit and counterflashing that will not accommodate R-30 insulation thickness. Will Knox County School utilize their own maintenance department to relocate electrical conduits such as this? If not, then who will be responsible for relocation of these items? If the contractor is responsible for relocation, then we need an electrical bid package and scope of work provided that gives pertinent information such as breaker panel locations etc… and ample enough time to find subcontractors to provide pricing. 	It is the Contractor's responsibility for lifting HVAC, piping, gas piping, and electrical as required.

3. On this low roof area there are several issues. There is no existing overflow scupper. Do you want to add an overflow to this area? If so, please provide a detail. Also, this area has elevation issues with the mechanical units and associated duct work. Will Knox County Schools utilize their own mechanical department and subs to complete the required work on these units? If not, can a mechanical bid package be provided along with ample time to procure subcontractor pricing? 	See parapet scupper detail and roof plan for locations.
 	
4. Question 4: There is an electrical junction box that will need to be extended in order to accommodate R30 ISO. Sometimes there is enough slack in the electrical wires to move up, but most of the time there is not. This could require pulling all new electrical. Will this be done by Knox County Schools maintenance department or one of their subs? If not, who will be responsible? If the contractor is responsible, will an electrical bid package be provided along with drawing that direct us where panels are located and existing lines run?	It is the Contractor's responsibility for lifting HVAC, piping, gas piping, and electrical as required.

	
5. There are a number of existing smoke vents that will need to be raised in order to accommodate the specified R30 ISO. Will Knox County utilize their own mechanical department to raise these smoke vents? If not, who will be responsible? If the contractor will be responsible, will a mechanical smoke vent bid package be provided along with ample time to procure the necessary subcontractor pricing? Or will the insulation requirements be relaxed in these locations? Raising smoke vents can be pricey. 	It is the Contractor's responsibility for lifting HVAC, piping, gas piping, and electrical as required.
6. All of the existing gas line is at an elevation that will not accommodate R30 ISO. Will Knox County Schools utilize their own maintenance department to raise the gas lines to the appropriate elevation? If not, who will be responsible? If the contractor is responsible, will a gas line bid package be provided?	It is the Contractor's responsibility for lifting HVAC, piping, gas piping, and electrical as required.

	
7. As can be seen, the gas line in sitting on the roof. The joints in this line are welded and will require them to be cut off and a professional welder brought in to properly weld back to raise the gas line to accommodate R30 ISO. Again, will Knox County be raising the gas lines with their own forces or subs? 	It is the Contractor's responsibility for lifting HVAC, piping, gas piping, and electrical as required.

Vocational Roof Questions	
Bidder Question:	**Response:**
Roof Area: Vocational Building It appears that the existing roof system consist of ½" densdeck mechanically attached through a sloped light weight concrete over what we believe is a perforated acoustic steel form deck with EPS sound absorbing insulation in the flutes of the steel form deck. 	
Question 1: All of the existing gas line is at an elevation that will not accommodate R30 ISO. Will Knox County Schools utilize their own maintenance department to raise the gas lines to the appropriate elevation? If not, who will be responsible? If the contractor is responsible, will a gas line bid package be provided?	It is the Contractor's responsibility for lifting HVAC, piping, gas piping, and electrical as required.
Question 2: There are potential elevation issues with existing mechanical equipment curbs that may not accommodate the designed R30 requirements. Will Knox County utilize their own mechanical department to raise these curbs and supports? If not, who will be responsible? If the contractor will be responsible, will a mechanical bid package be provided? Same gas line issues here as well. 	It is the Contractor's responsibility for lifting HVAC, piping, gas piping, and electrical as required.
Question 3: We do not believe there is enough elevation to accommodate the design intent of	It is the Contractor's responsibility for lifting HVAC,

R30 ISO. Will this skylight be required to be raised, if needed? If does indeed need to be raised, will you provide a detail and bid package? 	piping, gas piping, and electrical as required.
Question 4: The existing parapet on this building is a decorative concrete panel that is only about 4" wide and is set to an elevation about 3' above the roof deck. This wall is currently flashed with membrane to the top outside edge and an aluminum termination bar installed. The drawings indicate to remove and dispose of all the membrane and existing termination bar. The termination can likely be removed without damage to the concrete panel. Detail 7 A801 shows to install the new membrane partially up the wall and install a new t-bar and counterflashing. There are control joints in those panels that will be impossible to keep from leaking over time. The only fix for waterproofing the control joints would be to flash the parapet wall to the top outside edge and install a metal cap flashing. Will the membrane be required to extend up and over the parapet wall? If the membrane extends over the top of the parapet wall, there may need to be a 2x4 wood blocking on top of the parapet wall. Will we be required to install wood blocking on top of the parapet wall? If so, can you provide a detail for the attachment method? Note: If adding blocking, please note that hammer drilling the top of the wall will likely cause it to spald out, crack, or bust because the wall is so narrow. Is there an alternate method of attachment of the blocking that can be utilized, such as adhesive or some type of bracket that extends down the face of the wall enough to fasten it? There is a possibility that a coping and cleat system could be provided that eliminates the need for wood blocking in this location.	See detail Parapet Detail 7/A801 provide caulking at control joint from termination bar up the parapet at the top and down the face of the control joint.

C. Attachments

Specifications:

1. 01 21 00 - Allowances and Unit Prices_ADD02
2. 00 41 13 - Bid Form_Single Prime_ADD02
3. 01 21 00 - Allowances and Unit Prices_ADD02

Drawings:

1. G000 – COVER SHEET
2. A301 - ROOF PLAN - MAIN BUILDING
3. A302 - ROOF PLAN – AUDITORIUM
4. A303 - ROOF PLAN – VOCATIONAL

End of Addendum 02

TO: Knox County Procurement Division
Invitation to Bid #3503
1000 N. Central Street, Suite 100
Knoxville, TN 37917

DATED: _____, 2024

Having carefully examined the Invitation and Instructions to Bidders, the General Conditions of the Contract and Specifications entitled "Farragut High School Roof Replacement" and the Drawings similarly entitled, as well as the premises and conditions affecting the work, the Undersigned proposes to furnish all materials and labor called for by them for the work in accordance with said documents for the sum of:

_____Dollars ($_____).

hereinafter referred to as the Base Bid.

The Bidder includes the following Contingency Allowance in the Base Bid for $75,000 as specified in Section 01 21 00 – Allowances and Unit Prices.

The Bidder sets forth the following Unit Prices, including delivery, installation, insurance, overhead, taxes, profit, etc. as a price per indicated unit of measurement for materials and/or services to be added to or deducted from the Contract Sum by appropriate modifications during construction.

Tectum roof deck replacement _____
Per square foot

Metal roof deck replacement _____
Per square foot

Insulation board:

1/2 inch thick polyisocyanurate _____
Per square foot

1-1/2 inch thick polyisocyanurate _____
Per square foot

3 inches thick polyisocyanurate _____
Per square foot

Tapered insulation _____
Per square foot

Retrofit roof drain replacement _____
Each

Pressure treated wood nailers:

2x4 _____
Per linear foot

2x6 _____
Per linear foot

2x8 _____
Per linear foot

2x10 _____
Per linear foot

2x12 _____
Per linear foot

Plywood decking _____
Per square foot

Gypsum Patch _____
Per square foot

_____

If written notice of the acceptance of this bid is mailed, emailed, or delivered to the Undersigned within ninety (90) days after the date of receipt of bids or at anytime thereafter before this bid is withdrawn, the Undersigned agrees that he will execute and deliver a Contract on the forms which will be provided him in accordance with bid as specified; and that he will give performance and payment bonds as specified with good and sufficient surety or sureties all within ten (10) days, unless a longer period is allowed after the prescribed forms are presented to him for signature.

The Bidder proposes to complete the work within _____ consecutive calendar days from the Notice to Proceed. The Bidder, by submitting this Bid, agrees to furnish labor, materials, equipment, etc., necessary to complete the work by the above stated dates and to accept the conditions for liquidated damages in the amount of **Five Hundred Dollars ($500.00)** per calendar day. The above stated dates for completion of this project are of utmost importance to the Owner.

The Undersigned hereby acknowledges receipt of all Contract Documents including all pages of the Specifications, all sheets of the Drawings, and the following Addenda:

Addendum No. ___ Date: _____ Addendum No. ___ Date: _____

Addendum No. ___ Date: _____ Addendum No. ___ Date: _____

Addendum No. ___ Date: _____ Addendum No. ___ Date: _____

Sincerely,

_____
Bidder (If by a Corporation, this Bid must have the Signature Required by its By-Laws)

_____ _____
Title Firm Name

_____ _____
State of Incorporation State License No.

_____ _____
Email Address

_____
Official Address

_____
Phone Number

END OF SECTION 00 41 13 - BID FORM - SINGLE PRIME

SECTION 01 21 00 - ALLOWANCES AND UNIT PRICES

PART I GENERAL

1.01 SCOPE:

A. This section includes administrative and procedural requirements governing Allowances and Unit Prices.

B. Allowances included on the drawings or in individual specification sections not specifically listed herein shall be bound by the procedures described herein. The Schedule of Allowances may not be a comprehensive list of all Allowances to be included in the Bid.

1.02 RELATED DOCUMENTS:

A. Applicable provisions of the General Conditions, Supplementary Conditions, and Division 1 General Requirements apply to the work under this section.

1.03 ALLOWANCES:

A. Types of allowances include the following:

1. Unit Cost Allowances.
2. Contingency Allowance.

B. Selection And Purchases:

1. At the earliest practical date after award of the Contract, advise the Architect of the date when the final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
2. At the Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
3. Purchase products and systems selected by the Architect from the designated supplier.

C. Submittals:

1. Include each allowance on the Schedule of Values, with expenditures tracked on a monthly basis. Refer to Section 01 29 00 Payment Procedures.
2. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
3. Submit invoices or delivery slips to show the actual quantities of materials delivered to the site for use in fulfillment of each allowance.
4. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit costs, and to have this work measured, at the Owner's expense, by an independent surveyor acceptable to the Contractor.
5. Schedule: A "Schedule of Allowances" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials described under each Allowance.

D. Unused Materials:

1. Return unused materials to the manufacturer or supplier for credit to the Owner, after installation has been completed and accepted.

2. When requested by the Architect, prepare unused material for storage by Owner where it is not economically practical to return the material for credit. When directed by the Architect, deliver unused material to the Owner's storage space. Otherwise, disposal of unused material is the Contractor's responsibility.

E. Unused Allowances:

1. Credit any unused portions of allowances to the Owner.

1.04 UNIT PRICES:

A. Definitions:

1. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modifications, if the estimated quantities of Work required by the Contract Documents are increased or decreased.

B. Procedures:

1. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, profit, and applicable taxes.

2. Measurement and Payment: Refer to individual Specifications for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

PART II PRODUCTS

NOT USED

PART III EXECUTION

3.01 SCHEDULE OF ALLOWANCES:

A. Allowance No. 1: Contingency:

1. Description: Allowance included in the Base Bid of $75,000 for items unknown that may have to be addressed during roof replacement including repair of existing defective materials that cannot be retained within the new roofing system. Charges against this allowance shall be the products of the material area, length, or item to be addressed and the appropriate unit price.

B. Allowance No. 2: Tectum Roof Deck Replacement:

1. Description: Allowance included in the Base Bid for 450 square feet Tectum roof deck. Charges against this allowance shall be the products of the areas of materials discovered to be damaged and the appropriate unit prices listed on the bid form.

C. Allowance No. 3: Metal Roof Deck Replacement:

1. Description: Allowance included in the Base Bid for 100 square feet metal roof deck. Charges against this allowance shall be the products of the areas of materials discovered to be damaged and the appropriate unit prices listed on the bid form.

D. Allowance No. 4: Additional Insulation Board:

1. Description: Allowance included in the Base Bid for each thickness of insulation listed below. Charges against this allowance shall be the products of the areas of materials discovered to be deteriorated and the appropriate unit price listed on the bid form.

   a. ½ inch thick polyisocyanurate: Allowance for 8,500 square feet.

   b. 1-1/2 inch thick polyisocyanurate: Allowance for 8,500 square feet.

   c. 3 inches thick polyisocyanurate: Allowance for 8,500 square feet.

E. Allowance No. 5: Retrofit Roof Drain Replacement

1. Description: Allowance included in the Base Bid for replacement of 6 cast iron roof drains on roofs included in the scope of this project, based on the unit price listed on the bid form. Charges against the allowance shall be the products of the number of units determined to need replacement and the appropriate unit price listed on the bid form.

B. Allowance No. 6: Tapered Insulation:

1. Description: Allowance included in the Base Bid for 100 square feet of tapered insulation. Charges against this allowance shall be the products of the square feet of materials discovered to be deteriorated and the appropriate unit prices listed on the bid form.

C. Allowance No. 7: Plywood Decking:

1. Description: Allowance included in the Base Bid for 100 square feet of Plywood Decking. Charges against this allowance shall be the products of the square feet of materials discovered to be deteriorated and the appropriate unit prices listed on the bid form.

D. Allowance No. 8: Pressure Treated Wood Nailers:

1. Description: Allowance included in the Base Bid for 240 linear feet of pressure treated 2x4 wood nailers. Charges against this allowance shall be the products of the linear feet of materials discovered to be deteriorated and the appropriate unit prices listed on the bid form.

2. Description: Allowance included in the Base Bid for 240 linear feet of pressure treated 2x6 wood nailers. Charges against this allowance shall be the products of the linear feet of materials discovered to be deteriorated and the appropriate unit prices listed on the bid form.

3. Description: Allowance included in the Base Bid for 240 linear feet of pressure treated 2x8 wood nailers. Charges against this allowance shall be the products of the linear feet of materials discovered to be deteriorated and the appropriate unit prices listed on the bid form.

4. Description: Allowance included in the Base Bid for 240 linear feet of pressure treated 2x10 wood nailers. Charges against this allowance shall be the products of the linear feet of materials discovered to be deteriorated and the appropriate unit prices listed on the bid form.

5. Description: Allowance included in the Base Bid for 240 linear feet of pressure treated 2x12 wood nailers. Charges against this allowance shall be the products of the linear feet of materials discovered to be deteriorated and the appropriate unit prices listed on the bid form.

E. Allowance No. 9: Latent Conditions Testing

1. Description: Allowance included in the Base Bid of $5,000 for third party testing of latent conditions for items unknown that may have to be addressed during roof replacement including repair of existing defective

materials that cannot be retained within the new roofing system. Charges against this allowance shall be the third party testing of latent conditions to be addressed and the appropriate unit price.

F. Allowance No. 10: Gypsum Patch:

1. Description: Allowance included in the Base Bid for 100 square feet of Gypsum Patch. Charges against this allowance shall be the products of the square feet of materials discovered to be deteriorated and the appropriate unit prices listed on the bid form.

END OF SECTION 01 21 00 - ALLOWANCES AND UNIT PRICES

SECTION 07 53 23 - EPDM ROOFING - FULLY ADHERED

PART 1 GENERAL

1.01 SECTION INCLUDES

A. EPDM membrane roofing system, including all components specified.

B. Disposal of demolition debris and construction waste is the responsibility of Contractor. Perform disposal in manner complying with all applicable federal, state, and local regulations.

C. Comply with the published recommendations and instructions of the roofing membrane manufacturer.

D. Commencement of work by Contractor shall constitute acknowledgement by Contractor that this specification can be satisfactorily executed, under the project conditions and with all necessary prerequisites for warranty acceptance by roofing membrane manufacturer. No modification of the Contract Sum will be made for failure to adequately examine the Contract Documents or the project conditions.

1.02 RELATED REQUIREMENTS

A. Section 06 60 00 - Rough Carpentry: Wood nailers associated with roofing and roof insulation.

B. Section 07 62 00 - Sheet Metal Flashing and Trim: Formed metal flashing and trim items associated with roofing.

1.03 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D1079 for definition of terms related to roofing work not otherwise defined in the section.

B. LTTR: Long Term Thermal Resistance, as defined by CAN-ULC-S770.

1.04 REFERENCE STANDARDS

A. ANSI/SPRI/FM 4435/ES-1 - Test Standard for Edge Systems Used with Low Slope Roofing Systems; 2017.

B. ASTM C208 - Standard Specification for Cellulosic Fiber Insulating Board; 2012.

C. ASTM C473 - Standard Test Methods for Physical Testing of Gypsum Panel Products; 2016.

D. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2013.

E. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2017.

F. ASTM D1079 - Standard Terminology Relating to Roofing and Waterproofing; 2016.

G. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2016.

H. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2015.

I. ASTM D4811/D4811M - Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing; 2016.

J. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018.

K. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2016a.

L. CAN-ULC-S770 - Standard Test Method Determination of L-Term Thermal Resistance Of Closed-Cell Thermal Insulating Foams; 2015.

M. FM 4470 - Approval Standard for Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 and Noncombustible Roof Deck Construction; 2016.

N. PS 1 - Structural Plywood; 2009.

O. PS 20 - American Softwood Lumber Standard; 2015.

1.05 SUBMITTALS

A. See Section 01 33 00 – Submittal Procedures.

B. Product Data:
1. Provide membrane manufacturer's printed data sufficient to show that all components of roofing system, including insulation and fasteners, comply with the specified requirements and with the membrane manufacturer's requirements and recommendations for the system type specified; include at least the following:
   a. Technical data sheet for roof membrane.
   b. Technical data sheets for splice tape and adhesives.
   c. Technical data sheet for each insulation type.
   d. Technical data sheet for each cover board type.
   e. Technical data sheet for each type of metal edging.
2. Where UL or FM requirements are specified, provide documentation that shows that the roofing system to be installed is UL-Classified or FM-approved, as applicable; include data itemizing the components of the classified or approved system.
3. Installation Instructions: Provide manufacturer's instructions to installer, marked up to show exactly how all components will be installed; where instructions allow installation options, clearly indicate which option will be used.

C. Samples: Submit samples of each product to be used.

D. Shop Drawings: Provide:
1. The roof membrane manufacturer's standard details customized for this project for all relevant conditions, including flashings, base tie-ins, roof edges, terminations, expansion joints, penetrations, and drains.
2. For tapered insulation, provide project-specific layout and dimensions for each board, including slopes.

E. Installer Qualifications: Letter from manufacturer attesting that the roofing installer meets the specified qualifications.

F. Executed 20 year warranty.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: Roofing installer shall have the following:
1. Current approval, license, or authorization as applicator by the manufacturer.
2. At least five years experience in installing specified system.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact and legible.

B. Store materials clear of ground and moisture with weather protective covering.

C. Keep combustible materials away from ignition sources.

1.08 WARRANTY

A. See Section 01 70 00 – Execution and Closeout Requirements, for additional warranty requirements.

B. Comply with all procedures required by manufacturer to qualify for a 20-year warranty, including notifications, scheduling, and inspections.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design Roofing System: Carlisle SynTec Incorporated. www.carlislesyntec.com

B. Other Acceptable Manufacturers:
1. Elevate Roofing
2. GenFlex Roofing Systems.
3. Johns Manville International, Inc.
4. Versico Roofing Systems.

C. Manufacturer of Insulation and Cover Boards: Same manufacturer as roof membrane.

D. Manufacturer of Metal Roof Edging: Same manufacturer as roof membrane.
1. Field- or shop-fabricated metal roof edgings are not acceptable.

E. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 ROOFING SYSTEM DESCRIPTION

A. Roofing System:

Carlisle SynTec VacuSeal Vent Secured Roofing System [Basis of Design}

Ethylene-propylene-diene-monomer (EPDM) single-ply membrane.
1. Membrane Attachment: Fully adhered with applied adhesive.
2. Comply with applicable local building code requirements.
3. Provide assembly having Underwriters Laboratories, Inc. (UL) Class A Fire Hazard Classification.

B. Roofing System Components: Listed in order from the top of the roof down:
1. Membrane: 60 mil thickness.
2. Insulation Cover Board: Gypsum-based board, 1/4 inch thick; cold adhesive attached.
3. Insulation:
   a. Maximum Board Thickness: 3 inches; use as many layers as necessary; stagger joints in adjacent layers.
   b. Tapered: Slope as indicated; provide minimum R-value at thinnest point; place tapered layer on bottom.
   c. Total R-value: 30, minimum.
   d. Crickets: Tapered insulation of same type as specified for top layer; slope as indicated.

2.03 EPDM MEMBRANE MATERIALS

A. Roofing and Flashing Membrane: Black, cured synthetic single-ply membrane composed of ethylene propylene diene terpolymer (EPDM) with the following properties:
1. Reinforcement: None; membrane complying with ASTM D4637/D4637M Type I.
2. Nominal Thickness Tolerance: Plus/minus 10 percent.

B. Membrane Adhesive: Applied EPDM Bonding Adhesive by roof membrane manufacturer for roofing system and warranty to be provided; use only adhesive furnished by roof membrane manufacturer.

1. Can be applied in cold weather (20F and rising).

2. Single-Ply Low VOC Bonding Adhesive, Low VOC Content <250 g/l

C. Flashing Membrane: Self-curing, non-reinforced membrane composed of nonvulcanized EPDM rubber, complying with ASTM D4811/D4811M Type II, and with the following properties:
1. Thickness: 0.055 inch.

D. Self-Adhesive Flashing Membrane: Semi-cured 45 mil EPDM membrane laminated to 35 mil EPDM tape adhesive.

E. Pre-Molded Pipe Flashings: EPDM, molded for quick adaptation to different sized pipes.

F. Self-Adhesive Lap Splice Tape: 35 mil EPDM-based, formulated for compatibility with EPDM membrane and high-solids primer.

G. Splice Adhesive: Synthetic polymer-based, formulated for compatibility with EPDM membrane and metal surfaces.

H. Adhesive Primer: Synthetic rubber based primer formulated for compatibility with EPDM membrane and tape adhesive, with VOC content less than 2.1 lb/gal.

I. Seam Edge Treatment: EPDM rubber-based sealant, formulated for sealing exposed edges of membrane at seams.

J. Pourable Sealer: Two-part polyurethane, two-color for reliable mixing.

K. Water Block Seal: Butyl rubber sealant for use between two surfaces, not exposed.

L. Metal Plates and Strips Used for Fastening Membrane and Insulation: Steel with Galvalume coating; corrosion-resistance meeting FM 4470 criteria.

M. Termination Bars: Aluminum bars with integral caulk ledge; 1.3 inches wide by 0.10 inch thick.

N. Roof Walkway Pads: EPDM, 0.30 inch thick by 30 by 30 inches with EPDM tape adhesive strips laminated to the bottom.

2.04 ROOF INSULATION AND COVER BOARDS

A. Polyisocyanurate Board Insulation: Closed cell polyisocyanurate foam with black glass reinforced mat laminated to faces, complying with ASTM C1289 Type II Class 1, with the following additional characteristics:
1. Thickness: As indicated elsewhere.
2. Size: 48 inches by 96 inches, nominal.
   a. Exception: Insulation to be attached using adhesive or asphalt may be no larger than 48 inches by 48 inches, nominal.
3. R-value (LTTR):
   a. 1.0 inch Thickness: 6.0, minimum.
   b. 1.25 inch Thickness: 7.5, minimum.
   c. 1.5 inch Thickness: 9.0, minimum.
   d. 1.75 inch Thickness: 10.5, minimum.
   e. 2.0 inch Thickness: 12.1, minimum.
   f. 2.5 inch Thickness: 15.3, minimum.
   g. 3.0 inch Thickness: 18.5, minimum.
   h. 4.0 inch Thickness: 25.0, minimum.
4. Compressive Strength: 20 psi when tested in accordance with ASTM C1289.
5. Ozone Depletion Potential: Zero; made without CFC or HCFC blowing agents.

B. Gypsum-Based Cover Board: Non-combustible, water resistant gypsum core with embedded glass mat facers, complying with ASTM C1177/C1177M, and with the following additional characteristics:
1. Size: 48 inches by 96 inches, nominal.
   a. Exception: Board to be attached using adhesive or asphalt may be no larger than 48 inches by 48 inches, nominal.
2. Thickness: As indicated elsewhere.
3. Surface Water Absorption: 2.5 g, maximum, when tested in accordance with ASTM C473.
4. Spanning Capability: Recommended by manufacturer for following minimum flute spans:
   a. 1/4 inch Thickness: 2-5/8 inches, minimum.
5. Surface Burning Characteristics: Flame spread index of 0 (zero), smoke developed index of 0 (zero), when tested in accordance with ASTM E84.
6. Combustibility: Non-combustible, when tested in accordance with ASTM E136.
7. Factory Mutual approved for use with FM 1-60 and 1-90 rated roofing assemblies.
8. Mold Growth Resistance: Zero growth, when tested in accordance with ASTM D3273 for minimum of 4 weeks.
9. Pre-primed for better adhesion.
10. Acceptable Product: Georgia-Pacific DensDeck Prime Roof Guard.

C. Adhesive for Insulation Attachment: Type as required by roof membrane manufacturer for roofing system and warranty to be provided; use only adhesives furnished by roof membrane manufacturer.

D. Lightweight Insulating Concrete Gypsum-Concrete Patch:

Acceptable Product: Securock Brand Gypsum-Concrete Patch

2.05 METAL ACCESSORIES

A. Parapet Copings: Formed metal coping with galvanized steel anchor/support cleats for capping any parapet wall; watertight, maintenance free, without exposed fasteners; butt type joints with concealed splice plates; mechanically fastened as indicated.
1. Wind Performance:
a. At least minimum required when tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test method RE-3.
2. Description: Coping sections allowed to expand and contract freely while locked in place on anchor cleats by mechanical pressure from hardened stainless steel springs factory attached to anchor cleats; 8 inch wide splice plates with factory applied dual non-curing sealant strips capable of providing watertight seal.
3. Material and Finish: 24 gauge, 0.024 inch thick galvanized steel with Kynar 500 finish in manufacturer's standard color; matching concealed joint splice plates; factory-installed protective plastic film.
4. Dimensions:
a. Wall Width: As indicated on the drawings.
b. Piece Length: Minimum 144 inches.
c. Curved Application: Factory fabricated in true radius.
5. Anchor/Support Cleats: 20 gauge, 0.036 inch thick prepunched galvanized cleat with 12 inch wide stainless steel spring mechanically locked to cleat at 72 inches on center.
6. Special Shaped Components: Provide factory-fabricated pieces necessary for complete installation, including miters, corners, intersections, curves, pier caps, and end caps; minimum 14 inch long legs on corner, intersection, and end pieces.
7. Fasteners: Factory-furnished; electrolytically compatible; minimum pull out resistance of 240 pounds for actual substrate used; no exposed fasteners.

2.06 ACCESSORY MATERIALS

A. Wood Nailers: PS 20 dimension lumber, Structural Grade No. 2 or better Southern Pine, Douglas Fir; or PS 1, APA Exterior Grade plywood; pressure preservative treated.
1. Width: 3-1/2 inches, nominal minimum, or as wide as the nailing flange of the roof accessory to be attached to it.
2. Thickness: Same as thickness of roof insulation.

B. Cant Strips and Tapered Edge Strips: 45 degree face slope and minimum 5 inch face dimension; provide at all angle changes between vertical and horizontal planes that exceed 45 degrees.
1. Type: Wood fiber, complying with ASTM C208.
2. Install using hot asphalt (Type IV), roofing mastic, or mechanically fastened using fasteners and plates approved by roofing manufacturer.

PART 3 INSTALLATION

3.01 GENERAL

A. Install roofing, insulation, flashings, and accessories in accordance with roofing manufacturer's published instructions and recommendations for the specified roofing system. Where manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.

B. Obtain all relevant instructions and maintain copies at project site for duration of installation period.

C. Do not start work until Pre-Installation Notice has been submitted to manufacturer as notification that this project requires a manufacturer's warranty.

D. Perform work using competent and properly equipped personnel.

E. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.

F. Install roofing membrane only when surfaces are clean, dry, smooth and free of snow or ice; do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application; consult manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60 to 80 degrees F.

G. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.
   1. Protect from spills and overspray from bitumen, adhesives, sealants and coatings.
   2. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.
   3. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trades.

H. Until ready for use, keep materials in their original containers as labeled by the manufacturer.

I. Consult membrane manufacturer's instructions, container labels, and Material Safety Data Sheets (MSDS) for specific safety instructions. Keep all adhesives, sealants, primers and cleaning materials away from all sources of ignition.

3.02 EXAMINATION

A. Examine roof deck to determine that it is sufficiently rigid to support installers and their mechanical equipment and that deflection will not strain or rupture roof components or deform deck.

B. Verify that surfaces and site conditions are ready to receive work. Correct defects in the substrate before commencing with roofing work.

C. Examine roof substrate to verify that it is properly sloped to drains.

D. Verify that the specifications and drawing details are workable and not in conflict with the roofing manufacturer's recommendations and instructions; start of work constitutes acceptable of project conditions and requirements.

3.03 PREPARATION

A. Remove all of the existing roof system down to the roof deck including all existing composition base flashings. Dispose of all materials properly. Perform asbestos removal in accordance with federal, state and local regulations and dispose of waste in legal manner.
   1. At penetrations, remove all existing flashings, including lead, asphalt, mastic, etc.
   2. At walls, curbs, and other vertical and sloped surfaces, remove loose and unsecured flashings; remove mineral surfaced and coated flashings; remove excessive asphalt to provide a smooth, sound surface for new flashings.

B. Take appropriate measures to ensure that fumes from adhesive solvents are not drawn into the building through air intakes.

C. Prior to proceeding, prepare roof surface so that it is clean, dry, and smooth, and free of sharp edges, fins, roughened surfaces, loose or foreign materials, oil, grease and other materials that may damage the membrane.

D. Fill all surface voids in the immediate substrate that are greater than 1/4 inch wide with fill material acceptable insulation to membrane manufacturer.

E. Seal, grout, or tape deck joints, where needed, to prevent bitumen seepage into building.

F. Install blocking at the base of roof projections, penetrations and non-roof edge perimeters as detailed.

G. Wood Nailers: Provide wood nailers at all perimeters and other locations where indicated on the drawings, of total height matching the total thickness of insulation being used.
   1. Install with 1/8 inch gap between each length and at each change of direction.
   2. Mechanically fasten to deck to resist force of 200 lbf per linear foot.

3. Taper nailer where applicable to be flush at point of contact with membrane in either the vertical or horizontal applications.

3.04 INSULATION AND COVER BOARD INSTALLATION

A. Install insulation in configuration and with attachment method(s) specified in PART 2, under Roofing System.

B. Install only as much insulation as can be covered with the completed roofing system before the end of the day's work or before the onset of inclement weather.

C. Lay roof insulation in courses parallel to roof edges.

D. Neatly and tightly fit insulation to all penetrations, projections, and nailers, with gaps not greater than 1/4 inch. Fill gaps greater than 1/4 inch with acceptable insulation. Do not leave the roofing membrane unsupported over a space greater than 1/4 inch.

E. Loose Laid Installation: Install insulation by laying loose over substrate without mechanical securement of any kind.

3.05 SINGLE-PLY MEMBRANE

A. Beginning at low point of roof, place membrane without stretching over substrate and allow to relax at least 30 minutes before attachment or splicing; in colder weather allow for longer relax time.

B. Lay out the membrane pieces so that field and flashing splices are installed to shed water.

C. Install membrane without wrinkles and without gaps or fishmouths in seams; bond and test seams and laps in accordance with membrane manufacturer's instructions and details.

D. Install membrane adhered to the substrate, with edge securement as specified.

E. Adhered Membrane: Bond membrane sheet to substrate using membrane manufacturer's recommended bonding material, application rate, and procedures.

F. Edge Securement: Secure membrane at all locations where membrane terminates or goes through an angle change greater than 2 in 12 inches using mechanically fastened reinforced perimeter fastening strips, plates, or metal edging as indicated or as recommended by roofing manufacturer.
1. Exceptions: Round pipe penetrations less than 18 inches in diameter and square penetrations less than 4 inches square.
2. Metal edging is not merely decorative; ensure anchorage of membrane as intended by roofing manufacturer.

3.06 FLASHING AND ACCESSORIES INSTALLATION

A. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by membrane manufacturer's recommendations and details.

B. Metal Accessories: Install metal edgings, gravel stops, and copings in locations indicated on the drawings, with horizontal leg of edge member over membrane and flashing over metal onto membrane.
1. Follow roofing manufacturer's instructions.
2. Remove protective plastic surface film immediately before installation.
3. Install water block sealant under the membrane anchorage leg.
4. Flash with manufacturer's recommended flashing sheet unless otherwise indicated.
5. Where single application of flashing will not completely cover the metal flange, install additional piece of flashing to cover the metal edge.
6. If the roof edge includes a gravel stop and sealant is not applied between the laps in the metal edging, install an additional piece of self-adhesive flashing membrane over the metal lap to the top of the gravel stop; apply seam edge treatment at the intersections of the two flashing sections.
7. When the roof slope is greater than 1:12, apply seam edge treatment along the back edge of the flashing.

C. Roofing Expansion Joints: Install as shown on drawings and as recommended by roofing manufacturer.

D. Flashing at Walls, Curbs, and Other Vertical and Sloped Surfaces: Install weathertight flashing at all walls, curbs, parapets, curbs, skylights, and other vertical and sloped surfaces that the roofing membrane abuts to; extend flashing at least 8 inches high above membrane surface.
   1. Use the longest practical flashing pieces.
   2. Evaluate the substrate and overlay and adjust installation procedure in accordance with membrane manufacturer's recommendations.
   3. Complete the splice between flashing and the main roof sheet with specified splice adhesive before adhering flashing to the vertical surface.
   4. Provide termination directly to the vertical substrate as shown on roof drawings.

E. Roof Drains:
   1. Existing Drains: Remove all existing flashings, drain leads, roofing materials and cement from the drain; remove clamping ring.
   2. Taper insulation around drain to provide smooth transition from roof surface to drain. Use specified pre-manufactured tapered insulation with facer or suitable bonding surface to achieve slope; slope not to exceed manufacturer's recommendations.
   3. Position membrane, then cut a hole for roof drain to allow 1/2 to 3/4 inch of membrane to extend inside clamping ring past drain bolts.
   4. Make round holes in membrane to align with clamping bolts; do not cut membrane back to bolt holes.
   5. Apply sealant on top of drain bowl where clamping ring seats below the membrane
   6. Install roof drain clamping ring and clamping bolts; tighten clamping bolts to achieve constant compression.

F. Flashing at Penetrations: Flash all penetrations passing through the membrane; make flashing seals directly to the penetration.
   1. Pipes, Round Supports, and Similar Items: Flash with specified pre-molded pipe flashings wherever practical; otherwise use specified self-curing elastomeric flashing.
   2. Pipe Clusters and Unusual Shaped Penetrations: Provide penetration pocket at least 2 inches deep, with at least 1 inch clearance from penetration, sloped to shed water.
   3. Structural Steel Tubing: If corner radii are greater than 1/4 inch and longest side of tube does not exceed 12 inches, flash as for pipes; otherwise, provide a standard curb with flashing.
   4. Flexible and Moving Penetrations: Provide weathertight gooseneck set in sealant and secured to deck, flashed as recommended by manufacturer.
   5. High Temperature Surfaces: Where the in-service temperature is, or is expected to be, in excess of 180 degrees F, protect the elastomeric components from direct contact with the hot surfaces using an intermediate insulated sleeve as flashing substrate as recommended by membrane manufacturer.

3.07 FINISHING AND WALKWAY INSTALLATION

A. Install walkways at access points to the roof, around rooftop equipment that may require maintenance, and where indicated on the drawings.

B. Walkway Pads: Adhere to the roofing membrane, spacing each pad at minimum of 1.0 inch and maximum of 3.0 inches from each other to allow for drainage.
   1. If installation of walkway pads over field fabricated splices or within 6 inches of a splice edge cannot be avoided, adhere another layer of flashing over the splice and extending beyond the walkway pad a minimum of 6 inches on either side.
   2. Prime the membrane, remove the release paper on the pad, press in place, and walk on pad to ensure proper adhesion.

3.08 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Inspection by Manufacturer: Provide final inspection of the roofing system by a Technical Representative employed by roofing system manufacturer specifically to inspect installation for warranty purposes (i.e. not a sales person).

C. Perform all corrections necessary for issuance of warranty.

3.09 CLEANING

A. Clean all contaminants generated by roofing work from building and surrounding areas, including bitumen, adhesives, sealants, and coatings.

B. Repair or replace building components and finished surfaces damaged or defaced due to the work of this section; comply with recommendations of manufacturers of components and surfaces.

C. Remove leftover materials, trash, debris, equipment from project site and surrounding areas.

3.10 PROTECTION

A. Where construction traffic must continue over finished roof membrane, provide durable protection and replace or repair damaged roofing to original condition.

3.11 INSULATION SCHEDULE

A. Install thickness of board insulation to reach minimum R30CI.

B. Replace damaged insulation with 5 inches total thickness of board insulation. Refer to Section 01 21 00 for Allowances.

C. Verify measurements and extents in field before ordering material.

END OF SECTION 07 53 23 - EPDM ROOFING - FULLY ADHERED

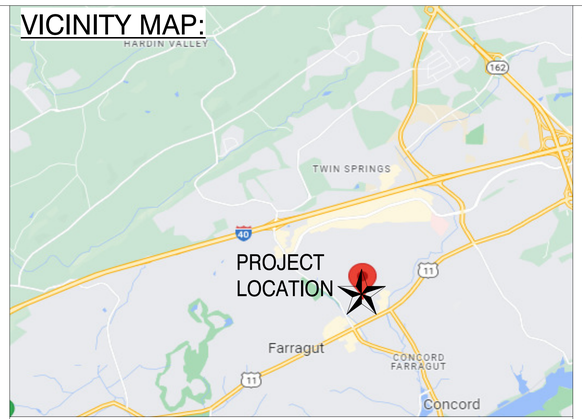
FARRAGUT HIGH SCHOOL ROOF REPLACEMENT

11237 KINGSTON PIKE, KNOXVILLE, TN 37934 KNOX COUNTY

ABBREVIATIONS:

AFF	- ABOVE FINISH FLOOR	MTL	- METAL
ALT	- ALTERNATE	MG	- MANUFACTURING
ALUM	- ALUMINUM	MFR	- MANUFACTURER
ARCH	- ARCHITECTURAL	MIN	- MINIMUM
ACT	- ACOUSTICAL TILE CEILING	MISC	- MISCELLANEOUS
ASPH	- ASPHALT	NIC	- NOT IN CONTRACT
BF	- BOTTOM FACE	NTS	- NOT TO SCALE
BSMT	- BASEMENT	NO, #	- NUMBER
BM	- BENCH MARK	OC	- ON CENTER
BLDG	- BUILDING	OD	- OUTSIDE DIAMETER
BLK	- BLOCK	P	- PLATE
BRG	- BEARING	PLAS	- PLASTIC
CB	- CATCH BASIN	P LAM	- PLASTIC LAMINATE
CJ	- CONTROL JOINT	PLYWD	- PLYWOOD
CHB	- CHALK BOARD	PTD	- PAINTED
CLG	- CEILING	RAD,R	- RADIUS
CLOS, CL	- CLOSET	RD	- ROOF DRAIN
CLR	- CLEAR	REINF	- REINFORCING
COL	- COLUMN	REQ'D	- REQUIRED
COMP	- COMPOSITION	RS	- RISER
CONC	- CONCRETE	RM	- ROOM
CONST	- CONSTRUCTION	RO	- ROUGH OPENING
CMU	- CONCRETE MASONRY UNIT	SCHED	- SCHEDULE
CT	- CERAMIC TILE	SCWD	- SOLID CORE WOOD
DTL	- DETAIL	SECT	- SECTION
D, DIA	- DIAMETER	SHT	- SHEET
DN	- DOWN	SIM	- SIMILAR
DWG	- DRAWING	SPECS	- SPECIFICATIONS
DF	- DRINK FOUNTAIN	SQFT / SF	- SQUARE FEET
DS	- DOWNSPOUT	STD	- STANDARD
EA	- EACH	STL	- STEEL
EF	- EACH FACE	STOR	- STORAGE
ELEC	- ELECTRIC	SD	- STORM DRAIN
EWC	- ELECTRIC WATER COOLER	SUSP	- SUSPENDED
ELEV	- ELEVATION	SQ	- SQUARE
EXIST	- EXISTING	TB	- TACK BOARD
EXT	- EXTERIOR	T'HOLD	- THRESHOLD
EJ	- EXPANSION JOINT	TLT	- TOILET
FE	- FIRE EXTINGUISHER	TD, TDS	- THREAD (S)
FL	- FLOOR	TF	- TOP FACE
FD	- FLOOR DRAIN	TYP	- TYPICAL
FT	- FOOT	U	- URINAL
FTNG	- FOOTING	VIF	- VERIFY IN FIELD
GALV	- GALVANIZED IRON	VS	- VENT STACK
GA	- GAUGE	VOL	- VOLUME
GYP	- GYPSUM	VT	- VINYL TILE
HB	- HOSE BIB	VERT	- VERTICAL
HCWD	- HOLLOW CORE WOOD	WSCT	- WAINSCOT
HDW	- HARDWARE	WC	- WATER CLOSET
HGT	- HEIGHT	WH	- WATER HEATER
HM	- HOLLOW METAL	WPFG	- WATERPROOFING
ID	- INSIDE DIAMETER	WF	- WIDE FLANGE
IN	- INCH	WDW	- WINDOW
INV	- INVERT	WD	- WOOD
JAN	- JANITOR	W/	- WITH
JST	- JOIST	WWF	- WELDED WIRE FABRIC
LAV	- LAVATORY	WWM	- WELDED WIRE MESH
lb	- POUND	∠	- ANGLE
MH	- MANHOLE	@	- AT
MAX	- MAXIMUM	C	- CHANNEL
MECH	- MECHANICAL	ø	- DIAMETER

VICINITY MAP:



MATERIALS LEGEND:

CONCRETE BLOCK	CONCRETE IN SECTION	RIGID INSULATION, EIFS AS NOTED
BRICK	SOIL IN SECTION	PLYWOOD
METAL IN SECTION	CRUSHED STONE	FINISH WOOD
GYP. BOARD, PLASTER, OR CONCRETE IN PLAN AS NOTED	BATT INSULATION	WOOD FRAMING

PROJECT INFORMATION:

PROJECT DESCRIPTION
A ROOF REPLACEMENT FOR FARRAGUT HIGH SCHOOL AT EXISTING MAIN BUILDING ROOF, EXISTING AUDITORIUM ROOF, AND EXISTING VOCATIONAL ROOF.

KNOX COUNTY SCHOOLS
BID #3503

JURISDICTION
KNOX COUNTY CODES ADMINISTRATION
CITY COUNTY BUILDING
SUITE 547
400 MAIN STREET
KNOXVILLE, TN. 37902
PHONE NUMBER: (865) 215-2325

KNOX COUNTY ADOPTED CODES:
2018 INTERNATIONAL BUILDING CODE
2018 NATIONAL ELECTRICAL CODE
2018 INTERNATIONAL FIRE CODE
2018 INTERNATIONAL MECHANICAL CODE
2018 INTERNATIONAL FUEL GAS CODE
2018 INTERNATIONAL PLUMBING CODE
2018 INTERNATIONAL ENERGY CONSERVATION CODE
2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES CODE (ICC A117.12009)
2018 NFPA - 101 LIFE SAFETY (LSC)

STATE OF TENNESSEE ADOPTED CODES:
2012 EDITION INTERNATIONAL BUILDING CODE, (EXCLUDING CHAPTER 11 AND SECTION 3411)
2012 EDITION INTERNATIONAL FUEL GAS CODE
2012 EDITION INTERNATIONAL MECHANICAL CODE
2017 EDITION NATIONAL ELECTRIC CODE, NFPA 70
2012 EDITION INTERNATIONAL ENERGY CONSERVATION CODE OR
2006 EDITION INTERNATIONAL ENERGY CONSERVATION CODE (GROUP F-1, F-2, S-1, & S-2 ONLY)
2012 EDITION INTERNATIONAL FIRE CODE
2012 INTERNATIONAL EXISTING BUILDING CODE (SCOPE OF WORK RELATED TO EXISTING DRAWINGS)
2010 ADA STANDARDS FOR ACCESSIBLE DESIGN (FOR BUILDINGS REQUIRED TO COMPLY WITH TENNESSEE PUBLIC BUILDING ACCESSIBILITY ACT
2012 EDITION NFPA 101 LIFE SAFETY CODE (STATE BUILDINGS, EDUCATIONAL OCCUPANCIES AND ANY OCCUPANCY REQUIRING AN INSPECTION BY THE TSFMO FOR INITIAL LICENSURE)

*FOR SPECIFIC APPLICATIONS, THE MOST STRINGENT CODE SHALL BE APPLIED.

FIRE DEPARTMENT JURISDICTION:
FIRE CHIEF: STAN SHARP
PUBLIC SAFETY COMPLEX
1630 HURON ST., BLDG. C
KNOXVILLE, TN 37917
ssharp@knoxvilletn.gov
(865) 595-4480

PROJECT DIRECTORY:

OWNER:
KNOX COUNTY SCHOOLS
DOUGLAS SHOVER
505 SUMMER PLACE
UTT 2ND FLOOR, ROOM 281H
KNOXVILLE, TN 37902
865-594-1825

ARCHITECT:
MBI COMPANIES INC.
HOWARD WALTZ
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919
865-584-0999

LIST OF DRAWINGS:

SHEET #	DRAWING TITLE	REV #	REVISION DATE	REVISION DESCRIPTION
GENERAL				
G000	COVER SHEET	1	01/12/2024	ADDENDUM 02
ARCHITECTURAL				
A000	GENERAL NOTES AND COMPOSITE PLAN	1	01/12/2024	ADDENDUM 02
A001	DEMOLITION ROOF PLAN - MAIN BUILDING	1	01/12/2024	ADDENDUM 02
A002	DEMOLITION ROOF PLAN - AUDITORIUM	1	01/12/2024	ADDENDUM 02
A003	DEMOLITION ROOF PLAN - VOCATIONAL	1	01/12/2024	ADDENDUM 02
A301	ROOF PLAN - MAIN BUILDING	1	01/12/2024	ADDENDUM 02
A302	ROOF PLAN - AUDITORIUM	1	01/12/2024	ADDENDUM 02
A303	ROOF PLAN - VOCATIONAL BUILDING	1	01/12/2024	ADDENDUM 02
A801	ROOF DETAILS	1	01/12/2024	ADDENDUM 02
Grand total: 9				

1

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CONSULTANT

SEAL

HOWARD W. WALTZ
REGISTERED ARCHITECT
NO. 104971
STATE OF TENNESSEE

PROJECT INFORMATION

PROJECT:
FARRAGUT HIGH SCHOOL ROOF REPLACEMENT

PROJECT ADDRESS:
11237 KINGSTON PIKE,
KNOXVILLE, TN 37934
KNOX COUNTY

PROJECT NO.: 231315

ACTIVE DESIGN PHASE
- ☐ FOR REVIEW ONLY
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- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/12/2024	ADDENDUM 02

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	01/03/2024
DESIGNED BY:	HW
DRAWN BY:	LS
REVIEWED BY:	HW
SHEET TITLE:	COVER SHEET
SHEET NO.:	G000

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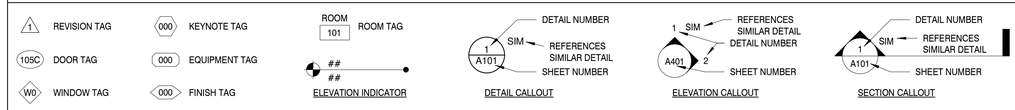
ARCH D

ARCHITECTURAL SYMBOLS



GENERAL NOTES

1. THE ARCHITECT HAS MADE EVERY EFFORT TO SET FORTH IN THE CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS AND DISCREPANCIES IN THE DRAWINGS AND SPECIFICATIONS SHALL NOT EXCUSE HIM FROM PROVIDING A COMPLETED FACILITY AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS. IN THE EVENT OF DISCREPANCIES, CONTRACTOR SHALL PRICE THE MORE EXPENSIVE AND EXTENSIVE WORK, UNLESS DIRECTED OTHERWISE.

2. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. THE DRAWINGS, GENERAL NOTES AND SPECIFICATIONS ARE COMPLIMENTARY, AND WHAT IS CALLED FOR BY ANY WILL BE BINDING AS IF CALLED FOR BY ALL. WORK SHOWN OR REFERRED TO ON ANY DRAWING SHALL BE PROVIDED AS THOUGH SHOWN ON ALL RELATED DRAWINGS. IF THERE IS ANY CONFLICT OR DISCREPANCY WITHIN OR BETWEEN ANY OF THE CONTRACT DOCUMENTS INVOLVING THE QUALITY OR QUANTITY OF WORK REQUIRED, THE WORK OF HIGHEST QUALITY AND/OR GREATEST QUANTITY SHOWN OR SPECIFIED SHALL BE FURNISHED.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BECOMING FAMILIAR WITH ALL CONTRACT DOCUMENTS AND FIELD CONDITIONS, AND CONFIRM THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION.

4. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT. THE CONTRACTOR SHALL PROVIDE AT THE PROJECT SITE A FULL SET OF CONSTRUCTION DOCUMENTS ANNOTATED WITH THE LATEST REVISIONS AND CLARIFICATIONS FOR THE USE BY ALL.

5. CONDUCT OPERATIONS IN SUCH A MANNER AS TO MINIMIZE INTERFERENCE WITH USE OF PUBLIC WAYS AND ADJACENT USED FACILITIES. DO NOT CLOSE, BLOCK OR OTHERWISE OBSTRUCT USE OF PUBLIC WAYS OR FACILITIES WITHOUT WRITTEN CONSENT OF AUTHORITIES HAVING JURISDICTION. PROVIDE ALTERNATE ROUTES TO CLOSED OR OBSTRUCTED FACILITIES AS REQUIRED BY LOCAL REGULATIONS.

6. EXCEPT WHERE OTHERWISE SPECIFIED, THE CONTRACTOR SHALL AT ALL TIMES PROVIDE PROTECTION AGAINST WEATHER TO MAINTAIN ALL WORK, MATERIALS, APPARATUS, AND FIXTURES FROM INJURY OR DAMAGES. AT THE END OF THE DAY'S WORK, ALL NEW WORK LIKELY TO BE DAMAGED SHALL BE COVERED OR OTHERWISE PROTECTED AS REQUIRED.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING HIS OWN TELEPHONE AND TOILET FOR ALL SCOPE OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL TAPS, EXTENSIONS, VALVES, OR OTHER DEVICES NECESSARY TO RUN POWER TOOLS AND EQUIPMENT. SUCH MODIFICATIONS TO EXISTING UTILITIES MUST BE REMOVED AT COMPLETION OF THE PROJECT.

8. THE CONTRACTOR SHALL LIMIT THE INGRESS AND EGRESS OF WORKERS AND EQUIPMENT TO THE CONSTRUCTION SITE TO AUTHORIZED PERSONS ONLY. DAMAGE TO ANY EXISTING INTERIOR OR EXTERIOR CONSTRUCTION SHALL BE REPAIRED TO "LIKE NEW" CONDITION UNDER THIS CONTRACT.

9. THE CONTRACTOR SHALL MAINTAIN AT ALL TIMES ADEQUATE SAFETY BARRICADES FOR PROTECTION OF JOB PERSONNEL AND THE PUBLIC AND CLEAR ACCESS IN AND OUT OF THE WORK SITE SO AS TO FACILITATE DAILY TRAFFIC MOVEMENT, DELIVERIES, AND SAFETY. REMOVE BARRICADES WHEN NO LONGER REQUIRED.

10. REMOVE DEBRIS, RUBBISH, AND OTHER SUBSTANCES FROM SITE. LEGALLY TRANSPORT AND DISPOSE OF SUCH MATERIALS OFF-SITE. BURYING OR BURNING OF "TO BE REMOVED" MATERIALS ON THE PROJECT SITE IS FORBIDDEN.

11. COOPERATE WITH THE APPLICABLE CITY OR OTHER GOVERNMENT OFFICIALS AND INSPECTORS AT ALL TIMES. IF SUCH OFFICIAL OR INSPECTOR DEEMS SPECIAL INSPECTION NECESSARY, PROVIDE ALL ASSISTANCE AND FACILITIES THAT WILL EXPEDITE HIS INSPECTION.

12. ALL DETAILS OF CONSTRUCTION SHALL CONFORM WITH THE APPLICABLE CODES (SEE PROJECT INFORMATION ON COVER SHEET)

13. INSTALL ALL MANUFACTURED ITEMS, MATERIALS, AND EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDED SPECIFICATIONS, UNLESS OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE, AS A MINIMUM STANDARD, WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES HAVING JURISDICTION. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY BEARING ON THE PERFORMANCE OF THE WORK.

14. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS NOTED OTHERWISE. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT AND APPURTENANCES, AND LABOR NECESSARY TO AFFECT ALL INSTALLATIONS INDICATED ON THE DRAWINGS. THE WORK SHALL ALSO INCLUDE ALL MATERIALS, DETAIL AND LABOR NECESSARY FOR THE SUCCESSFUL INSTALLATION OF THE WORK DESCRIBED HEREIN.

15. ALL DIMENSIONS ARE TO FACE OF CONC. BLOCK, CONC. PANEL, FACE OF EXISTING FINISH, OR FACE OF NEW STUD, UNLESS OTHERWISE NOTED. "CLEAR" DENOTES FINISH TO FINISH DIMENSIONS.

16. ALL GRADES, LINES, LEVELS, AND DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO START OF CONSTRUCTION. ANY ERROR OR INCONSISTENCY SHALL BE REPORTED TO THE ARCHITECT FOR INSTRUCTIONS PRIOR TO START OF CONSTRUCTION.

17. CONTRACTOR IS TO FIELD VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR POSSIBLE CONFLICTS.

18. CONTRACTOR IS TO FIELD VERIFY LOCATIONS AND RUNS OF ALL NEW AND EXISTING STORM SEWER PIPING AND ROOF TIE-INS. REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO START OF CONSTRUCTION.

19. DO NOT INTERRUPT EXISTING UTILITIES IN OCCUPIED FACILITIES UNLESS AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION. IF INTERRUPTION IS ALLOWED, PROVIDE ALTERNATE TEMPORARY SERVICES ACCEPTABLE TO GOVERNING AUTHORITIES. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES 48 HOURS PRIOR TO ANY DEMOLITION WORK.

20. CONTRACTOR SHALL PERFORM HIGH QUALITY PROFESSIONAL WORK. JOIN MATERIALS TO UNIFORM ACCURATE FITS SO THEY MEET WITH NEAT, STRAIGHT LINES, FREE OF SMEARS OR OVERLAPS. INSTALL EXPOSED MATERIALS APPROPRIATELY LEVEL, PLUMB AND AT THE ACCURATE RIGHT ANGLES, OR FLUSH WITH ADJOINING MATERIALS. WORK OF EACH TRADE SHALL MEET ALL NATIONAL STANDARDS PUBLISHED BY THAT TRADE.

21. BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AND SHALL BE RESPONSIBLE FOR THEIR CORRECTNESS. ANY DIFFERENCES BETWEEN DIMENSIONS INDICATED ON THE DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR INSTRUCTIONS AND CONSIDERATIONS BEFORE PROCEEDING WITH THE WORK.

22. IT IS THE CONTRACTOR'S RESPONSIBILITY FOR LIFTING HVAC, PIPING, GAS PIPING, AND ELECTRICAL AS REQUIRED.

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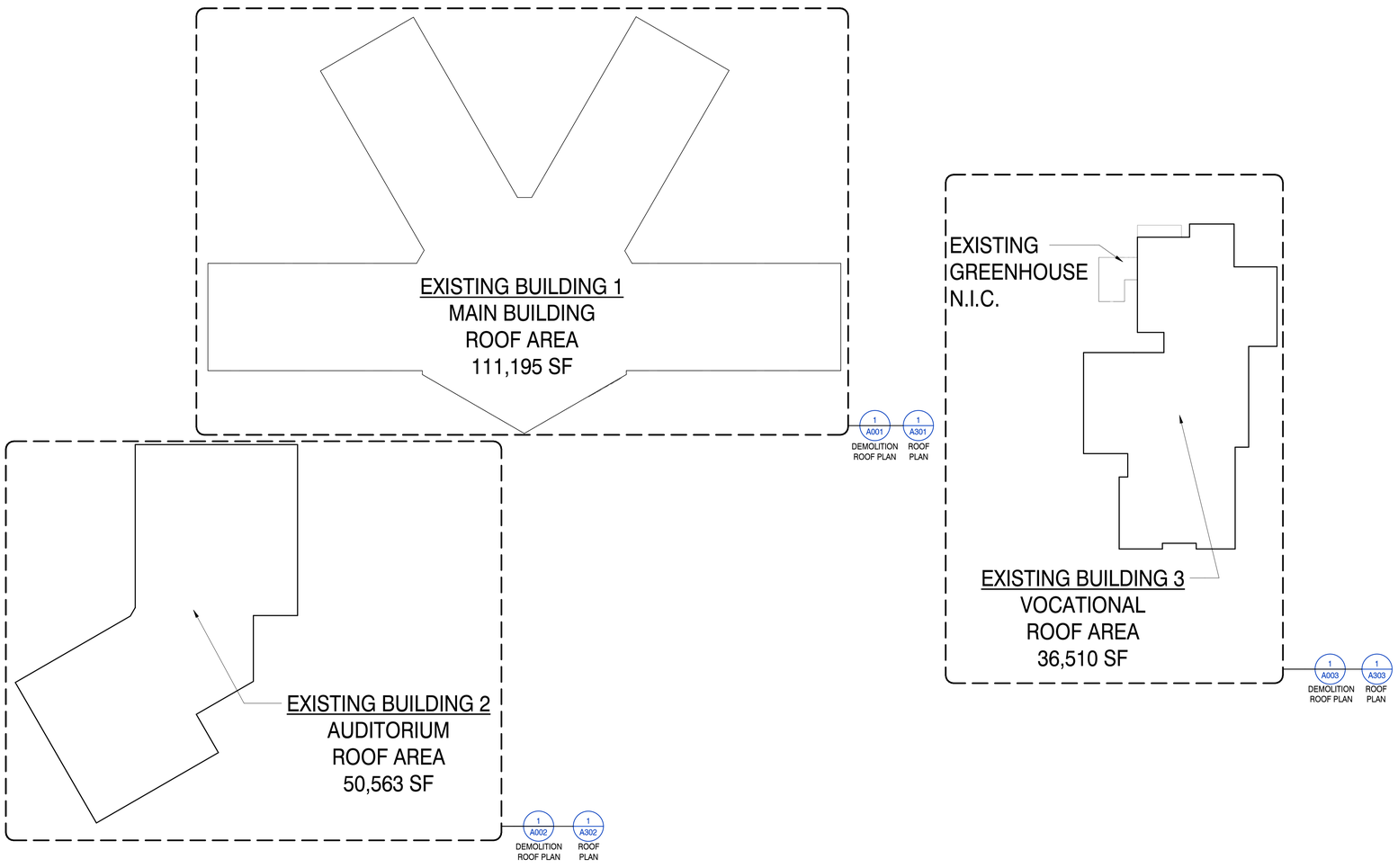

COMPOSITE ROOF PLAN

SCALE : 1" = 60'-0"

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CONSULTANT

SEAL

PROJECT INFORMATION

PROJECT:

FARRAGUT HIGH SCHOOL ROOF REPLACEMENT

PROJECT ADDRESS:

11237 KINGSTON PIKE,
KNOXVILLE, TN 37934
KNOX COUNTY

PROJECT NO.: 231315

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
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- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/12/2024	ADDENDUM 02

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	01/03/2024
DESIGNED BY:	HW
DRAWN BY:	LS
REVIEWED BY:	HW

SHEET TITLE:

GENERAL NOTES AND COMPOSITE PLAN

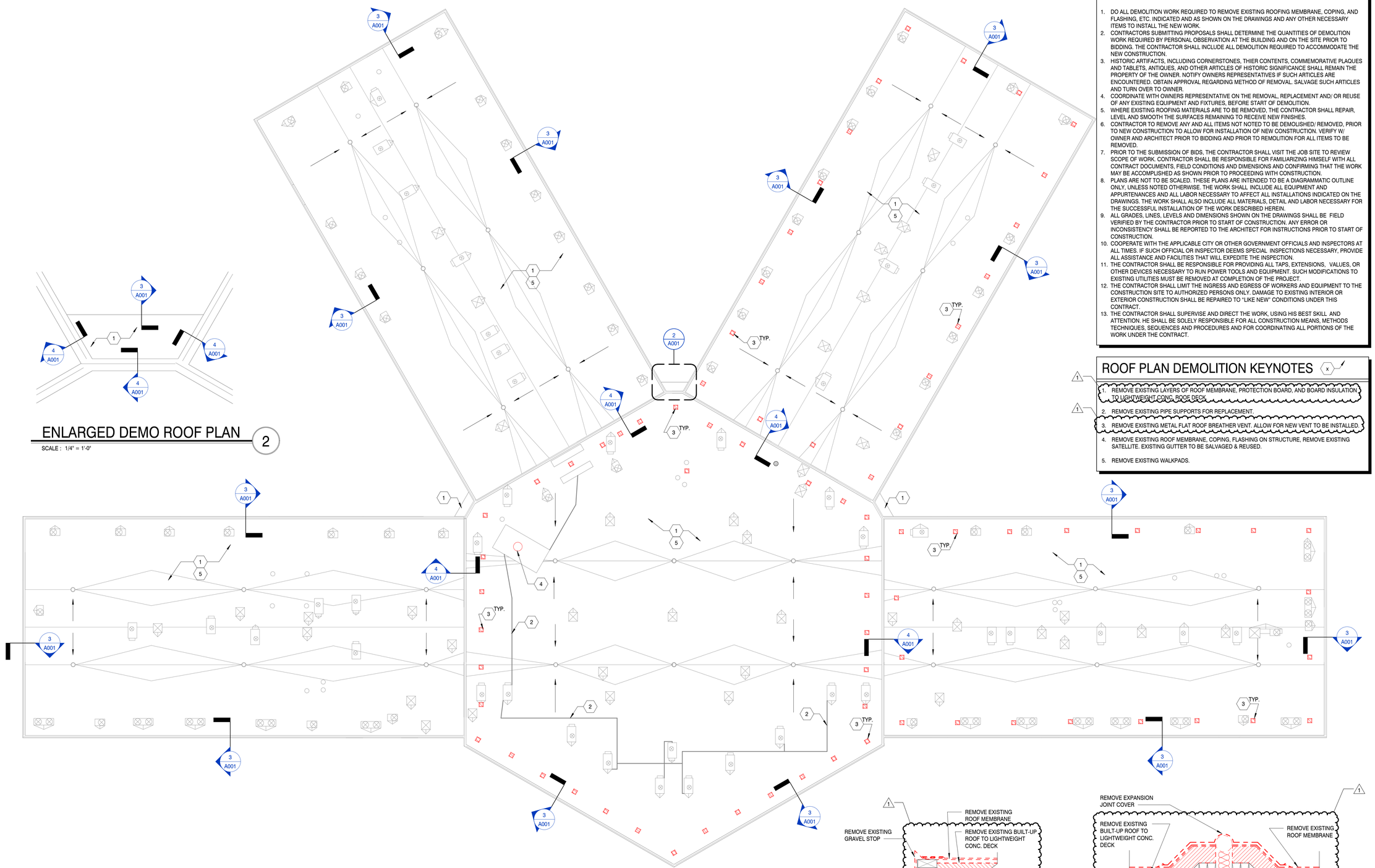
SHEET NO.:

A000

ARCH D

ENLARGED DEMO ROOF PLAN (2)

SCALE : 1/4" = 1'-0"



DEMOLITION ROOF PLAN - MAIN BUILDING (1)

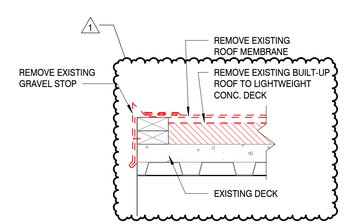
SCALE : 1" = 20'-0"

DEMOLITION NOTES

1. DO ALL DEMOLITION WORK REQUIRED TO REMOVE EXISTING ROOFING MEMBRANE, COPING, AND FLASHING, ETC. INDICATED AND AS SHOWN ON THE DRAWINGS AND ANY OTHER NECESSARY ITEMS TO INSTALL THE NEW WORK.
2. CONTRACTORS SUBMITTING PROPOSALS SHALL DETERMINE THE QUANTITIES OF DEMOLITION WORK REQUIRED BY PERSONAL OBSERVATION AT THE BUILDING AND ON THE SITE PRIOR TO BIDDING. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION.
3. HISTORIC ARTIFACTS, INCLUDING CORNERSTONES, THIER CONTENTS, COMMEMORATIVE PLAQUES AND TABLETS, ANTIQUES, AND OTHER ARTICLES OF HISTORIC SIGNIFICANCE SHALL REMAIN THE PROPERTY OF THE OWNER. NOTIFY OWNERS REPRESENTATIVES IF SUCH ARTICLES ARE ENCOUNTERED. OBTAIN APPROVAL REGARDING METHOD OF REMOVAL. SALVAGE SUCH ARTICLES AND TURN OVER TO OWNER.
4. COORDINATE WITH OWNERS REPRESENTATIVE ON THE REMOVAL, REPLACEMENT AND/ OR REUSE OF ANY EXISTING EQUIPMENT AND FIXTURES, BEFORE START OF DEMOLITION.
5. WHERE EXISTING ROOFING MATERIALS ARE TO BE REMOVED, THE CONTRACTOR SHALL REPAIR, LEVEL AND SMOOTH THE SURFACES REMAINING TO RECEIVE NEW FINISHES.
6. CONTRACTOR TO REMOVE ANY AND ALL ITEMS NOT NOTED TO BE DEMOLISHED/ REMOVED, PRIOR TO NEW CONSTRUCTION TO ALLOW FOR INSTALLATION OF NEW CONSTRUCTION. VERIFY W/ OWNER AND ARCHITECT PRIOR TO BIDDING AND PRIOR TO REMOLITION FOR ALL ITEMS TO BE REMOVED.
7. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTOR SHALL VISIT THE JOB SITE TO REVIEW SCOPE OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION.
8. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS NOTED OTHERWISE. THE WORK SHALL INCLUDE ALL EQUIPMENT AND APPURTENANCES AND ALL LABOR NECESSARY TO AFFECT ALL INSTALLATIONS INDICATED ON THE DRAWINGS. THE WORK SHALL ALSO INCLUDE ALL MATERIALS, DETAIL AND LABOR NECESSARY FOR THE SUCCESSFUL INSTALLATION OF THE WORK DESCRIBED HEREIN.
9. ALL GRADES, LINES, LEVELS AND DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO START OF CONSTRUCTION. ANY ERROR OR INCONSISTENCY SHALL BE REPORTED TO THE ARCHITECT FOR INSTRUCTIONS PRIOR TO START OF CONSTRUCTION.
10. COOPERATE WITH THE APPLICABLE CITY OR OTHER GOVERNMENT OFFICIALS AND INSPECTORS AT ALL TIMES. IF SUCH OFFICIAL OR INSPECTOR DEEMS SPECIAL INSPECTIONS NECESSARY, PROVIDE ALL ASSISTANCE AND FACILITIES THAT WILL EXPEDITE THE INSPECTION.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL TAPS, EXTENSIONS, VALUES, OR OTHER DEVICES NECESSARY TO RUN POWER TOOLS AND EQUIPMENT. SUCH MODIFICATIONS TO EXISTING UTILITIES MUST BE REMOVED AT COMPLETION OF THE PROJECT.
12. THE CONTRACTOR SHALL LIMIT THE INGRESS AND EGRESS OF WORKERS AND EQUIPMENT TO THE CONSTRUCTION SITE TO AUTHORIZED PERSONS ONLY. DAMAGE TO EXISTING INTERIOR OR EXTERIOR CONSTRUCTION SHALL BE REPAIRED TO "LIKE NEW" CONDITIONS UNDER THIS CONTRACT.
13. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

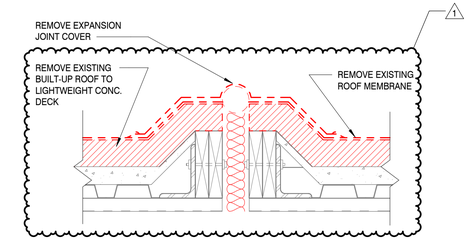
ROOF PLAN DEMOLITION KEYNOTES (x)

1. REMOVE EXISTING LAYERS OF ROOF MEMBRANE, PROTECTION BOARD, AND BOARD INSULATION TO LIGHTWEIGHT CONC. ROOF DECK.
2. REMOVE EXISTING PIPE SUPPORTS FOR REPLACEMENT.
3. REMOVE EXISTING METAL FLAT ROOF BREATHER VENT. ALLOW FOR NEW VENT TO BE INSTALLED.
4. REMOVE EXISTING ROOF MEMBRANE, COPING, FLASHING ON STRUCTURE, REMOVE EXISTING SATELLITE. EXISTING GUTTER TO BE SALVAGED & REUSED.
5. REMOVE EXISTING WALKPADS.



GRAVEL STOP DETAIL (3)

SCALE : 1 1/2" = 1'-0"



EXPANSION JOINT DETAIL (4)

SCALE : 1 1/2" = 1'-0"

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CONSULTANT

SEAL

HOWARD W. WALDROP
REGISTERED ARCHITECT
AND ARCHITECTURE
COMMERCE
NO. 104971
STATE OF TENNESSEE
1-12-24

PROJECT INFORMATION

PROJECT:

FARRAGUT HIGH SCHOOL ROOF REPLACEMENT

PROJECT ADDRESS:

11237 KINGSTON PIKE,
KNOXVILLE, TN 37934
KNOX COUNTY

PROJECT NO.: 231315

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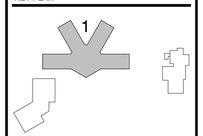
REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/12/2024	ADDENDUM 02

KEY PLAN



SHEET INFORMATION

SHEET ISSUED:	01/03/2024
DESIGNED BY:	HW
DRAWN BY:	LS
REVIEWED BY:	HW

SHEET TITLE:

DEMOLITION ROOF PLAN - MAIN BUILDING

SHEET NO.:

A001

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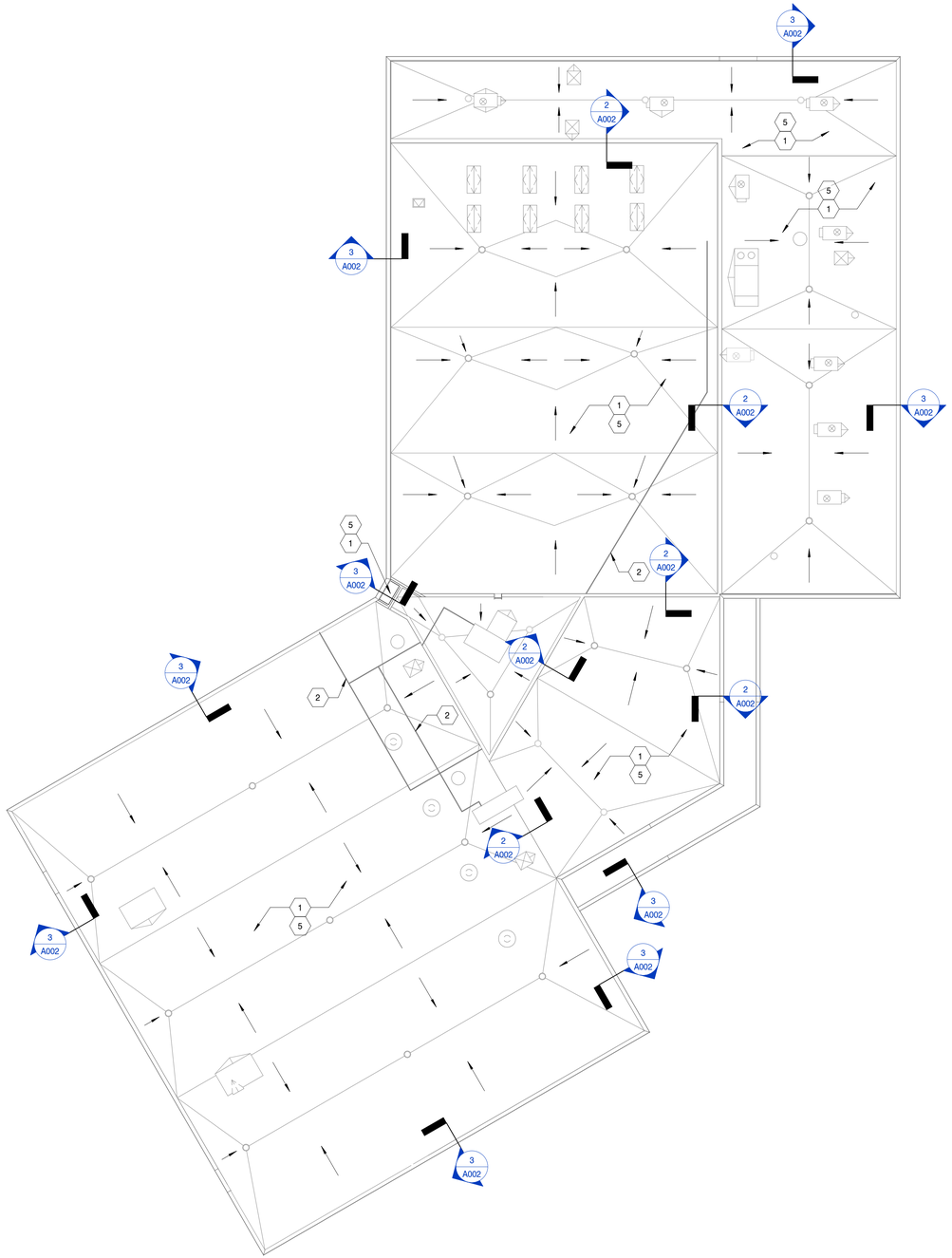

DEMOLITION ROOF PLAN - AUDITORIUM

SCALE : 1" = 20'-0"

1

DEMOLITION NOTES

1. DO ALL DEMOLITION WORK REQUIRED TO REMOVE EXISTING ROOFING MEMBRANE, COPING, AND FLASHING, ETC. INDICATED AND AS SHOWN ON THE DRAWINGS AND ANY OTHER NECESSARY ITEMS TO INSTALL THE NEW WORK.
2. CONTRACTORS SUBMITTING PROPOSALS SHALL DETERMINE THE QUANTITIES OF DEMOLITION WORK REQUIRED BY PERSONAL OBSERVATION AT THE BUILDING AND ON THE SITE PRIOR TO BIDDING. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION.
3. HISTORIC ARTIFACTS, INCLUDING CORNERSTONES, THIER CONTENTS, COMMEMORATIVE PLAQUES AND TABLETS, ANTIQUES, AND OTHER ARTICLES OF HISTORIC SIGNIFICANCE SHALL REMAIN THE PROPERTY OF THE OWNER. NOTIFY OWNERS REPRESENTATIVES IF SUCH ARTICLES ARE ENCOUNTERED. OBTAIN APPROVAL REGARDING METHOD OF REMOVAL. SALVAGE SUCH ARTICLES AND TURN OVER TO OWNER.
4. COORDINATE WITH OWNERS REPRESENTATIVE ON THE REMOVAL, REPLACEMENT AND/ OR REUSE OF ANY EXISTING EQUIPMENT AND FIXTURES, BEFORE START OF DEMOLITION.
5. WHERE EXISTING ROOFING MATERIALS ARE TO BE REMOVED, THE CONTRACTOR SHALL REPAIR, LEVEL AND SMOOTH THE SURFACES REMAINING TO RECEIVE NEW FINISHES.
6. CONTRACTOR TO REMOVE ANY AND ALL ITEMS NOT NOTED TO BE DEMOLISHED/ REMOVED, PRIOR TO NEW CONSTRUCTION TO ALLOW FOR INSTALLATION OF NEW CONSTRUCTION. VERIFY W/ OWNER AND ARCHITECT PRIOR TO BIDDING AND PRIOR TO REMOLITION FOR ALL ITEMS TO BE REMOVED.
7. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTOR SHALL VISIT THE JOB SITE TO REVIEW SCOPE OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION.
8. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS NOTED OTHERWISE. THE WORK SHALL INCLUDE ALL EQUIPMENT AND APPURTENANCES AND ALL LABOR NECESSARY TO AFFECT ALL INSTALLATIONS INDICATED ON THE DRAWINGS. THE WORK SHALL ALSO INCLUDE ALL MATERIALS, DETAIL AND LABOR NECESSARY FOR THE SUCCESSFUL INSTALLATION OF THE WORK DESCRIBED HEREIN.
9. ALL GRADES, LINES, LEVELS AND DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO START OF CONSTRUCTION. ANY ERROR OR INCONSISTENCY SHALL BE REPORTED TO THE ARCHITECT FOR INSTRUCTIONS PRIOR TO START OF CONSTRUCTION.
10. COOPERATE WITH THE APPLICABLE CITY OR OTHER GOVERNMENT OFFICIALS AND INSPECTORS AT ALL TIMES. IF SUCH OFFICIAL OR INSPECTOR DEEMS SPECIAL INSPECTIONS NECESSARY, PROVIDE ALL ASSISTANCE AND FACILITIES THAT WILL EXPEDITE THE INSPECTION.
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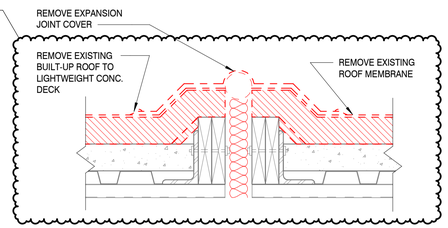
12. THE CONTRACTOR SHALL LIMIT THE INGRESS AND EGRESS OF WORKERS AND EQUIPMENT TO THE CONSTRUCTION SITE TO AUTHORIZED PERSONS ONLY. DAMAGE TO EXISTING INTERIOR OR EXTERIOR CONSTRUCTION SHALL BE REPAIRED TO "LIKE NEW" CONDITIONS UNDER THIS CONTRACT.
13. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

ROOF PLAN DEMOLITION KEYNOTES

1

1. REMOVE EXISTING LAYERS OF ROOF MEMBRANE, PROTECTION BOARD, AND BOARD INSULATION TO LIGHTWEIGHT CONC. ROOF DECK.
2. REMOVE EXISTING PIPE SUPPORTS FOR REPLACEMENT.
3. REMOVE EXISTING METAL FLAT ROOF BREATHER VENT. ALLOW FOR NEW VENT TO BE INSTALLED.
4. REMOVE EXISTING ROOF MEMBRANE, COPING, FLASHING ON STRUCTURE, REMOVE EXISTING SATELLITE. EXISTING GUTTER TO BE SALVAGED & REUSED.
5. REMOVE EXISTING WALKPADS.

1



EXPANSION JOINT DETAIL

SCALE : 1 1/2" = 1'-0"

2

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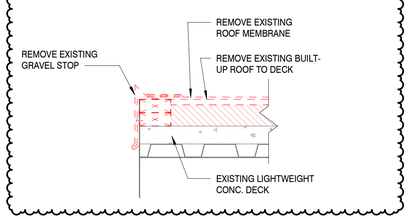


EXPANSION JOINT DETAIL

SCALE : 1 1/2" = 1'-0"

3

MBI

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919

PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL

HOWARD W. WALKER
REGISTERED ARCHITECT
AND ARCHITECTURE
COMMERCE
NO. 104971
STATE OF TENNESSEE

PROJECT INFORMATION

PROJECT:

FARRAGUT HIGH SCHOOL ROOF REPLACEMENT

PROJECT ADDRESS:

11237 KINGSTON PIKE,
KNOXVILLE, TN 37934
KNOX COUNTY

PROJECT NO.: 231315

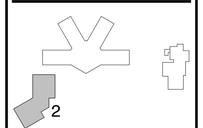
ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/12/2024	ADDENDUM 02

KEY PLAN



SHEET INFORMATION

SHEET ISSUED:	01/03/2024
DESIGNED BY:	HW
DRAWN BY:	LS
REVIEWED BY:	HW

SHEET TITLE:

DEMOLITION ROOF PLAN - AUDITORIUM

SHEET NO.:

A002

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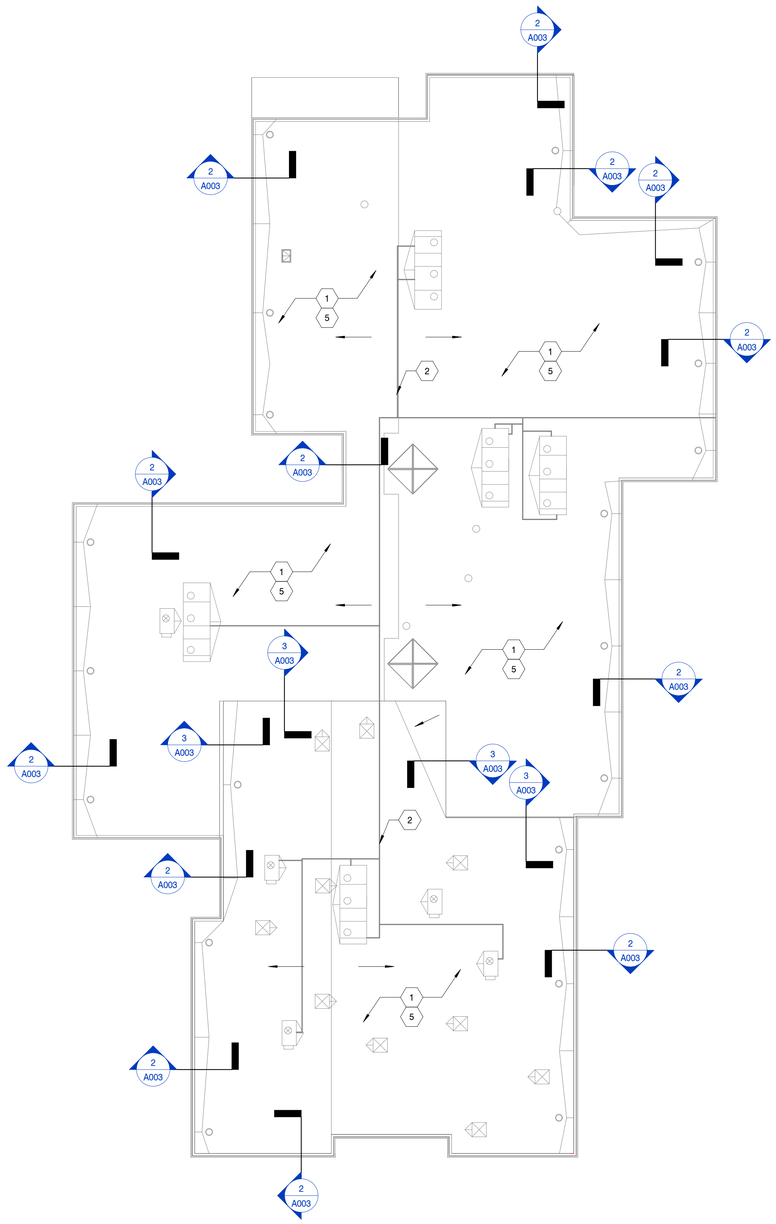

DEMOLITION ROOF PLAN - VOCATIONAL

SCALE : 1" = 20'-0"

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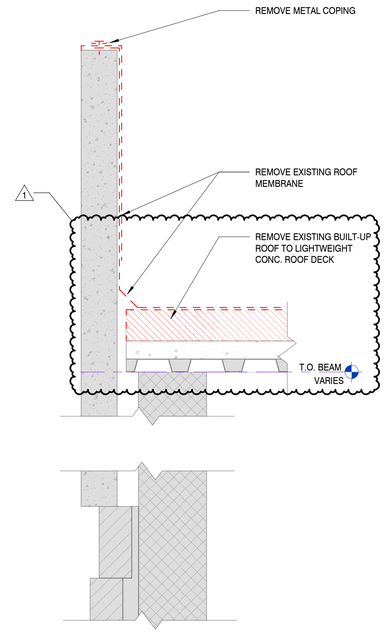
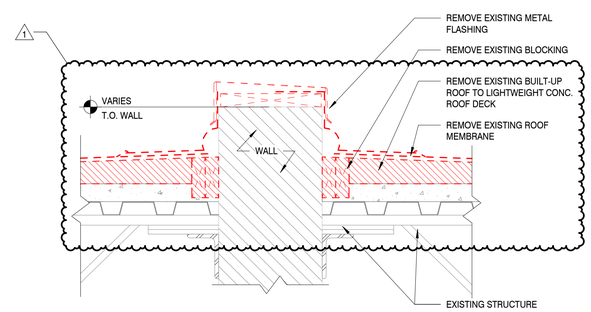


DEMOLITION WALL SECTION

SCALE : 1 1/2" = 1'-0"

2



ROOF PARAPET FLASHING

SCALE : 1 1/2" = 1'-0"

3

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5. REMOVE EXISTING WALKPADS.

MBI

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CONSULTANT

SEAL

HOWARD W. WALDROP
REGISTERED ARCHITECT
NO. 104971
STATE OF TENNESSEE
MBI COMMERCE

PROJECT INFORMATION

PROJECT:

FARRAGUT HIGH SCHOOL ROOF REPLACEMENT

PROJECT ADDRESS:

11237 KINGSTON PIKE,
KNOXVILLE, TN 37934
KNOX COUNTY

PROJECT NO.: 231315

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
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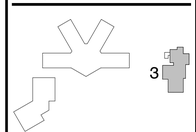
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/12/2024	ADDENDUM 02

KEY PLAN



SHEET INFORMATION

SHEET ISSUED:	01/03/2024
DESIGNED BY:	HW
DRAWN BY:	LS
REVIEWED BY:	HW

SHEET TITLE:

DEMOLITION ROOF PLAN - VOCATIONAL

SHEET NO.:

A003

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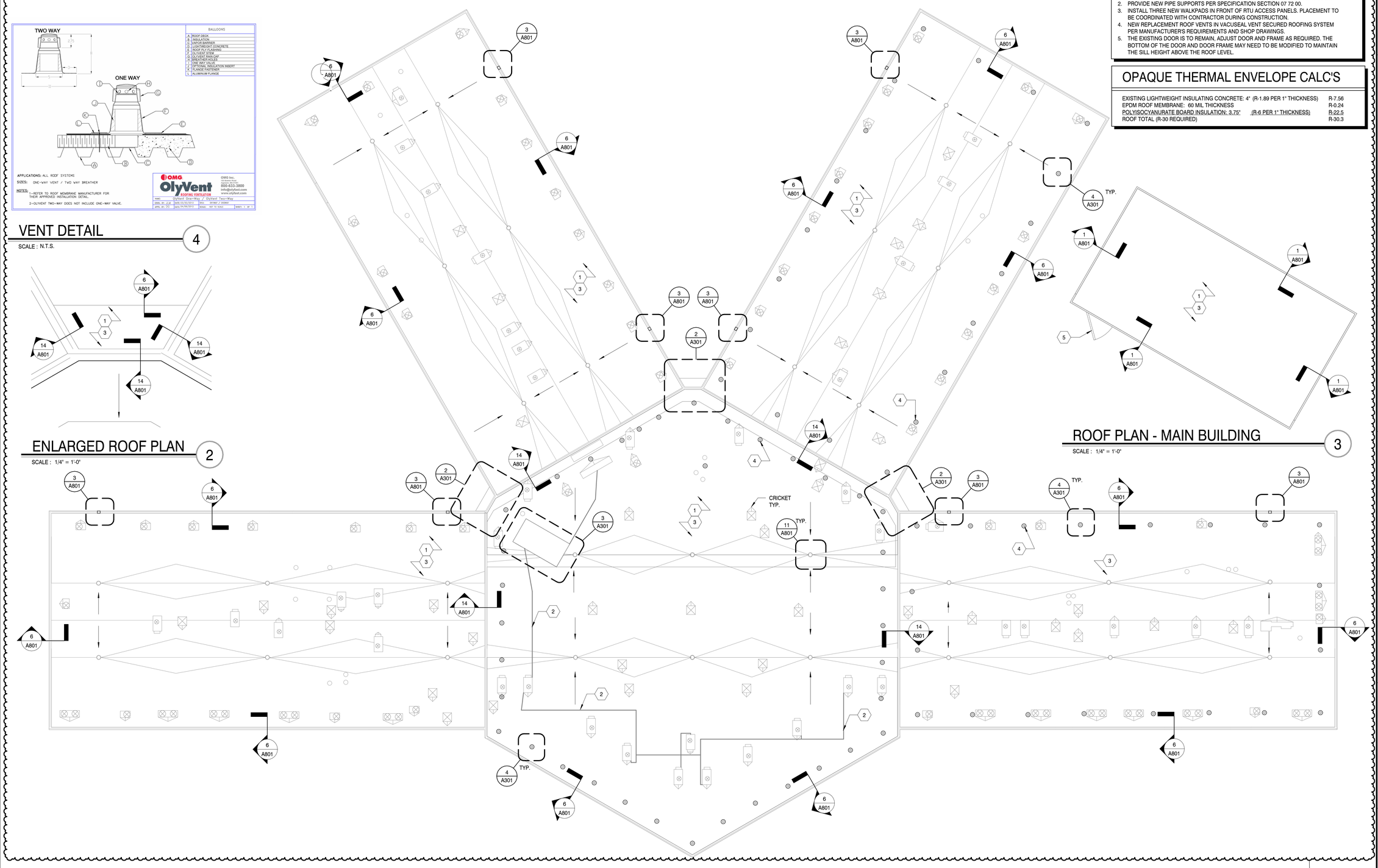
VENT DETAIL 4

SCALE : N.T.S.

ENLARGED ROOF PLAN 2

SCALE : 1/4" = 1'-0"



ROOF PLAN - MAIN BUILDING 3

SCALE : 1/4" = 1'-0"

ROOF PLAN KEYNOTES

1. NEW EPDM ROOF MEMBRANE. BOARD INSULATION. WITH THICKNESS TO PROVIDE MINIMUM OF R-30 CI (WHICH INCLUDES EXISTING LIGHTWEIGHT INSULATING CONCRETE - CONSTRUCT IN ACCORDANCE WITH UL P908) PER SECTION 07 53 23.
2. PROVIDE NEW PIPE SUPPORTS PER SPECIFICATION SECTION 07 72 00.
3. INSTALL THREE NEW WALKPADS IN FRONT OF RTU ACCESS PANELS. PLACEMENT TO BE COORDINATED WITH CONTRACTOR DURING CONSTRUCTION.
4. NEW REPLACEMENT ROOF VENTS IN VACUSEAL VENT SECURED ROOFING SYSTEM PER MANUFACTURER'S REQUIREMENTS AND SHOP DRAWINGS.
5. THE EXISTING DOOR IS TO REMAIN, ADJUST DOOR AND FRAME AS REQUIRED. THE BOTTOM OF THE DOOR AND DOOR FRAME MAY NEED TO BE MODIFIED TO MAINTAIN THE SILL HEIGHT ABOVE THE ROOF LEVEL.

OPAQUE THERMAL ENVELOPE CALC'S

EXISTING LIGHTWEIGHT INSULATING CONCRETE: 4" (R-1.89 PER 1" THICKNESS)		R-7.56
EPDM ROOF MEMBRANE: 60 MIL THICKNESS		R-0.24
POLYISOCYANURATE BOARD INSULATION: 3.75"	(R-6 PER 1" THICKNESS)	R-22.5
ROOF TOTAL (R-30 REQUIRED)		R-30.3

ROOF PLAN - MAIN BUILDING 1

SCALE : 1" = 20'-0"

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MBI

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CONSULTANT

SEAL

PROJECT INFORMATION

PROJECT:

FARRAGUT HIGH SCHOOL ROOF REPLACEMENT

PROJECT ADDRESS:

11237 KINGSTON PIKE,
KNOXVILLE, TN 37934
KNOX COUNTY

PROJECT NO.: 231315

ACTIVE DESIGN PHASE

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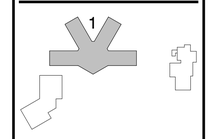
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/12/2024	ADDENDUM 02

KEY PLAN



SHEET INFORMATION

SHEET ISSUED:	01/03/2024
DESIGNED BY:	HW
DRAWN BY:	LS
REVIEWED BY:	HW

SHEET TITLE:

ROOF PLAN - MAIN BUILDING

SHEET NO.:

A301

ARCH D

ROOF PLAN KEYNOTES

1. NEW EPDM ROOF MEMBRANE, BOARD INSULATION, WITH THICKNESS TO PROVIDE MINIMUM OF R-30 CI (WHICH INCLUDES EXISTING LIGHTWEIGHT INSULATING CONCRETE - CONSTRUCT IN ACCORDANCE WITH UL P908) PER SECTION 07 53 23.
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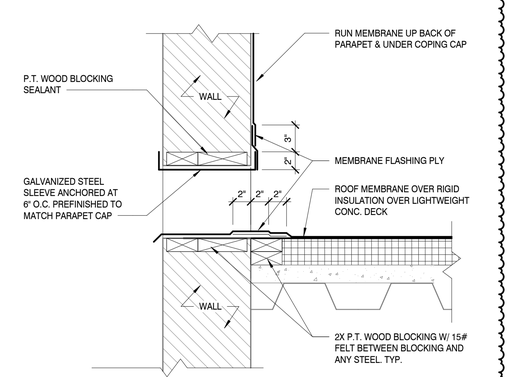
4. NEW REPLACEMENT ROOF VENTS IN VACUSEAL VENT SECURED ROOFING SYSTEM PER MANUFACTURER'S REQUIREMENTS AND SHOP DRAWINGS.

ROOF PLAN - AUDITORIUM

SCALE : 1" = 20'-0"

1



THRU-WALL SCUPPER DETAIL

SCALE : 1 1/2" = 1'-0"

2

MBI

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KNOXVILLE, TN 37919

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CONSULTANT

SEAL

PROJECT INFORMATION

PROJECT:

FARRAGUT HIGH SCHOOL ROOF REPLACEMENT

PROJECT ADDRESS:

11237 KINGSTON PIKE,
KNOXVILLE, TN 37934
KNOX COUNTY

PROJECT NO.: 231315

ACTIVE DESIGN PHASE

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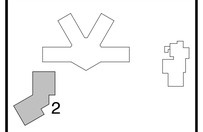
REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/12/2024	ADDENDUM 02

KEY PLAN



SHEET INFORMATION

SHEET ISSUED:	01/03/2024
DESIGNED BY:	HW
DRAWN BY:	LS
REVIEWED BY:	HW

SHEET TITLE:

ROOF PLAN - AUDITORIUM

SHEET NO.:

A302

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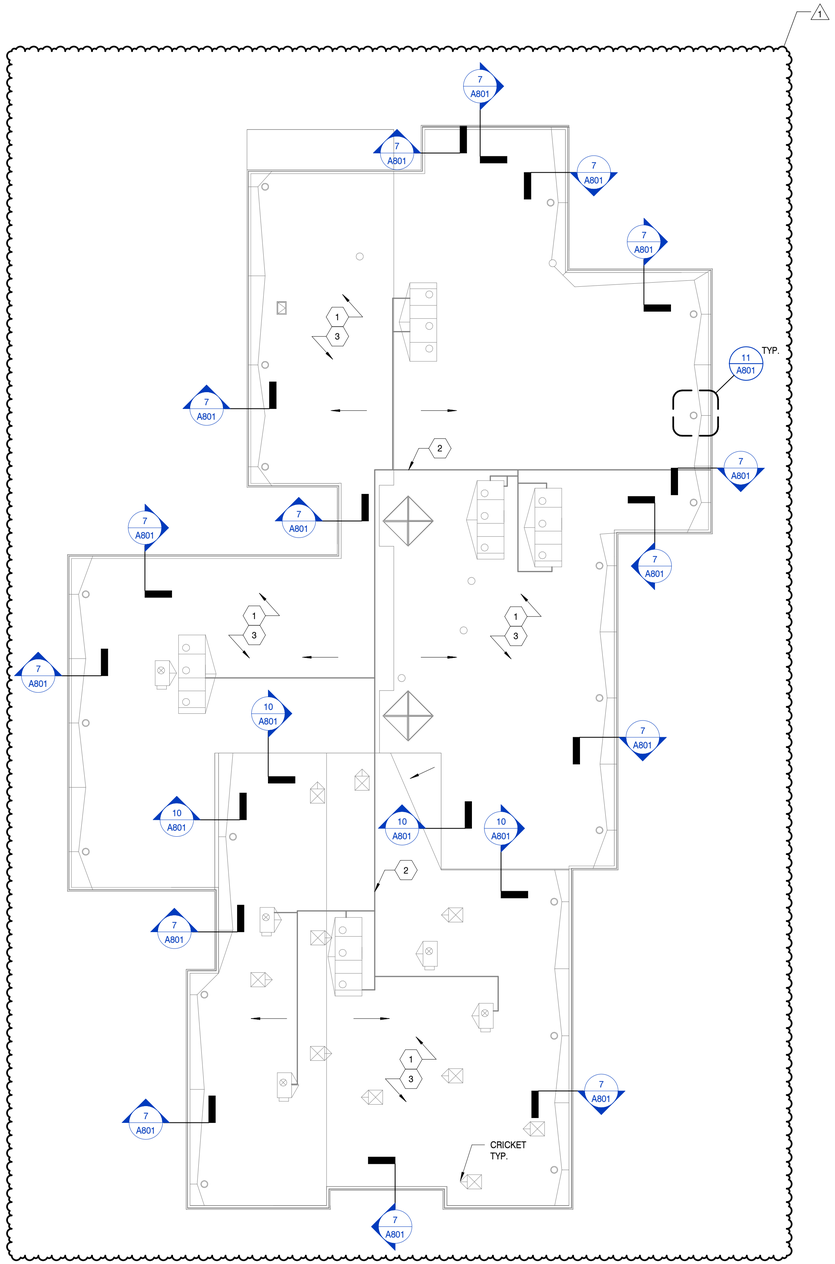

ROOF PLAN - VOCATIONAL

SCALE : 1" = 20'-0"

1

ROOF PLAN KEYNOTES

1. NEW EPDM ROOF MEMBRANE. BOARD INSULATION, WITH THICKNESS TO PROVIDE MINIMUM OF R-30 CI (WHICH INCLUDES EXISTING LIGHTWEIGHT INSULATING CONCRETE - CONSTRUCT IN ACCORDANCE WITH UL P908) PER SECTION 07 53 23.
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REVISION INFORMATION

NO.	DATE	DESCRIPTION
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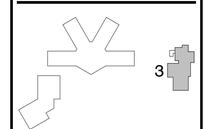
KEY PLAN



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SHEET TITLE:

ROOF PLAN - VOCATIONAL BUILDING

SHEET NO.:

A303

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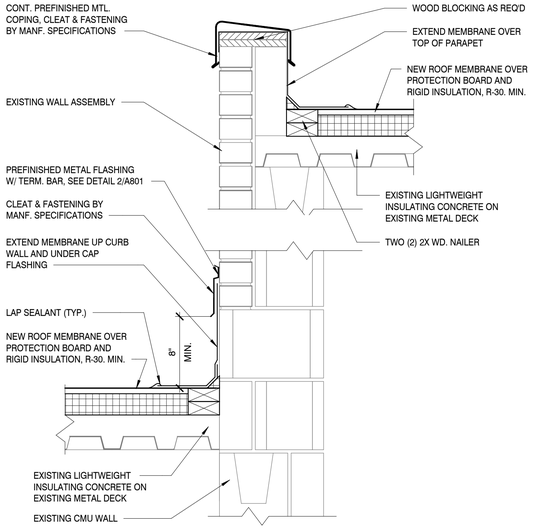
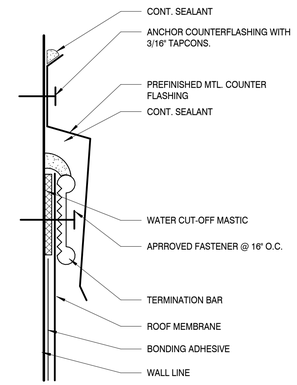


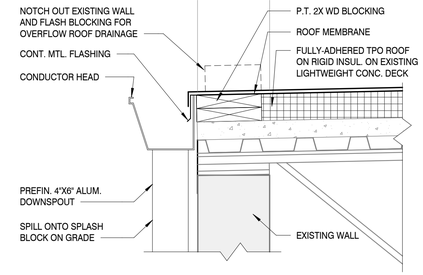
STAIR ENCLOSURE DETAIL 1

SCALE : 1 1/2" = 1'-0"



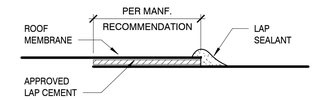
TERMINATION BAR 2

SCALE : 3" = 1'-0"



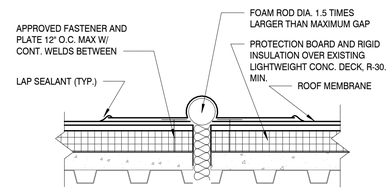
ROOF EDGE/ SCUPPER DETAIL 3

SCALE : 1 1/2" = 1'-0"



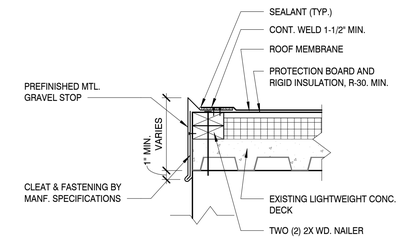
LAP SPLICE DETAIL 4

SCALE : 6" = 1'-0"



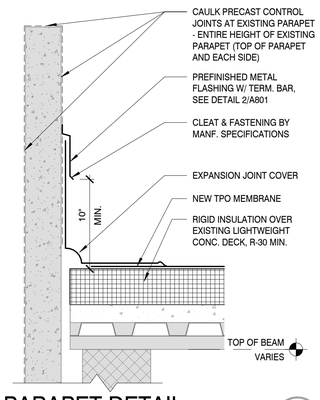
EXPANSION JOINT DETAIL 5

SCALE : 1 1/2" = 1'-0"



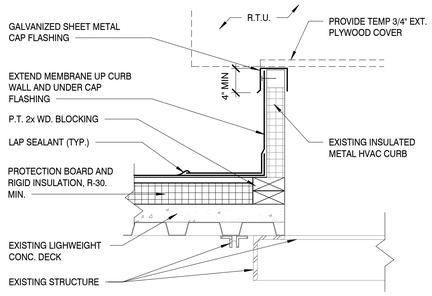
GRAVEL STOP 6

SCALE : 1 1/2" = 1'-0"



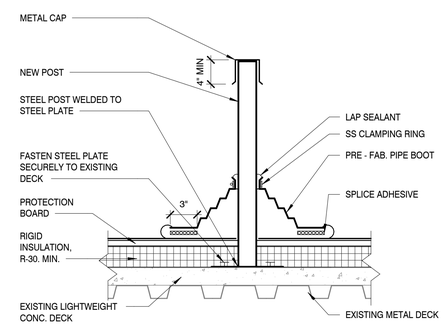
ROOF PARAPET DETAIL 7

SCALE : 1 1/2" = 1'-0"



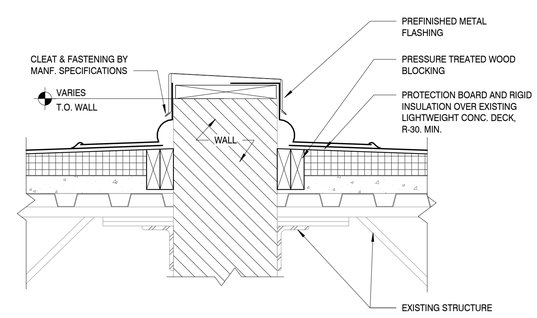
ROOF CURB 8

SCALE : 1 1/2" = 1'-0"



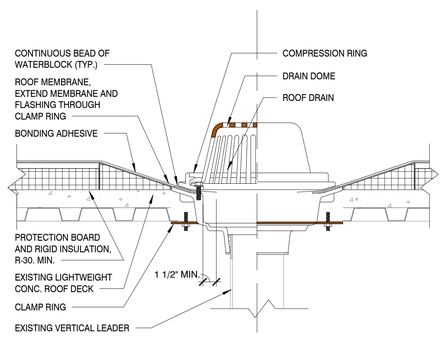
ROOF MOUNTED POST 9

SCALE : 1 1/2" = 1'-0"



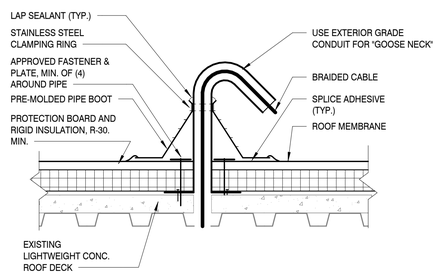
ROOF PARAPET FLASHING 10

SCALE : 1 1/2" = 1'-0"



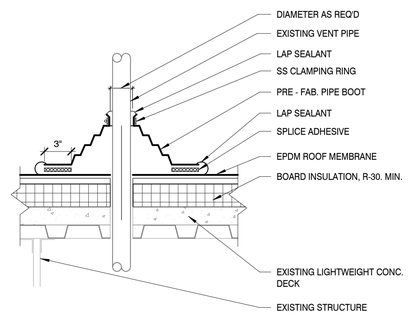
ROOF DRAIN 11

SCALE : 1 1/2" = 1'-0"



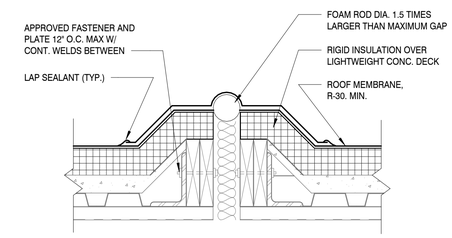
CABLE PENETRATION 12

SCALE : 1 1/2" = 1'-0"



VENT PIPE 13

SCALE : 1 1/2" = 1'-0"



EXPANSION JOINT DETAIL 14

SCALE : 1 1/2" = 1'-0"

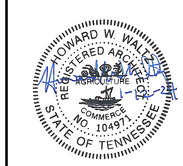
MBI

MBI COMPANIES INC.
299 N. WEISGARBER ROAD
KNOXVILLE, TN 37919

PHONE: (865) 584-0999
FAX: (865) 584-5213
WEB: mbicompanies.com

CONSULTANT

SEAL



PROJECT INFORMATION

PROJECT:

FARRAGUT HIGH SCHOOL ROOF REPLACEMENT

PROJECT ADDRESS:

11237 KINGSTON PIKE,
KNOXVILLE, TN 37934
KNOX COUNTY

PROJECT NO.: 231315

ACTIVE DESIGN PHASE

- ☐ FOR REVIEW ONLY
- ☐ FOR PERMITTING ONLY
- ☐ SCHEMATIC DESIGN
- ☐ DESIGN DEVELOPMENT
- ☐ CONSTRUCTION BIDDING
- ■ CONSTRUCTION DOCUMENTS
- ☐ AS-BUILT RECORD SET

REVISION INFORMATION

NO.	DATE	DESCRIPTION
1	01/12/2024	ADDENDUM 02

KEY PLAN

SHEET INFORMATION

SHEET ISSUED:	01/03/2024
DESIGNED BY:	HW
DRAWN BY:	LS
REVIEWED BY:	HW
SHEET TITLE:	

ROOF DETAILS

SHEET NO.:

A801

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