



ADDENDUM #2

PARTIAL ROOF REPLACEMENT SAGE PARK MIDDLE SCHOOL WINDSOR, CT

Hibbard & Rosa Architects, L.L.C.
Middletown, Connecticut

The following changes, revisions, and/or additions are hereby made a part of the Contract Documents and shall supersede previously issued documents and shall become a part of the contract documents.

Date: April 05, 2021

Information to Bidders:

Addendum #1 incorrectly identified three science rooms where the existing gabled standing seam roof system is to be removed and replaced with flat roof system. There are **four** science rooms with two sprinkler heads per gable roof, total of **eight** sprinkler heads where the contractor will have to lower a total of **eight** sprinkler heads.

Information to Bidders:

Detail 2, Sheet A-7 incorrectly notes an eight inch track, Delete 8 inch track and insert 10 inch metal track.

Information to Bidders:

Detail 4 & 5, Sheet A-7; Polyurea foam insulation to be applied to existing metal roof deck. Prime/seal existing metal deck prior to installation of polyurea foam insulation.

Information to Bidders:

Specification Section 01 50 00 Temporary Facilities and Controls, Delete the requirement for a Contractors Office and Equipment as specified in paragraph 1.5, D,1.

Information to Bidders:

Detail 1, Sheet A-7. The ceiling gypsum board is new and the contractor will be required to install. The Contractor shall be responsible to repair water damaged gypsum board in the well, prime and paint two coats.

Information to Bidders:

Sheet A-1; Delete the first two descriptions of roof systems under the LEGEND and insert the two new roof system descriptions/assemblies on Sheet SK-1

Information to Bidders:

Contractor shall install metal wall panels at opening above main entry. Refer to the attached SK-2 drawing.

Information to Bidders:

The knuckles in the existing metal roof panels in Detail 6, Sheet A-7 shall be covered/reinforced with SR coating and 12" wide SR poly mesh. Apply additional layer of coating.

Information to Bidders:

The light gage metal framing extending past the existing sloped metal roof or the structural steel may be cut back flush. The Contractor may also increase the depth of the hat channel frame for the new vertical metal wall panel to pass corner brackets.

Information to Bidders:

Specification section 07 27 00 attached.

Information to Bidders:

No request for substitution of products listed as the standard of quality have been submitted in the allotted time frame.

Information to Bidders:

The Contractor shall be responsible to replace an additional roof drain not indicated on Sheet A-1, Roof Plan. Roof drain is located on the lower roof adjacent to the Gymnasium.

Information to Bidders:

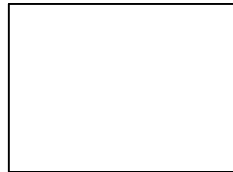
The contractor shall be responsible to provide a new exhaust duct extension from the exhaust duct located under the existing sloped metal roof to the new vertical wall panel. The new exhaust duct shall match the size of the existing duct (approximately 1'-7" x 1'-7") and have 1 inch insulation. Contractor shall provide a new wall mounted exhaust duct with same capacity/HP as the existing exhaust fan.

Information to Bidders:

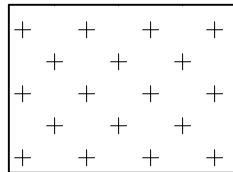
The Contractor shall be responsible to raise existing roof top mechanical equipment to maintain the minimum flashing height as required by the manufacturer.

END OF ADDENDUM #2

LEGEND



SBS MODIFIED CAP SHEET SET IN TYPE III ASPHALT ON SBS BASE SHEET SET IN TYPE III ASPHALT ON 1/2" FIBER BOARD SET IN TYPE II ASPHALT ON 2.6" FLAT STOCK POLYISOCYANURATE INSULATION SET IN TYPE III ASPHALT ON 2.6" FLAT STOCK POLYISO. INSULATION MECHANICALLY FASTENED TO SLOPED METAL ROOF DECK. TOTAL DEPTH OF INSULATION 5.2". METAL ROOF DECK SLOPED 1/4" PER FT.



SBS MODIFIED CAP SHEET SET IN TYPE III ASPHALT ON SBS MODIFIED BASE SHEET SET IN TYPE III ASPHALT ON 1/2" FIBER BOARD SET IN TYPE II ASPHALT ON 1/4" PER FT TAPERED POLYISOCYANURATE INSULATION SET IN TYPE III ASPHALT ON 4.2" FLAT STOCK POLYISOCYANURATE INSULATION MECHANICALLY FASTENED TO METAL ROOF DECK (NO SLOPE)

REVISED ROOF PLAN LEGEND



N.T.S.

PARTIAL ROOF REPLACEMENT FOR
SAGE PARK MIDDLE SCHOOL
25 SAGE PARK ROAD - WINDSOR, CT

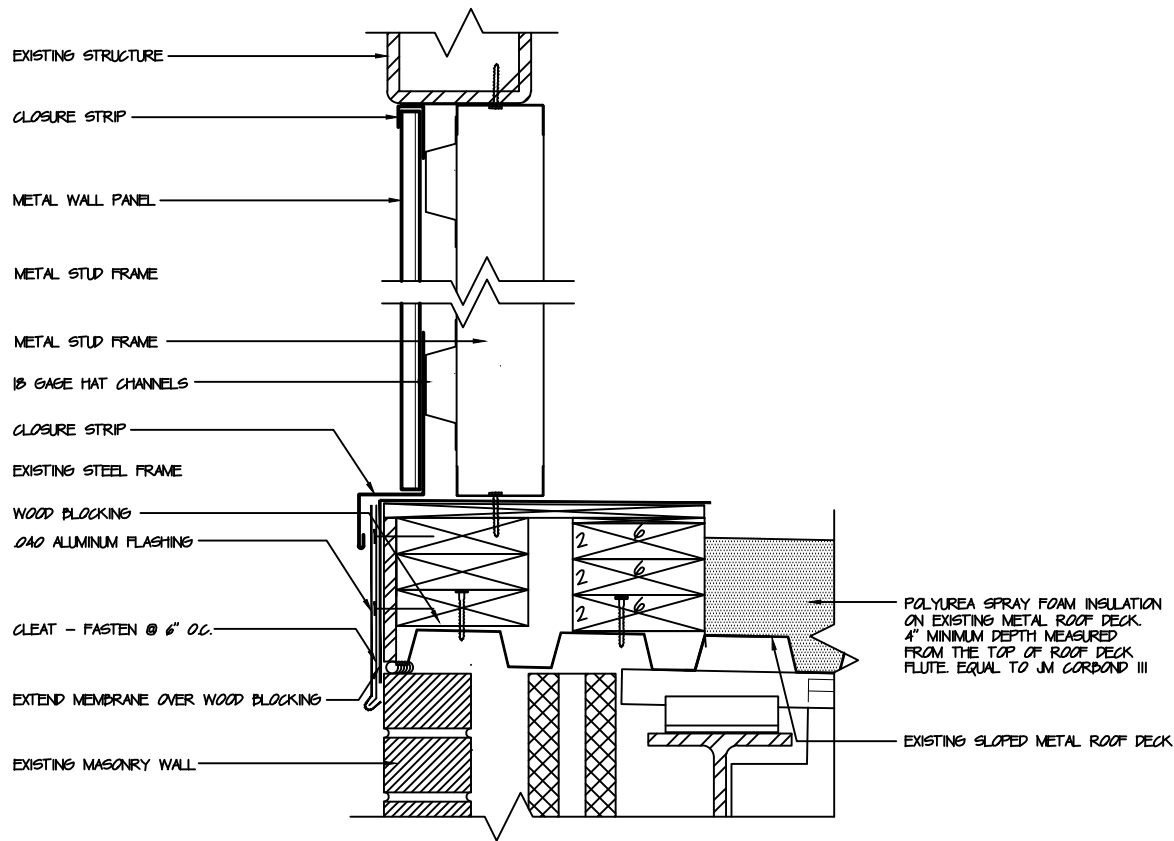
PROJECT DATA:

STATE: CT
PROJ#: 14 01 RR
DATE: 01-06-21
CON#: 1899

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SK-2



NOTE:
 INSTALL METAL WALL PANEL AT INSIDE FACE
 OF ENTRY GABLE APPROX 35'-0" ON THREE
 SIDES OF ENTRY.

① REVISED ROOF PLAN LEGEND
 1/2" = 1'-0"

PARTIAL ROOF REPLACEMENT FOR
 SAGE PARK MIDDLE SCHOOL
 25 SAGE PARK ROAD - WINDSOR, CT

PROJECT DATA:

STATE	
PROJ#	164 010 RR
DATE:	01-06-21
CON#:	1899

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SK-2

SECTION 07 27 00
ROOF DECK AND INSULATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including the Conditions of the Contract and Division 01 Specification Sections apply to this section.

1.2 SUMMARY

- A. Section includes roof insulation over the properly prepared deck substrate.
- B. Related Sections:
 - 1. Section 07 22 18 - Preparation for Re-Roofing
 - 2. Section 07 52 16 - Modified Bituminous Membrane Roofing
 - 3. Section 07 62 00 - Sheet Metal Flashing and Trim

1.3 REFERENCES

- A. American Society for Testing and materials (ASTM):
 - 1. ASTM A167 Standard Specification for Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet and Strip.
 - 2. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanized) by the Hot-Dip Process.
 - 3. ASTM B29 Standard Specification for Refined Lead.
 - 4. ASTM B32 Standard Specification for Solder Metal.
 - 5. ASTM C165 Standard Test Method for Measuring Compressive Properties of Thermal Insulation.
 - 6. ASTM C208 Standard Specification for Cellulosic Fiber Insulation Board.
 - 7. ASTM C209 Standard Test Method for Cellulosic Fiber Insulating Board.
 - 8. ASTM C272 Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions.
 - 9. ASTM C1396 Standard Specification for Gypsum Wallboard.
 - 10. ASTM C518 Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 - 11. ASTM C578 Standard Specification for Perlite Thermal Insulation Board.
 - 12. ASTM C728 Standard Test Methods for Fire Test of Roof Coverings.
 - 13. ASTM C1289 Standard Specification for Faced Rigid Polyisocyanurate Thermal Insulation.
 - 14. ASTM D5 Standard Test Method for Penetration of Bituminous Materials.
 - 15. ASTM D36 Standard Test Method for Softening Point of Bitumen (Ring and Ball Apparatus).

16. ASTM D312 Standard Specification for Asphalt Used in Roofing.
 17. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
 18. ASTM D1621 Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
 19. ASTM D1622 Standard Test Method for Apparent Density of Rigid Cellular Plastics.
 20. ASTM D1863 Standard Specification for Mineral Aggregate Used on Built-Up Roofs.
 21. ASTM D2126 Standard Test Method for Response off Rigid Cellular Plastics to Thermal Humid Aging.
 22. ASTM D2178 Standard Specification for Asphalt Glass Felts used in Roofing and Waterproofing.
 23. ASTM D4601 Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
 24. ASTM D5147 Standard Sampling and Testing Modified Bituminous Sheet Material.
- B. Cast Iron Soil Pipe Institute, Washington, D.C. (CISPI)
- C. Factory Mutual Research (FM):
1. Roof Assembly Classifications.
- D. National Roofing Contractors Association (NRCA):
1. Roofing and Waterproofing Manual.
- E. Underwriters Laboratories, Inc. (UL):
1. Fire Hazard Classifications.
- F. Warnock Hersey (WH):
1. Fire Hazard Classifications.
- G. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
- H. Steel Deck Institute, St. Louis, Missouri (SDI)
- I. Southern Pine Inspection Bureau, Pensacola, Florida (SPIB)
- J. Insulation Board, Polyisocyanurate (FS HH-I-1972)
- K. Insulation Board, Thermal (Fiberboard) (FS LLL-1-535B)

1.4 SUBMITTALS

- A. Product Data: Provide manufacturer's specification data sheets for each product in accordance with Division 01 Section Submittal Procedures. 01 33 00.

- B. Provide approval letters from insulation manufacturer for use of their insulation within this particular roofing system type.
- C. Provide a sample of each insulation type.
- D. Shop Drawings
 - 1. Submit manufacturer's shop drawings indicating complete installation details of tapered insulation system, including identification of each insulation block, sequence of installation, layout, drain locations, roof slopes, thicknesses, crickets and saddles.
 - 2. Shop drawing shall include: Outline of roof, location of drains, complete board layout of tapered insulation components, thickness and the average "R" value for the completed insulation system.
- E. Certification
 - 1. Submit roof manufacturer's certification that insulation fasteners furnished are acceptable to roof manufacturer.
 - 2. Submit roof manufacturer's certification that insulation furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.

1.5 QUALITY ASSURANCE

- A. Fire Classification, ASTM E-108.
- B. Manufacturer's Certificate: Certify that roof system furnished is approved by Factory Mutual, Underwriters Laboratories, Warnock Hersey or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.
- C. Manufacturer's Certificate: Certify that the roof system is adhered properly to meet or exceed the requirements of FM 1-90.
- D. Pre-installation meeting: Refer to Division 07 roofing specifications for pre-installation meeting requirements.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.
- B. Store all insulation materials in a manner to protect them from the wind, sun and moisture damage prior to and during installation. Any insulation that has been exposed to any moisture shall be removed from the project site.

- C. Keep materials enclosed in a watertight, ventilated enclosure (i.e. tarpaulins).
- D. Store materials off the ground. Any warped, broken or wet insulation boards shall be removed from the site.

PART 2 – PRODUCTS

2.1 PRODUCTS, GENERAL

- A. Refer to Division 01 Section “Common Product Requirements.”
- B. General: Preformed roof insulation boards manufactured or approved membrane roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.

2.2 INSULATION MATERIALS

- A. Thermal Insulation Properties and Approved Insulation Boards.
 - 1. Flat Stock Polyisocyanurate Roof Insulation; ASTM C1289:
 - a. Qualities: Factory Tapered, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers. For use as a base layer and top layer of insulation (2 layers equals 5.2”) on a sloped metal roof deck
 - b. Thickness: 2.6”
 - c. R-Value: Minimum 30
 - d. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1
 - 2. Flat Stock Polyisocyanurate Roof Insulation; ASTM C1289:
 - e. Qualities: Factory Tapered, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers. For use as a base layer of insulation
 - f. Thickness: 2.7”
 - g. R-Value: Minimum 30
 - h. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1
 - 3. Tapered Polyisocyanurate Roof Insulation; ASTM C1289:
 - a. Qualities: Factory Tapered, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers. For use where tectum roof deck with slurry topping has no slope
 - b. Thickness: Minimum 1.5”
 - c. Average R-Value: Average 30+
 - d. Tapered Slope: 1/4”
 - e. Cricket Slope: 1/2”
 - f. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1

- g. Acceptable Products:
 - 1) ENRGY 3; Johns Manville
 - 2) EnergyGuard; GAF
 - 3) Approved Equivalent

- 4. Tapered Polyisocyanurate Roof Insulation; ASTM C1289:
 - a. Qualities: Factory Tapered, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers. For use where tectum roof deck with slurry topping has no slope
 - b. Thickness: Minimum 1.5"
 - c. Average R-Value: Average 30+
 - d. Tapered Slope: 1/8"
 - e. Cricket Slope: 1/2")
 - f. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1
 - g. Acceptable Products:
 - 1) ENRGY 3; Johns Manville
 - 2) EnergyGuard; GAF
 - 3) Approved Equivalent

- 5. Cover Board: ASTM C 208, Type II, Grade 2, cellulosic-fiber insulation board, 1/2 inch over tapered polyisocyanurate insulation design.
 - a. High Density Fiberboard Roof Insulation; ASTM C208
 - b. Qualities: Rigid, composed of interlocking fibers factory blended treated with asphalt on the top side.
 - c. Board Size: Four feet by four feet (4' x 4')
 - d. Thickness: Minimum 1/2 inch
 - e. Compliances: UL, WH, FM listed under Roofing Systems. Federal Specification LLL-I-535-B.
 - f. Acceptable Manufacturers:
 - 1) Celotex
 - 2) Temple Inland
 - 3) Approved Equivalent

2.3 RELATED MATERIALS

- A. Fiber Cant and Tapered Edge Strips: Performed rigid insulation units of sizes/shapes indicated, matching insulation board or of perlite or organic fiberboard, as per the approved manufacturer.

1. Acceptable Manufacturers:
 - a. Celotex
 - b. Johns Manville
 - c. GAF
 - d. Approved Equivalent

- B. Protection Board: Pre-molded semi-rigid asphalt composition board one half (1/2) inch.

- C. Roof Board Joint Tape: Six (6) inches wide glass fiber mat with adhesive compatible with insulation board facers.

- D. Roof Deck Insulation Adhesive:

Generic Type III Asphalt: Hot Bitumen, ASTM D 312, Type III steep asphalt having the following characteristics:
 - a. Softening Point 185 deg. F - 205 deg. F
 - b. Flash Point 500 deg. F
 - c. Penetration @ 77 deg. F 15-35 units
 - d. Ductility @ 77 deg. F 2.5 cm
 1. Over properly prepared substrate, embed first layer of insulation in solid mopping of type III hot asphalt. Stagger end joints of boards so all open joints are eliminated. Walk in each piece of insulation to ensure boards are properly adhered. Additional layers of insulation shall be full adhered in Type III hot asphalt.

 2. Approved 1/2" fiberboard shall be fully adhered and set in Type III hot asphalt.

- E. Fasteners: Corrosion resistant screw fastener as recommended by roof membrane manufacturer.
 1. Factory Mutual Tested and Approved with three (3) inches coated disc for I-90 rating, length required to penetrate metal deck one inch.

PART 3 – EXECUTION

3.1 EXECUTION, GENERAL

- A. Comply with requirements of Division 01 Section "Common Execution Requirements."

3.2 INSPECTOR OF SURFACES

- A. Roofing contractor shall be responsible for preparing an adequate substrate to receive insulation.
 1. Verify that work which penetrates roof deck has been completed.

Partial Roof Replacement for
Sage Park Middle School
Windsor, CT

2. Verify that wood nailers are properly and securely installed.
3. Examine surfaces for defects, rough spots, ridges, depressions, foreign material, moisture, and unevenness.
4. Do not proceed until defects are corrected.
5. Do not apply insulation until substrate is sufficiently dry.
6. Broom clean substrate immediately prior to application.
7. Use additional insulation to fill depressions and low spots that would otherwise cause ponding water.
8. Verify that temporary roof has been completed.

3.3 INSTALLATION

A. Attachment Type III Hot Asphalt (Gypsum Plank Roof Deck)

1. Over properly prepared substrate, embed first layer of insulation in solid mopping of type III hot asphalt. Stagger end joints of boards so all open joints are eliminated. Walk in each piece of insulation to ensure boards are properly adhered. Additional layers of insulation shall be full adhered in Type III hot asphalt.
2. Approved 1/2" fiberboard shall be fully adhered and set in Type III hot asphalt.

B. Attachment Type III Hot Asphalt (Metal Roof Deck)

1. Over properly prepared substrate, embed first layer of insulation in solid mopping of type III hot asphalt. Stagger end joints of boards so all open joints are eliminated. Walk in each piece of insulation to ensure boards are properly adhered. Additional layers of insulation shall be full adhered in Type III hot asphalt.
2. Approved 1/2" fiberboard shall be fully adhered and set in Type III hot asphalt.

3.4 CLEANING

- A. Remove debris and cartons from roof deck. Leave insulation clean and dry, ready to receive roofing membrane.

3.5 CONSTRUCTION WASTE MANAGEMENT

- A. Remove and properly dispose of waste products generated during installation. Comply with requirements of authorities having jurisdiction.

END OF SECTION