ADDENDUM NO. 1

March 23, 2021

EUGENE SCHOOL DISTRICT 4J MONROE MIDDLE SCHOOL ROOF 2021

This addendum is being issued for clarification and / or revision of the Contract Documents as noted. This document is hereby made a part of the Contract Documents to the extent as though it was originally included herein.

Bidder shall notify all sub-bidders of this addendum, and shall acknowledge receipt of this addendum by inserting the above addendum number in the space provided on the bid form prior to submitting bids. Failure to acknowledge receipt of any addendum will subject the bidder to disqualification.

The following are clarifications to the Contract Documents:

Item	Reference	Description
0.99	Roof size Clarification	Area to be roofed is approximately 210 squares. Contractor to verify with own measurements.
1.00	*Attendance to prebid*	Sign in sheet
1.01	*Section 00 01 01* *Title Page*	Omitted the term “Architect” and modified to read “Roof Consultant.”
1.02	*Section 07 01 52* *Roof System Repairs*	Added specification section to address base bid scope of work associated with roof system repairs.
1.03	*Section 07 52 16* *Styrene-Butadiene-Styrene (SBS) Modified Bituminous Membrane Roofing*	Added specification section to address Alternate No. 2 which adds 2ply SBS roof assembly alternative.
1.04	*Sheet GI-1* *General Information*	Added general note to outline scope for Alternate No. 2.
1.05	*Sheet GI-2* *System Assemblies*	Added system details 9/GI-2 and 10/GI-2 to address Alternate No. 2.
1.06	*Sheet R101* *Roof Plan*	Added key notes 18 & 19 to address Alternate No. 2. Modified legend to reference structural.
1.07	*Sheet S100* *General Structural Notes and Fall Protection Structural Notes*	Reissued same sheet as part of structural resubmission. (no changes)
1.08	*Sheet S101* *Roof Plan Wind Load Diagram*	Expanded Base Bid scope. Added key note 3 and detail bubble to incorporate ladder replacement to Area E.
1.09	*Sheet S201* *Structural Details*	Expanded Base Bid scope. Added details 8/S201 and 9/S201 to incorporate ladder replacement to Area E.

END OF ADDENDUM NO. 1

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DOCUMENT 00 01 01
TITLE PAGE

PROJECT MANUAL:
Monroe Middle School Roofing 2021
Eugene Public School District 4J
Eugene, Oregon
C.I.P. Project No. xxx.xxx.xxx

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DATE: 03/23/21

ROOF SYSTEM REPAIRS

SECTION 070152

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Repairs to asphalt BUR roof systems. Typical repair types include, but are not limited to, open/dry lap repairs, membrane patching and membrane coating.

1.3 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.4 ABBREVIATIONS

A. ASTM ASTM International (formerly American Society for Testing and Materials).

B. NRCA National Roofing Contractors Association.

C. UL Underwriters Laboratories.

D. TIMA Thermal Insulation Manufacturers Association.

E. LTTR Long Term Thermal Resistance

1.5 REFERENCED STANDARDS

A. NRCA / ARMA Sheet Metal and Air Conditioning National Association (SMACNA) Architectural Sheet Metal Manual, Repair Manual for Low-Slope Roof Systems

B. National Roofing Contractors Association (NRCA) – Membrane Roof Systems – 2019

1.6 SUBMITTALS

A. Product data for each type of product specified. Include data substantiating that materials comply with requirements.

B. Installation instructions for installing products and systems.

C. Maintenance Data: For roofing system to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications and Requirements:

1. A qualified firm that is approved, authorized, or licensed by manufacturer of the roof repair materials outlined in this Section.
2. In continuous business under same name for past five (5) years.
3. Completed at least three (3) successful installations of specified materials and systems on projects of similar scope.
4. Contractor shall provide all personnel trained in application of materials and systems and shall maintain supervision as specified elsewhere.

B. Source Limitations: For each separate roof system, obtain primary products, including each type of roofing ply sheet, bitumen, and adhesive, membrane flashings from a single manufacturer, or with primary manufacturer's endorsement. Provide secondary products as recommended and approved by the primary manufacturer for the specified roof systems.

C. Fire-Test-Response Ratings: Where indicated, provide fire-resistance-rated roof assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Packing, Shipping, Handling, and Unloading:

1. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
2. Handle and store materials and equipment in a manner to avoid significant or permanent damage and deflection of the roof deck.
3. Do not leave unused rigid insulation and sheet materials on the roof overnight or when roofing work is not in progress unless protected from weather or other moisture sources.

B. Storage and Protection:

1. Store roll goods on ends only; do no lay flat. Flattened rolls shall be rejected, and shall not be used in the construction of the roof system.

2. Store and handle roofing sheets in a dry, well-ventilated, weathertight place to ensure no possibility of significant moisture pickup.
3. Control temperature of storage areas in accordance with the manufacturer's instructions.
4. Store materials on pallets, blocking, or other means to keep materials from coming into contact with moisture, dirt, debris, and other contaminates.
5. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
6. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
7. Protect roof level rigid insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with rigid insulation manufacturer's written instructions for handling, storing, and protecting during installation.
8. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.9 PROJECT CONDITIONS

A. Provide tarps or plastic sheeting required to protect opened roofs and flashings and to prevent the entrance of moisture or rain water into the existing structure until new materials have been applied and roof is in a watertight condition.

B. Have necessary waterproof canvas or plastic sheeting readily available in case of emergency. The Contractor will be held liable for any damage to building interior due to Contractor's negligence.

C. Roofing materials shall not be applied when water in any form (i.e., rain, dew, ice, frost, snow, etc.) is present on the deck.

D. Adhesive applied roofing materials shall not be applied when dirt, dust, debris, oil, etc.is present on the deck.

E. Weather Limitations: Proceed with roofing work only when existing and forecasted weather conditions permit roofing to be installed in accordance with manufacturer's written recommendations and warranty requirements.

1.10 WARRANTY

A. Special Manufacturer's Warranty: The Manufacturer shall provide a written warranty for the coating system, guarding against failures related to material defects.

1. Warranty Period: Five (5) years from date of Substantial Completion.

B. Special Installer's Warranty: The Installer shall provide a written warranty guaranteeing all roof repairs against defects of quality of Work and materials. Warranty shall be delivered to the Owner prior to final acceptance of the Work.

1. Warranty Period: Two (2) years from date of Substantial Completion except where stated below.

PART 2 - PRODUCTS

2.1 GENERAL:

1. Repair Scopes: Refer to Part 3 of this Section for detailed explanations of each individual repair scope
2. Provide materials compatible with roofing membrane.
3. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

2.2 ASPHALT BUILT UP ROOF (BUR) MEMBRANE REPAIRS

A. Membrane Repair Patch Material: Cold adhesive applied, granule surfaced, SBS modified bitumen top sheet (114-mils thick minimum at selvage edge, ASTM 6163, Type I, Grade G).

B. Adhesive: ASTM D 4479-93 (brush or spray coatings) Type I; Roofing system Manufacturer's standard asphalt-based, one-part, asbestos-free, cold-applied adhesive specially formulated for compatibility and use with roofing membrane.

C. Asphalt Primer: To comply with ASTM D 41.

D. Flashing Cement / Plastic Cement / Repair Mastic: ASTM D 4586, asbestos free, of consistency required by roofing system manufacturer for application.

E. Mastic Sealant: Polyisobutylene, plain or modified bitumen, non-hardening, non-migrating, non-skinning, and nondrying.

F. Roofing Granules: Ceramic-coated roofing granules, No. 11 screen size with 100 percent passing No. 8 sieve and 98 percent of mass retained on No. 40 sieve, color to match color of top ply (cap) sheet.

G. Reinforcing Mesh: Open mesh, glass fiber reinforcing.

H. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FM 4470; designed for fastening roofing membrane components to substrate; tested by manufacturer for required pullout strength; and acceptable to roofing system manufacturer.

I. Aluminum Coating: Asphalt based, fibered aluminum coating complying with the requirements of ASTM D 2824, Type III.

J. Reinforced Fluid Applied Flashing Membrane: Liquid applied, layered membrane, fully reinforced and seamless flashing system; Polymethyl Methacrylate (PMMA).

PART 3 - EXECUTION

3.1 QUALITY OF WORK

A. Experienced personnel in the type of roofing work specified shall perform the work.

B. Contractor shall be fully aware of work involved and the requirements under this contract, and shall direct workers in the proper application of materials and work specified.

C. Supervision shall be maintained by the same person throughout the entire course of the installation of new materials.

D. Finished work shall be free from wrinkles, creases, bubbles, fish mouths, and similar defects. Laps shall be fully sealed per manufacturer's installation instructions, and entire surface shall be watertight.

E. Use proper installation practices. An aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project, and shall be subject to approval by the Port.

F. Make necessary preparations, utilize recommended application techniques, apply specified materials, and exercise care in ensuring that the finished application is acceptable to the Port.

G. Cooperate with inspection and test agencies engaged or required to perform services in connection with installing elastic sheet membrane roofing system.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

1. Moisture includes rain, dew, ice, frost, snow, and the like.
2. Dust and debris includes dirt, oil, and other materials not inherent in the substrate.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove temporary roof-drain plugs when no work is taking place or when rain is forecast.

C. Inspect all substrates for irregularities and defects that prohibit the proper installation of roofing repair materials. Notify Roof Consultant of all defects for proper correction, prior to installation of new materials.

D. Substrates shall be clean and dry, smooth, free of fins, raised edges, sharp edges, protruding or loose nails, and free of foreign material.

E. Prepare all surfaces and details in accordance with manufacturer's printed instructions and these contract documents.

F. Protect building surfaces and equipment from damage and contamination from roofing work.

3.3 GENERAL INSTALLATION REQUIREMENTS

A. All cuts in existing membrane are to be smooth and free of fins and over cuts or jagged edges.

B. Coordinate installing membrane roofing system components, so roof level insulation is not exposed to precipitation or left exposed at the end of the workday.

C. Where the existing roof is cut open, install and maintain suitable temporary felt and fabric flashing as required to keep water out from under the existing roofing during the construction period, as well as to prevent any water leaking into existing occupied spaces within.

3.4 INSTALLATION – BUR MEMBRANE ROOFING REPAIRS

A. Refer to the Drawings for individual locations.

B. BUR Membrane Repair – Aluminum Coating Application:

1. Prepare indicated membrane base flashings for coating application. Remove debris and contaminants from the surface of the membrane and base flashings to be coated.
2. Power wash surfaces to receive coating in accordance with the manufacturer's written instructions. Take necessary precautions to avoid damaging the roof system.
3. Fill cracks or holes within the area designated for repair with sealant or caulking materials approved by both the coating and membrane manufacturers.
4. Prime entire surface at repair area as marked on drawings. Primer should extend a minimum of 3-inches on adjoining surfaces where coating is intact.
5. Allow primer to dry and apply aluminum coating with brush, roller, or spray equipment, at specified location to receive repair. Install at a rate of 1 1/2 - 2 gallons per 100 square feet of repair area.
6. Protect surrounding areas from over spray or splatter.

C. BUR Membrane Repair – Reinforced Fluid-Applied Membrane Application:

1. Ensure that substrates are free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, bituminous products, release agents, laitance, paint, loose particles/friable matter, rust or any other material that would be detrimental to adhesion of the catalyzed primer and/or resin to the substrate. Some surfaces may require scarification, shotblasting, or grinding to achieve a suitable substrate.
2. Preparation/Mixing/Catalyzing Resin Products: Pour the desired quantity of resin into a clean container and using a spiral mixer or mixing paddle, stir the liquid for the time period specified by the resin manufacturer. Calculate the amount of catalyst powder needed using the manufacturer's guidelines and add the pre-measured catalyst to the resin component. Mix again for the time period specified by the resin manufacturer, ensuring that the product is free from swirls and bubbles. To avoid aeration, do not use a spiral mixer unless the spiral section of the mixer can be fully contained in the liquid during the mixing process. Mix only enough product to ensure that it can be applied before pot life expires.
3. Primer Application: Apply primer resin using a roller or brush at the rate specified by the primer manufacturer over qualified and prepared substrates. Apply primer resin at the increased rate specified by the primer manufacturer over porous substrates. Do not let

resin pool or pond. Do not under-apply or over-apply primers as this may interfere with proper primer catalyzation. Make allowances for waste, including saturation of roller covers and application equipment.

4. Paste Application: Apply catalyzed preparation paste using a trowel over prepared and primed substrates. Before application of any resin product over cured paste, wipe the surface of the paste using the specified cleaner/solvent and allow to dry. Treat the surface again if not followed up by resin application within 60 minutes.
5. Coating Application:

    a. Using masking tape, mask the perimeter of the area to receive the flashing system. Apply resin primer to substrates requiring additional preparation and allow primer to cure.
    b. Pre-cut fleece to ensure a proper fit at transitions and corners prior to membrane application.
    c. Apply an even, generous base coat of flashing resin to prepared surfaces using a roller at the rate specified by the resin manufacturer. Work the fleece into the wet, catalyzed resin using a brush or roller to fully embed the fleece in the resin and remove trapped air. Lap fleece layers a minimum of 2 inch (5 cm) and apply an additional coat of catalyzed resin between layers of overlapping fleece. Again using a roller, apply an even top coat of catalyzed resin immediately following embedment of the fleece at the rate specified by the resin manufacturer, ensuring that the fleece is fully saturated. Ensure that the flashing resin is applied to extend beyond the fleece (maximum ¼-inch (6 mm)). Remove the tape before the catalyzed resin cures. Make allowances for waste, including saturation of roller covers and application equipment.
    d. Should work be interrupted for more than 12 hours or the surface of the cured resin becomes dirty or contaminated by the elements, wipe the surface to be lapped with new flashing resin using the specified cleaner/solvent. Allow the surface to dry for a minimum 20 minutes and a maximum 60 minutes before continuing work.

D. BUR Membrane Repair - Open/Dry Lap Repair:

1. Carefully cut the open lap with a sharp blade to lay flat, remove any water and debris.
2. Prepare the area extending a minimum 8-inches beyond any part of the defect in all directions. Remove debris and contaminants from the surface of the membrane and flashing to be repaired.
3. Apply bottom layer of repair mastic extending 6-inches beyond open lap in all directions.
4. Imbed reinforcing mesh into bottom layer of repair mastic.
5. Apply top layer of repair mastic over reinforcing mesh.
6. Imbed granules into finished surface of 3-course repair.

E. BUR Membrane Repair - Membrane Patch:

1. Prepare the area extending a minimum of 6-inches in all directions beyond the edge of the membrane defect. Remove debris and contaminants from the surface of the membrane within the area to be repaired.
2. Clean and prime the surface of the prepared membrane. Allow primer to dry before proceeding.
3. Install 1/8-inch uniform layer of cold adhesive over the surface of the existing cap sheet or granule surfaced base flashing a minimum of 6-inches in all directions.

4. Embed top ply sheet into cold adhesive, fully covering the adhesive application. Roll sheet into position so as to prevent air pockets, bridging and voids.
5. Re-roll the perimeter of the membrane installation to eliminate voids, fishmouths, and blisters.

3.5 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

D. Remove trash, nails, debris, and equipment from site and leave the site clean.

END OF SECTION 070152

STYRENE-BUTADIENE-STYRENE (SBS) MODIFIED BITUMINOUS MEMBRANE ROOFING

SECTION 075216

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Styrene-butadiene-styrene (SBS)-modified bituminous membrane roofing.
2. Vapor retarder.
3. Rigid roof insulation.

B. Related Requirements:

1. Section 012300 "Alternates" for administrative and procedural requirements for alternates.
2. Section 061000 "Miscellaneous Rough Carpentry" for wood nailer, blocking, and replacement of selected exterior wood siding.
3. Section 070150 "Preparation for Re-Roofing" for methods of existing roof tear-off procedures and requirements.
4. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashings and counter flashings.

1.3 DEFINITIONS

A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.

1.4 REFERENCES

A. ARMA: Asphalt Roofing Manufacturers Association

B. ASTM: American Society for Testing and Materials

1. ASTM C1396: Gypsum Board
2. ASTM D5147: Test Methods for Sampling and Testing Modified Bituminous Sheet Material
3. ASTM E119: Test Method for Fire Tests of Building Construction and Materials
4. ASTM E84: Test Method for Surface Burning Characteristics of Building Materials
5. ASTM C1289: Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board

C. NRCA: National Roofing Contractors Association

1. Quality Control Recommendations for Polymer Modified Bitumen Roofing
2. NRCA Roofing and Waterproofing Manual

D. TIMA: Thermal Insulation Manufacturers Association

1. RIC/TIMA Bulletin #281-1

E. UL: Underwriters Laboratories Inc.

1. Requirements for Roof Deck Constructions

1.5 REROOFING (PREINSTALLATION) CONFERENCE

A. Reroofing (Preinstallation) Conference: Reference Section 070150 “Preparation for Reroofing.”

1.6 SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work, including:

1. Base flashings and membrane terminations.
2. Tapered insulation, including slopes.
3. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.

C. Qualification Data: For Installer and manufacturer.

D. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

E. Sample Warranties: For manufacturer's special warranties.

F. Maintenance Data: For roofing system to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for membrane roofing system identical to that used for this Project.

B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by built-up roofing manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1. In continuous business under same name for a minimum of the past 5 years.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing to be installed according to manufacturer's written instructions and warranty requirements.

B. Provide tarps or plastic sheeting required to protect opened roofs and flashings and to prevent the entrance of moisture or rain water into the existing structure until new materials have been applied and roof is in a watertight condition.

C. Have necessary waterproof canvas or plastic sheeting readily available in case of emergency. The Contractor will be held liable for any damage to building interior due to Contractor’s negligence.

D. Roofing materials shall not be applied when water in any form (i.e., rain, dew, ice, frost, snow, etc.) is present on the deck.

1.10 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of built-up roofing that fail in materials or workmanship within specified warranty period.

1. Special warranty includes built-up roofing membrane, base flashings, roof insulation, fasteners, cover boards, roofing accessories, and other components of built-up roofing.
2. Warranty Period: 10 years from date of Substantial Completion.

B. Installer’s Special Project Warranty: Submit roofing Installer's warranty, signed by Installer, covering the Work of this Section, including all components of built-up roofing such as built-up roofing membrane, base flashing, roof insulation, fasteners, cover boards, and vapor retarders, for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Installed built-up roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Built-up roofing and base flashings shall remain watertight.

1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D4272.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by built-up roofing manufacturer based on testing and field experience.

C. Roofing System Design: The completed membrane roof system shall meet or exceed the uplift criteria as shown on the structural drawings.

D. UL Listing:
1. Provide built-up bituminous roofing systems and components that have been tested for application and slopes indicated and are listed by Underwriter's Laboratories (UL) for Class A external fire exposure.
2. Provide built-up bituminous roofing system materials bearing UL Classification marking on bundle, package, or container, indicating that materials have been produced under UL's Classification and follow-up service.
3. Provide built-up bituminous roofing systems that can be installed to comply with UL requirements for Fire Classified and Class 90 wind-uplift requirements.

E. Insulation Fire Performance Characteristics:
1. Provide insulation materials that are identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, per methods indicated below, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction.
2. Surface Burning Characteristics: ASTM E84.
3. Fire Resistance Ratings: ASTM E119.

2.2 MANUFACTURERS

A. Source Limitations: Obtain components including roof insulation, and fasteners for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

2.3 SBS ROOFING

A. Manufacturers: Subject to compliance with requirements.

2.4 ROOFING SHEET MATERIALS

A. Base Ply Sheet:

1. Random fibrous glass mat impregnated with styrene-butadiene-styrene (SBS) modified bitumen. ASTM D 6163, Type I, Grade S.
2. Minimum thickness: 110 mils.
3. Minimum weight: 76 pounds per 100 square feet.
4. Application method: Torch Application.

B. Top Ply Sheet:

1. Random fibrous glass mat impregnated with styrene-butadiene-styrene (SBS) modified bitumen. ASTM 6163, Type I, Grade G.
2. Minimum thickness: 114-mils at selvage edge.
3. Minimum weight: 112 pounds per 100 square feet.
4. Granule color: White.
5. Application method: Torch Application.

C. Reinforcing Ply Sheet:

1. Random fibrous glass mat impregnated with styrene-butadiene-styrene (SBS) modified bitumen. ASTM D 6163, Type I, Grade S.
2. Minimum thickness: 110 mils.
3. Minimum weight: 76 pounds per 100 square feet.
4. Application method: Torch Application.

D. Flashing Sheet:

1. Foil clad membrane with fiberglass scrim/fiberglass mat composite impregnated with styrene-butadiene-styrene (SBS) modified bitumen. ASTM D 6298.
2. Minimum thickness 146-mils.
3. Minimum weight: 96 pounds per 100 square feet.
4. Surface: Aluminum.
5. Application method: Torch or Cold Adhesive.

2.5 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing.

1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

B. Roofing Adhesive: Membrane manufacturer's standard, single component, solvent-free, no VOC, modified asphalt adhesive.

1. Utilize adhesives that permit rapid application of fluid applied coating systems where applicable.

C. Roofing Cement / Flashing Cement / Plastic Cement: ASTM D 4586, asbestos free, of consistency required by roofing system manufacturer for application.

D. Primer: Asphalt, solvent blend, conforming to ASTM D 41.

E. Primer for Self-Adhered Sheets: Quick drying, low VOC, water based, high tack primer specifically designed to promote adhesion of roofing sheets to approved substrates.

F. Cants: Rigid perlite board, 3-inch vertical (with 3-7/8-inch face) minimum, and as shown on the drawings, ASTM C728.

G. Mastic Sealant: Polyisobutylene (plain or bituminous modified), nonhardening, nonmigrating, non-skinning, and nondrying.

H. Sealant in contact with roof membrane materials: Moisture-curing, non-slump elastomeric sealant designed for roofing applications. Sealant shall be approved by the roof membrane manufacturer for use in conjunction with the roof membrane materials.

I. Fasteners: Galvanized steel, fluoropolymer-coated steel, or nonferrous metal screws. Size, length, and type recommended by manufacturer as suitable for material to be fastened, substrate, and that will comply with requirements of governing authorities and listing agencies and approved by Factory Mutual Research Corporation.

J. Ceramic Granules: Ceramic-coated roofing granules, No. 11 screen size with 100 percent passing No. 8 sieve and 98 percent of mass retained on No. 40 sieve, color to match color of top ply (cap) sheet.

K. Radiant Barrier Coating: As recommended by the manufacturer for use in covering asphaltic bleedout on the flashing sheet application.

1. Color: Match flashing sheet.

L. Walk Pads: Manufacturer's standard cold-applied walk pad suitable for use with their SBS membrane assemblies.

M. Reinforced Fluid Applied Flashing Membrane: Liquid applied, layered membrane, fully reinforced and seamless flashing system; Polymethyl Methacrylate (PMMA).

1. Siplast Inc.; Parapro 123 Flashing System.
2. Or pre-bid approved equal.

N. Lead Sheet: 4 lbs. desilverized lead sheet.

O. Preformed Pipe Flashing: Two piece, four pound lead pipe jack with integral flashing flange and flashing cap.

P. Miscellaneous Accessories: Provide those recommended by roofing system manufacturer.

2.6 VAPOR RETARDER

A. Vapor Retarder:

1. Self-adhered membrane with random fibrous glass mat impregnated with styrene-butadiene-styrene (SBS) modified bitumen. ASTM D 6163, Type I, Grade S.
2. Minimum thickness: 98 mils.
3. Minimum weight: 72 pounds per 100 square feet.
4. Application method: Self-Adhered.

2.7 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.

B. Insulation Performance Requirements:
1. Thermal Resistance: 5.7 per inch minimum R-value per manufacturer’s data.
2. Required assembly R-Value: R-30.
    a. Reference GI-2 for when R-30 typical or R-30 average is being utilized.
    b. No matter how R-value is being calculated on GI-2, a minimum of one layer of flat stock rigid insulation is to be utilized as part of the assembly.

C. Flat Stock Rigid Insulation: ASTM C 1289, Type II, rigid closed-cell polyisocyanurate foam board, felt or glass-fiber mat facer on both major surfaces.
1. Produced using HC blowing agents in lieu of HCFCs, in accordance with standards mandated by the Environmental Protection Agency.
2. Compressive strength: Nominal 20 psi per ASTM D 1621.
3. Flame spread: 35 or less per ASTM E 84.
4. Panel Thickness: As indicated on GI-2.
5. Board size: 4-foot by 8-foot.
6. Attachment method: Mechanically Attached.

D. Tapered Rigid Insulation – Type 1: ASTM C 1289, Type II, tapered rigid closed-cell polyisocyanurate foam board, felt or glass-fiber mat facer on both major surfaces.
1. Produced using HC blowing agents in lieu of HCFCs, in accordance with standards mandated by the Environmental Protection Agency.
2. Compressive strength: Nominal 20 psi per ASTM D 1621.
3. Flame spread: 35 or less per ASTM E 84.
4. Slope: 1/8-inch per foot.
5. Board size: 4-foot by 4-foot.
6. Attachment method: Installed in Adhesive.

E. Tapered Rigid Insulation – Type 2: ASTM C 1289, Type II, tapered rigid closed-cell polyisocyanurate foam board, felt or glass-fiber mat facer on both major surfaces.
1. Produced using HC blowing agents in lieu of HCFCs, in accordance with standards mandated by the Environmental Protection Agency.
2. Compressive strength: Nominal 20 psi per ASTM D 1621.

3. Flame spread: 35 or less per ASTM E 84.
4. Slope: 1/4-inch per foot.
5. Board size: 4-foot by 4-foot.
6. Attachment method: Installed in Adhesive.

F. Insulation Crickets: ASTM C 1289, Type II; Rigid closed-cell polyisocyanurate foam board, felt or glass-fiber mat facer on both major surfaces.
1. Units shall be 4-foot by 4-foot, 1/2-inch minimum thickness at the start-point of the tapered insulation system.
2. Attachment method: Installed in Adhesive.

2.8 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with roofing.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening flat stock rigid roof insulation to substrate, and acceptable to roofing system manufacturer.

C. Tapered Insulation and Cover Board Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.

D. Tapered Edge Strip: Rigid polyisocyanurate board of 24-inches wide, 4-foot long tapering from 0-inch to 2-inch in thickness. Stack units to achieve required thickness where indicated on Drawings.

1. Products:

a. Atlas Roofing Corporation; Gemini Tapered Edge Strip.
b. Or pre-bid approved equal.

E. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.9 COVER BOARD

A. General: Provide preformed roof insulation cover boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thicknesses indicated.

B. Cover board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, factory primed.

1. Unit thickness: 1/4-inch.
2. Board size: 4-foot x 4-foot.
3. Attachment method: Adhesive ribbons.
4. Approved manufacturers:

a. Ultralight Coated Glass-Mat Roof Board, by United States Gypsum Company.
b. DensDeck Prime, by Georgia Pacific.
c. Or pre-bid approved equal.

2.10 WALK PADS

A. Walk Pads: Manufacturer’s standard factor-formed, nonporous, heavy-duty, slip-resistant, surface-textured, walk pad for use in conjunction with PVC roof membranes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work:

1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
2. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
3. Verify that concrete substrate is visibly dry and free of moisture.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

3.3 ROOFING INSTALLATION, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions, provided they do not conflict with the requirements herein.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

C. Install roofing and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition.

3.4 VAPOR-RETARDER INSTALLATION

A. Self-Adhering-Sheet Vapor Retarder: Prime substrate if required by manufacturer. Install self-adhering-sheet vapor retarder over area to receive vapor retarder, side and end lapping each sheet a minimum of 3-1/2 inches and 6 inches, respectively. Seal laps by rolling.

B. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into roofing system.

3.5 INSULATION INSTALLATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Install tapered insulation under area of roofing to conform to slopes indicated.

D. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.

E. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.

F. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.

1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.

G. Adhered Tapered Insulation: Install each layer of tapered insulation and adhere to substrate as follows:

1. Set each layer of tapered insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

H. Mechanically Fastened Flat Stock Rigid Insulation: Install each layer of flat stock rigid insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.

1. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.

I. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction. Loosely butt cover boards together.

1. Install into ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

3.6 SBS-MODIFIED BITUMINOUS MEMBRANE INSTALLATION

A. Install roofing system according to roofing system manufacturer's written instructions and applicable recommendations in ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing" and as follows:

1. Deck Type: N (nailable).
2. Adhering Method: Torch Application.
3. Number of SBS-Modified Asphalt Sheets: Two.
4. Surfacing Type: M (mineral-granule-surfaced cap sheet).

B. Coordinate installation of roofing system so insulation and other components of the roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.

1. Provide tie-offs at end of each day's work to cover exposed roofing sheets and insulation with a course of coated felt set in roofing cement or hot roofing asphalt, with joints and edges sealed.
2. Complete terminations and base flashings, and provide temporary seals to prevent water from entering completed sections of roofing system.
3. Remove and discard temporary seals before beginning work on adjoining roofing.

C. Install modified bituminous roofing sheet and cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets over and terminate beyond cants, installing as follows:

1. Unroll roofing sheets and allow them to relax for minimum time period required by manufacturer.

D. Laps: Accurately align roofing sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Completely bond and seal laps, leaving no voids.

1. Repair tears and voids in laps and lapped seams not completely sealed.
2. Apply roofing granules to cover exuded bead at laps while bead is hot.

E. Install roofing sheets so side and end laps shed water.

3.7 FLASHING AND STRIPPING INSTALLATION

A. Install base flashing over cant strips and other sloped and vertical surfaces, at roof edges, and at penetrations through roof, and secure to substrates according to roofing system manufacturer's written instructions and as follows:

1. Prime substrates with asphalt primer if required by roofing system manufacturer.
2. Flashing-Sheet Application (Option 1): Adhere flashing sheet to substrate in asphalt roofing cement at rate required by roofing system manufacturer.
3. Flashing-Sheet Application (Option 2): Torch apply flashing sheet to substrate.

B. Extend base flashing up walls or parapets a minimum of 8 inches above roofing membrane and 4 inches onto field of roofing membrane.

C. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.

1. Seal top termination of base flashing.

D. Install roofing cap-sheet stripping where metal flanges and edgings are set on roofing according to roofing system manufacturer's written instructions.

E. Apply radiant barrier coating over all adhesive bleed-out in the flashing sheet application.

F. Roof Drains: Set 30-by-30-inch metal flashing in bed of asphaltic adhesive on completed roofing membrane. Cover metal flashing with roofing cap-sheet stripping, and extend a minimum of 6 inches beyond edge of metal flashing onto field of roofing membrane. Clamp roofing membrane, metal flashing, and stripping into roof-drain clamping ring.

1. Install stripping according to roofing system manufacturer's written instructions.

3.8 REINFORCED FLUID APPLIED PMMA MEMBRANE FLASHING INSTALLATION

A. Substrate Examination/Preparation:

1. General: Ensure that substrates are free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, bituminous products, release agents, laitance, paint, loose particles/friable matter, rust or any other material that would be detrimental to adhesion of the catalyzed primer and/or resin to the substrate. Some surfaces may require scarification, shotblasting, or grinding to achieve a suitable substrate.
2. Preparation of Steel/Aluminum Substrates: Grind to generate a "white-metal" surface and remove loose particles. Extend preparation area a minimum of 1/2-inch beyond the termination of the roofing/flashing system. Notch steel surfaces to provide a rust-stop where detailed.
3. Rigid Plastic Flashing Substrates: Evaluate the plastic for compatibility with the resin materials. Lightly abrade the surface to receive the flashing system, clean plastic substrates using the specified the cleaner/solvent and allow to dry. Extend the preparation area a minimum of ½- inch beyond the termination of the flashing system.
4. Preparation of Wood/Plywood Flashing Substrates to receive Resin: Prime wood/plywood surfaces to receive the specified flashing system with the specified PMMA-based primer at the rate specified by the resin manufacturer and allow primer to cure. Tape the joints between plywood or wood panels using the specified tape and prior to application of the flashing system.

B. Mixing of Resin Products:

1. Preparation/Mixing/Catalyzing Resin Products: Pour the desired quantity of resin into a clean container and using a spiral mixer or mixing paddle, stir the liquid for the time period specified by the resin manufacturer. Calculate the amount of catalyst powder needed using the manufacturer's guidelines and add the pre-measured catalyst to the resin component. Mix again for the time period specified by the resin manufacturer, ensuring that the product is free from swirls and bubbles. To avoid aeration, do not use a spiral mixer unless the spiral section of the mixer can be fully contained in the liquid during the mixing process. Mix only enough product to ensure that it can be applied before pot life expires.

C. Preparation Paste and Primer Mixing/Applications:

1. Primer Application: Apply primer resin using a roller or brush at the rate specified by the primer manufacturer over qualified and prepared substrates. Apply primer resin at the increased rate specified by the primer manufacturer over DensDeck Prime or other porous substrates. Do not let resin pool or pond. Do not under-apply or over-apply primers as this may interfere with proper primer catalyzation. Make allowances for waste, including saturation of roller covers and application equipment.
2. Paste Application: Apply catalyzed preparation paste using a trowel over prepared and primed substrates. Before application of any resin product over cured paste, wipe the surface of the paste using the specified cleaner/solvent and allow to dry. Treat the surface again if not followed up by resin application within 60 minutes.

D. Flashing Membrane Application:

1. Base Flashing Application:

a. Using masking tape, mask the perimeter of the area to receive the flashing system. Apply resin primer to substrates requiring additional preparation and allow primer to cure.
b. Pre-cut fleece to ensure a proper fit at transitions and corners prior to membrane application.
c. Apply an even, generous base coat of flashing resin to prepared surfaces using a roller at the rate specified by the resin manufacturer. Work the fleece into the wet, catalyzed resin using a brush or roller to fully embed the fleece in the resin and remove trapped air. Lap fleece layers a minimum of 2 inch (5 cm) and apply an additional coat of catalyzed resin between layers of overlapping fleece. Again using a roller, apply an even top coat of catalyzed resin immediately following embedment of the fleece at the rate specified by the resin manufacturer, ensuring that the fleece is fully saturated. Ensure that the flashing resin is applied to extend beyond the fleece (maximum ¼-inch (6 mm)). Remove the tape before the catalyzed resin cures. Make allowances for waste, including saturation of roller covers and application equipment.
d. Should work be interrupted for more than 12 hours or the surface of the cured resin becomes dirty or contaminated by the elements, wipe the surface to be lapped with new flashing resin using the specified cleaner/solvent. Allow the surface to dry for a minimum 20 minutes and a maximum 60 minutes before continuing work.

3.9 WALKWAY INSTALLATION

A. Walkway Pads: Install walkway pads using units of size indicated or, if not indicated, of manufacturer's standard size, according to walkway pad manufacturer's written instructions.

1. Set walkway pads in cold-applied adhesive.

3.10 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to inspect substrate conditions, surface preparation, membrane application, flashings, protection, and drainage components, and to furnish reports to Roof Consultant.

B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.

1. Notify Roof Consultant and Owner 48 hours in advance of date and time of inspection.

3.11 PROTECTING AND CLEANING

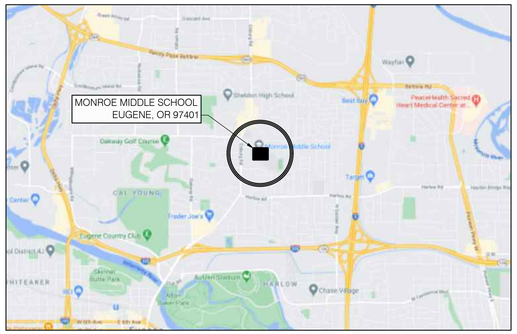
A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to the Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

END OF SECTION 075216

EUGENE SCHOOL DISTRICT 4J
MONROE MIDDLE SCHOOL ROOF REPLACEMENT PROJECT

SITE MAPS



1 GI-1 LOCATION MAP
SCALE: NTS

2 GI-1 VICINITY MAP
SCALE: NTS

3 GI-1 AERIAL VIEW
SCALE: NTS

DRAWING SCHEDULE

GENERAL NOTES

1. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS OF THE PROJECT, INCLUDING VERIFICATION OF EXISTING ROOF SYSTEM CONSTRUCTION AND MATERIALS.
2. EXISTING MATERIALS AND CONSTRUCTION ARE NOTED ON THE DRAWINGS AS EXISTING. ALL OTHER NOTATIONS INDICATE NEW MATERIALS, PRODUCTS, AND CONSTRUCTION UNLESS OTHERWISE STATED OR INDICATED.
3. ALL PERMITTING, INCLUDING ROAD CLOSURES, PARKING STALLS, SIDEWALK CLOSURES, SCAFFOLD ERECTION, ETC. SHALL BE COORDINATED, OBTAINED, AND PAID FOR BY CONTRACTOR.
4. CONTRACTOR STAGING AND STORAGE AREAS SHALL BE AS DIRECTED BY THE OWNER'S REPRESENTATIVE AT THE PRE-CONSTRUCTION MEETING. CONTRACTOR SHALL ASSUME A REASONABLE AMOUNT OF STORAGE, AND STAGING SPACE WILL BE MADE AVAILABLE.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT BUILDING OCCUPANTS AND PASSERS-BY FROM FALLING DEBRIS OR EQUIPMENT AT ALL TIMES DURING THE COURSE OF CONSTRUCTION. DO NOT THROW MATERIALS FROM THE ROOF.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING BUILDING SURFACES, FINISHES, AND SYSTEMS FROM DAMAGE, DISCOLORATION, ETC. DURING THE COURSE OF ALL CONSTRUCTION ACTIVITIES.
7. PERSONAL FALL PROTECTION DEVICES ARE NOT, NOR WILL BE, PROVIDED BY THE OWNER ON ANY ROOF AREA DESIGNATED TO RECEIVE WORK. PERSONAL FALL PROTECTION IS THE RESPONSIBILITY OF THE CONTRACTOR.
8. ALL CONSTRUCTION SHALL CONFORM TO THE 2019 OREGON STRUCTURAL SPECIALTY CODE (2019 OSSC), AND ALL LOCAL GOVERNING BUILDING CODES AND ORDINANCES.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES WHETHER SHOWN HEREIN OR NOT, AND TO PROTECT UTILITIES FROM DAMAGE. THE CONTRACTOR SHALL BEAR ALL EXPENSES OF REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED BY OPERATIONS IN CONJUNCTION WITH THE EXECUTION OF THE WORK.
10. ROOF ACCESS BY MEANS OF EXTERNAL LIFT OF OTHER DEVICE UNLESS SPECIFICALLY APPROVED BY THE OWNER.
11. ALL ITEMS TRANSPORTED TO ROOF SHALL BE TRANSPORTED USING APPROVED AND SAFE METHODS OF LOADING.
12. SCOPE OF WORK CONSISTS OF THIS DRAWINGS SET AND THE ASSOCIATED PROJECT MANUAL.
13. EXISTING ROOF SYSTEMS HAVE BEEN TESTED FOR ASBESTOS CONTAINING MATERIALS (ACM). NO ASBESTOS WAS IDENTIFIED WITHIN ROOFING SAMPLES TAKEN FROM ROOF AREAS TO BE REPLACED AS PART OF THIS SCOPE OF WORK.
14. WHILE NOT TESTED FOR ASBESTOS CONTAINING MATERIALS (ACM), ALL REPAIR MASTICS/SEALANTS ARE ASSUMED TO BE ACM. ADDITIONAL TESTING MAY BE REQUIRED BY THE CONTRACTOR TO ENSURE ALL MATERIALS TO BE DEMOLISHED ARE HANDLED APPROPRIATELY WITH REGARD TO OROSHA, DEQ AND THE OWNER.
15. THIS PROJECT INCLUDES A BASE BID AND AN ALTERNATE. BID WORK DOES NOT INCLUDE ANY INCREASE IN AREA OR CHANGES IN OCCUPANCY.

BASE BID: INCLUDES, BUT IS NOT LIMITED TO: COMPLETE REMOVAL OF EXISTING BUILT-UP ROOF MEMBRANE ASSEMBLIES AT ROOF AREAS B, D, E, F & H DOWN TO THE SEISMIC SHEATHING OVERLAY ABOVE THE STRUCTURAL DECK. REMOVAL OF EXISTING ASSOCIATED FLASHING ASSEMBLIES, CURBED EDGE METAL AND ROOF DRAINS UNLESS OTHERWISE NOTED. INSTALLATION OF DECK INFILL AT REMOVED ROOF DRAINS. INSTALLATION OF BUILT-UP ROOF MEMBRANE ASSEMBLY, FLASHINGS, WALL PANELS, GUTTERS, AND COPING. REFERENCE SHEET GI-2 FOR ADDITIONAL INFORMATION REGARDING THE BASE BID MEMBRANE ASSEMBLY. REPAIRS AT ROOF AREAS C & G CONSISTING OF PATCHING AND COATING WHERE INDICATED.

ALTERNATE NO. 1: DUPLICATES THE BASE BID ARTICLE ABOVE WITH ROOF MEMBRANE ASSEMBLY TO BE FULLY ADHERED 80-MIL PVC IN LIEU OF BUILT-UP ROOFING. REFERENCE SHEET GI-2 AND SHEET R202 FOR ADDITIONAL INFORMATION REGARDING THE ALTERNATE ROOF MEMBRANE ASSEMBLY.

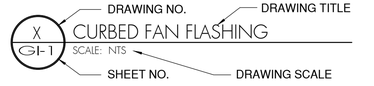
1

ALTERNATE NO. 2: DUPLICATES THE BASE BID ARTICLE ABOVE WITH ROOF MEMBRANE ASSEMBLY TO BE 2-PLY SBS MODIFIED BITUMEN IN LIEU OF BUILT-UP ROOFING. REFERENCE SHEET GI-2 FOR ADDITIONAL INFORMATION REGARDING THE ALTERNATE ROOF MEMBRANE ASSEMBLY.

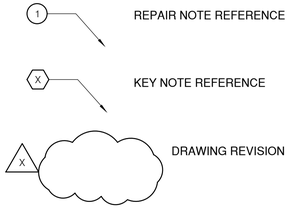
BUILDING DATA

MAXIMUM TOP OF ROOF DECK HEIGHT (OF AREAS TO BE RE-ROOFED):	26-FEET
EXPOSURE:	B
RISK CATEGORY:	III
BASIC WIND SPEED:	105 MPH

DRAWING SYMBOLS



DETAIL REFERENCE ON PLAN
DRAWINGS - SIM. INDICATES SIMILAR CONSTRUCTION AS SHOWN ON DETAIL NOTED.



PROJECT TEAM

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BID SET

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EUGENE SCHOOL DISTRICT 4J
MONROE MIDDLE SCHOOL
ROOF REPLACEMENT

SHEET TITLE:
GENERAL INFORMATION

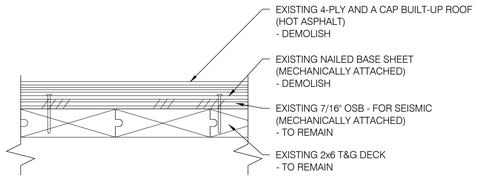
THE BAR SCALE IS 2 INCHES IN LENGTH. IF THE BAR IS NOT 2 INCHES LONG, THIS DRAWING IS NOT TO THE SCALE INDICATED.

Date: MARCH 15, 2021
Revisions:
1 ADDEM 1 MARCH 23, 2021

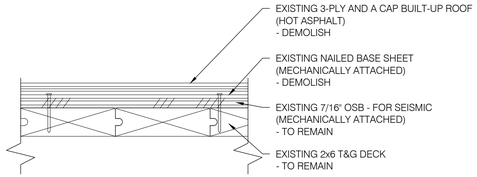
Drawn: TWB
Check: BAR
File: GI-Gen_Info
Job: R3282.07

SHEET NUMBER:
GI-1

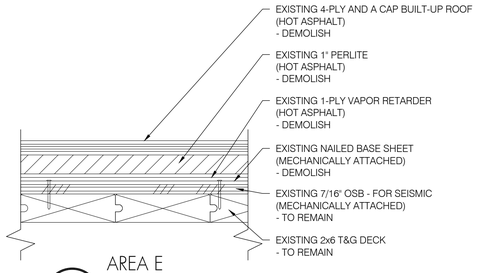
EXISTING ROOF SYSTEMS



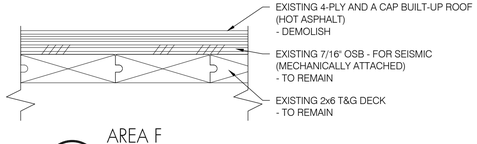
1 / GI-2 AREA B
EXISTING ROOF ASSEMBLY
SCALE: 3" = 1'-0"



2 / GI-2 AREAS D & H
EXISTING ROOF ASSEMBLY
SCALE: 3" = 1'-0"

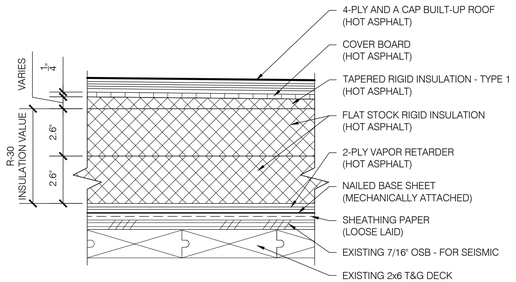


3 / GI-2 AREA E
EXISTING ROOF ASSEMBLY
SCALE: 3" = 1'-0"

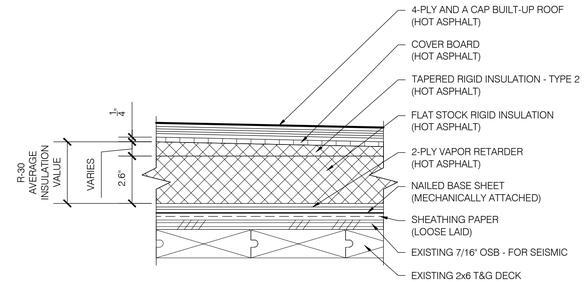


4 / GI-2 AREA F
EXISTING ROOF ASSEMBLY
SCALE: 3" = 1'-0"

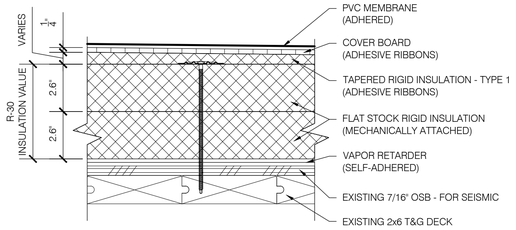
NEW ROOF SYSTEMS



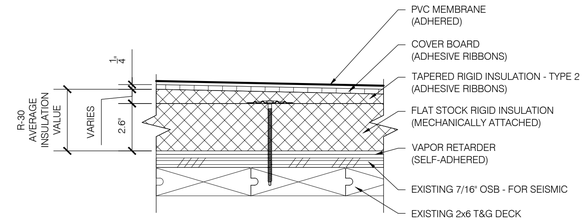
5 / GI-2 AREAS B, D, F & H
ROOF ASSEMBLY 1
SCALE: 3" = 1'-0"



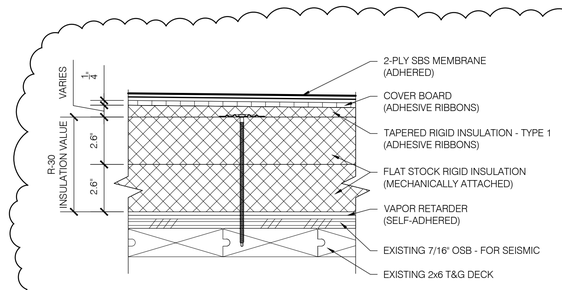
6 / GI-2 AREA E
ROOF ASSEMBLY 2
SCALE: 3" = 1'-0"



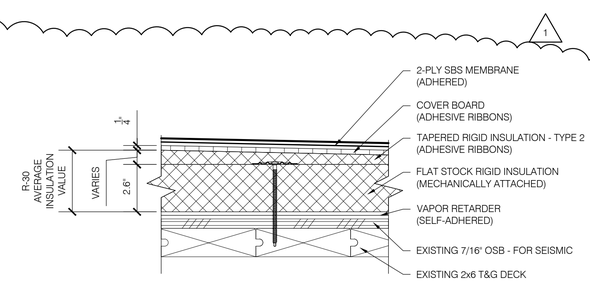
7 / GI-2 AREAS B, D, F & H
ROOF ASSEMBLY 3 - ALTERNATE NO. 1
SCALE: 3" = 1'-0"



8 / GI-2 AREA E
ROOF ASSEMBLY 4 - ALTERNATE NO. 1
SCALE: 3" = 1'-0"



9 / GI-2 AREAS B, D, F & H
ROOF ASSEMBLY 3 - ALTERNATE NO. 2
SCALE: 3" = 1'-0"



10 / GI-2 AREA E
ROOF ASSEMBLY 4 - ALTERNATE NO. 2
SCALE: 3" = 1'-0"

BID SET

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EUGENE SCHOOL DISTRICT 4J

MONROE MIDDLE SCHOOL

ROOF REPLACEMENT

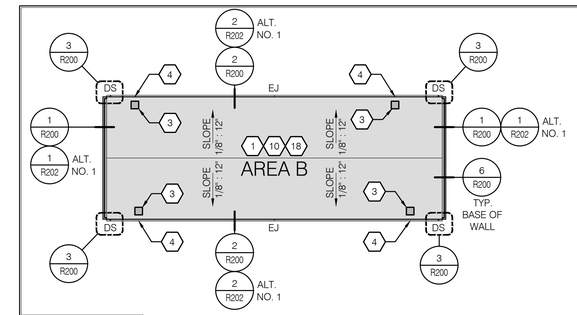
SHEET TITLE:
SYSTEM ASSEMBLIES

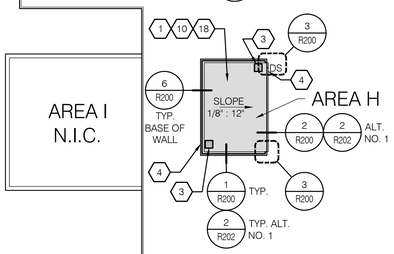
THE BAR SCALE IS 2 INCHES IN LENGTH. IF THE BAR IS NOT 2 INCHES LONG, THIS DRAWING IS NOT TO THE SCALE INDICATED.

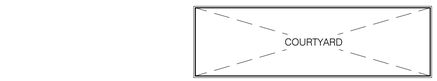
Date: MARCH 15, 2021
Revisions:
1 ADDEM 1 MARCH 23, 2021

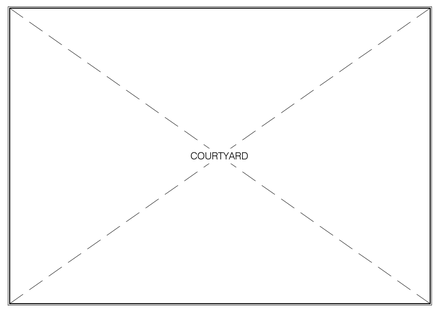
Drawn: TWB
Check: BAR
File: GI-Gen_Info
Job: R3282.07

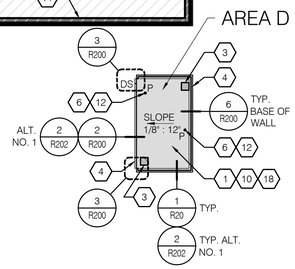
SHEET NUMBER:
GI-2

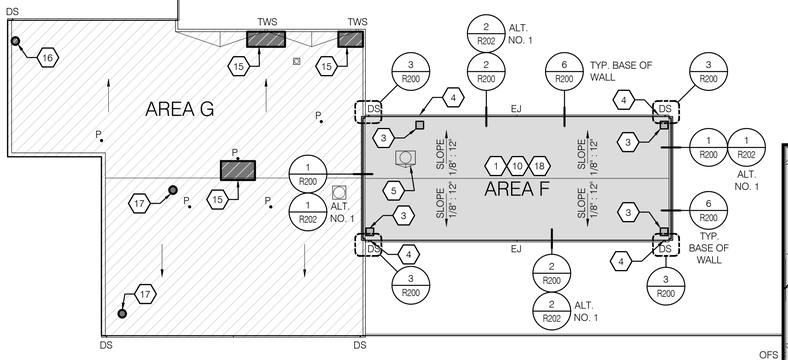


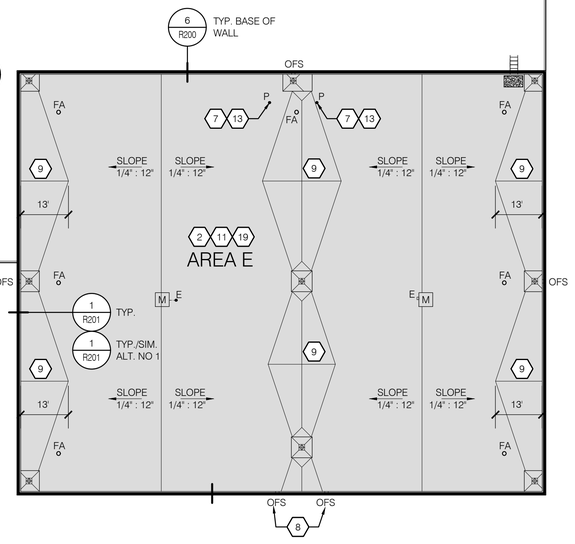












1 R101 ROOF PLAN
SCALE: 1" = 20'

LEGEND

(SYMBOLS APPLY TO SHADED/HATCHED AREAS ONLY)

- SHADED INDICATES ROOF AREAS TO BE REPLACED
- HATCH INDICATES ROOF AREAS TO RECEIVE REPAIRS
- INDICATES APPROXIMATE EXTENT/LOCATION OF REPAIR ACTIVITIES - REFERENCE KEY NOTES AND SPECIFICATIONS
- DRAIN SUMP
- DS — GUTTER DOWNSPOUT
- EJ — GUTTER EXPANSION JOINT
- OFS — OVERFLOW SCUPPER
- OF — EXISTING OVERFLOW THROUGH CURBED EDGE
- EXISTING ROOF DRAIN
- EXISTING CURBED FAN UNIT
- P — EXISTING PLUMBING VENT PIPE
- E — EXISTING ELECTRICAL PENETRATION
- EXISTING ROOF ACCESS LADDER TO BE REPLACED - REFERENCE STRUCTURAL
- M — EXISTING CURBED MECHANICAL UNIT
- EXISTING OVER-DECK ELECTRICAL CONDUIT
- FA — FALL PROTECTION ANCHOR
- SLOPE X/X" : 12" — DIRECTION AND SLOPE OF TAPERED INSULATION SYSTEMS - TAPERED INSULATION CRICKETS SHALL PRODUCE A FINISHED SLOPE EQUAL TO THE TAPERED INSULATION TO WHICH IT IS APPLIED UNLESS OTHERWISE NOTED
- WALKPAD

KEY NOTES

1. INSTALL NEW 4-PLY AND A CAP BUILT UP ROOF ASSEMBLY. - REFERENCE DETAIL 5/GI-2.
2. INSTALL NEW 4-PLY AND A CAP BUILT UP ROOF ASSEMBLY. - REFERENCE DETAIL 6/GI-2.
3. INSTALL NEW DECK INFILL PRIOR TO ROOF MEMBRANE ASSEMBLY. - REFERENCE STRUCTURAL DRAWINGS
4. INSTALL WALL PANEL COVER PLATE OVER VOID IN EXISTING METAL WALL PANELS WHERE DRAIN OUTLET WAS REMOVED. WALL PANEL COVER PLATE IS TO MATCH THE PROFILE OF THE EXISTING METAL WALL PANEL AND EXTEND A MINIMUM OF 6" ABOVE AND BELOW THE HOLE IN THE EXISTING METAL WALL PANEL. CLEAN THE SURFACE OF THE EXISTING METAL WALL PANEL AROUND THE HOLE AND WET SET THE WALL PANEL COVER PLATE INTO A BED OF BUTYL SEALANT. FASTEN THE PERIMETER OF THE WALL PANEL COVER PLATE WITH RUBBER WASHERED FASTENERS AT 3" ON CENTER.
5. PROVIDE CRICKET ON UP-SLOPE SIDE OF CURB.
6. RAISE AND INTEGRATE PLUMBING VENT PIPE INTO ROOF MEMBRANE ASSEMBLY. - REFERENCE DETAIL 5/R200.
7. RAISE AND INTEGRATE PLUMBING VENT PIPE INTO ROOF MEMBRANE ASSEMBLY. - REFERENCE DETAIL 4/R201.
8. OVERFLOW SCUPPERS TO BE NO MORE THAN 2" ABOVE THE SURFACE OF THE ROOF MEMBRANE. - REFERENCE DETAIL 2/R201 FOR SIMILAR.
9. INSTALL INSULATION CRICKET WITH 1/2" PANEL SLOPE UTILIZING A 3:1 LENGTH/WIDTH RATIO EXCEPT WHERE NOTED OTHERWISE.
10. ALTERNATE NO. 1: INSTALL NEW PVC ROOF ASSEMBLY. - REFERENCE DETAIL 7/GI-2.
11. ALTERNATE NO. 1: INSTALL NEW PVC ROOF ASSEMBLY. - REFERENCE DETAIL 8/GI-2.
12. ALTERNATE NO. 1: RAISE AND INTEGRATE PLUMBING VENT PIPE INTO ROOF MEMBRANE ASSEMBLY. - REFERENCE DETAIL 6/R202.
13. ALTERNATE NO. 1: RAISE AND INTEGRATE PLUMBING VENT PIPE INTO ROOF MEMBRANE ASSEMBLY. - REFERENCE DETAIL 6/R202 SIM.
14. BUR MEMBRANE REPAIR - ALUMINUM COATING APPLICATION
15. BUR MEMBRANE REPAIR - REINFORCED FLUID-APPLIED MEMBRANE APPLICATION - EXTEND THROUGH SCUPPER LINERS AND TERMINATE AT EXTERIOR LEADING EDGE
16. BUR MEMBRANE REPAIR - OPEN/DRY LAP PATCH
17. BUR MEMBRANE REPAIR - MEMBRANE PATCH
18. ALTERNATE NO. 2: INSTALL NEW 2-PLY SBS ROOF ASSEMBLY. - REFERENCE DETAIL 9/GI-2.
19. ALTERNATE NO. 2: INSTALL NEW 2-PLY SBS ROOF ASSEMBLY. - REFERENCE DETAIL 10/GI-2.

BID SET

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EUGENE SCHOOL DISTRICT 4J
MONROE MIDDLE SCHOOL
ROOF REPLACEMENT

SHEET TITLE:
ROOF PLAN

THE BAR SCALE IS 2 INCHES IN LENGTH. IF THE BAR IS NOT 2 INCHES LONG, THIS DRAWING IS NOT TO THE SCALE INDICATED.

Date:	MARCH 15, 2021
Revisions:	
1 ADDEM 1	MARCH 23, 2021
Drawn:	TWB
Check:	BAR
File:	R100-Roof_Plans
Job:	R3282.07

SHEET NUMBER:
R101

GENERAL STRUCTURAL NOTES:

CODE REQUIREMENTS:
CONFORM TO THE 2018 INTERNATIONAL BUILDING CODE AS AMENDED BY THE 2019 OSSC, REFERENCED HEREAFTER AS IBC.

DESIGN CRITERIA:
DESIGN WAS BASED ON THE STRENGTH AND DEFLECTION CRITERIA OF THE IBC. IN ADDITION TO THE DEAD LOADS, THE FOLLOWING LOADS WERE USED FOR DESIGN:

GROUND SNOW LOAD Pg: 25 PSF
FLAT-ROOF SNOW LOAD Pf: 25 PSF
SNOW EXPOSURE FACTOR Ce: 1.0
SNOW IMPORTANCE FACTOR Ic: 1.10
THERMAL FACTOR Ct: 1.0

BASIC WIND SPEED (3-SEC GUST, ULTIMATE): 105 MPH
BUILDING CATEGORY: III
WIND EXPOSURE: B

EXISTING CONDITIONS:
THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES FROM CONDITIONS SHOWN ON THE DRAWINGS PRIOR TO THE START OF THE WORK.

TEMPORARY CONDITIONS:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL STABILITY OF THE NEW AND EXISTING STRUCTURES AND WALLS DURING CONSTRUCTION. THE STRUCTURE SHOWN ON THE DRAWINGS HAS BEEN DESIGNED FOR STABILITY UNDER THE FINAL CONFIGURATION ONLY.

CARPENTRY:
SAWN LUMBER DESIGN IS BASED ON THE NATIONAL DESIGN SPECIFICATION, LATEST EDITION. SAWN LUMBER SHALL CONFORM TO WEST COAST LUMBER INSPECTION BUREAU OR WESTERN WOOD PRODUCTS ASSOCIATION GRADING RULES. UNLESS NOTED OTHERWISE ALL LUMBER SHALL BE 19% AT TIME OF FABRICATION AND DRIED TO A MAXIMUM OF 15% BEFORE INSTALLATION OF GYP. BOARD AND OF BRICK VENEER AND VERIFIED BY THE GENERAL CONTRACTOR. ALL WOOD IN PERMANENT CONTACT WITH CONCRETE OR CMU SHALL BE PRESSURE TREATED UNLESS AN APPROVED BARRIER IS PROVIDED. GRADES SHALL BE D.F. #2 UNLESS NOTED OTHERWISE ON THE PLANS.

FRAMING ACCESSORIES AND STRUCTURAL FASTENERS SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE COMPANY (OR ENGINEER APPROVED EQUAL) AND OF THE SIZE AND TYPE SHOWN ON THE DRAWINGS AND ATTACHED PER MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS UNLESS NOTED OTHERWISE. HANGERS NOT SHOWN SHALL BE SIMPSON HU OF SIZE RECOMMENDED FOR MEMBER. ALL FRAMING NAILS SHALL BE COMMON NAILS. NO BOX NAILS ALLOWED. FASTENERS AND ACCESSORIES IN CONTACT WITH PRESERVATIVE TREATED WOOD MUST BE HOT DIPPED GALVANIZED OR HAVE ZMAX COATING. ALL FASTENERS IN CONTACT WITH FIRE RETARDANT LUMBER MUST BE HOT-DIPPED GALVANIZED. DO NOT INSTALL 0.148" x 1 1/2" NAILS IN HANGERS UNLESS SPECIFICALLY NOTED ON THE PLANS & DETAILS. NAIL CALLOUTS SHALL BE INTERPRETED AS FOLLOWS:

NAIL CALLOUT	DIAMETER	LENGTH
8d COMMON	0.131"	2 1/2"
10d COMMON	0.148"	3"
16d COMMON	0.162"	3 1/2"
16d SINKER	0.148"	3 1/4"
ROOF SHEATHING NAILS	0.131"	2 1/2" (RING SHANK AT DECK ROOF)

SHEATHING PANELS SHALL CONFORM TO THE REQUIREMENTS OF VOLUNTARY PRODUCT STANDARD PS 1 OR PS 2, OR APA PRP-108 PERFORMANCE STANDARDS. UNLESS NOTED, PANELS SHALL BE APA RATED SHEATHING, EXPOSURE 1, OF THE THICKNESS AND SPAN RATING SHOWN ON THE DRAWINGS. INSTALLATION SHALL BE IN CONFORMANCE WITH APA RECOMMENDATIONS. ALLOW 1/8" SPACING AT PANEL ENDS AND EDGES, UNLESS OTHERWISE RECOMMENDED BY THE PANEL MANUFACTURER.

ALL ROOF SHEATHING SHALL BE INSTALLED WITH FACE GRAIN PERPENDICULAR TO SUPPORTS, EXCEPT AS INDICATED ON THE DRAWINGS. ROOF SHEATHING SHALL EITHER BE BLOCKED, TONGUE-AND-GROOVE, OR HAVE EDGES SUPPORTED BY PLYCLIPS. NAILING NOT SPECIFICALLY IDENTIFIED ON THE DRAWINGS SHALL CONFORM TO IBC TABLE 2304.9.1.

METALS:
ALL MISCELLANEOUS STEEL: ASTM A36 (Fy=36,000 PSI), OR AS NOTED ASTM A572 (Fy=50 KSI).
ALL BOLTS: ASTM A307 UNLESS NOTED OTHERWISE.
ALL STEEL TO HAVE SHOP COAT.
ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIP GALVANIZED PER ASTM 123 FOR STRUCTURAL STEEL AND ASTM 153 FOR BOLTS AND HARDWARE. FABRICATION OF STEEL THAT IS TO BE HOT DIP GALVANIZED SHALL ALSO MEET ASTM A385. REPAIR OF DAMAGED GALVANIZED COATING SHALL BE MADE WITH PRODUCTS MEETING ASTM A780 AND AS A MINIMUM SHALL BE 50% GREATER IN THICKNESS THAN THE SURROUNDING GALVANIZING.

MECHANICAL:
THE CONTRACTOR SHALL COORDINATE SEISMIC RESTRAINTS OF ELECTRICAL EQUIPMENT, MECHANICAL, PLUMBING, FIRE SPRINKLER, MACHINERY, AND ASSOCIATED PIPING WITH THE STRUCTURE. ANY CONNECTIONS TO STRUCTURE NOT CONFORMING TO SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA), OR SPECIFICALLY DETAILED ON THE MECHANICAL ENGINEER'S DRAWINGS, SHALL BE DESIGNED IN ACCORDANCE OF THESE GENERAL NOTES, BY AN ENGINEER REGISTERED IN THE STATE OF WASHINGTON, AND SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.

FLASHING AND WATERPROOFING:
ALL FLASHING AND WATERPROOFING SHALL BE PER PROFESSIONAL ROOF CONSULTANTS UNLESS NOTED OTHERWISE ON THE PLANS.

FALL PROTECTION GENERAL STRUCTURAL NOTES:

CODE REQUIREMENTS:
1. CONFORM TO THE 2018 INTERNATIONAL BUILDING CODE AS AMENDED BY THE 2019 OREGON STRUCTURAL SPECIALTY CODE, REFERENCED HEREAFTER AS IBC.
2. CONFORM TO OREGON OSHA STANDARDS FOR THE CONSTRUCTION INDUSTRY SUBPART M (FALL PROTECTION) AND ALL APPLICABLE STATE ADMINISTRATIVE CODE SAFETY STANDARDS.
3. CONFORM TO ANSI/ASSE Z359 AMERICAN NATIONAL STANDARD, CURRENT EDITION.

SYSTEM REQUIREMENTS:
1. INDIVIDUAL ANCHORS SHALL BE USED FOR A MAXIMUM OF ONE PERSON IN FALL ARREST OR FALL RESTRAINT.
2. PERSONAL FALL ARREST SYSTEMS (PFAS) SHALL BE LIMITED TO FULL BODY HARNESSES THAT LIMIT THE MAXIMUM FALL ARREST LOAD TO 900 LBS.
3. ANCHORS ARE TO BE USED ONLY BY PERSONS TRAINED IN THEIR USE. LANYARDS, SAFETY HARNESSES, ATTACHMENTS, AND ALL OTHER PERSONAL SAFETY DEVICES ATTACHED TO THE ANCHOR ARE THE SOLE RESPONSIBILITY OF THE USER AND NOT TM RIPPEY CONSULTING ENGINEERS.
4. ANCHORS ARE TO BE VISUALLY INSPECTED BY THE USER PRIOR TO EACH USE.
5. ANCHORS ARE TO BE INSPECTED ANNUALLY BY A 'QUALIFIED PERSON'.
6. ANCHORS SHALL BE RE-CERTIFIED BY A 'COMPETENT PERSON' WHEN RE-ROOFING OR RENOVATION OR AT PERIODS NOT TO EXCEED 10 YEARS.
7. THE SYSTEM USER IS TO MAINTAIN A LOG BOOK OF USE AND INSPECTION.
8. FALL PROTECTION SYSTEMS SERVING ROOF EDGES WITH INSUFFICIENT HEIGHT FOR FALL ARREST CLEARANCE SHALL BE CLEARLY IDENTIFIED AS 'FALL RESTRAINT' ONLY.

ANCHOR LOADS:
ULTIMATE ANCHOR LOAD: 5000 LB
ALLOWABLE LOAD: 310 LB (PER PERSON, COMBINED BODY WEIGHT AND TOOLS).

PRODUCTS:
1. SINGLE POINT FALL ARREST ANCHORS - 'GUARDIAN CB18', OR EQUIVALENT APPROVED BY THE ENGINEER.

INSTALLATION:
1. INSTALL IN ACCORDANCE WITH APPROVED DRAWINGS AND MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE SPECIAL INSPECTION OF INSTALLATION BY A CERTIFIED INDEPENDENT TESTING LABORATORY EMPLOYED BY THE OWNER.

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1990
RALPH TURNBAUGH
EXP: 6/30/22

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EUGENE SCHOOL DISTRICT 4J
MONROE MIDDLE SCHOOL
ROOF REPLACEMENT

SHEET TITLE:
GENERAL STRUCTURAL NOTES
AND FALL PROTECTION
STRUCTURAL NOTES

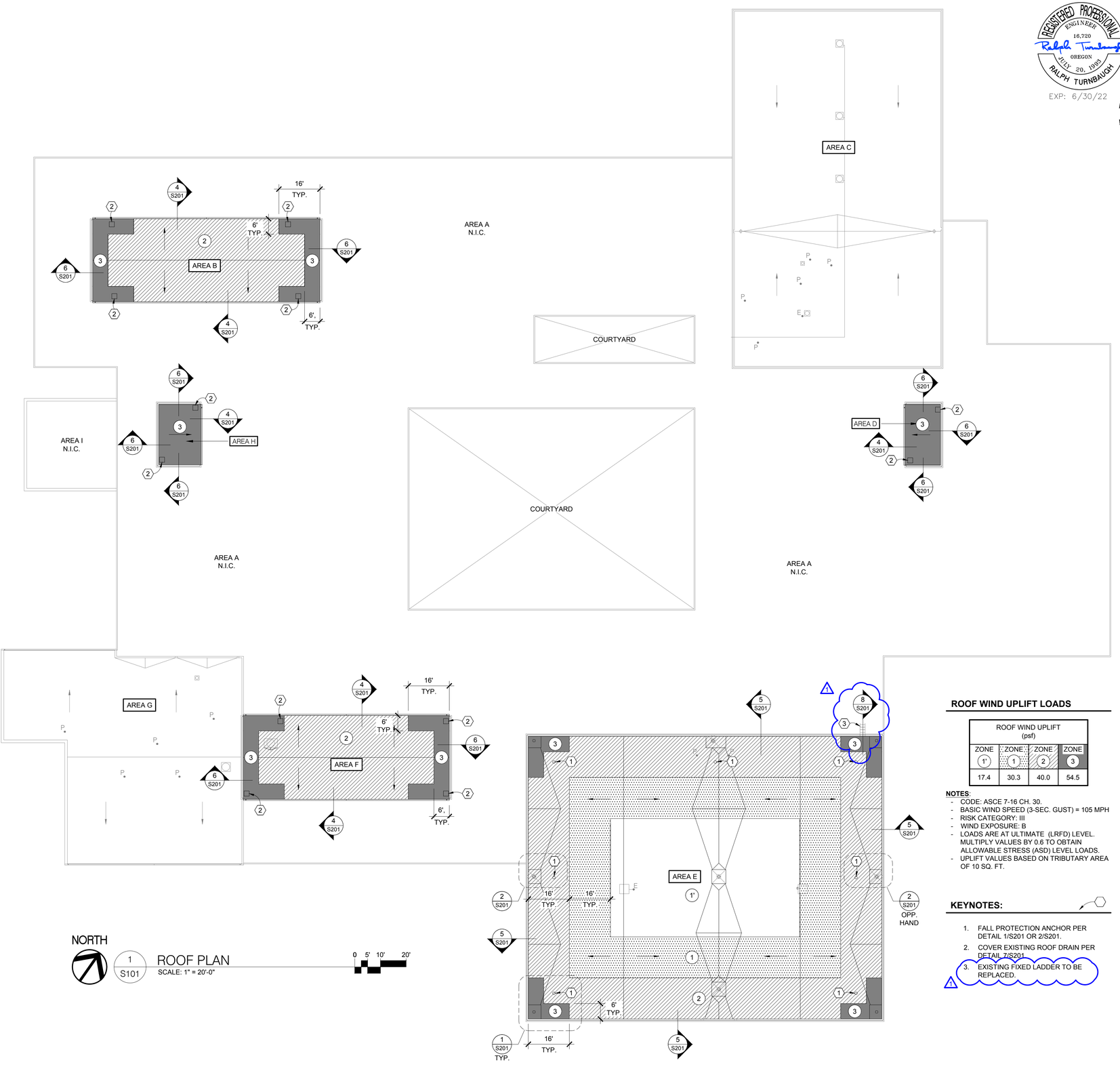
THE BAR SCALE IS 2-INCHES IN LENGTH. IF THE BAR IS NOT 2-INCHES LONG, THIS DRAWING IS NOT TO THE SCALE INDICATED.

Date: MARCH 15, 2021
Revisions:
1 ADDENDUM 1
MARCH 23, 2021

Drawn: JSC
Check: JH / RNT
File:
TMR Job: 21069

BID SET

SHEET NUMBER:
S100



ROOF WIND UPLIFT LOADS

ROOF WIND UPLIFT (psf)			
ZONE 1'	ZONE 1	ZONE 2	ZONE 3
17.4	30.3	40.0	54.5

NOTES:

- CODE: ASCE 7-16 CH. 30.
- BASIC WIND SPEED (3-SEC. GUST) = 105 MPH
- RISK CATEGORY: III
- WIND EXPOSURE: B
- LOADS ARE AT ULTIMATE (LRFD) LEVEL. MULTIPLY VALUES BY 0.6 TO OBTAIN ALLOWABLE STRESS (ASD) LEVEL LOADS.
- UPLIFT VALUES BASED ON TRIBUTARY AREA OF 10 SQ. FT.

KEYNOTES:

1. FALL PROTECTION ANCHOR PER DETAIL 1/S201 OR 2/S201.
2. COVER EXISTING ROOF DRAIN PER DETAIL 7/S201.
3. EXISTING FIXED LADDER TO BE REPLACED.

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1980
RALPH TURNBAUGH
EXP: 6/30/22

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EUGENE SCHOOL DISTRICT 4J
MONROE MIDDLE SCHOOL
ROOF REPLACEMENT

SHEET TITLE:
ROOF PLAN
WIND LOAD DIAGRAM

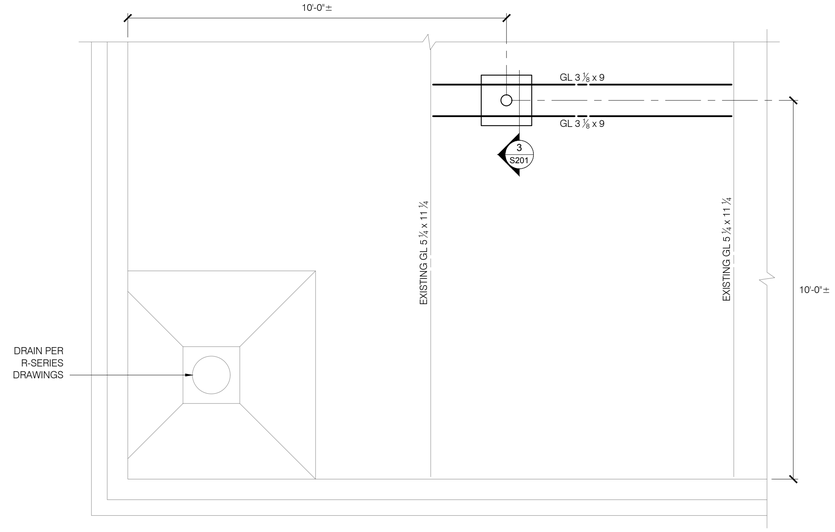
THE BAR SCALE IS 2INCHES IN LENGTH. IF THE BAR IS NOT 2INCHES LONG, THIS DRAWING IS NOT TO THE SCALE INDICATED.

Date: MARCH 15, 2021
Revisions:
1 ADDENDUM 1
MARCH 23, 2021

Drawn: JSC
Check: JH / RNT
File:
TMR Job: 21069

BID SET

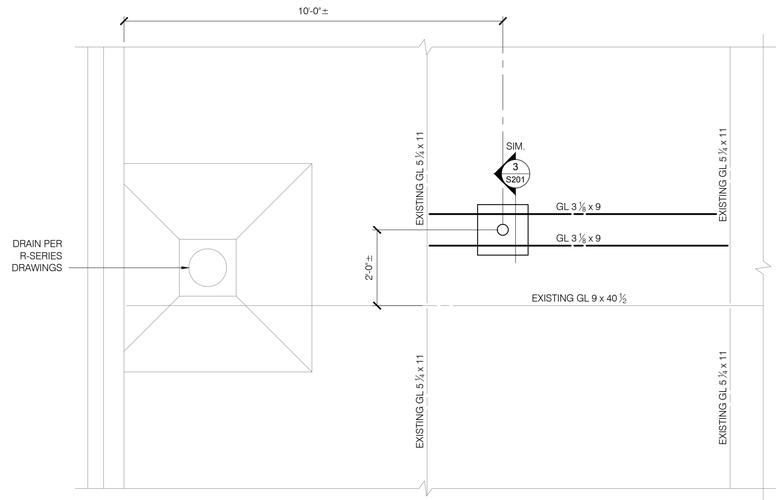
SHEET NUMBER:
S101



1 S201 PLAN AT FALL PROTECTION ANCHOR

21069-01

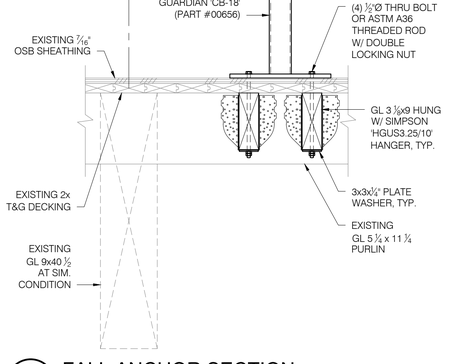
SCALE: 1/2" = 1'-0"



2 S201 PLAN AT FALL PROTECTION ANCHOR

21069-02

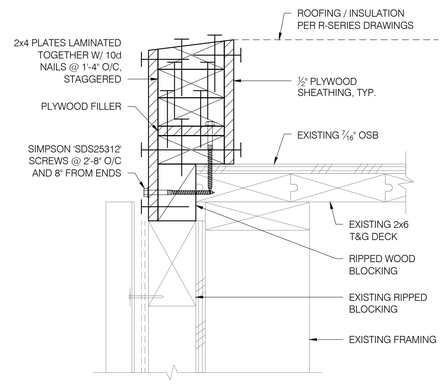
SCALE: 1/2" = 1'-0"



3 S201 FALL ANCHOR SECTION

21069-03

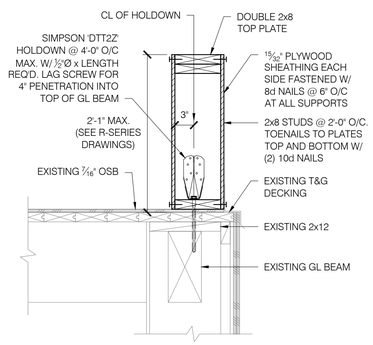
SCALE: 1" = 1'-0"



4 S201 AREA: B, D, F, & H GUTTER EDGE

21069-04

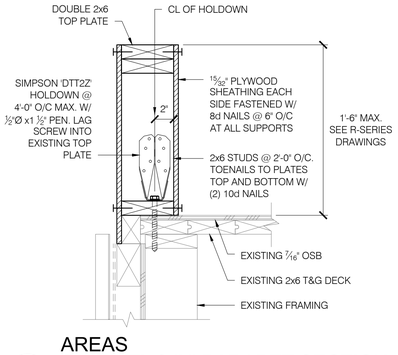
SCALE: 3" = 1'-0"



5 S201 AREA 'E' PARAPET SECTION

21069-05

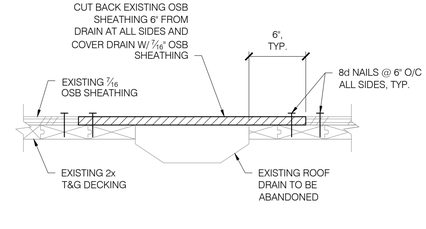
SCALE: 1" = 1'-0"



6 S201 AREAS 'B', 'D', 'F', & 'H' PARAPET SECTION

21069-06

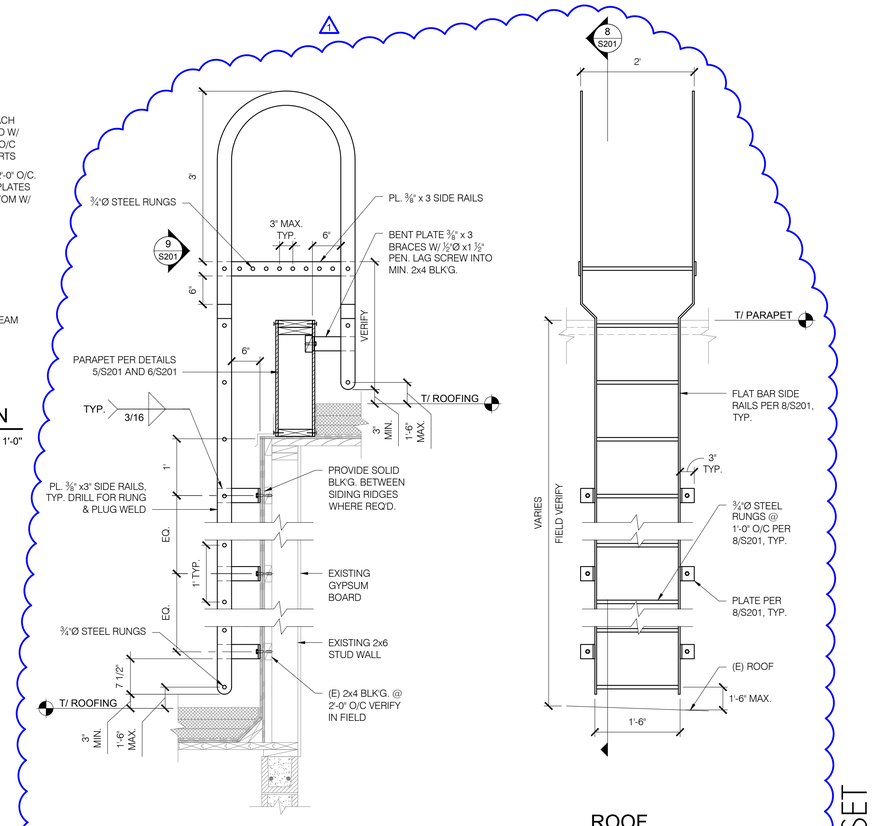
SCALE: 1 1/2" = 1'-0"



7 S201 SECTION AT ABANDONED ROOF DRAIN

21069-07

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



8 S201 ROOF LADDER SECTION

21069-08

SCALE: 3/4" = 1'-0"

9 S201 ROOF LADDER ELEVATION

21069-09

SCALE: 3/4" = 1'-0"

BID SET

REGISTERED PROFESSIONAL ENGINEER
16,720
Ralph Turnbaugh
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/22

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EUGENE SCHOOL DISTRICT 4J
MONROE MIDDLE SCHOOL
ROOF REPLACEMENT

SHEET TITLE:

STRUCTURAL DETAILS

THE BAR SCALE IS 2"INCHES IN LENGTH. IF THE BAR IS NOT 2"INCHES LONG, THIS DRAWING IS NOT TO THE SCALE INDICATED.

Date: MARCH 15, 2021

Revisions:

1 ADDENDUM 1
MARCH 23, 2021

Drawn: JSC

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S201