

GARDEN CITY ELEMENTARY SCHOOL ROOF REPLACEMENT

SECTION 01010 - SUMMARY OF WORK

PART 1) - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Invitation to Bid as issued by Roanoke City Public Schools.

1.2 PROJECT IDENTIFICATION: Garden City Elementary School Roof Replacement

OWNER: Roanoke City Public Schools
40 Douglass Avenue, N.W.
Roanoke, VA 24012

- A. Contract Documents, dated June 10, 2020 were prepared for the Project by:

Interactive Design Group
301 6th Street, SW
Roanoke, VA 24016
Tel: 540/342-7534
Fax: 540/342-7536
Richard A. Rife, AIA, Project Manager
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- C. The Owner's Representative is:
Mr. Jeffrey S. Shawver, Chief of Physical Plants
Tel: 540/853-6306
Email: jshawver@rcps.info
- D. The Work consists of the replacement of the roofs at Garden City Elementary School. Bidders may submit individual bids on individual Base Bid scopes of work and/or submit multiple lump sum bids on multiple Base Bid scopes of work.
- E. Roanoke City Public Schools intends to award a Contracts to the responsible bidder submitting the lowest lump-sum proposals, but expressly reserves the right to reject any or all bids, to waive any informality or irregularity in the bids received, and to award a bid or bids deemed to be in the best interests of Roanoke City Public Schools.

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1.3 BASE BID PACKAGES

A. Base Bid TPO-20:

1. Install a new fully adhered TPO roof system as described in Section 07535 of the specifications and as described elsewhere on the construction documents.
2. Provide a 20-year Warranty as described in Section 07535.

B. Base Bid TPO-30:

1. Install a new fully adhered TPO roof system as described in Section 07535 of the specifications and as described elsewhere on the construction documents.
2. Provide a 30-year Warranty as described in Section 07535.

1.4 CONTRACTOR USE OF PREMISES

- A. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
1. Utilities: Do not interrupt utility service to the site or buildings without prior approval by Owner.

1.5 OCCUPANCY REQUIREMENTS

- A. The Owner will maintain normal operations at each School throughout the replacement of that school's roof. Contractors shall confine their operations and parking to designated areas of the school site.
- B. Deliveries of Materials: Coordinate deliveries of materials and storage and staging on each site with the Owner prior to commencement of the work. Material deliveries should be limited to periods when busses are not moving on the site.

1.6 OWNER-FURNISHED PRODUCTS

- A. Pre-purchased and pre-ordered items: None.
- B. Owner purchased, Owner installed items: None.
- C. Owner-purchased, Contractor installed items: None.
- D. Contractor Purchased, Owner Installed items: None.

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1.7 MISCELLANEOUS PROVISIONS

- A. Permits: Apply for, obtain and pay for permits required to perform the work. Display permits in appropriate location.
- B. Codes: Comply with applicable codes and regulations of authorities having jurisdiction. Schedule and coordinate inspections by various Building Inspectors.
- C. Dimensions: Verify dimensions indicated on drawings with field dimensions before fabrication or ordering of materials. Do not scale drawings.
- D. Existing Conditions: Visit site prior to submission of bid to verify existing conditions.
- E. Definitions for terms used in specifications:
 - 1. Provide: Furnish and install, complete with all necessary accessories, ready for intended use. Pay for all related costs.
 - 2. Approved: Acceptance of item submitted for approval. Not a limitation or release for compliance with the Contract Documents or regulatory requirements. Refer to limitations of "Approved" in General and Supplementary Conditions.
 - 3. Match Existing: Match existing as Acceptable to the Owner.
- F. Intent: Drawings and specifications are intended to provide the basis for proper completion of the work suitable for the intended use of the Owner. Anything not expressly set forth but which is reasonably implied or necessary for proper performance of the project shall be included.
- G. Writing Style: Specifications are written in the imperative mode. Except where specifically intended otherwise, the subject of all imperative statements is the Contractor. For example, "Provide tile" means "Contractor shall provide tile."
- H. Lead-Containing Paint Abatement: The Contractor shall take any and all precautions advisable or required by law to safeguard his employees and the public from the hazards of exposure to lead-containing paint and other hazardous materials. The Owner has not conducted any tests related to possible lead content in the existing paint.

PART 2) - PRODUCTS (Not Applicable)

PART 3) - EXECUTION (Not Applicable)

END OF SECTION 01010

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SECTION 02070 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Demolition and removal of existing roof materials and rooftop equipment as shown on the drawings.

1.2 DEFINITIONS

A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Owner's property.

B. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Owner, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.

C. QUALITY ASSURANCE

A. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.3 PROJECT CONDITIONS

A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

B. Asbestos: Asbestos abatement shall be done in coordination with the demolition work. Areas of known asbestos-containing materials are shown in the Asbestos Survey. If any additional materials suspected of containing asbestos are encountered, do not disturb the materials and immediately notify the Owner.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected when moving rooftop gas lines or electrical conduits.

B. Perform surveys as the Work progresses to detect hazards resulting from demolition activities.

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3.2 UTILITY SERVICES

A. Maintain existing utilities indicated to remain in service and protect them against damage during demolition operations.

1. Do not interrupt existing utilities serving occupied or operating facilities, except when authorized in writing by Owner and authorities having jurisdiction.

a. Provide not less than 72 hours' notice to Owner if shutdown of service is required during execution of the work.

B. Do not start demolition work until utility disconnecting and sealing have been completed and verified.

3.3 PREPARATION

A. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

B. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area. Protect existing site improvements, appurtenances, and landscaping to remain.

3.4 POLLUTION CONTROLS

A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.

1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level.

C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.

3.5 SELECTIVE DEMOLITION

A. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete Work within limitations of governing regulations and as follows:

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1. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

END OF SECTION 02070

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SECTION 06105 – MISCELLANEOUS CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Wood blocking, furring, grounds and nailers.

PART 2 - PRODUCTS

2.1 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWWPA C2, except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWWPA C31 with inorganic boron (SBX).

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and one of the following:

- a. Ammoniacal, or amine, copper quat (ACQ).
- b. Copper bis (dimethyldithiocarbamate) (CDDC).
- c. Copper azole, Type A (CBA-A).
- d. Oxine copper (copper-8-quinolinolate) in a light petroleum solvent.

B. Kiln-dry material after treatment to a maximum moisture content of 19 percent and 15 percent for plywood. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.

D. Application: Treat items indicated on Drawings, and the following:

1. Wood curbs, blocking and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

2.2 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

1. Where carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Nails, Wire, Brads, and Staples: FS FF-N-105.

C. Power-Driven Fasteners: CABO NER-272.

D. Wood Screws: ASME B18.6.1.

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PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Discard units of material with defects that impair quality of carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.

B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

C. Apply field treatment complying with AWWPA M4 to cut surfaces of preservative-treated lumber.

D. Securely attach carpentry work as indicated and according to applicable codes and recognized standards.

E. Use fasteners of appropriate type and length. Pre-drill members when necessary to avoid splitting wood.

3.2 WOOD BLOCKING INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

END OF SECTION 06105

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SECTION 07535 - SINGLE-PLY MEMBRANE ROOFING – **BASE BIDS TPO-20 and TPO-30**

PART 1 - GENERAL

1.1 SUMMARY

A. The project consists of installing Adhered TPO (Thermoplastic Polyolefin) Roofing Systems as outlined below:

1. **Base Bid TPO-20:** Tear off areas of existing roof and install new insulation or backer board and a 60-Mil TPO Adhered Roofing System. Provide 20-year watertight warranty.
2. **Base Bid TPO-30:** Tear off areas of existing roof and install new insulation or backer board and an 80-Mil TPO Adhered Roofing System. Provide 20-year watertight warranty.

1.2 EXTENT OF WORK

A. Provide all labor, material, tools, equipment, and supervision necessary to complete the installation of the reinforced TPO (Thermoplastic Polyolefin) Adhered Roofing System including flashings and insulation as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details.

B. The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions that will affect their work.

C. The roofing contractor shall confirm all given information and advise the building owner, prior to bid, of any conflicts that will affect their cost proposal.

1.3 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the job site in the manufacturer's original, unopened containers or wrappings with the manufacturer's name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.

B. Comply with the manufacturer's written instructions for proper material storage.

C. Insulation must be on pallets, off the ground and tightly covered with waterproof materials.

D. Any materials which are found to be damaged shall be removed and replaced at the applicator's expense.

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1.4 WORK SEQUENCE

A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the membrane system.

B. Do not disrupt activities in occupied spaces.

1.5 USE OF THE PREMISES

A. Before beginning work, the roofing contractor must secure approval from the building owner's representative for the following:

1. Areas permitted for personnel parking.
2. Access to the site.
3. Areas permitted for storage of materials and debris.
4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials to and from the roof.

1.6 EXISTING CONDITIONS

A. If discrepancies are discovered between the existing conditions and those noted on the drawings, immediately notify the owner's representative by phone and solicit the manufacturer's approval prior to commencing with the work. Necessary steps shall be taken to make the building watertight until the discrepancies are resolved.

1.7 TEMPORARY FACILITIES AND CONTROLS

A. Temporary Utilities:

1. Water and power for construction purposes are available at the site and will be made available to the roofing contractor.
2. Provide all hoses, valves and connections for water from a source designated by the owner when made available.
3. When available, electrical power should be extended as required from the source. Provide all trailers, connections and fused disconnects.

B. Temporary, Sanitary Facilities: Sanitary facilities will not be available at the job site. The roofing contractor shall be responsible for the provision and maintenance of portable toilets or their equal.

C. Building Site:

1. The roofing contractor shall use reasonable care and responsibility to protect the building and site against damages. The contractor shall be responsible for the correction of any damage incurred as a result of the performance of the contract.
2. The roofing contractor shall remove all debris from the job site in a timely and legally acceptable manner so as to not detract from the aesthetics or the functions of the building.

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D. Security: Obey the owner's requirements for personnel identification, inspection and other security measures.

1.8 JOB SITE PROTECTION

A. The roofing contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide canvas, boards and sheet metal (properly secured) as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during the roofing application.

B. During the roofing contractor's performance of the work, the building owner will continue to occupy the existing building. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. The roofing contractor shall provide labor and materials to construct, maintain and remove necessary, temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.

C. Do not overload any portion of the building, by either use of or placement of equipment, storage of debris, or storage of materials.

D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.

E. Take precautions to prevent drains from clogging during the roofing application. Remove debris at the completion of each day's work and clean drains, if required. At completion, test drains to ensure the system is free running and drains are watertight. Remove strainers and plug drains in areas where work is in progress. Install flags or other telltales on plugs. Remove plugs each night and screen drain.

F. Store moisture susceptible materials above ground and protect with waterproof coverings.

G. Remove all traces of piled bulk material and return the job site to its original condition upon completion of the work.

1.9 SAFETY

A. The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are safety related. Safety shall be the responsibility of the roofing contractor. All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers and the occurrence of the general public on or near the site.

1.10 SUBMITTALS

A. Product Data: For each type of roofing product specified. Include data substantiating that materials comply with requirements.

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B. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system.

C. Shop Drawings: Include plans, sections, and details of the following:

1. Base flashings and membrane terminations.
2. Tapered insulation, including slopes.

D. Samples for Verification: Of the following products:

1. 12-by-12-inch square of sheet roofing, including lap seam.
2. 12-by-12-inch square of roof insulation.

E. Maintenance Data: For roofing system to include in the maintenance manuals specified in Division 1.

F. Warranty: Sample copy of standard roofing system manufacturer's warranty stating obligations, remedies, limitations, and exclusions of warranty.

1.11 PROJECT CONDITIONS

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

1.12 WARRANTY

A. **Base Bid TPO-20:** Provide manufacturer's 20-year Total System Warranty covering both labor and material with no dollar limitation. The maximum wind speed coverage shall be peak gusts of 70 mph measured at 10 meters above ground level. Certification is required with bid submittal indicating the manufacturer has reviewed and agreed to such wind coverage.

B. **Base Bid TPO-30:** Provide manufacturer's 30-year "Golden Seal" Warranty covering entire roof system "Edge to Edge" including membrane, flashing, insulation, adhesives, sheet metal and other components for both labor and material with no dollar limitation. The maximum wind speed coverage shall be peak gusts of 70 mph measured at 10 meters above ground level. Certification is required with bid submittal indicating the manufacturer has reviewed and agreed to such wind coverage.

1. Warranty shall also cover leaks caused by accidental punctures: 16 man-hours per year.

C. Pro-rated System Warranties shall not be acceptable.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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A. Available Manufacturers: This specification is based on the “Sure-Weld” TPO System by Carlisle Syn-Tec, Inc. Subject to compliance with requirements, manufacturers offering systems that may be incorporated into the Work include, but are not limited to, the following:

1. TPO Sheet:
 - a. Firestone Building Products Company Ultra Ply TPO system
 - b. Tremco TremPly Max system
 - c. Johns Manville Corp JM TPO Systems

2.2 TPO SHEET

A. **Roof System TPO-20 Sheet:** Flexible sheet formed from a Thermoplastic Polyolefin membrane complying with ASTM D 4637, Type 1, of the following grade, class, thickness, backing, and exposed face color:

1. UL Class: A.
2. Thickness: 60 mils, nominal.
3. Reinforcing: Nonwoven polyester fabric.
4. Exposed Face Color: Gray.
5. Elongation: 250% minimum, per ASTM D-412.
6. Breaking Strength: 250 lbs. Per ASTM D-751 A.
7. Tear Strength: 55 lbs. minimum, per ASTM D-751 B.

B. **Roof System TPO-30 Sheet:** Uniform, flexible sheet formed from a Thermoplastic Polyolefin membrane complying with ASTM D 4637, Type 1, of the following grade, class, thickness, backing, and exposed face color:

1. UL Class: A.
2. Thickness: 80 mils, nominal.
3. Reinforcing: Nonwoven polyester fabric.
4. Exposed Face Color: Gray.
5. Elongation: 250% minimum, per ASTM D-412.
6. Breaking Strength: 350 lbs. Per ASTM D-751 A.
7. Tear Strength: 55 lbs. minimum, per ASTM D-751 B.

2.3 AUXILIARY MATERIALS

A. General: Furnish auxiliary materials recommended by roofing system manufacturer for intended use and compatible with TPO membrane roofing.

B. Sheet Flashing: 60- or 80-mil-thick reinforced TPO membrane or 115-mil-thick fleece-backed TPO membrane, according to application.

C. Bonding Adhesive: Use manufacturer's foam adhesive for the insulation and fleece-backed membrane. Use the manufacturer's standard low-VOC bonding adhesive elsewhere.

D. Splice Adhesive and Cleaner: Single-component butyl splicing adhesive and solvent-based splice cleaner.

E. Splice Primer and Tape: Manufacturer's standard synthetic rubber polymer primer and 3-inch-wide minimum, butyl splice tape with release film.

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F. Lap Sealant: Manufacturer's standard single-component sealant.

G. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.

H. Metal Termination Bars: Manufacturer's standard aluminum bars, approximately 1 inch wide, roll formed and pre-punched.

I. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions of FM 4470, designed for fastening sheet to substrate, and acceptable to roofing system manufacturer.

J. Miscellaneous Accessories: Provide seam tape, pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, in-seam sealants, termination reglets, and other accessories recommended by roofing system manufacturer for intended use.

K. Traffic Pads: Protective surfacing for roof traffic shall be roof manufacturer's standard TPO Walkway Pads installed per manufacturer's requirements.

2.4 INSULATION MATERIALS

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

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

B. Polyisocyanurate Board Insulation: Rigid, cellular polyisocyanurate thermal insulation with core formed without using CFCs as blowing agents to comply with ASTM C 1289, classified as follows:

1. Polyisocyanurate Board Insulation: aged R-value of 6.0 per inch of thickness. Facer shall be coated glass-fiber mat on both major surfaces, equal to Carlisle SecureShield, 25 psi compressive strength insulation as approved by Roof Manufacturer as a component of its warranted fully adhered TPO roof system. Install with approved adhesive or fasteners. Thickness as shown on drawings. Provide 1/8":12" tapered insulation where shown on drawings.

2. Cover board shall be high density polyisocyanurate foam core bonded to a coated glass-fiber facer equal to Carlisle SecureShield HD, 109 psi compressive strength. Install with approved adhesive or fasteners. Thickness: 1/2"

2.3 INSULATION ACCESSORIES

A. General: Furnish roof insulation accessories recommended by insulation manufacturer for intended use and compatible with sheet roofing material.

PART 3 - EXECUTION

3.1 EXAMINATION

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- A. Examine substrates, areas, and conditions under which roofing will be applied, with Installer present, for compliance with requirements.
- B. Verify that roof openings and penetrations are in place and set and braced and that roof drains are properly clamped into position.
- C. Verify that wood nailers are in place and secured and match thicknesses of insulation required.
- D. Do not proceed with installation until unsatisfactory conditions have been corrected.
- E. 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.
- F. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of the roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.2 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 manufacturer's written instructions for installing roof insulation.
- C. Install crickets and areas of tapered insulation on areas of roofing to conform to slopes indicated and to Shop Drawings.
- D. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- E. 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. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
- F. Attached Insulation: Install each layer of insulation and secure to deck using adhesive or fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type indicated. Use foam adhesive over the gym roof deck and any areas of concrete roof deck. Screw fasteners may be used elsewhere where rooms below have lay-in ceilings.
 - 1. Fasten insulation according to the insulation and roofing system manufacturers' written instructions to meet specified wind-uplift requirements.

3.3 ADHERED SHEET INSTALLATION

- A. Install TPO sheet over area to receive roofing according to roofing system manufacturer's written instructions. Unroll sheet and allow to relax for a minimum of 30 minutes.
- B. Accurately align sheets and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

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C. Apply bonding adhesive to substrate and underside of sheet at rate required by manufacturer and allow to partially dry. Do not apply bonding adhesive to splice area of sheet.

D. Adhesively fasten sheet securely at terminations and perimeter of roofing.

E. Apply roofing sheet with side laps shingled with slope of roof deck where possible.

F. Spread sealant or mastic bed over deck drain flange at deck drains and securely seal roofing sheet in place with clamping ring.

3.4 SEAM INSTALLATION

A. Hot air weld the TPO membrane seams in accordance with the manufacturer's hot air welding procedures.

B. Repair tears, voids, and lapped seams in roofing that does not meet requirements.

3.5 FLASHING INSTALLATION

A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of flashing sheet at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing as recommended by manufacturer.

D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.6 FIELD QUALITY CONTROL

A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Architect. Notify Architect or Owner 48 hours in advance of the date and time of inspection.

3.7 PROTECTING AND CLEANING

A. Install walkways at all locations as identified on the drawings. Hot air weld walkway pads to the membrane in accordance with the manufacturer's specifications.

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B. Protect membrane roofing 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 condition in a written report to Architect.

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

END OF SECTION 07535

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SECTION 07620 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes shop-fabricated sheet metal flashing and trim in the following categories:
 1. Exposed trim, gravel stops and copings.
 2. Metal flashing and counterflashing.
 3. Scuppers, gutters and downspouts.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data including manufacturer's material and finish data, installation instructions, and general recommendations for each specified flashing material and fabricated product.
- C. Shop Drawings of each item specified showing layout, profiles, methods of joining, and anchorage details.
- D. Samples of sheet metal flashing, trim, and accessory items, for finish selection.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

PART 2 - PRODUCTS

2.1 METALS

- A. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated and with not less than the strength and durability of alloy and temper designated below:

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1. Factory-Applied Finish: 70% Kynar/Hylar fluoropolymer coating 1.0 mil total dry thickness.
2. Color as selected by Owner from manufacturer's standard colors.

2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.
- B. Asphalt Mastic: SSPC-Paint 12, solvent-type asphalt mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil dry film thickness per coat.
- C. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.
- D. Elastomeric Sealant: Generic type recommended by sheet metal manufacturer and fabricator of components being sealed and complying with requirements for joint sealants as specified in Division 7 Section "Joint Sealants."
- E. Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather-resistant seaming and adhesive application of flashing sheet metal.
- F. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of Work, matching or compatible with material being installed; noncorrosive; size and thickness required for performance.
- G. Roofing Cement: ASTM D 4586, Type I, asbestos free, asphalt based.

2.3 FABRICATION, GENERAL

- A. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.
- B. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- C. Form exposed sheet metal Work without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.
- D. Seams: Fabricate nonmoving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
- E. Expansion Provisions: Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof

GARDEN CITY ELEMENTARY SCHOOL ROOF REPLACEMENT

and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

- F. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
- G. Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact with asphalt mastic or other permanent separation as recommended by manufacturer.
- H. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.
- I. Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.
 - 1. Size: As recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

2.4 SHEET METAL FABRICATIONS

- A. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements but not less than that listed below for each application and metal.
- B. Gutters with Girth up to 15 Inches: Fabricate from the following material:
 - 1. Aluminum: 20 gauge, 0.0320 inch thick, with factory-applied 70% fluoropolymer coating.
- C. Downspouts: Fabricate from the following material:
 - 1. Aluminum: 20 gauge, 0.0320 inch thick, with factory-applied 70% fluoropolymer coating.
- D. Scuppers: Fabricate from the following material:
 - 1. Aluminum: 20 gauge, 0.0320 inch thick, with factory-applied 70% fluoropolymer coating.
- E. Copings, Exposed Trim, Gravel Stops, and Fasciae: Fabricate from the following material:
 - 1. Aluminum: 16 gauge, 0.050 inch thick, with factory-applied 70% fluoropolymer coating.
- F. Counterflashing: Fabricate from the following material:
 - 1. Aluminum: 18 gauge, 0.040 inch thick, with factory-applied 70% fluoropolymer coating.
- G. Flashing Receivers: Fabricate from the following material:
 - 1. Aluminum: 18 gauge, 0.040 inch, mill finish.

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- H. Downspout standoff support brackets:
 - 1. Aluminum: 16 gauge, 0.050 inch thick, with factory-applied fluoropolymer coating.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions under which sheet metal flashing and trim are to be installed and verify that Work may properly commence. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Anchor units of Work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install Work with laps, joints, and seams that will be permanently watertight and weatherproof.
- B. Install exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- C. Expansion Provisions: Provide for thermal expansion of exposed sheet metal Work. Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- D. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards. Fill joint with sealant and form metal to completely conceal sealant.
- E. Seams: Fabricate nonmoving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
- F. Separations: Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with asphalt mastic or other permanent separation as recommended by manufacturer.
 - 1. Underlayment: Where installing stainless steel or aluminum directly on cementitious or wood substrates, install a slip sheet of red-rosin paper and a course of polyethylene underlayment.

GARDEN CITY ELEMENTARY SCHOOL ROOF REPLACEMENT

2. Bed flanges of Work in a thick coat of roofing cement where required for waterproof performance.

- G. Counterflashings: Coordinate installation of counterflashings with installation of assemblies to be protected by counterflashing. Install counterflashings in reglets or receivers. Secure in a waterproof manner by means of snap-in installation and sealant, lead wedges and sealant, interlocking folded seam, or blind rivets and sealant. Lap counterflashing joints a minimum of 2 inches and bed with sealant.
- H. Roof-Drainage System: Install drainage items fabricated from sheet metal, with straps, adhesives, and anchors recommended by SMACNA's Manual or the item manufacturer, to drain roof in the most efficient manner. Coordinate roof-drain flashing installation with roof-drainage system installation. Coordinate flashing and sheet metal items for steep-sloped roofs with roofing installation.

3.3 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.
- B. Provide final protection and maintain conditions that ensure sheet metal flashing and trim Work during construction is without damage or deterioration other than natural weathering at the time of Substantial Completion.

END OF SECTION 07620

GARDEN CITY ELEMENTARY SCHOOL ROOF REPLACEMENT

SECTION 07920 – JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes joint sealants for the following applications, including those specified by reference to this Section:

1. Roofing and sheet metal joints requiring sealant.

1.2 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

1.3 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products listed.

2.2 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with roofing materials.

B. Non-Sag Polyurethane Sealant:

1. Products: One of the following or an equal product approved by the roofing manufacturer:

- a. Pecora Dynatrol 1 one part polyurethane.
- b. Master Builders NP-1 one part polyurethane.
- c. Tremco Dymonic one part polyurethane.

2. Typical applications: Exterior joints at sheet metal flashing and trim.

GARDEN CITY ELEMENTARY SCHOOL ROOF REPLACEMENT

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

3.2 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

3.3 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.4 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 07920

GARDEN CITY ELEMENTARY SCHOOL ROOF REPLACEMENT

SECTION 09910 - PAINTING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Summary: Paint all exposed surfaces, as listed in Finish Schedule.
- B. Submittals: Product Data and color Samples.
- C. Obtain primers for each coating system from the same manufacturer as the finish coats.

PART 2 - PRODUCTS

2.1 PAINT

- A. The contractor shall supply Benjamin Moore products Ultra Spec HP Acrylic semi-gloss enamel and Corotech acrylic metal primer for all interior and exterior painting and finishing work. No substitutions.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with the Applicator present, under which painting will be performed for compliance with paint application requirements.
 - 1. Do not begin to apply paint until unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.

3.2 PREPARATION

- A. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease before cleaning.
- B. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
 - 1. Provide barrier coats over incompatible primers or remove and reprime.

GARDEN CITY ELEMENTARY SCHOOL ROOF REPLACEMENT

2. Ferrous Metals: Remove rust and flaking or loose paint with a wire brush or sand paper.
 3. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove loose or flaking paint with a wire brush or sand paper.
- C. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
 3. Use only thinners approved by paint manufacturer and only within recommended limits.
- D. Tinting: Tint primer coats to match the color of the finish coat.

3.3 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Paint colors, surface treatments, and finishes are indicated in the schedules.
 2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 3. Provide finish coats that are compatible with primers used.
 4. Sand lightly between each succeeding enamel or varnish coat.
 5. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
- B. Application Procedures: Apply paints and coatings by brush, roller, or other applicators according to manufacturer's written instructions.
- C. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

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- D. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing.
- E. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- F. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 EXTERIOR PAINT APPLICATION SCHEDULE

- A. Ferrous Metal: (Railings) As follows:
 - 1. Semigloss, Enamel: Two coats over primer.
- B. Zinc-Coated Metal: (Gas piping, roof hatches) As follows:
 - 1. Semigloss, Enamel: Two coats over galvanized metal primer.

3.5 COLOR SCHEDULE

- A. Use the following colors:
 - 1. Gas piping: OSHA safety yellow
 - 2. Railings and hatches: Black

END OF SECTION 09910

PROJECT MANUAL & SPECIFICATIONS

ROANOKE CITY PUBLIC SCHOOLS GARDEN CITY ELEMENTARY SCHOOL ROOF REPLACEMENT

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June 10, 2020

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01010 SUMMARY OF WORK

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02060 SELECTIVE DEMOLITION

DIVISION 3 - CONCRETE

NOT USED

DIVISION 4 - MASONRY

NOT USED

DIVISION 5 - METALS

NOT USED

DIVISION 6 - WOOD AND PLASTICS

06105 MISCELLANEOUS CARPENTRY

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

07532 SINGLE-PLY MEMBRANE ROOFING

07620 SHEET METAL FLASHING AND TRIM

07920 JOINT SEALANTS

DIVISION 8 - DOORS AND WINDOWS

NOT USED

DIVISION 9 - FINISHES

09910 PAINTING

DIVISION 10 - SPECIALTIES

NOT USED

DIVISION 11 - EQUIPMENT

NOT USED

DIVISION 12 - FURNISHINGS

NOT USED

DIVISION 13 - SPECIAL CONSTRUCTION

NOT USED

DIVISION 14 - CONVEYING SYSTEMS
NOT USED

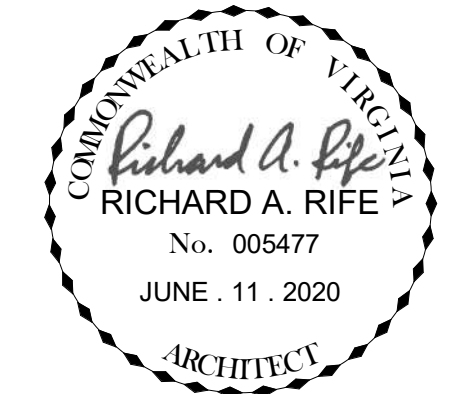
DIVISION 15 - MECHANICAL
NOT USED

DIVISION 16 - GENERAL ELECTRICAL
NOT USED

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INTERACTIVE DESIGN GROUP
 301 6TH STREET SW
 ROANOKE, VA 24016
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NO.	REVISIONS	DATE

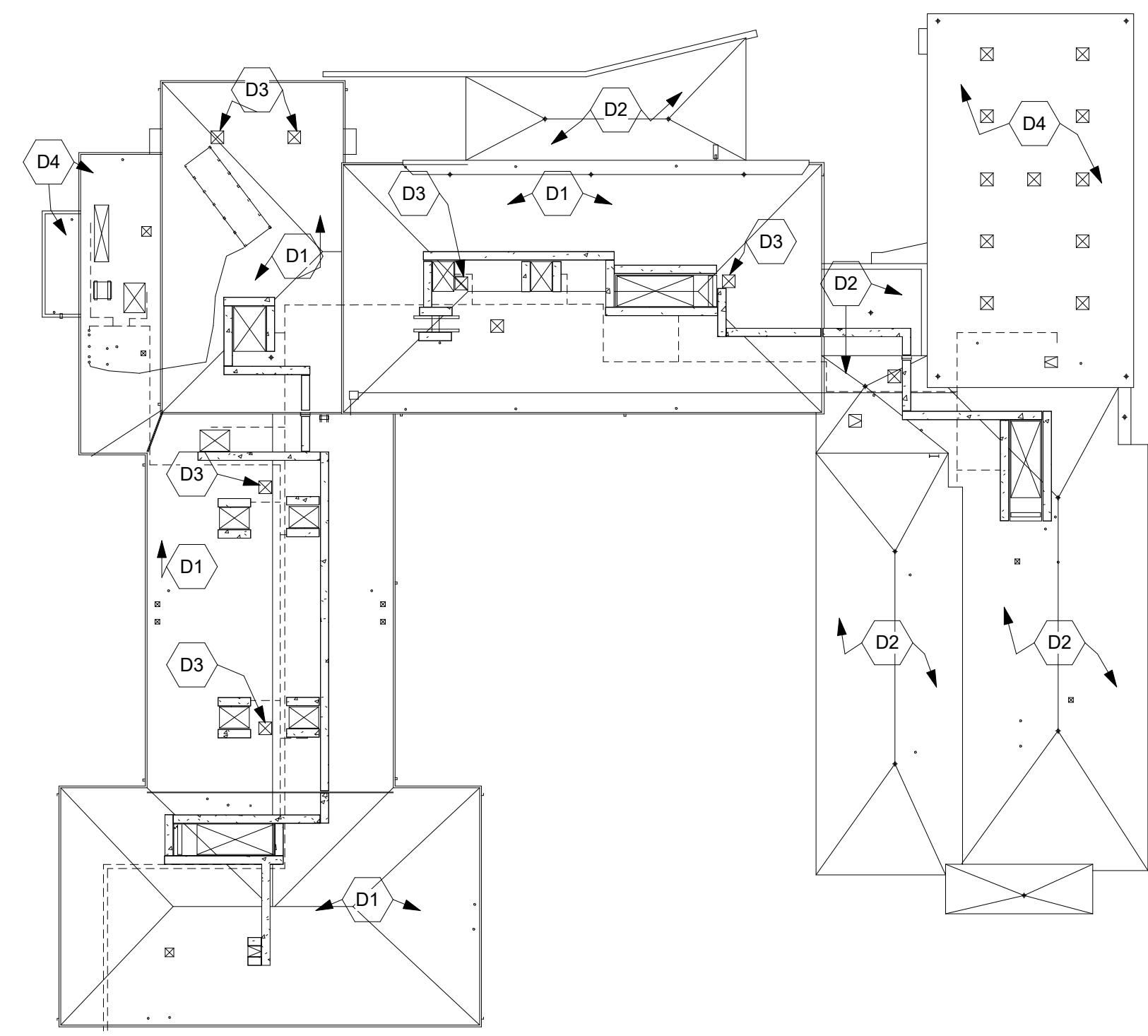
ROOF REPLACEMENT FOR
**ROANOKE CITY
 PUBLIC
 SCHOOLS -
 GARDEN CITY
 ELEMENTARY
 SCHOOL**

3716 GARDEN CITY BLVD SE
 ROANOKE, VA 24014

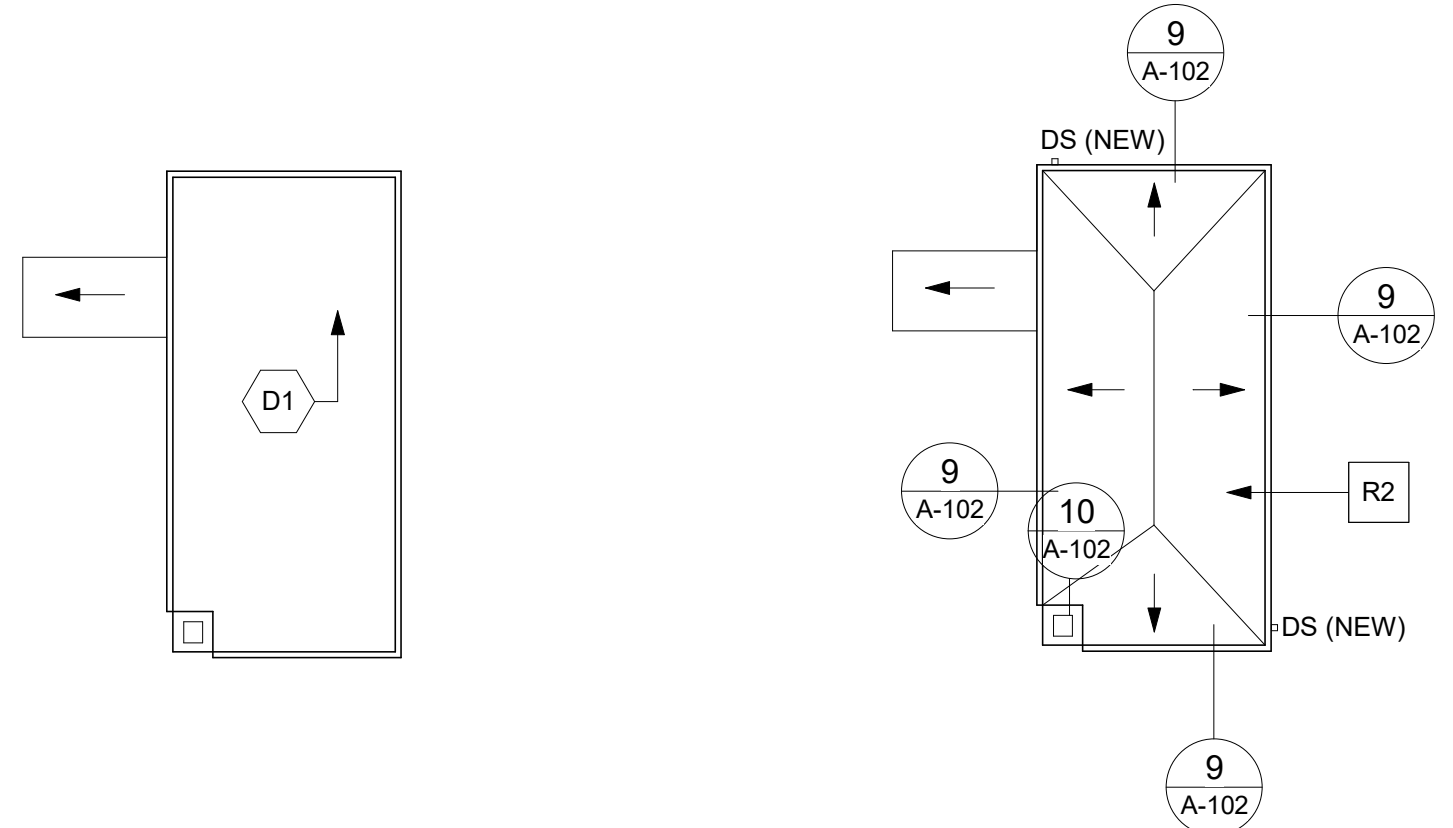
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JOB	20-022

ROOF PLAN

SHEET
A-101

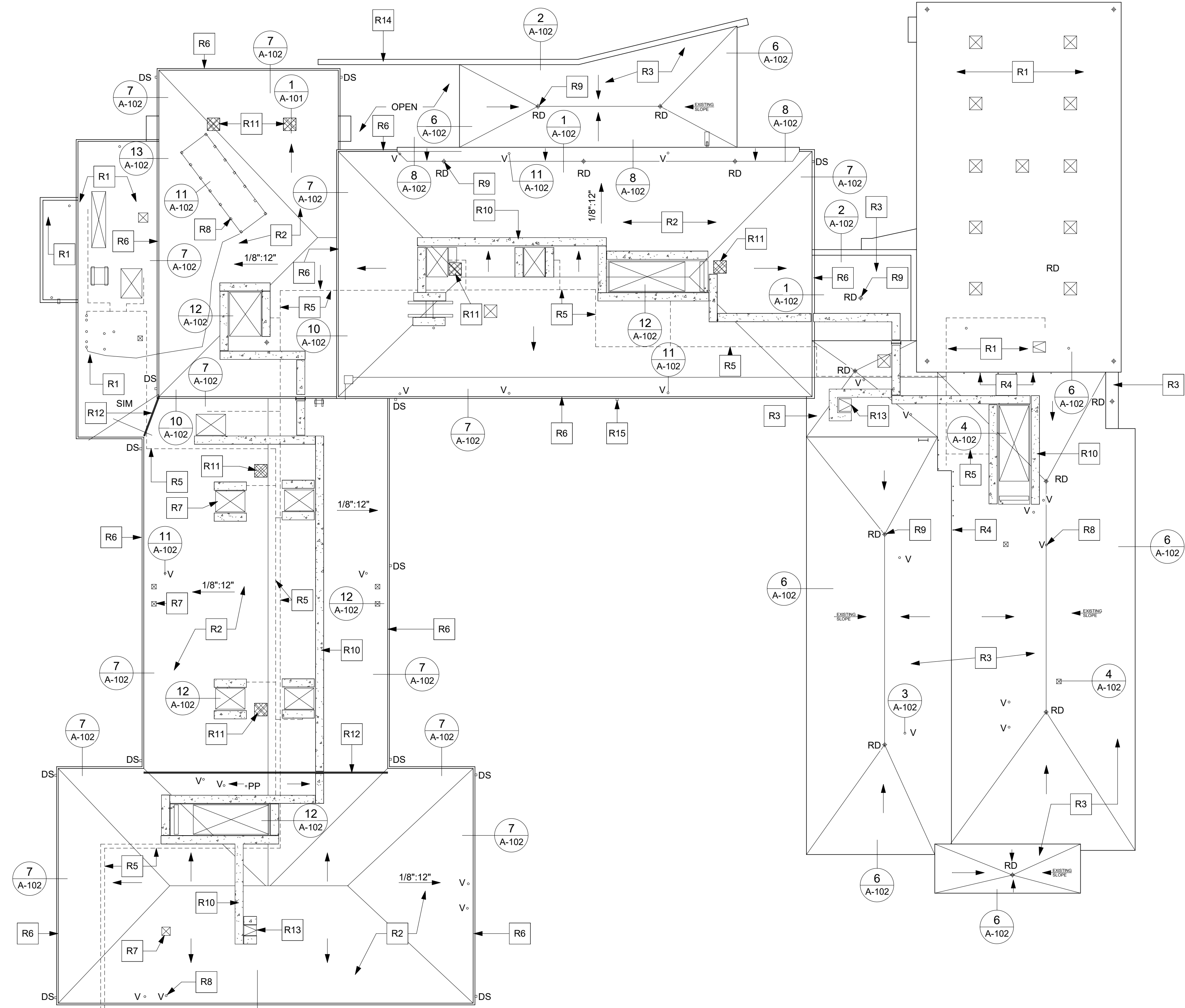


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 A-101 1/32" = 1'-0"



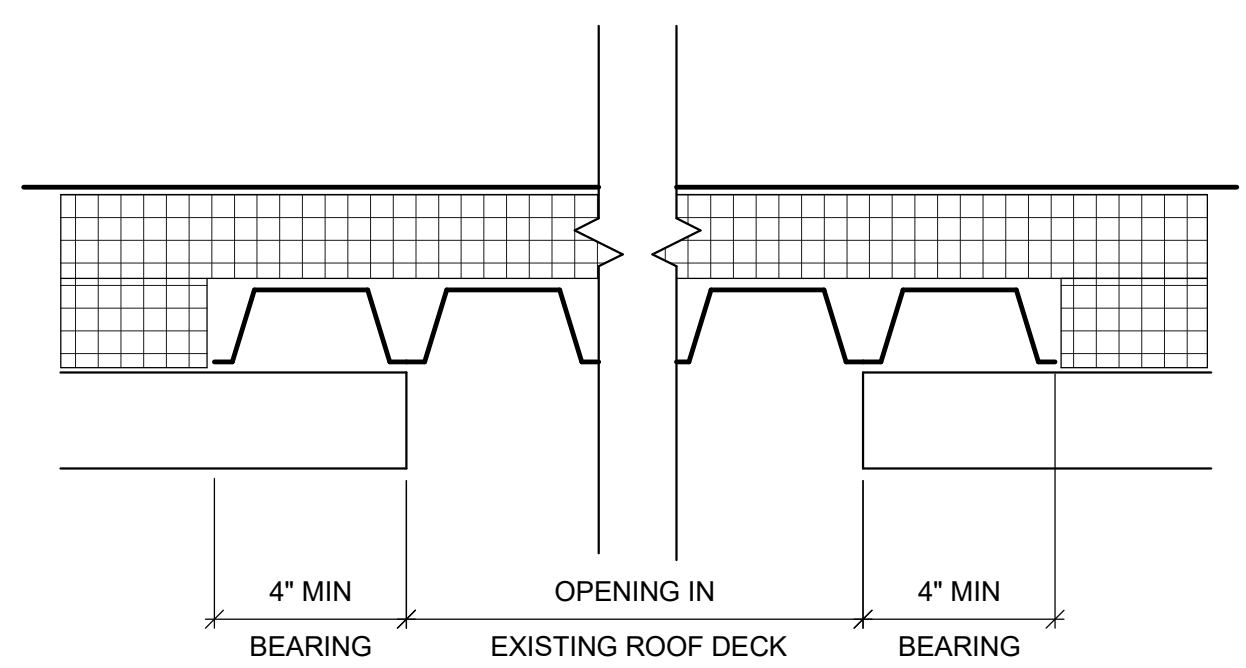
3
 A-101 1/16" = 1'-0"

4
 A-101 1/16" = 1'-0"



2
 A-101 1/16" = 1'-0"

- DEMOLITION NOTES**
- D1. REMOVE EXISTING ROOF, GRAVEL STOP, WALKPADS, AND INSULATION DOWN TO ROOF DECK.
 - D2. REMOVE EXISTING STONE BALLAST AND WALKPADS. REMOVE EXISTING LOOSE LAID EPDM MEMBRANE ROOF.
 - D3. REMOVE EXISTING SEALED-OFF ROOF CURB. FILL OPENING IN ROOF DECK WITH STEEL DECK.
 - D4. EXISTING ROOF TO REMAIN.



1
 A-101 3" = 1'-0"

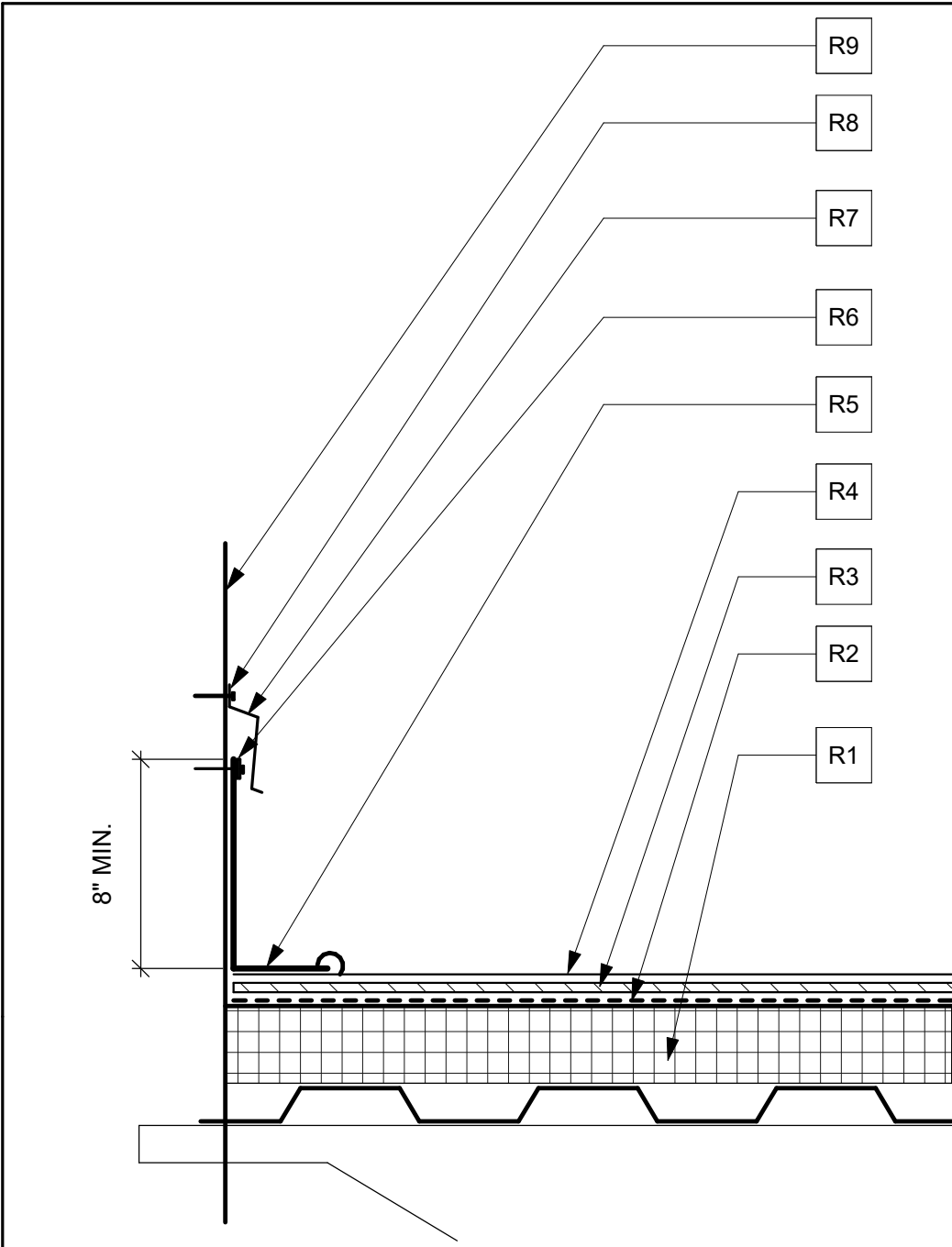
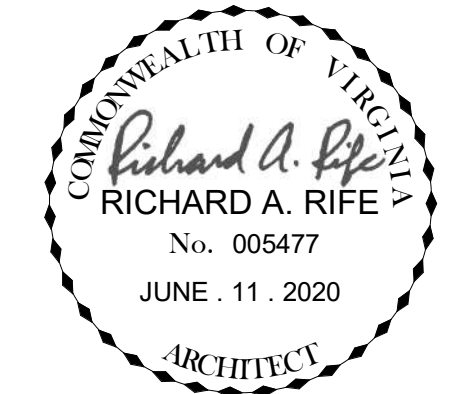
- NOTES LEGEND**
- A - MISCELLANEOUS
 - C - CIVIL
 - E - ELECTRICAL
 - F - FLOORS / CEILINGS
 - G - DOORS / GLAZINGS
 - K - FURNITURE / FINISHES
 - L - LIFE SAFETY
 - M - MECHANICAL
 - P - PLUMBING
 - R - ROOF
 - S - STRUCTURAL
 - W - WALLS

- ROOF REPLACEMENT NOTES**
- R1. EXISTING ROOF TO REMAIN - NO CHANGES TO THE AREA.
 - R2. OVER EXISTING EXPOSED ROOF DECK, INSTALL NEW TAPERED INSULATION AND FULLY ADHERED TPO ROOF.
 - R3. INSTALL NEW 1/2" RECOVERY BOARD OVER EXISTING TAPERED INSULATION. INSTALL FULLY ADHERED TPO ROOF.
 - R4. SAND RUSTY AREAS, PRIME AND PAINT EXISTING GUARDRAILS.
 - R5. SAND RUSTY AREAS, PRIME AND PAINT GAS LINES. INSTALL NEW MIRO INDUSTRIES MODEL 3-R-2 PIPE SUPPORT OR SIMILAR AS REQUIRED. INSTALL LOOSE-LAID TPO MEMBRANE CUSHIONS UNDER EACH SUPPORT.
 - R6. NEW GUTTERS AND DOWNSPOUTS TO MATCH EXISTING.
 - R7. REMOVE EXISTING EPDM FLASHING ON CURBS AS REQUIRED AND INSTALL NEW TPO FLASHING - TYPICAL AT ALL ROOF CURBS.
 - R8. REMOVE EXISTING EPDM FLASHING AT VENTS, SUPPORTS, AND FLUES AS REQUIRED AND INSTALL NEW TPO FLASHING - TYPICAL AT ALL VENTS, SUPPORTS, AND FLUES.

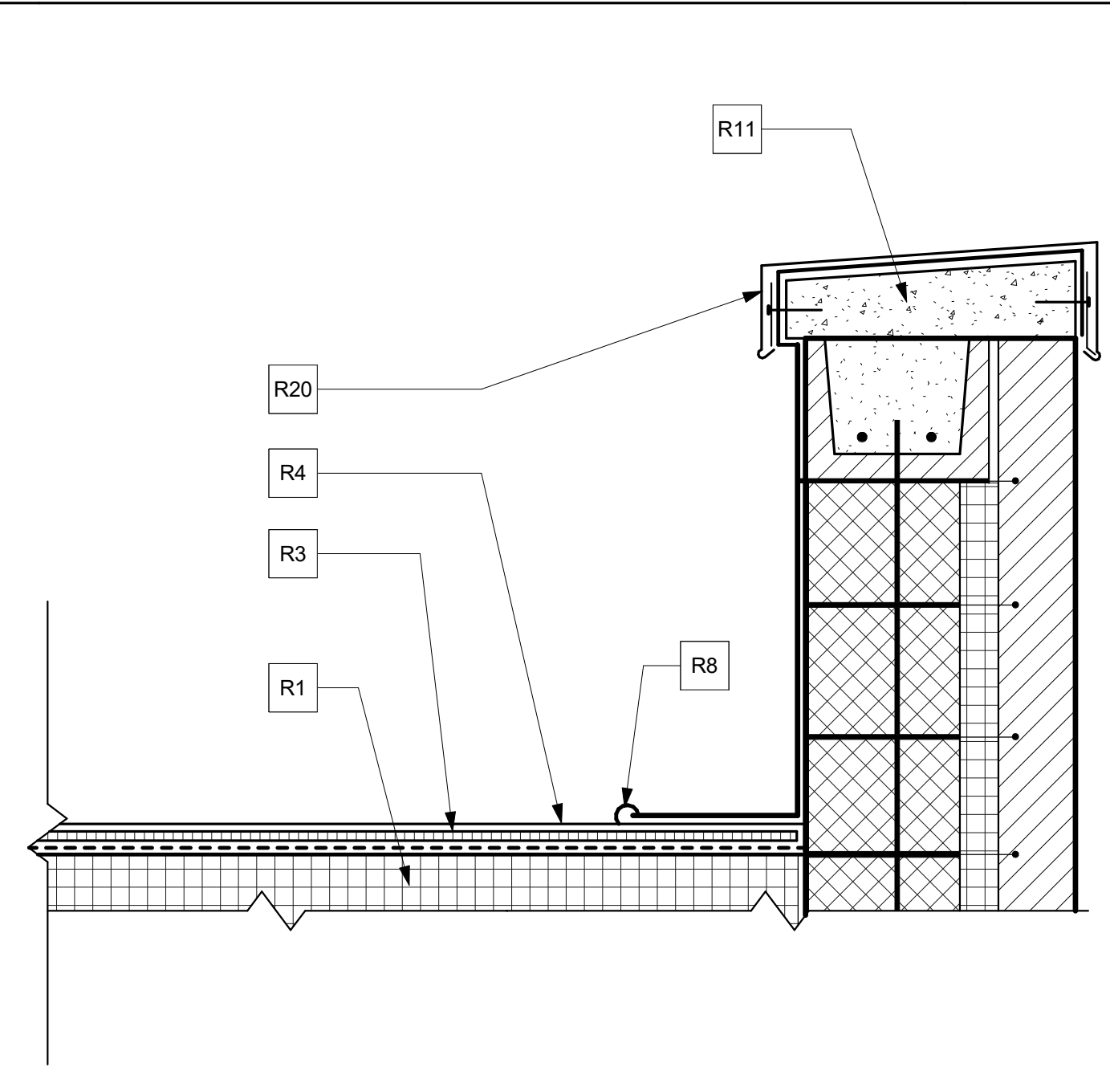
- R9. REMOVE EXISTING FLASHING FROM ROOF DRAINS AND INSTALL NEW FLASHING PER ROOF MANUFACTURER'S DETAILS - TYPICAL AT ALL ROOF DRAINS.
- R10. INSTALL MANUFACTURER'S STANDARD WALKPAD SYSTEM.
- R11. CLOSE OPENING IN ROOF DECK WITH NEW DECK PER DETAIL 1 / A-101.
- R12. REPLACE EXISTING ROOF EXPANSION JOINT WITH NEW EXPANSION JOINT PER ROOF MANUFACTURER'S DETAILS.
- R13. EXISTING ROOF HATCH. SAND RUSTY AREAS. PRIME AND PAINT.
- R14. INSTALL PREFINISHED SHEET METAL COPING OVER PRECAST COPING SIMILAR TO DETAIL 2 / A-102.
- R15. ADD A NEW DOWNSPOUT TO MATCH EXISTING. SPILL ON GRADE WITH A CONCRETE SPLASH BLOCK.



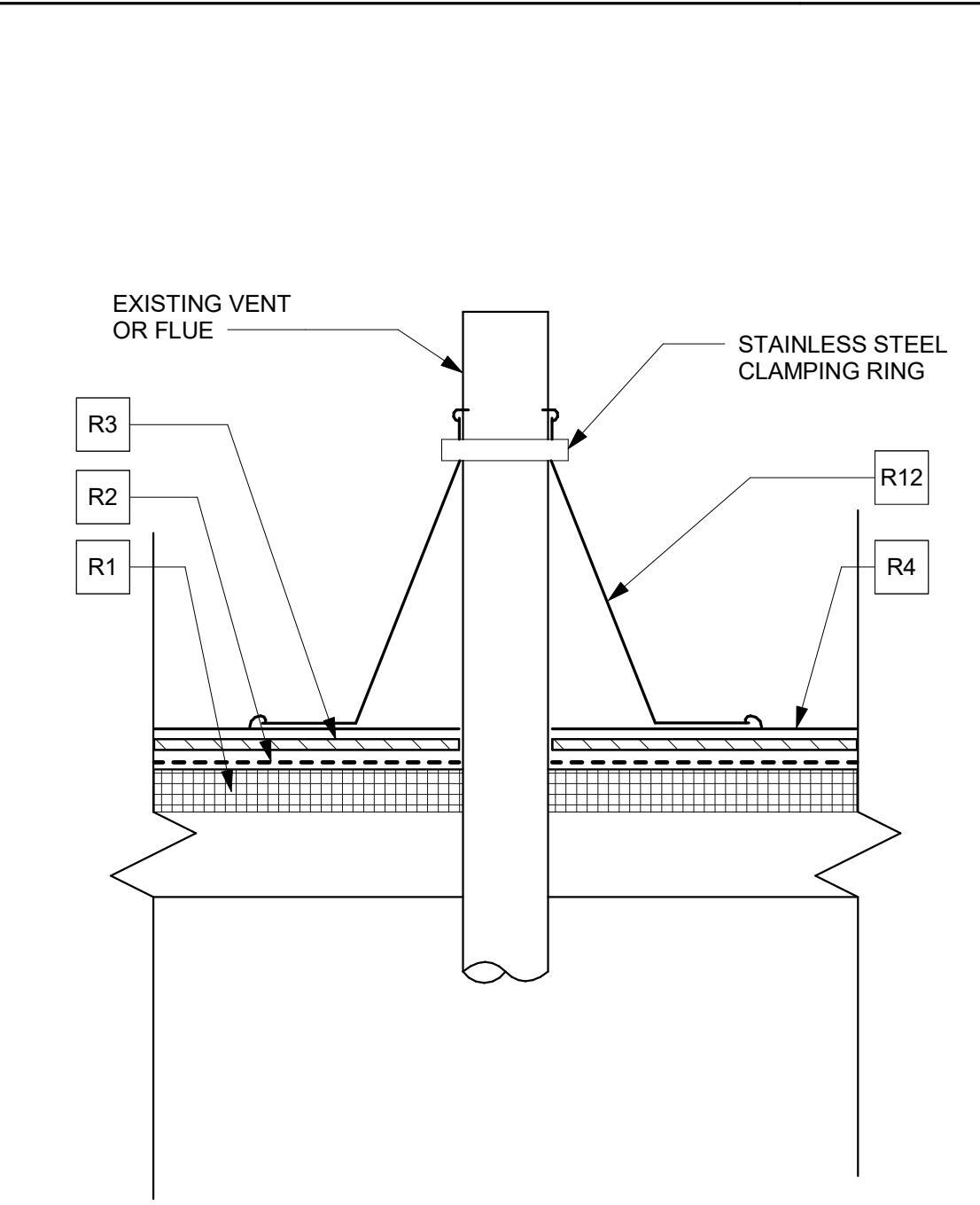
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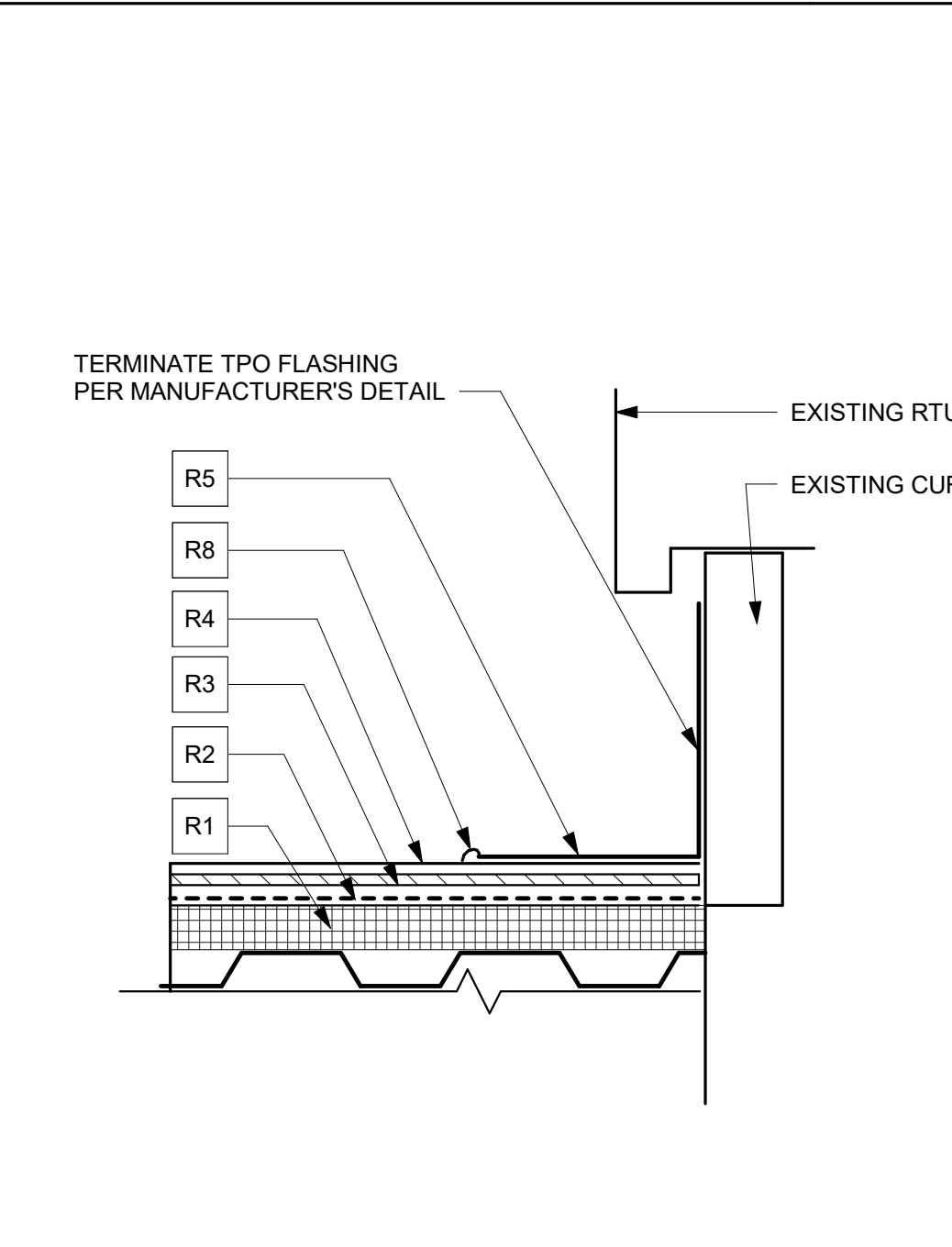
1 ROOF LEVEL CHANGE DETAIL
A-102 1 1/2" = 1'-0"



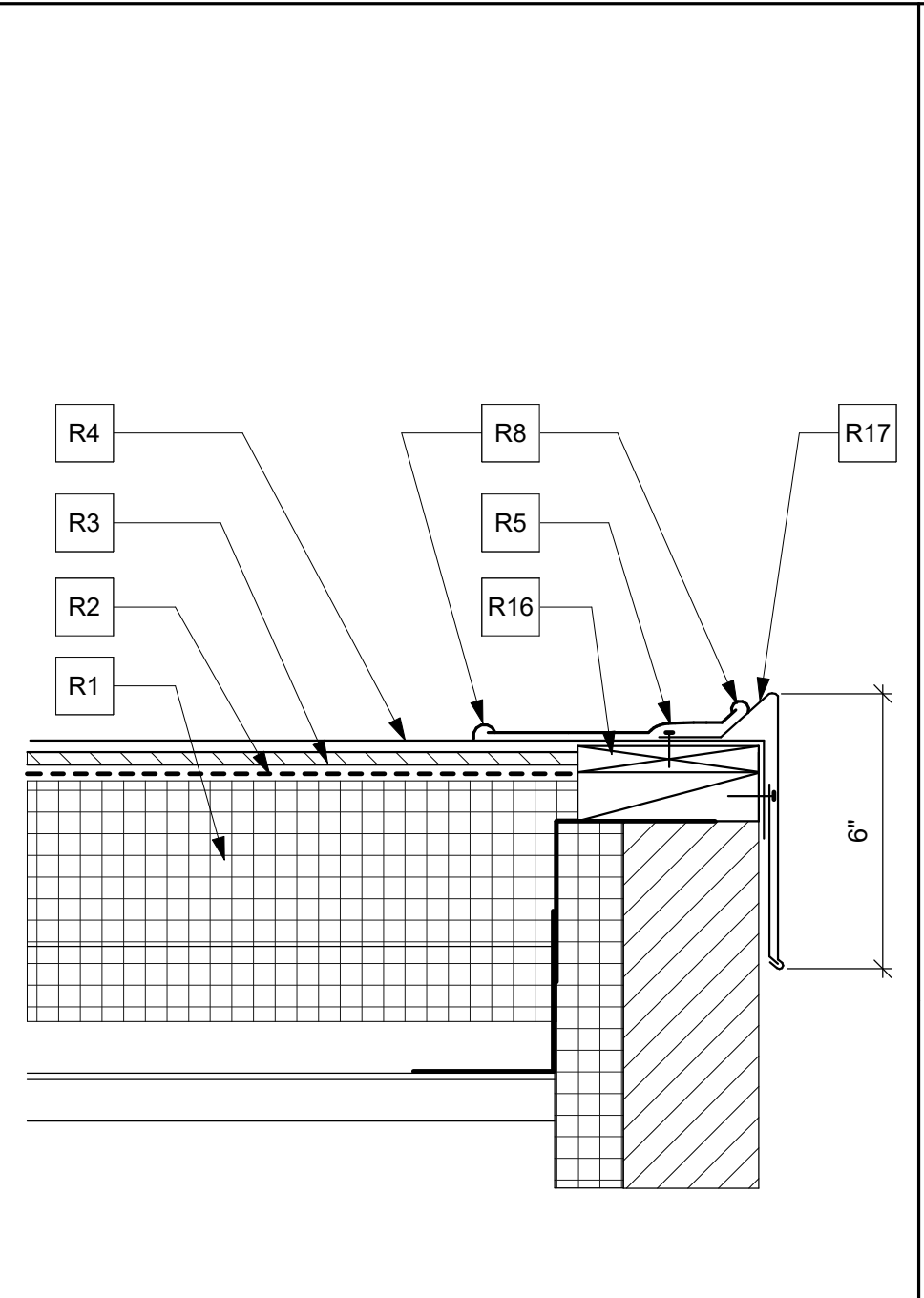
2 TYP. ROOF EDGE DETAIL
A-102 1 1/2" = 1'-0"



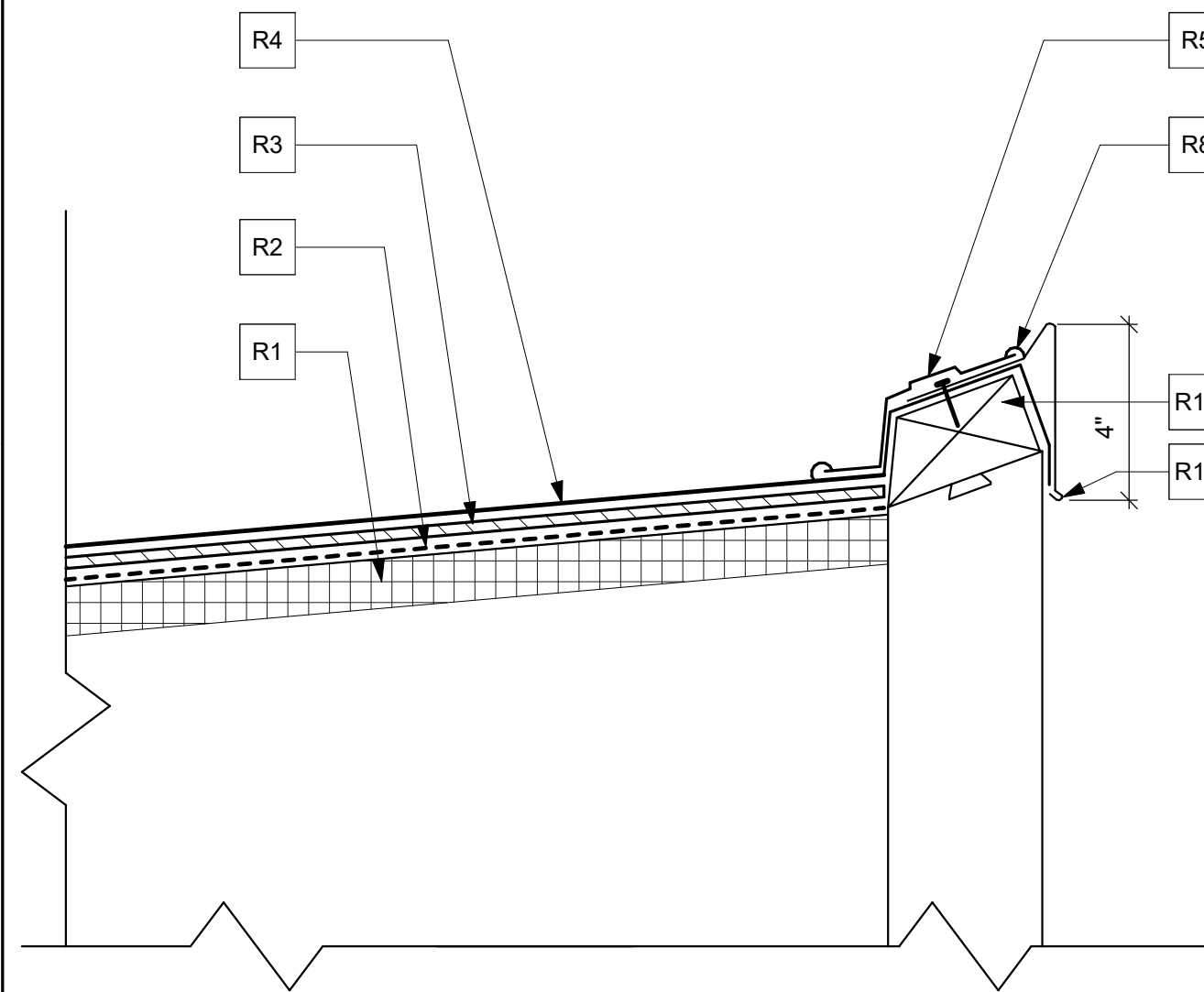
3 DETAIL AT PLUMBING VENTS, FLUES, AND SOLAR PANEL SUPPORTS
A-102 3" = 1'-0"



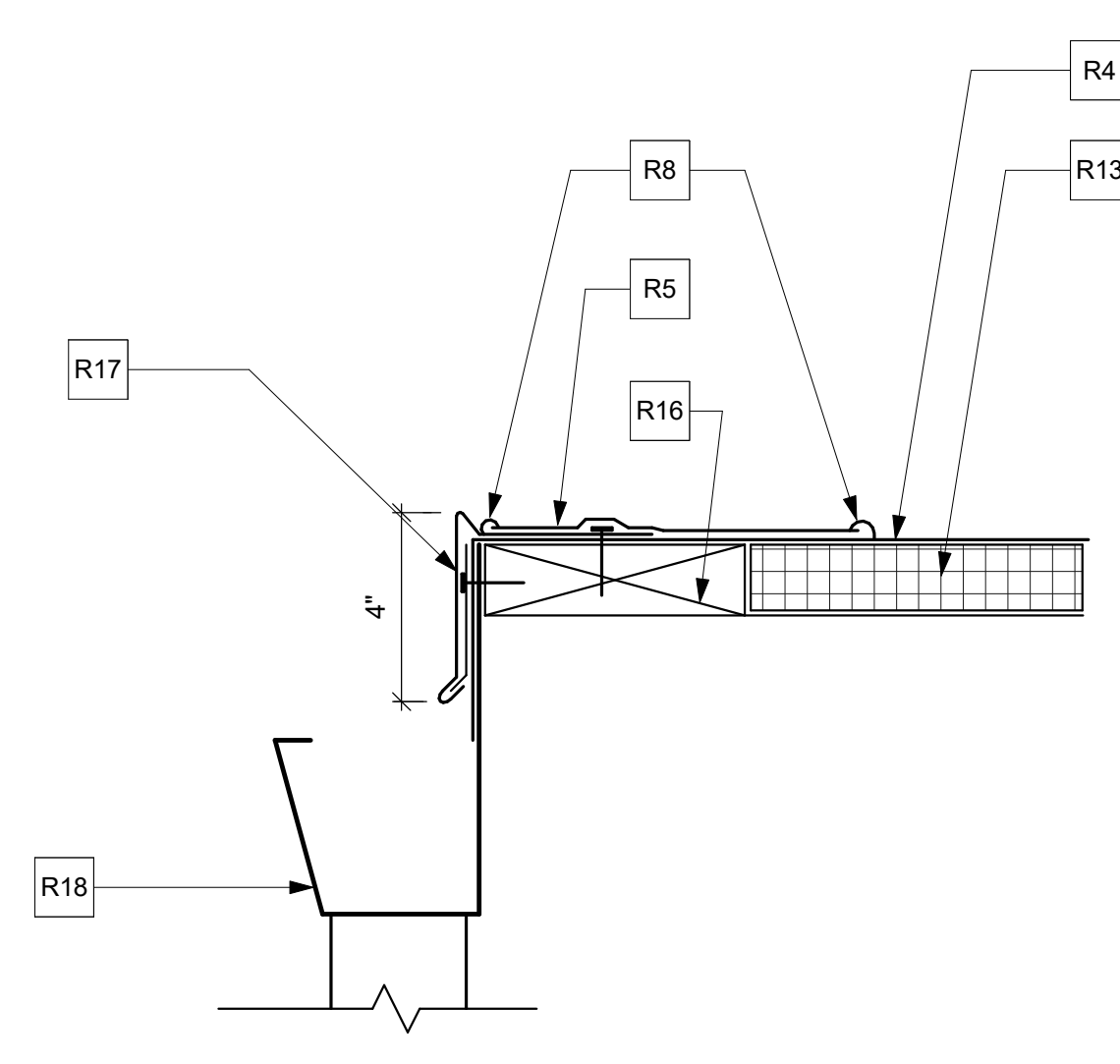
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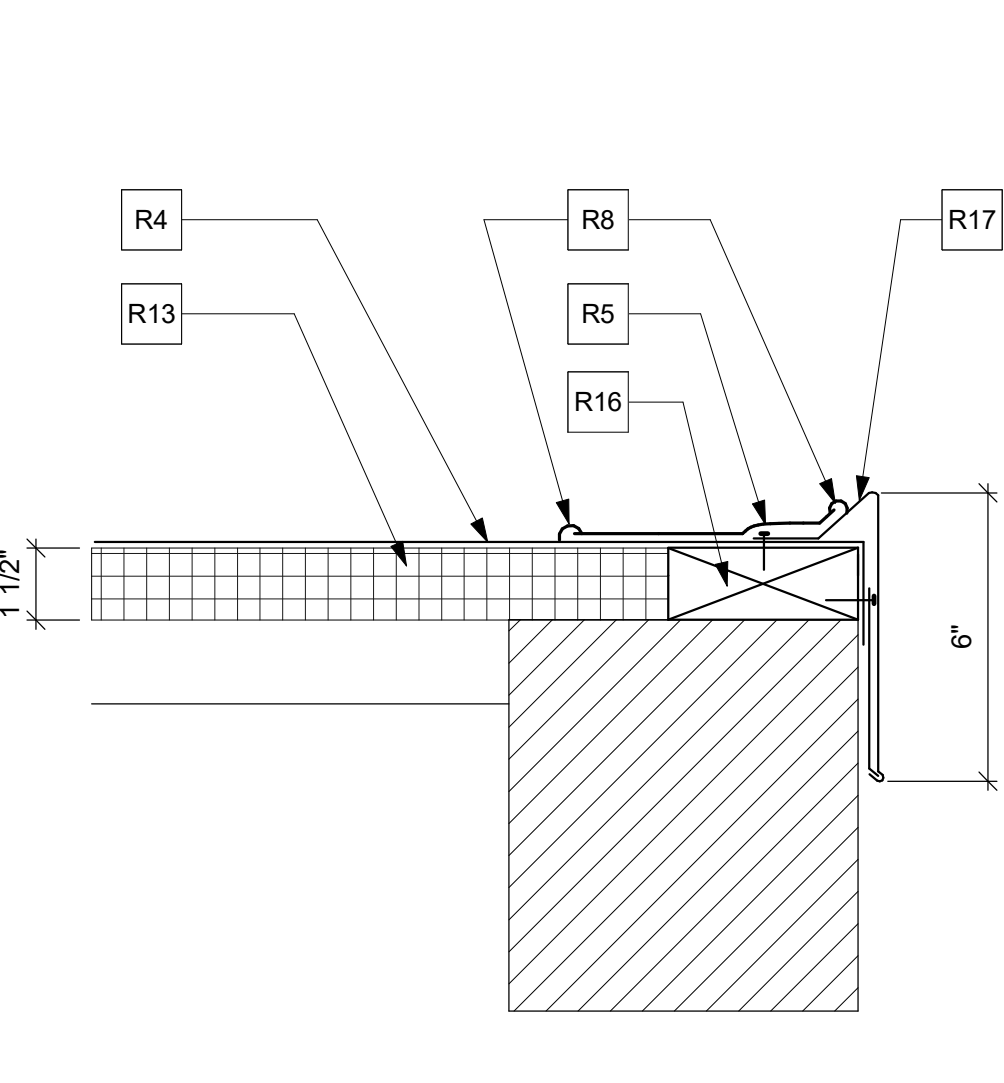
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A-102 3" = 1'-0"



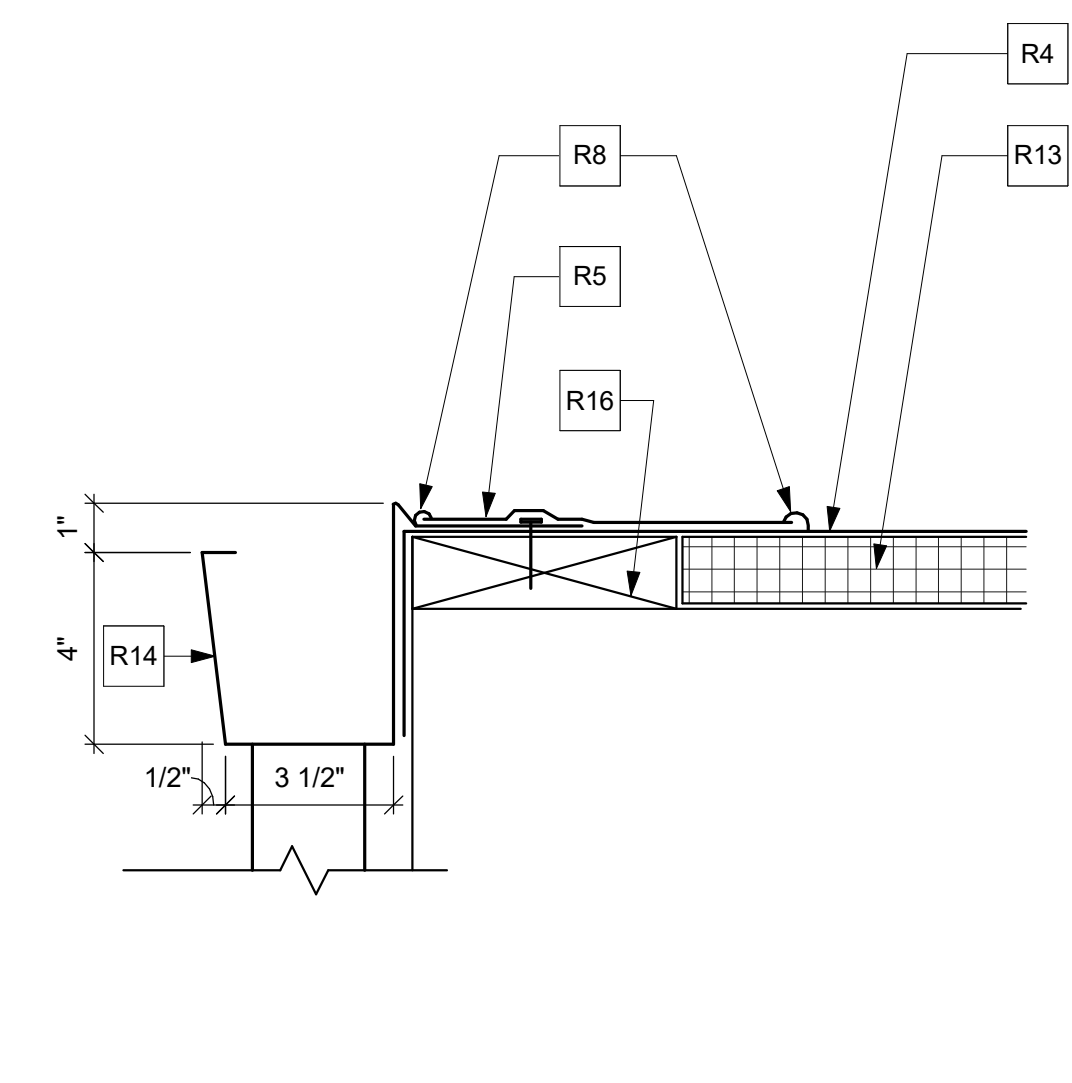
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A-102 3" = 1'-0"



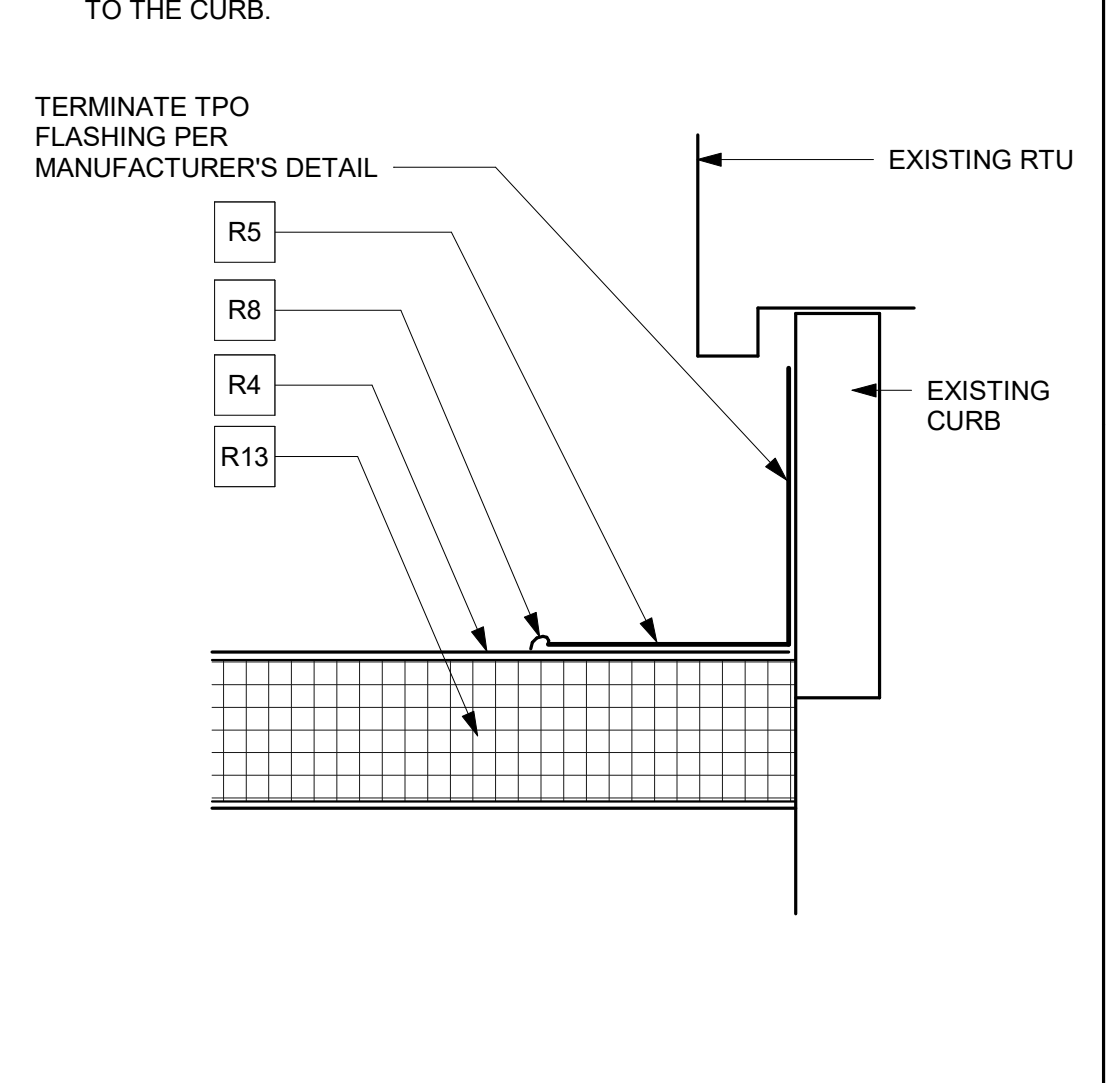
7 DETAIL AT ROOF EDGE
A-102 3" = 1'-0"



8 ROOF EDGE DETAIL
A-102 3" = 1'-0"



9 DETAILS AT ROOF EDGE
A-102 3" = 1'-0"



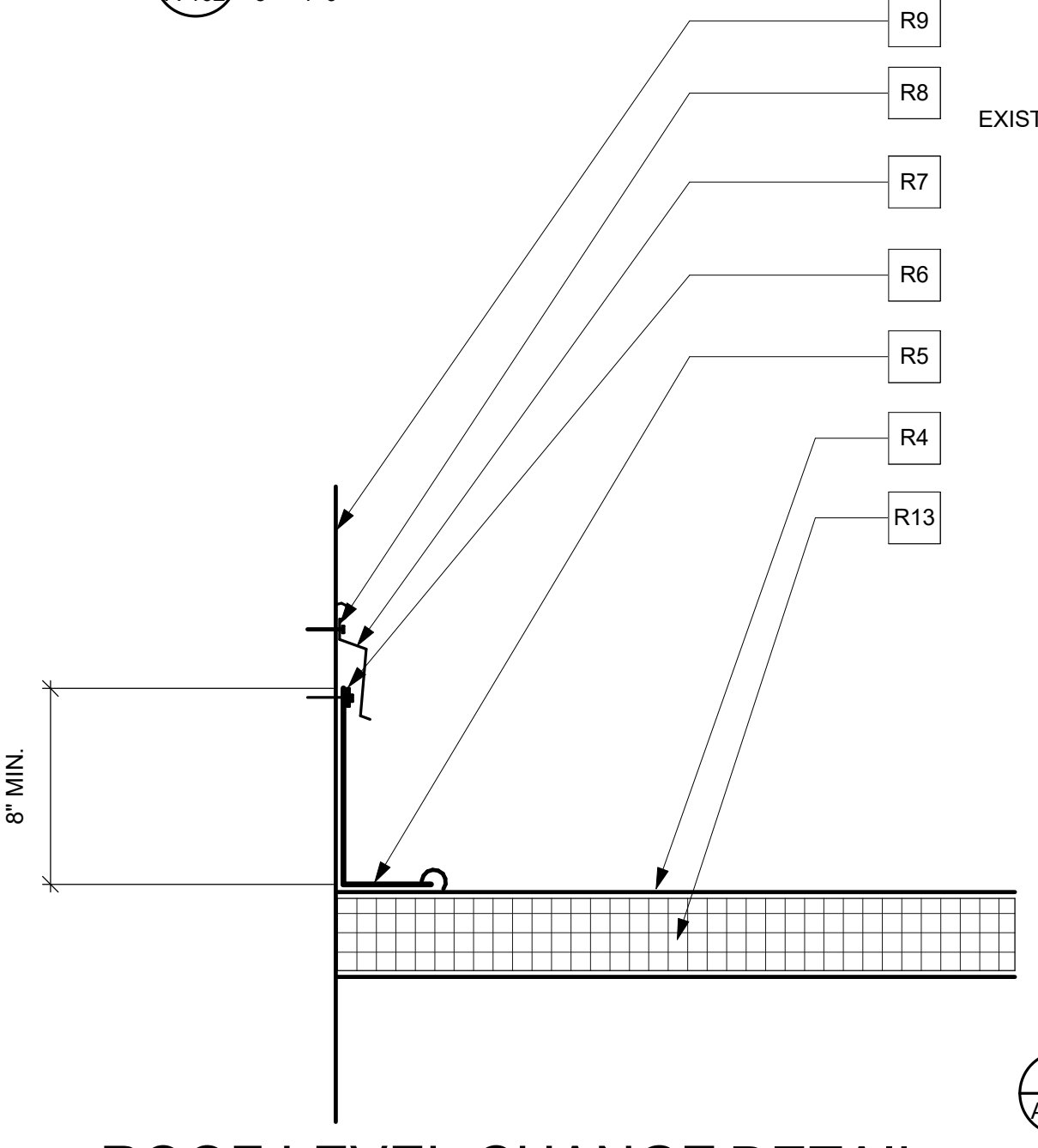
12 CURB DETAIL
A-102 3" = 1'-0"

NOTES LEGEND

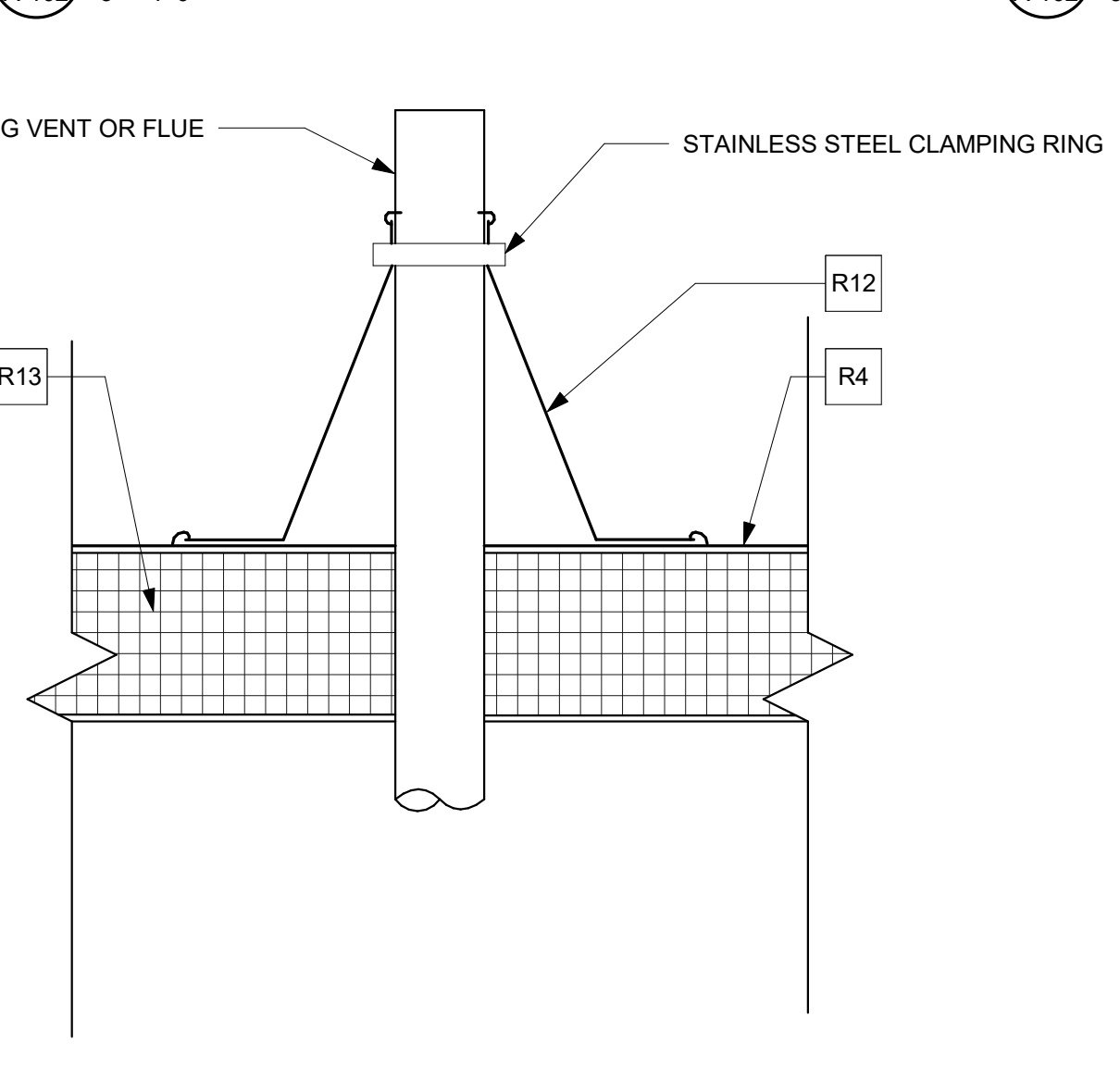
A - MISCELLANEOUS	G - DOORS / GLAZINGS	P - PLUMBING
C - CIVIL	K - FURNITURE / FINISHES	R - ROOF
E - ELECTRICAL	L - LIFE SAFETY	S - STRUCTURAL
F - FLOORS / CEILINGS	M - MECHANICAL	W - WALLS

- R12. NEW PREFABRICATED TPO FLASHING BOOT WITH SEALANT AT EDGES
- R13. NEW TAPERED INSULATION - 1 1/2" MINIMUM THICKNESS AT PERIMETER.
- R14. NEW PREFINISHED SHEET METAL GUTTER AND DOWNSPOUTS
- R15. CONTINUOUS LEAF BARRIER: 1/4" GALVANIZED HARDWARE CLOTH
- R16. NEW PRESSURE TREATED WOOD BLOCKING AS REQUIRED
- R17. NEW PREFINISHED SHEET METAL GRAVEL SHOP
- R18. NEW GUTTER AND DOWNSPOUTS TO MATCH EXISTING.
- R19. EXISTING ROOF DECK.
- R20. NEW PREFINISHED SHEET METAL COPING.
- R21. EXISTING GLASS BLOCK TO REMAIN.
- R22. NEW CANT STRIP.
- R23. EXISTING TPO ROOF MEMBRANE.

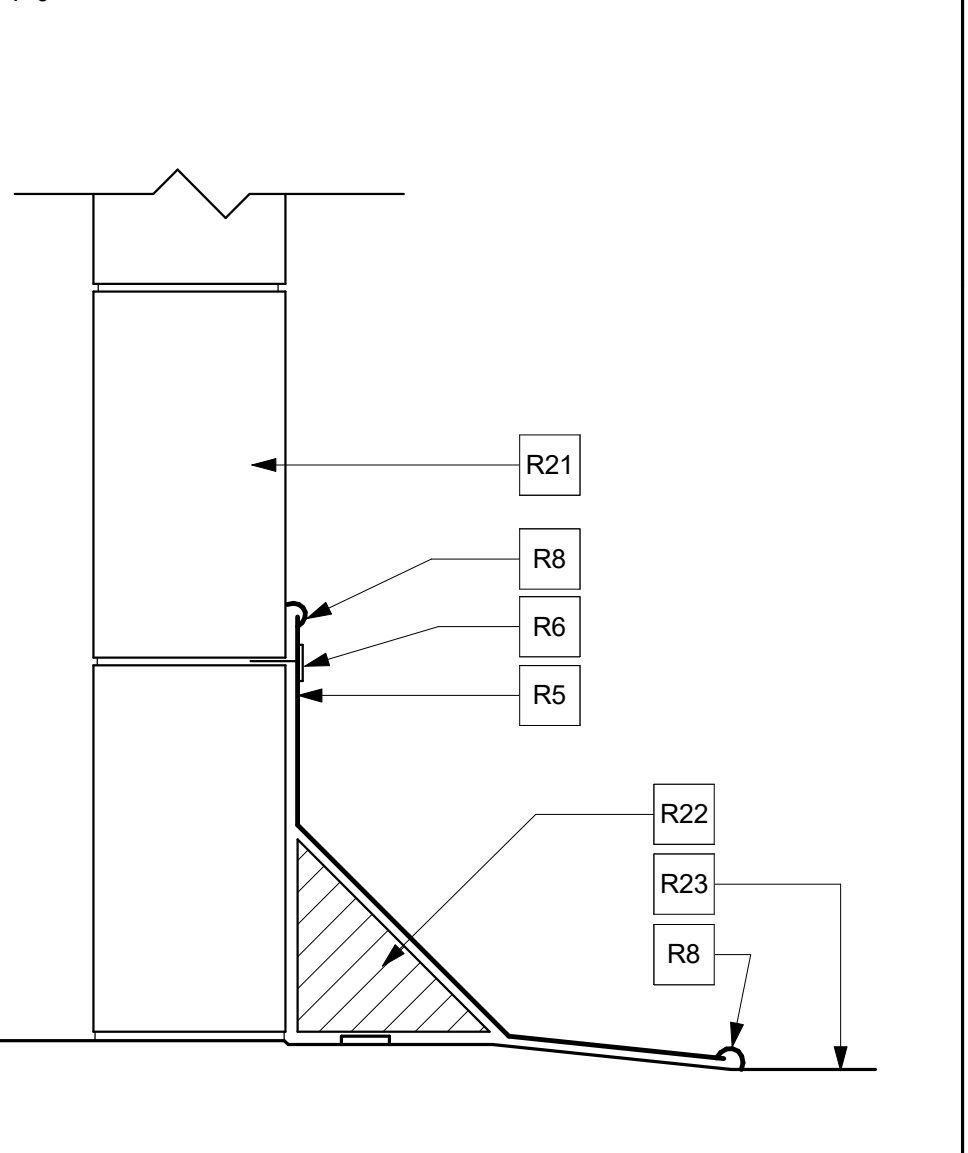
- ROOF DETAIL NOTES**
- R1. EXISTING RIGID INSULATION TO REMAIN.
 - R2. REMOVE EXISTING LOOSE-LAID EPDM MEMBRANE TO REMAIN.
 - R3. NEW 1/2" RECOVERY BOARD - SECURE TO ROOF DECK.
 - R4. NEW ADHERED TPO MEMBRANE.
 - R5. NEW ADHERED TPO MEMBRANE FLASHING
 - R6. TERMINATION BAR AND SEALANT
 - R7. METAL COUNTER FLASHING SECURED TO MASONRY.
 - R8. CONTINUOUS SEALANT
 - R9. EXISTING MASONRY WALL
 - R10. EXTEND TPO FLASHING OVER PRECAST CONCRETE.
 - R11. EXISTING PRECAST COPING TO REMAIN



10 ROOF LEVEL CHANGE DETAIL
A-102 1 1/2" = 1'-0"



11 DETAIL AT PLUMBING VENTS, FLUES, AND SOLAR PANEL SUPPORTS
A-102 3" = 1'-0"



13 DETAIL
A-102 3" = 1'-0"

NO.	REVISIONS	DATE

ROOF REPLACEMENT FOR
ROANOKE CITY PUBLIC SCHOOLS - GARDEN CITY ELEMENTARY SCHOOL

3716 GARDEN CITY BLVD SE
ROANOKE, VA 24014

DATE	JUNE . 11 . 2020
DRAWN	AS
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ROOF DETAILS

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