

**PROJECT MANUAL  
FOR  
CITY OF LYNCHBURG**

**May 21, 2013**

**Roof Replacement for  
Task 5: Fire Station No. 1**

**800 Clay Street, Va. 24504**

**Lynchburg City Building Number FE101/401**



**PROCUREMENT DIVISION  
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**SECTION 00-0110**

**TABLE OF CONTENTS**

**PROCUREMENT AND CONTRACTING REQUIREMENTS**

**Division 00 -- Procurement and Contracting Requirements**

00-0110 - Table of Contents

**SPECIFICATIONS**

**Division 01 -- General Requirements**

01-1000 - Summary

01-3000 - Administrative Requirements

01-4000 - Quality Requirements

01-5000 - Temporary Facilities and Controls

01-6000 - Product Requirements

01-7000 - Execution and Closeout Requirements

**Division 06 -- Wood, Plastics, and Composites**

06-1000 - Rough Carpentry

**Division 07 -- Thermal and Moisture Protection**

07-0150.19 - Preparation for Re-Roofing

07-5300 - Elastomeric Membrane Roofing

07-6200 - Sheet Metal Flashing and Trim

**END OF TABLE OF CONTENTS**

## SECTION 01-1000

### SUMMARY

#### PART 1 GENERAL

##### 1.01 PROJECT

- A. Project Name: Task 5 - Roof Replacement at Fire Station No. 1.
- B. Owner's Name: City of Lynchburg.
  - 1. Owner's Project Representative: Scott Glass, AIA
- C. City's Building No. FE101/401
- D. Architect's Name: Craddock Cunningham Architectural Partners.
  - 1. Project Architect: Mark W. Smith
- E. The Project consists of the removal of the thermoplastic roof membrane, the gypsum recovery board, the original asphalt built-up roof plies, the All Weather-Crete (perlite/asphlat) insulation, cleaning of concrete deck and removal of flashings. Replacement with an adhered insulation to concrete deck, an adhered EPDM roof system. Remove ballasted EPDM at hose tower and replace with adhered EPDM system.
  - 1. Roof area is approximately 9,630 square feet including the hose tower.
  - 2. Reuse or retro-fit of the existing internal downspout drains.
  - 3. Replacement of the aluminum coping and fascia.

##### 1.02 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on a Stipulated Price as described in agreement.

##### 1.03 OWNER OCCUPANCY

- A. Owner intends to occupy the Project during roof replacement.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

##### 1.04 EMERGENCY REPAIRS

- A. Roof leaks that occur during construction will require emergency repair due to finished spaces located below this roof area. Contractor shall provide 24/7 type call service with response to site available in 8 hours of call.

##### 1.05 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to roof area and unloading areas located at parking lot. Access to the building must remain available for Owner's operations and public access..
- B. Arrange use of site and premises to allow:
  - 1. Owner occupancy.
  - 2. Use of site and premises by the public.
- C. Existing building spaces may not be used for storage.
- D. Parking and Storage: The contractor may use owner's parking area (limited) on-site or at the City owned parking areas at Clay Street or parking deck. Location of on-site spaces as designated by the Owner and may adjust due to limited areas.

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION - NOT USED

END OF SECTION

## SECTION 01-3000

### ADMINISTRATIVE REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Preconstruction meeting.
- B. Submittals for review, information, and project closeout.
- C. Submittal procedures.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01-7000 - Execution and Closeout Requirements: Additional coordination requirements.

##### 1.03 PROJECT COORDINATION

- A. Project Coordinator: Scott Glass.
- B. Cooperate with the Project Coordinator in allocation of mobilization areas of site for temporary storage, access, traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Project Coordinator.
- D. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
- E. The project coordinator may allow the general contractor to submit the following directly to the architect. This will be determined at the pre-construction meeting:
  - 1. Requests for interpretation.
  - 2. Requests for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Manufacturer's instructions and field reports.
  - 6. Applications for payment and change order requests.

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION

##### 3.01 PRECONSTRUCTION MEETING

- A. Owner will schedule a meeting after Notice of Award.
- B. Attendance Required:
  - 1. Owner.
  - 2. Architect.
  - 3. Contractor.
- C. Agenda:
  - 1. Designation of personnel representing the parties to Contract, Contractor and Architect.
  - 2. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  - 3. Use of premises by Owner and Contractor.
  - 4. Scheduling.
  - 5. Procedures for maintaining record documents.
  - 6. Security and housekeeping procedures.
  - 7. Temporary utilities provided by Owner.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

##### 3.02 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
  - 1. Product data.
  - 2. Shop drawings.
  - 3. Samples for selection.
  - 4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.

### **3.03 SUBMITTALS FOR PROJECT CLOSEOUT**

- A. When the following are specified in individual sections, submit them at project closeout:
  - 1. Project record documents.
  - 2. Operation and maintenance data.
  - 3. Warranties.
  - 4. Bonds.
  - 5. Other types as indicated.
- B. Submit for Owner's benefit during and after project completion.

### **3.04 SUBMITTAL PROCEDURES**

- A. Transmit each submittal with architect provided form.
- B. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- C. Deliver submittals to Architect at business address.
- D. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
- E. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- F. Provide space for Contractor and Architect review stamps.
- G. When revised for resubmission, identify all changes made since previous submission.
- H. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- I. Submittals not requested will not be recognized or processed.

**END OF SECTION**

## SECTION 01-4000

### QUALITY REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Control of installation.
- B. Manufacturers' field services.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01-3000 - Administrative Requirements: Submittal procedures.

##### 1.03 SUBMITTALS

- A. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- B. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
  - 1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION

##### 3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

##### 3.02 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

##### 3.03 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not conforming to specified requirements.

COL Task 5  
Fire Station No. 1

- B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

**END OF SECTION**

## SECTION 01-5000

### TEMPORARY FACILITIES AND CONTROLS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary sanitary facilities.
- C. Temporary Controls: Barriers and enclosures.
- D. Security requirements.
- E. Vehicular access and parking.
- F. Waste removal facilities and services.

##### 1.02 TEMPORARY UTILITIES

- A. Owner will provide the following:
  - 1. Electrical power, consisting of connection to existing facilities.
  - 2. Water supply, consisting of connection to existing facilities.
- B. Use trigger-operated nozzles for water hoses, to avoid waste of water.

##### 1.03 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

##### 1.04 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C. Provide protection for plants designated to remain. Replace damaged plants.
- D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
- E. Traffic Controls: Coordinate with City's traffic engineer.

##### 1.05 EXTERIOR ENCLOSURES

- A. Provide temporary roofing.

##### 1.06 SECURITY

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.

##### 1.07 VEHICULAR ACCESS AND PARKING

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Owner.
- C. Provide and maintain access to fire hydrants, free of obstructions.

- D. Existing parking areas located at public parking areas may be used for construction parking.
- E. Additional Parking: The contractor may obtain a Construction Parking Permit from the City of Lynchburg's Inspections Department. This permit allows for street-side parking as required for construction operations.

**1.08 WASTE REMOVAL**

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
  - 1. Coordinate location of waste containers with Owner's Representative.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

## SECTION 01-6000

### PRODUCT REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Transportation, handling, storage and protection.
- B. Product option requirements.
- C. Substitution limitations and procedures.

##### 1.02 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
  - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

#### PART 2 PRODUCTS

##### 2.01 EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by the Contract Documents.
- B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

##### 2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.

##### 2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

#### PART 3 EXECUTION

##### 3.01 SUBSTITUTION PROCEDURES

- A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.
- B. Architect will consider requests for substitutions only within 15 days after date established in Notice to Proceed.
- C. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.

- D. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- E. A request for substitution constitutes a representation that the submitter:
  - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
  - 2. Will provide the same warranty for the substitution as for the specified product.
  - 3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
  - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
- F. Substitution Submittal Procedure:
  - 1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
  - 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
  - 3. The Architect will notify Contractor in writing of decision to accept or reject request.

### **3.02 TRANSPORTATION AND HANDLING**

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

### **3.03 STORAGE AND PROTECTION**

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- G. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- H. Prevent contact with material that may cause corrosion, discoloration, or staining.
- I. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- J. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

COL Task 5  
Fire Station No. 1

**END OF SECTION**

## SECTION 01-7000

### EXECUTION AND CLOSEOUT REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Pre-installation meetings.
- D. Cutting and patching.
- E. Cleaning and protection.
- F. Closeout procedures, except payment procedures.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01-1000 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01-5000 - Temporary Facilities and Controls: Temporary exterior enclosures.

##### 1.03 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2009.

##### 1.04 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
  - 1. Structural integrity of any element of Project.
  - 2. Integrity of weather exposed or moisture resistant element.
  - 3. Efficiency, maintenance, or safety of any operational element.
  - 4. Visual qualities of sight exposed elements.

##### 1.05 PROJECT CONDITIONS

- A. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
- B. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

##### 1.06 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.
- B. Coordinate access to building for owner and visitors to keep facility accessible throughout construction period. Phasing of project will be required.
- C. Coordinate completion and clean-up of work of separate sections.

#### PART 2 PRODUCTS

##### 2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01-6000.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

#### **3.02 PREPARATION**

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

#### **3.03 PREINSTALLATION MEETINGS**

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
  - 1. Review conditions of examination, preparation and installation procedures.
  - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

#### **3.04 GENERAL INSTALLATION REQUIREMENTS**

- A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.
- B. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

- D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- F. Make neat transitions between different surfaces, maintaining texture and appearance.

### **3.05 ALTERATIONS**

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
  - 1. Verify that construction and utility arrangements are as shown.
  - 2. Report discrepancies to Architect before disturbing existing installation.
- B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
  - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
- C. Remove existing work as indicated and as required to accomplish new work.
  - 1. Remove items indicated on drawings.
  - 2. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
  - 3. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- D. Protect existing work to remain.
  - 1. Prevent movement of structure; provide shoring and bracing if necessary.
  - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
  - 3. Repair adjacent construction and finishes damaged during removal work.
- E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.

### **3.06 CUTTING AND PATCHING**

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
  - 1. Complete the work.
  - 2. Fit products together to integrate with other work.
  - 3. Match work that has been cut to adjacent work.
  - 4. Repair areas adjacent to cuts to required condition.
  - 5. Repair new work damaged by subsequent work.
  - 6. Remove and replace defective and non-conforming work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to specified condition.
- E. Restore work with new products in accordance with requirements of Contract Documents.
- F. Patching:
  - 1. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

### **3.07 PROGRESS CLEANING**

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

### **3.08 PROTECTION OF INSTALLED WORK**

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

**3.09 FINAL CLEANING**

- A. Execute final cleaning prior to final project assessment.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces,
- C. Clean debris from roofs, gutters, downspouts, and drainage systems.
- D. Clean site; sweep paved areas, rake clean landscaped surfaces.
- E. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

**3.10 CLOSEOUT PROCEDURES**

- A. Notify Architect when work is considered ready for Substantial Completion.
- B. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to Owner-occupied areas.
- C. Accompany Project Coordinator on preliminary final inspection.
- D. Notify Architect when work is considered finally complete.
- E. Complete items of work determined by Architect's final inspection.

**END OF SECTION**

## SECTION 06-1000

### ROUGH CARPENTRY

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Roof-mounted curbs.
- B. Preservative treated wood materials.
- C. Concealed wood blocking, nailers, and supports.

#### PART 2 PRODUCTS

##### 2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
  - 1. Species: Southern Pine, unless otherwise indicated.

##### 2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
  - 1. Lumber: S4S, No. 2 or Standard Grade.

##### 2.03 ACCESSORIES

- A. Fasteners and Anchors:
  - 1. Metal and Finish: Hot-dipped galvanized steel per ASTM A 153/A 153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

##### 2.04 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
  - 1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.
- B. Preservative Treatment:
  - 1. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative to 0.25 lb/cu ft retention.
    - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
    - b. Treat lumber exposed to weather.
    - c. Treat lumber in contact with roofing, flashing, or waterproofing.
  - 2. Preservative Pressure Treatment of Plywood Above Grade: AWPA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative to 0.25 lb/cu ft retention.
    - a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
    - b. Treat plywood in contact with roofing, flashing, or waterproofing.

#### PART 3 EXECUTION

##### 3.01 ROOF-RELATED CARPENTRY

- A. Install wood blocking and curbs as required for new roofing and flashings.
- B. Set wood blocking at height above roof insulation for termination of roof to be 8 inch minimum from horizontal plane.

COL Task 5  
Fire Station No. 1

- C. Attach wood with adequate fasteners to prevent warp and displacement of blocking.

**END OF SECTION**

**SECTION 07-0150.19**

**PREPARATION FOR RE-ROOFING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Removal of existing roofing system in preparation for a new roof membrane system.

**1.02 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate with affected mechanical and electrical work associated with roof penetrations.
- B. Preinstallation Meeting: Convene one week before starting work of this section.
- C. Schedule work to coincide with commencement of installation of new roofing system.

**1.03 FIELD CONDITIONS**

- A. Do not remove existing roofing membrane when weather conditions threaten the integrity of the building contents or intended continued occupancy.
- B. Maintain continuous temporary protection prior to and during installation of new roofing system.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Materials as deemed necessary by contractor for protection and weather-tightness of interior spaces.

**PART 3 EXECUTION**

**3.01 MATERIAL REMOVAL**

- A. Remove only existing roofing materials that can be replaced with new materials as the weather will permit.
- B. Remove metal counter flashings.
- C. Remove insulation and fasteners, nailer strips, blocking, and ballast and equipment as indicated.

**3.02 FIELD QUALITY CONTROL**

- A. The drawings identify the approximate limits to material removal.

**END OF SECTION**

## SECTION 07-5300

### ELASTOMERIC MEMBRANE ROOFING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Elastomeric roofing membrane, adhered conventional application.
- B. Insulation, flat and tapered.
- C. Insulation adhesive.
- D. Flashings.
- E. Roofing stack boots and walkway pads.
- F. Reuse/repair or replacement type roof drains

##### 1.02 RELATED REQUIREMENTS

- A. Section 06-1000 - Rough Carpentry: Wood nailers and curbs.
- B. Section 07-0150.19 - Preparation for Re-Roofing.
- C. Section 07-6200 - Sheet Metal Flashing and Trim: Counterflashings, reglets, and copings.

##### 1.03 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all affected installers; review preparation and installation procedures and coordination and scheduling necessary for related work.

##### 1.04 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, and fasteners.
- C. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.
- D. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

##### 1.05 QUALITY ASSURANCE

- A. Perform work in accordance with NRCA Roofing and Waterproofing Manual and manufacturer's instructions.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 10 years of documented experience.
- C. Applicator Qualifications: Company specializing in performing the work of this section with minimum 10 years experience and approved by manufacturer.

##### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact.
- B. Store products in weather protected environment, clear of ground and moisture.
- C. Protect foam insulation from direct exposure to sunlight.

##### 1.07 FIELD CONDITIONS

- A. Do not apply roofing membrane during unsuitable weather.

- B. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.

### **1.08 WARRANTY**

- A. Correct defective Work within a two year period after Date of Substantial Completion.
- B. Provide twenty year manufacturer's material and labor warranty to cover failure to prevent penetration of water.
- C. Provide manufacturer's roof damage warranty as standard with installation of a reinforced membrane.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. EPDM Membrane Materials:
  - 1. Carlisle SynTec: [www.carlisle-syntec.com](http://www.carlisle-syntec.com).
  - 2. Firestone Building Products Co: [www.firestonebpc.com](http://www.firestonebpc.com).
  - 3. GenFlex Roofing Systems: [www.genflex.com](http://www.genflex.com).
- B. Insulation:
  - 1. Any manufacturer approved by roof membrane manufacturer.

### **2.02 ROOFING**

- A. Elastomeric Membrane Roofing: One ply membrane, fully adhered, over insulation.
- B. Acceptable Insulation Types:
  - 1. Minimum 2 layers of polyisocyanurate board.
- C. Acceptable Insulation Types - Tapered Application:
  - 1. Tapered perlite or polyisocyanurate board.

### **2.03 ROOFING MEMBRANE AND ASSOCIATED MATERIALS**

- A. Membrane: Ethylene-propylene-diene-terpolymer (EPDM); internally reinforced with fabric or scrim.
  - 1. Thickness: 0.060 inch.
  - 2. Color: Black.
- B. Seaming Materials: As recommended by membrane manufacturer.
- C. Flexible Flashing Material: Same material as membrane; conforming to the following:
  - 1. Thickness: 0.60 mil.
  - 2. Color: Black.

### **2.04 INSULATION**

- A. Perlite Board Insulation: Expanded perlite mineral aggregate, ASTM C728, with the following characteristics:
  - 1. Tapered Board: Slope as indicated; minimum thickness 0.5 inch; fabricate of fewest layers possible.
  - 2. Manufacturer: As approved by roof membrane manufacturer.
- B. Polyisocyanurate Board Insulation: Rigid cellular foam, complying with ASTM C1289, and with the following characteristics:
  - 1. Compressive Strength: 16 psi
  - 2. Board Thickness: 2 layers for a total of 3 inch.
  - 3. Tapered Board: Slope as indicated; minimum thickness 1/2 inch; fabricate of fewest layers possible.
  - 4. Thermal Resistance: R-value of 20.
  - 5. Manufacturer: As approved by roof membrane manufacturer.

### **2.05 ACCESSORIES**

- A. Stack Boots: Prefabricated flexible boot and collar for pipe stacks through membrane; same material as membrane.
  - 1. Use 2- piece split boot for existing mechanical post, piping and conduits.
- B. Membrane Adhesive: As recommended by membrane manufacturer.
- C. Surface Conditioner for Adhesives: Compatible with membrane and adhesives.
- D. Insulation Adhesive: As recommended by insulation manufacturer.
- E. Walkway Pads: Suitable for maintenance traffic, contrasting color or otherwise visually distinctive from roof membrane.
  - 1. Composition: Roofing membrane manufacturer's standard.

## **2.06 ROOF DRAINS**

- A. Roof Drain: Repair/reuse existing cast iron drains or as a Contractor's option use Zurn, Josam or OMG replacement roof drain. Sized to suit existing roof drain body. Verify roof drain diameter. Base the bid on a 4 inch drain and field verify prior to submittal.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
- C. Verify deck surfaces are dry and free of snow or ice.
- D. Verify that roof openings, curbs, and penetrations through roof are solidly set, and nailing strips and reglets are in place.

### **3.02 CONCRETE DECK PREPARATION**

- A. Fill surface honeycomb and variations with latex filler.
- B. Confirm dry deck by moisture meter with 12 percent moisture maximum.

### **3.03 INSULATION - UNDER MEMBRANE**

- A. Attachment of Insulation: Embed each layer of insulation in adhesive in full contact, in accordance with roofing and insulation manufacturers' instructions.
- B. Lay subsequent layers of insulation with joints staggered minimum 6 inch from joints of preceding layer.
- C. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.
- D. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
- E. At roof drains, use boards cut to slope to slope down to roof drains over a distance of 12-18 inches.
  - 1. See drawings for tapered insulation layout for crickets to drain.
- F. Do not apply more insulation than can be covered with membrane in same day.

### **3.04 MEMBRANE APPLICATION**

- A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
- B. Shingle joints on sloped substrate in direction of drainage.
- C. Fully Adhered Application: Fully embed membrane in adhesive except in areas directly over or within 3 inches of expansion joints. Fully adhere one roll before proceeding to adjacent rolls.

- D. At intersections with vertical surfaces:
  - 1. Fully adhere flexible flashing over membrane and up to nailing strips.
- E. Around roof penetrations, seal flanges and flashings with flexible flashing.
- F. Coordinate installation of roof drains and curbs and pipe penetrations and related flashings.

### **3.05 ROOF DRAIN INSTALLATION**

- A. Repair roof drain to accept new membrane or Install roof drain inside the existing drain as instructed by manufacturer.

### **3.06 PROTECTION**

- A. Protect installed roofing and flashings from construction operations.
- B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

**END OF SECTION**

## SECTION 07-6200

### SHEET METAL FLASHING AND TRIM

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Fabricated sheet metal items, including flashings and counterflashings.
- B. Sealant.
- C. Reglets and accessories.

##### 1.02 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Samples: Submit two samples 2x3 inch in size illustrating metal finish color.

##### 1.03 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements, except as otherwise indicated.

#### PART 2 PRODUCTS

##### 2.01 SHEET MATERIALS

- A. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 0.02 inch thick base metal, shop pre-coated with PVDF coating.
  - 1. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system.
  - 2. Color: As selected by Architect from manufacturer's standard colors.

##### 2.02 ACCESSORIES

- A. Fasteners: Galvanized steel.( neoprene washers where exposed fasteners can only be used). Drilled and adhesive type at limestone coping.
- B. Sealant: Polyurethane or silicone as recommended by roof installer.

##### 2.03 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Form pieces in longest possible lengths.
- C. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- D. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- F. Fabricate vertical faces with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.
- G. Cleats formed to conceal fasteners and shall be continuous.

#### PART 3 EXECUTION

##### 3.01 INSTALLATION

- A. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
- B. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

COL Task 5  
Fire Station No. 1

- C. Seal metal joints watertight.
- D. Apply sealants to joints that can not be sealed by any other means.

**END OF SECTION**

**Appendix Photos for  
Task 5: Fire Station No. 1**



Photo 1.JPG



Photo 2.JPG



Photo 3.JPG



Photo 4.JPG



Photo 5.JPG



Photo 6.JPG

**Appendix Photos for  
Task 5: Fire Station No. 1**



Photo 7.JPG



Photo 8.JPG



Photo 9.JPG



Photo 10.JPG



Photo 11.JPG



Photo 12.JPG

**Appendix Photos for  
Task 5: Fire Station No. 1**



Photo 13.JPG



Photo 14.JPG



Photo 15.JPG



Photo 16.JPG

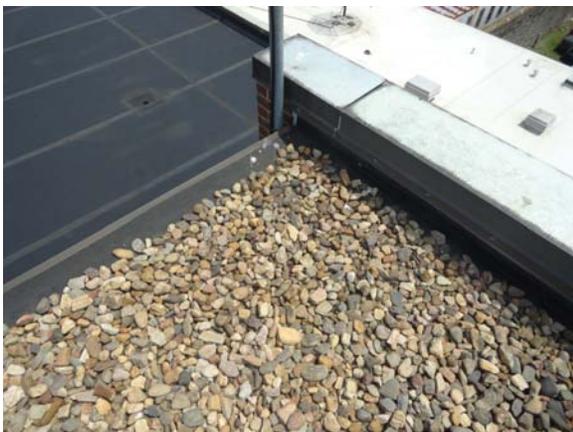


Photo 17.JPG



Photo 18.JPG

# ROOF REPLACEMENT FOR TASK 5: FIRE STATION NO. 1

800 CLAY STREET LYNCHBURG, VIRGINIA 24504

LYNCHBURG CITY BUILDING NO. FE101/401

## ARCHITECT

CRADDOCK CUNNINGHAM  
ARCHITECTURAL PARTNERS P.C.

10 NINTH STREET  
LYNCHBURG, VA 24504  
phone: (434) 846-8456  
fax: (434) 846-4534  
email: info@ccapppc.com  
contact person: Mark Smith, Architect  
direct email: mark@ccapppc.com

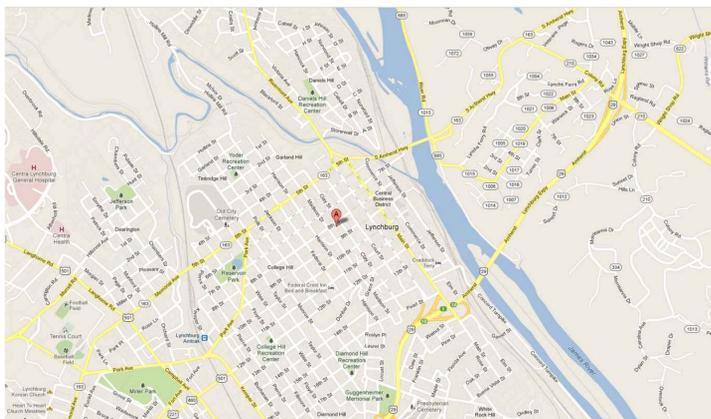
## OWNER

CITY OF LYNCHBURG, VA  
PUBLIC WORKS DEPARTMENT

BUILDINGS & GROUNDS DIVISION  
800 ORCHARD STREET  
LYNCHBURG, VA 24501  
phone: (434) 455-4407  
fax: (434) 845-1813  
email: Randy.Dalton@lynchburgva.gov  
contact person: Randy Dalton

## DRAWING LIST

CS1.1 Cover Sheet  
A1.1 Roof Plan and Details



SITE MAP



VICINITY MAP

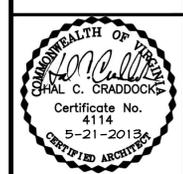


## ABBREVIATIONS

AB ANCHOR BOLT	DET DETAIL(ED)	GRG GRATING	LLV LONG LEG VERTICAL	FLYND FLYWOOD	STC SOUND TRANSMISSION COEFFICIENT
ABV ABOVE	DIA DIAMETER	GNB GYPSUM WALLBOARD	LOC LOCATION	PNLG PANELING	STD STANDARD
ACST ACOUSTIC	DIAG DIAGONAL, DIAGRAM	GYP GYPSUM	LONS LONGS	FR PAIR	STL STEEL
ACT ACOUSTICAL CEILING TILE	DIM DIMENSION	H HEIGHT, HIGH	LPT LOW POINT	PSF POUNDS PER SQUARE FOOT	STO STORAGE
AFB ABOVE FINISHED FLOOR	DK DECK	HB HOSE BIBB	MACH MACHINE	PSI POUNDS PER SQUARE INCH	STRUCT STRUCTURAL
ASGR AGGREGATE	DN DOWN	HEP HARDWARE	MAS MASONRY	PT PRESSURE TREATED, POINT, POINT OF TANG.	SUSP SUSPENDED
AHR ANCHOR	DOH DOOR OPENING HEIGHT	HC HANDICAPPED	MATL MATERIAL	PTN PARTITION	SYM SYMMETRICAL
AL ALUMINUM	DON DOOR OPENING WIDTH	HDR HARDWARE	MAX MAXIMUM	PVC POLYVINYL CHLORIDE, POINT OF VERTICAL CURVE	SYS SYSTEM
APC ARCHITECTURAL PRECAST	DP DAMPROOFING	HWD HARDWOOD	MCT MEDIUM DENSITY FIBERBOARD	QT QUARRY TILE	TEL TELEPHONE
APPROX APPROXIMATE	DR DOOR	HM HOLLOW METAL	MDF MEDIUM DENSITY FIBERBOARD	R RADIUS, REACTION, RISER, RESISTANCE	T&G TONGUE AND GROOVE
ARCH ARCHITECTURAL	DS DOWNSPOUT	HMD HOLLOW METAL DOOR	MECH MECHANICAL	RA RETURN AIR	THK THICK(NESS)
AVG AVERAGE	DWG DRAWING	HMF HOLLOW METAL FRAME	MEZZ MEZZANINE	RAF RESILIENT ATHLETIC FLOORING	THR THRESHOLD
BD BOARD	EA EACH	HOR HORIZONTAL	MFR MANUFACTURER	RCP REFLECTED CEILING PLAN	TOS TOP OF STEEL
BET BETWEEN	EIFS EXTERIOR INSULATION FINISH SYSTEM	HPT HIGH POINT	MIN MINIMUM	RCPT RECEPTACLE(S)	TOT TOTAL
BLDG BUILDING	EJ EXPANSION JOINT	HR HANDRAIL	MISC MISCELLANEOUS	RD ROOF DRAIN	TRD TREAD
BLK BLOCKING	EL ELEVATION	HT HEIGHT	NO MASONRY OPENING	REF REFERENCE	TRTP TREATED
BM BEAM	ELEC ELECTRIC( AL)	HVAC HEATING, VENTILATING & AIR CONDITIONING	MOH MASONRY OPENING HEIGHT	REINF REINFORCE(MENT) (ING)	T STAT THERMOSTAT
BOT BOTTOM	ELEV ELEVATOR, ELEVATION	HW HOT WATER	MOW MASONRY OPENING WIDTH	REQD REQUIRED	TYP TYPICAL
BRG BEARING	ENCL ENCLOSE(URE)	ID INSIDE DIAMETER	NT NUT	REQMT REQUIREMENT(S)	UON UNLESS OTHERWISE NOTED
BUR BUILT-UP ROOF(ING)	EQ EQUAL	IN INCH	MTL METAL	REIL RESILIENT	UTIL UTILITY
C/C CENTER TO CENTER	EGPT EQUIPMENT	INCL INCLUSIVE	MUL MULLION	RET RETURN	VCT VINYL COMPOSITION TILE
CIP CAST-IN-PLACE, CAST IRON PIPE	ENC ELECTRIC WATER COOLER	INSTL INSTALL(ED)	MMP MEMBRANE WATERPROOFING	REV REVERSE ACTING, REVISED, REVISION	VENT VENTILATE
CJ CONTROL JOINT	EXH EXHAUST	INSUL INSULATE(ED) (ING) (ION)	N NORTH	RF RETURN FAN, ROOF	VERT VERTICAL
CL CENTER LINE	EXIST EXISTING	INT INTERIOR	NIC NOT IN CONTRACT	RG RETURN GRILLE	VEST VESTIBULE
CFG COLD FORMED STEEL	EXP EXPOSED	INTMD INTERMEDIATE	NO NUMBER	RM ROOM	VIF VERIFY IN FIELD
CFMF COLD FORMED METAL FRAMING	EXPN EXPANSION	ISOL ISOLATION	NOM NOMINAL	RO ROUGH OPENING	VNR VENEER
CLG CEILING	EXT EXTERIOR	JAN JANITOR	NST NONSLIP TREAD	RJ ROLL UP	VTR VENT THRU ROOF
CLR CLEAR	F4M FLASHING & KEEPS	JST JOIST	NTS NOT TO SCALE	S SOLID, SOUTH, SWITCH	VWG VINYL WALL COVERING
CMU CONCRETE MASONRY UNIT	FD FLOOR DRAIN	JT JOINT(S), JOYER TRANSMITTER	OAH OVERALL HEIGHT	SA STATUS ALARM, SUPPLY AIR	W/ WITH
COL COLUMN	FCN FOUNDATION	KOP KNOCKOUT PANEL	OC ON CENTER	SCHD SCHEDULE	WC WATER CLOSET, WATER COLUMN
COMP COMPOSITE	F/F FACE TO FACE	L LENGTH, LINE, LONG	OD OUTSIDE DIAMETER	SECT SECTION	WD WINDOW
CONC CONCRETE, CONCENTRATED	FIN FINISH(ED)	LAB LABORATORY	OFD OWNER FURNISHED CONTRACTOR INSTALLED	SF SQUARE FEET (FOOT)	W/O WITHOUT
CONN CONNECT(ED), CONNECTION	FL FLOOR	LAM LAMINATE	OFI OWNER FURNISHED OWNER INSTALLED	SG SUPPLY GRILLE	WOH WINDOW OPENING HEIGHT
CONSTR CONSTRUCTION	FRP FIBERGLASS REINFORCED POLYESTER	LAV LAVATORY	OFF OFFICE	SGFU STRUCTURAL GLAZED FACING UNITS	WOW WINDOW OPENING WIDTH
CONT CONTINUATION, CONTINUOUS, CONTROL	FT FOOT(FEET)	LB ROUND	OH OVERHEAD	SH SHEET	WP WEATHERPROOF, WORKING POINT
CONTR CONTRACT, CONTRACTOR	FRT FIRE RETARDANT TREATED	LF LINEAR FOOT	OPN OPENING	SIM SIMILAR	WRB WATER RESISTANT GYPSUM WALLBOARD
COORD COORDINATE	FTG FOOTING	L6 LENGTH, LONG	OPP OPPOSITE	SLP SLOPE	WVF WELDED WIRE FABRIC
CORR CORRIDOR, CORRUGATED	FUT FUTURE	LIN LINEAR	O/O OUT TO OUT	SNT SEALANT	WV NEST
CT CERAMIC TILE	G GAGE	LL LIVE LOAD	PI PERIMETER INSULATION	SPEC SPECIFICATION(S)	
CTNG COATING	GAL GALLON	LLH LONG LEG HORIZONTAL	PL PLATE	SFFI SPRAY POLYURETHANE FOAM INSULATION	
CTR CENTER	GALV GALVANIZE(D)		PL PROPERTY LINE	SPM SINGLE PLY MEMBRANE	
COUNTERSUNK	GL GLASS		PLASTIC LAMINATE	SQ SQUARE	
DEPTH, DEEP			PLAS PLASTER	SS STAINLESS STEEL	

## SYMBOL LEGEND

	PRE CAST ARCHITECTURAL CONCRETE "APC"		FINISH WOOD
	GYPSUM WALLBOARD		PLYWOOD
	BRICK OR MASONRY VENEER		CONCRETE
	CONCRETE MASONRY UNITS "CMU"		CRUSHED STONE BASE MATERIAL
	RIGID INSULATION		EARTH
	BATT INSULATION		STEEL
	COLUMN TAG		ELEV. NO. ELEVATION REFERENCE SYMBOL SHOWN ON THIS DWG
	WALL TYPE TAG		DETAIL NO. DETAIL REFERENCE SYMBOL SHOWN ON THIS DWG
	GENERAL NOTE TAG		SECTION NO. SECTION REFERENCE SYMBOL SHOWN ON THIS DWG
	LOUVER TAG		SECTION NO. SECTION REFERENCE SYMBOL 2 USED ON INT. ELEV. WITH SEVERAL SECTIONS CUT FOUND ON A COMMON SHEET. SHEET NUMBER NOTED WITH SECTION DETAILS.
	WINDOW TAG		
	ELEVATION MARKER		
	INTERIOR ELEVATION MARKER		
	FINISH SCHEDULE TAG		



WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS OFFICE MUST BE NOTIFIED OF ANY VARIATION FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS.

DESIGNED: MWS  
DRAWN: TCC  
CHECKED: MWS  
DATE: 2013-05-21  
REVISIONS:

COVER SHEET

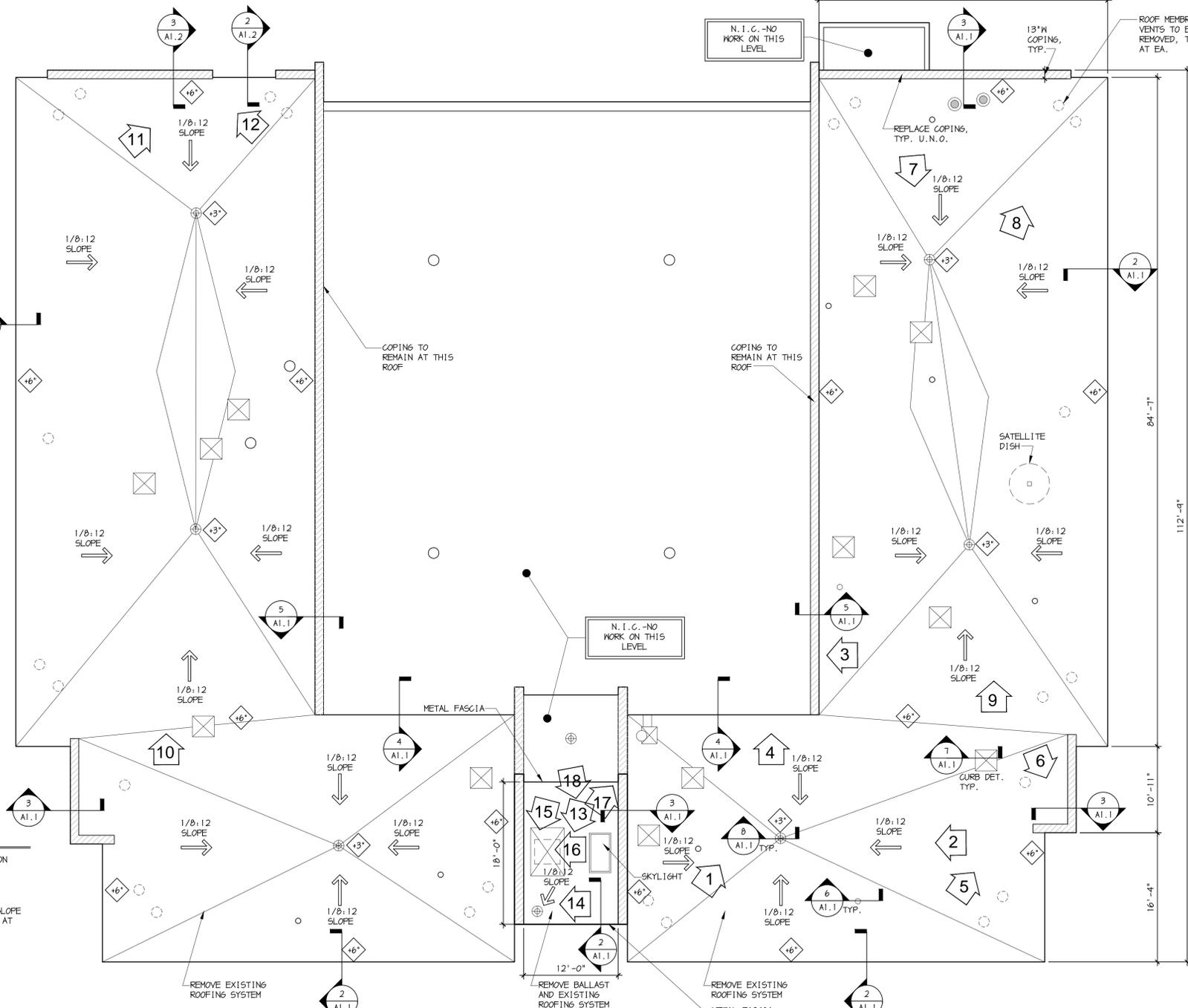
CS1.1

**LEGEND**

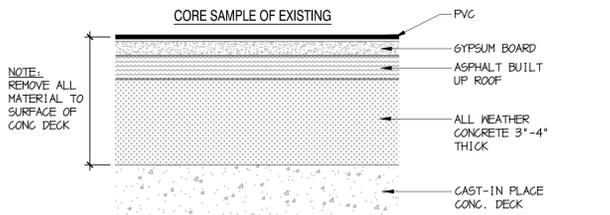
- ROOF SLOPE
- 01 PHOTO REFERENCE
- ⊕ DRAIN
- ⊗ HVAC/MECHANICAL UNIT
- VENT PIPE
- ⊙ GAS PIPE
- VENT TO BE REMOVED
- ▭ COPING CAP
- ⬠ HEIGHT OF SLOPED INSULATION

**GENERAL NOTE**

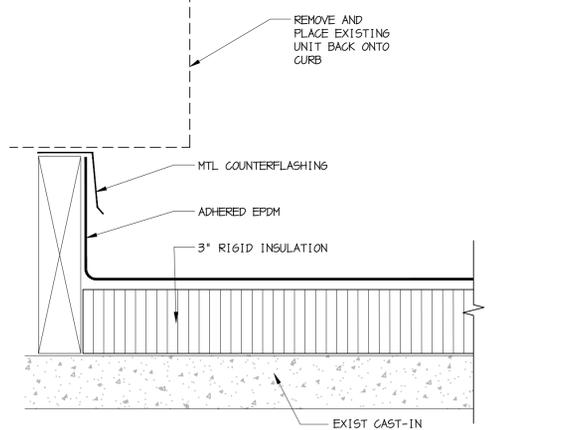
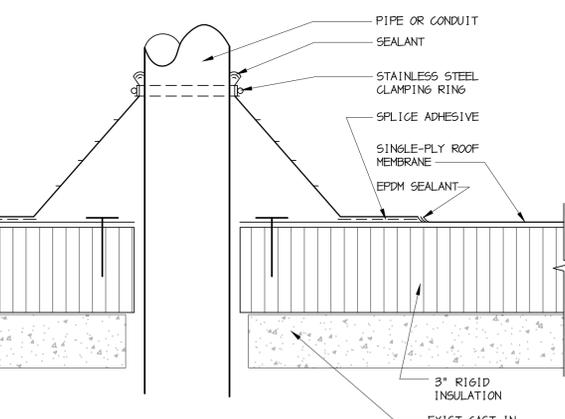
1. ALL DIMENSIONS ARE TAKEN LEVEL, NOT ON SLOPE OF ROOF. CONTRACTOR TO BE RESPONSIBLE FOR ALL QUANTITIES OF MATERIALS.
2. TAPER INSULATION TO ACHIEVE 1/8" FOOT SLOPE TO DRAINS. MINIMUM OF 1" DRAIN TAPER AT 18" RADIUS. VERIFY THICKNESS AT PERIMETER FOR WOOD BLOCKING AND INSULATION THICKNESS.



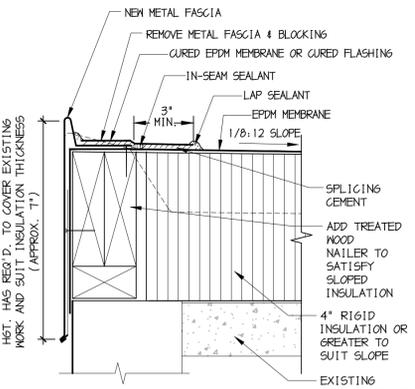
**1 ROOF PLAN BLDG. NO. FE101/401**  
A1.1 1/8"=1'-0"



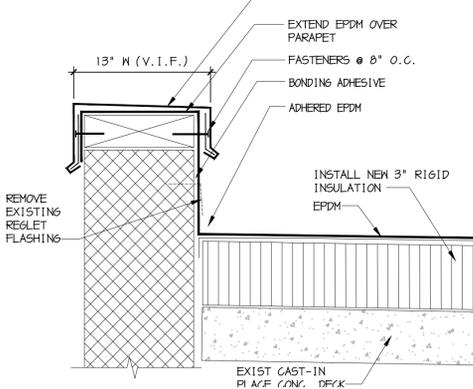
**6 VENT PIPE DETAIL**  
A1.1 3"=1'-0"



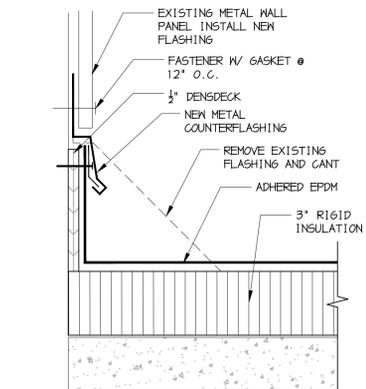
**7 CURB DETAIL**  
A1.1 3"=1'-0"



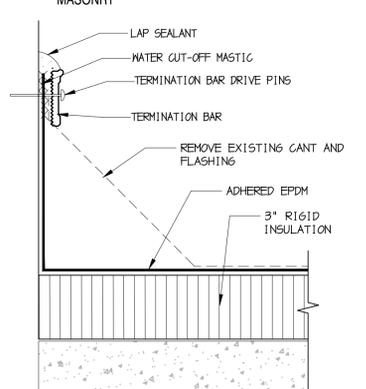
**2 EDGE DETAIL**  
A1.1 3"=1'-0"



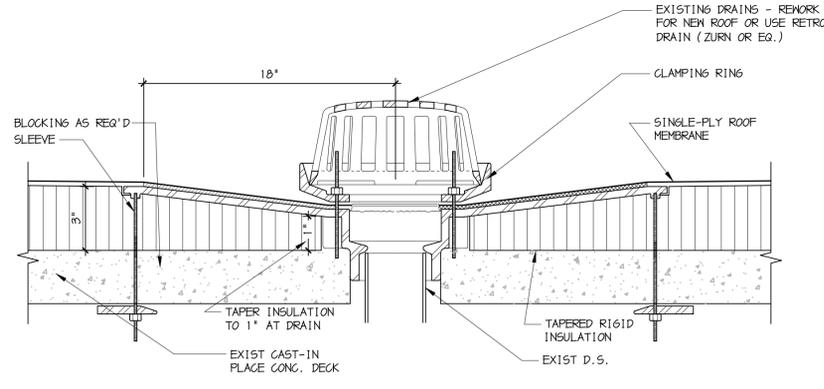
**3 DETAIL SECTION AT PARAPET**  
A1.1 3"=1'-0"



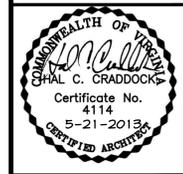
**4 DETAIL SECTION**  
A1.1 3"=1'-0"



**5 DETAIL SECTION**  
A1.1 3"=1'-0"



**8 DRAIN DETAIL**  
A1.1 3"=1'-0"



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DESIGNED: MWS  
DRAWN: TCC  
CHECKED: MWS  
DATE: 2013-05-21  
REVISIONS:

**ROOF PLAN AND DETAILS**

**A1.1**