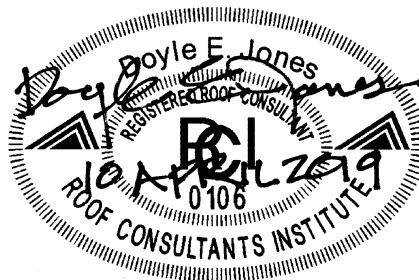


BIDDING / PROJECT MANUAL
TO:

**GATLINBURG REAGAN DRIVE FIREHALL
REROOF 2019**

GATLINBURG, TENNESSEE

for: THE CITY OF GATLINBURG
1230 PARKWAY EAST, GATLINBURG, TN



10 APRIL 2019

ARCHITECT: DOYLE E. JONES, RRC; 134 COURT AVE., SUITE 207, SEVIERVILLE, TENNESSEE

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CITY OF GATLINBURG INVITATION TO BID

Notice is hereby given that the City of Gatlinburg is soliciting sealed Bid Proposals for:

**Gatlinburg Reagan Drive Firehall ReRoof 2019
Gatlinburg, Tennessee**

Sealed Bid Proposals will be accepted until **2:30 p.m. Thursday, 9 May 2019** at Gatlinburg City Hall, 1230 Parkway East, Gatlinburg, Tennessee, 37738, at which time and place they will be publicly opened and read aloud. Bids may only be mailed or hand delivered. Prior delivered Bids may be delivered to City of Gatlinburg Treasurer, Robert Holt, City Hall Building. Bids shall be enclosed in the proper labeled envelopes. Bids received after the above scheduled closing time will not be considered nor returned.

The Work consists of removal and replacement asphalt, laminated, random sawtooth design, shingles (+/- 6,500 SF) and removal and replacement of PVC-KEE membrane (+/- 3,600 SF; plus miscellaneous roofing flashings and equipment curbs. Bid proposal to also include an alternate price for potential gutter replacement.

Drawings and Specifications (full and partial sets) and other Contract Documents may be obtained by Bidders at the offices of Architect/Roof Consultant: Doyle E Jones. Electronic file copies shall be available at no charge, and printed copies shall be available at the non-refundable cost of reproduction.

Each Bid must be accompanied by a bidders bond in the sum of not less than five percent (5%) of the total amount of the Bid, including any additive alternatives. Cashiers and Certified Checks made payable to the City Of Gatlinburg are also acceptable. The successful Bidder will be required to furnish a satisfactory performance bond and payment bond in the full amount, (100%), of the bid. All bonds shall be from a Surety Company registered in the Federal Register, Part II, Department of the Treasury, Fiscal Service, Companies holding Certificates of authority as acceptable sureties on Federal Bonds and as acceptable reinsuring companies; notice and authorized to transact business in the state of Tennessee. Attorneys-in-Fact who sign any bonds must file with each instrument a certified and effective dated copy of their power of attorney. The bid deposit shall be retained by the City of Gatlinburg for a period of ten (10) days after the award of the contract to insure that the bidder will execute the contract and provide the proper bonds.

A Pre-Bid Meeting will be held on Thursday, 25 April 2019, at 2:30 pm at 309 Reagan Drive, Gatlinburg, TN. **Bidders are required to be present** at the Pre-Bid Meeting for their bids to be considered on Bid Day; however later roof visits will be allowed, without the Architect present.

All Bidders must be licensed in the specialty category of "Roofing and Sheet Metal" as required by the Contractors Licensing Act, most current edition, enacted by the General Assembly of the State of Tennessee, as currently amended. Bidder's and any Sub Contractors Name, License Number, Date of Expiration of the License, License Limitation, that part of License Classification applying to the Bid, Name of the Project, Date and Time of the Opening, and the Bid Box Number must be placed on the envelope containing the Bid, otherwise the Bid cannot be opened or considered.

All Bids submitted shall include an affidavit stating compliance with the TCA 50-9-113, Drug-Free Workplace Program

No Bidder will be permitted to withdraw his Bid within 30 days after the date of opening of Bids.

Although evaluation of received Bids will consider lowest cost, the City of Gatlinburg has no obligation to make an award based on lowest cost alone. Lowest cost will be considered among a number of factors, including, but not limited to, integrity, performance, licensing, certification, specialized experience, legal compliance, financial solvency, industry reputation, technical capability, proposed time of completion and prior experience with the City or Architect. The City will also consider responsiveness to the Instructions to Bidders and compliance therewith. The City has no obligation to make an award and reserves the right to waive any non-material bid defects, reject any or all bids, and /or terminate the selection process at any time.

The Construction Contract and the detailed Specifications contain the provisions required for the construction of the Project. No information obtained from any officer, agent, or employee of the City of Gatlinburg on any matters shall in any way effect the risk or obligation assumed or relieve him from fulfilling any of the conditions of the Contract.

Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete within Contractor's Bid stipulated time the Contractor and Architect establish thereafter as time is of the essence. Bidder will agree also to pay as liquidated damages the sum of Two Hundred (\$200.00) dollars for each consecutive calendar day that the contractor is in default after the stipulated date for completion of the work.

For questions concerning the Contract Documents, Bidders may contact City of Gatlinburg Treasurer/Purchasing Agent, Att: Robert L Holt, at 865-436-1404 or Fax 865-436-6464 or roberth@ci.gatlinburg.tn.us. For information concerning the Technical Specifications, Bidders may contact Doyle Jones, Architect at 865-453-6311 or Fax 865-428-6376 or Email arcjaguar@arcjones.net

End of Invitation to Bid

SECTION 00100 - INSTRUCTIONS TO BIDDERS

1.1 The Work:

Gatlinburg Reagan Drive Firehall ReRoof 2019

1.2 Securing Bid Documents:

- A. Copies of the Bid Documents maybe obtained upon the conditions set forth in the Invitation to Bid.

1.3 Related Documents:

- A. Drawings and General Provisions of Contract, including General Conditions and Supplementary General Conditions and other Division 1 Specification Sections, apply to this section.

1.4 Qualifications of Bidders: Bidders shall be:

- A. Licensed Contractors in the State of Tennessee, with speciality category of "Roofing and Sheet Metal Work".
- B. Have 5 years active experience, principally engaged in and specializing in the installation of Asphalt Shingle Roofing and Single Ply Roofing .

1.5 Non-Discrimination:

- A. It is the policy of the City of Gatlinburg not to discriminate on the basis of race, color, national origin, age, sex, or disability in its hiring and employment practices, or in admission to, access to, or operation of its programs, services and activities. With regard to all aspects of this contract, the Bidder/Proposed Contractor certifies and warrants it will comply with this policy.

1.6 Bid Form:

- A. In order to receive consideration, make bids in strict accordance with the following:
 - 1. Make bids upon the forms provided (Section 00300). **Two (2) Copies** of all Bid forms shall be submitted, along with the required Attachments listed below. Photocopies of blank Bid form in the Bid Manual will be acceptable.
 - 2. No telegraphic or fax bid or telegraphic or fax modification of a bid will be considered. Bids received after the time fixed for receiving them will not be considered. Late bids will be unopened.
 - 3. Address bids to Owner and enclose in 9" x 12" sealed envelope bearing the completed Bid Envelope Cover - Section 00305 Page 1, herein. (Photocopies Acceptable of Form in Bid Manual)
 - 4. All bids submitted must comply with TCA 62-6-119 concerning "Notice of Requirements Given in Invitation to Bidders", and each bid must have the following statement on the outside of the envelope which contains the proposal. "All information required by TCA 62-6-119 is on the face of this bid envelope".
- B. **Bid Attachments Required** to receive consideration are:
 - 1. Bid Bond or Cashiers Check.
 - 2. Insurance Requirements Form Completed (00312)
(Photocopies of Form in Bid Manual are acceptable)
 - 3. **Affidavit of Compliance with Tennessee Drug Free Workplace**, (Section 00320) and **Certificate of Compliance** from the **Tennessee Department of Labor and Workforce Development**
 - 4. Acknowledgment Form Completed for **Worker Background Check** Requirement.

5. Copy of Bidders Proposed **Manufacturer's** (Roofing Systems Company) **PVC-KEE Warranty** for the specified period listed elsewhere.
6. **Certified Installer** letter from Manufacturer.

1.7 Bonds

- A. Bid security in the amount stated in the invitation to bid must accompany each bid issued by Surety. The successful Bidder's security will be retained until he has signed the contract and has furnished the required Certificates of Insurance.
 1. Each bid shall be accompanied by a **Bidders Bond**, Executed by the bidder and a surety company authorized to transact business in the State of Tennessee, or a cashier's check or certified check on a duly authorized bank made payable to the City Of Gatlinburg, in the sum of not less than five percent (5%) of the total amount of the bid. Said bond or check will pledge the Bidder to enter into a Contract with the Owner on the terms stated in the Bid and will furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the bidder refuse to enter into such Contract or fail to furnish such bonds the amount of the Bid Security shall be forfeited to the Owner as liquidated damages, not as a penalty. Said bond or check will be returned to the unsuccessful bidder as soon as the contract has been awarded, and the successful bidder as soon as the necessary bonds have been furnished and the contract has been executed. Attorney-in-Fact who signs any bonds must file with each instrument a certified and effective dated copy of their power of attorney.
- B. The Owner reserves the right to retain the security of all Bidders until the successful Bidder enters into the Contract or until Thirty (30) days after bid opening, whichever is sooner.
 1. Other bid security will be returned as soon as practical. If any Bidder refuses to enter into a Contract, the Owner may retain his bid security as liquidated damages but not as a penalty.
- C. Prior to signing the Contract, the Owner will require the successful Bidder to secure and post a **Labor and Materials Payment Bond and a Performance Bond**, each in the amount of 100% of the Contract Sum on each of the forms provided herein the project manual or its AIA approved equal. Such bonds shall be issued by surety acceptable to approved equal. Such bonds shall be issued by surety acceptable to the Owner. Costs of such bonds will be inclusive to the bid amount.

1.8 Pre-Bid Conference Meeting:

- A. A **Pre-Bid Conference Meeting will be held on Thursday, 25 April 2019, at 2:30 pm** at 309 Reagan Drive, Gatlinburg, TN.
- B. **Bidders mandatory presence is required** at the Pre-Bid Meeting for their bids to be considered on Bid Day; however, later roof visits will be allowed, without the Architect present.
 1. If a Bidder makes such later visit, any verbal communication with firehall staff is non-binding and shall not affect or modify the Work as described or any obligations contained in the Bid/Project Manual.

1.9 Contingency Allowance:

- A. Bidders shall include in their Bid. a Contract Contingency Allowance, of **\$2,000.00**, for unforeseen conditions, to be administered by the Architect subject to the Owner's Approval.

1.10 Construction Contract Alternates:

- A. Bidders shall include an alternate amount to replace the existing gutters with new per Architects Details and specifications.

1.11 Unit Price Repair Allowances:

- A. Each Bidder to assist the Owner in tracking the cost of potential unforeseen repair details shall provide a list of **Unit Prices** to install and complete various repair details. The Bid Form itemization by detail shall be completed; Section 00300 Bid Form.

1. The details to be installed include:
 - a. Replace possible deteriorated Plywood Deck/Sheathing square foot cost.
 - b. Replace possible deteriorated Wood Framing board foot cost

1.12 Examination of Documents and Site Work:

- A. Before submitting a bid, each Bidder shall examine the Drawings carefully, shall read the specifications and all other proposed Contract Documents, and shall visit the Site of the Work. Each Bidder shall fully inform himself prior to bidding as to existing conditions and limitations under which the Work is to be performed, and shall include in his bid a sum to cover the cost of items necessary to perform the Work as set forth in the proposed Contract Documents. No allowance will be made to a Bidder because of lack of such examination or knowledge. **The submission of a bid will be considered as conclusive evidence that the Bidder has determined for himself the difficulties that such conditions will impose upon the performance of the Work and the effect of such conditions on the quantity of Work required. No adjustment to the contract sum will be made for conditions which can be determined by examining site and documents, and that all quantities of material necessary to Reroof are included in the Bid amount as derived from Bidder's own field measurements.**

1.13 Interpretation of Plans and Specifications:

- A. No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any Bidder orally. Each request for such interpretation should be in writing addressed to the Architect. To be given consideration it must be received at least **Five (5) days** prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed by certified mail to all prospective Bidders, not later than **Three (3) days** prior to the date fixed for the opening of the bids. All addenda so issued shall become part of the Contract Documents.
1. Addenda will be faxed and by telephone receipt verified, to each person or firm recorded by the Architect as having received the Bidding Documents
- B. The intent of these specifications is to set forth and convey to prospective Bidders the general style, type, character and quality of the article desired, and not to designate or imply a certain brand or make. However, any deviation from this specification shall be clearly noted along with sufficient information to allow the City Of Gatlinburg and the Architect to evaluate the exceptions. Brand names and/or stock numbers are used to describe quality standard.

1.14 Insurance:

- A. The Successful Bidder (Contractor) shall furnish a Certificate Of Insurance (AIA Form G705) with limits as in Section 00312 - Insurance Requirements.
- B. Any and all proposed sub-contractors shall also furnish a Certificate Of Insurance (AIA Form G705) with limits as in Section 00312 - Insurance Requirements.
- C. **Builders Risk Insurance** - The Bidder is required to furnish Builders Risk Insurance to the project, see Bid Form. Installation Floater Insurance shall be considered as an acceptable alternate to Builders Risk.

1.15 Warranties:

- A. Upon Completion of the membrane roofing Work, the Contractor shall furnish a Roof Systems Company (Manufacturer) **Twenty (20) Year, No Dollar Limit, Full Systems Warranty**.

- B. Upon completion of the asphalt shingle work, the Contractor shall furnish a Contractors warranty Three years for labor and materials, No Dollar Limit, full system warranty and provide Shingle manufacturers Materials Warranty (30 years)

1.16 Coordination:

- A. The successful Bidder / Contractor shall coordinate with the Firehall Staff regarding location of Dumpster Unit location, Setup location, "DownTime" during any Mechanical Unit Raising, and any other Contractor mobilization question. The Owner and its Staff retain total control over the job site; therefore, Contractor and his/her employees must cooperate and coordinate with Staff at all times.

1.17 Prohibition on Hiring Illegal Immigrants:

- A. Tennessee law requires that Contractor attest in writing (on bid form) that **Contractor will not knowingly utilize the services of illegal immigrants** in the performance of this Contract and will not knowingly utilize the services of any subcontractor, if permitted under this Contract, who will utilize the services of illegal immigrants in the performance of this Contract

1.18 Non-Collusion or Fraud:

- A. Bidders, by submitting a signed bid, certify that the accompanying bid is not the result of, or affected by, any unlawful act of collusion with any other person or company who engages in the same line of business or commerce, or any other fraudulent act punishable under Tennessee or United States law.

1.19 Minority Sub-Contractors:

- A. Bidders are encouraged to actively solicit minority Sub-Contractors.

1.20 Modification or Withdrawal of Bids:

- A. A **Modification** to a bid may be made as a monetary "add" or "deduct" only from the enclosed Bid Amount and shall be prominently marked on the face of the sealed Bid Envelope and shall be initialed by a representative of the Bidder.
- B. A **Bidder, prior to Bid Opening Time, may withdraw** his bid at any time, either personally or by written request.
- C. A **request to withdraw bid after Bid Opening**, due to mistake must be in writing to the City Of Gatlinburg, delivered in person or postmarked certified or registered mail not later than twenty-four hours after the time fixed for receipt and opening of bids. Request shall acknowledge that bidder refuses to enter into contract based on bid. Request shall acknowledge that bidder intends to submit original work papers, documents, and materials used in preparation of the bid, that document the mistake, delivered in person or postmarked certified or registered mail with Three working days following date of bid opening .

Bidder making such request will be removed from consideration for award of contract; and, the Owner will consider whether forfeiture of Bid Security should be waived.

- D. No Bidder may withdraw his bid for a period of Thirty (30) calendar days after the date set for opening thereof, and bids shall be subject to acceptance by the Owner, during this period.

1.21 Award or Rejection of Bids:

- A. Intent: The City of Gatlinburg and the Architect intend to meet soon following the Bid Opening to review the Bids, and subject to additional information being deemed necessary to evaluate the Bidder or Bidders, plan to award the Contract as soon as possible.

- B. The City of Gatlinburg reserves the right to reject any or all Bid Proposals, to evaluate Bid Proposals and to negotiate additional terms. The City of Gatlinburg shall not be required to accept the lowest Bid Proposal, but may accept the Bid Proposal which, in its sole discretion, is in City's best interest, taking into account all factors and circumstances, including but not limited to the cost quoted in the proposal and the prior experience, qualifications and financial condition of the proposer.
 - 1. The Bidder, if requested, shall provide the Owner with a Financial Statement, Contractor's Qualification Statement, AIA Document A305, and other information that may be required to determine the financial qualifications.
 - 2. The Owner shall have the right to negotiate the final Contract Sum with the apparent low bidder if the bids received exceed the funds available.
- C. The Owner reserves the right to reject any counterproposal or qualified bids.

1.22 Post Bid Submittals:

- A. Bidders to whom award of a Contract is under consideration shall submit to the Architect within Two (2) working days following date of bid opening, the name and resume of the superintendent who will manage the project should the Bidder be awarded the Contract.
- B. Bidders to whom award of a Contract is under consideration shall submit to the Architect within Two (2) working days following date of bid opening, a completed Contractor's Construction Schedule specified in subparagraph 3.10.1 of the General Conditions.

1.23 Execution of Agreement:

- A. The form of Agreement which the successful Bidder will be required to execute is the Standard Form of Agreement Between Owner and Contractor AIA-A101.
- B. The Bidder to whom the Contract is awarded shall, within Five (5) calendar days after notice of award and receipt of Agreement forms from the Owner, sign and deliver required copies to the Owner.
- C. At or prior to delivery of the signed Agreement, the Bidder to whom the Contract is awarded shall deliver to the Owner those Certificates of Insurance required by the Contract Documents and such Labor and Materials Payment Bonds and Performance Bond as are required by the Owner.
- D. Bonds and Certificates of Insurance shall be approved by the Owner before the successful Bidder may proceed with the work. Failure or refusal to provide Bonds or Certificates of Insurance in a form satisfactory to the Owner shall subject the successful Bidder to loss of time from the allowable construction period equal to the time of delay in furnishing the required material.
 - 1. The successful bidder will be required to furnish a satisfactory Performance Bond and Payment Bond each in the full amount of the bid. Such bond shall be from a Surety Company authorized to transact business in the State of Tennessee and Company shall be registered in Federal Register, Part II, Department of the Treasury, Fiscal Service Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies: Notice. Attorneys-in-Fact who sign any bonds must file with each instrument a certified and effective dated copy of their power of attorney.

1.24 Notice to Proceed:

- A. A Notice to Proceed shall be issued by the Owner or Architect.
- B. Construction shall commence on a date to be specified in the "Notice to Proceed" to the Contractor and shall be completed on or before the completion date specified within the Bid

Proposal and in the Contract Documents as time is of the essence in the performance of the contract for construction.

- C. Upon receipt of Notice to Proceed, the Contractor will prosecute the work regularly, diligently, and uninterruptedly at such rate of progress as will insure full completion thereof within the time specified.

1.25 Construction Time and Liquidated Damages:

- A. The Agreement will include a stipulation that the Work be completed by a certain number of calendar days as Bidder stipulated in the Bid Proposal.
- B. The Agreement will include a stipulation that the Contractor be Liable for Liquidated Damages in the amount of Two Hundred Dollars (\$200.00) per calendar day for each calendar day after the agreed Completion Date that the work is not fully certified by the Architect as being substantially complete as that stage of completion is defined in the Conditions of the Contract.

1.26 Progress Payments & Retainage:

- A. See Section 01008 - Supplementary Conditions.

1.27 Substitutions:

- A. Where an article or material is specified by proprietary or manufacturer's name or by catalog reference, the Contract shall be based on furnishing the item or material named or its approved substitute as determined by the Architect. If two or more manufacturers or producers of items are named, either of any such items may be furnished at the Contractor's option.
- B. The Contractor may, at his option, offer substitute products that he proposes to use in said installation not later than three (3) days before bid opening. Acceptance of substitute products shall rest with the Architect and shall be given in writing by addenda not later than two(2) days prior to bid date. Where the architectural evaluation of substitute products is required to obtain the Owner's approval, the Contractor shall pay for said evaluation. The Contractor shall assume full responsibility for substitute products with respect to contract specifications requirements.

1.28 Applications for Payment:

- A. The Contractor's Application for Payment shall be made on forms "AIA G702" and "AIA G703" as published by the American Institute of Architects.

1.29 Contract Termination:

- A. See Sample Agreement AIA 101 for Termination Provisions.

1.30 Restrictive or Ambiguous Specifications:

- A. It is the responsibility of the prospective bidder to review the entire invitation for bids packet and to notify the Architect, if the specifications are formulated in a manner that would unnecessarily restrict competition. Any such protest or question regarding the specifications or bidding procedures must be received by the Architect not less than seventy-two (72) hours prior to the time set for bid opening. These requirements also apply to the specifications that are ambiguous.

1.31 Scope of Specifications:

- A. Mentioned herein or indicated on the drawings of articles, materials, operations or methods require that the Contractor shall:
 - 1. Provide each item mentioned or indicated, or quality subject to qualifications noted.
 - 2. Perform each operation prescribed according to conditions stated.

3. Provide, therefore, all necessary labor, equipment and incidentals.
- B. Use of the word "all" has been generally omitted, but coverage in all cases is intended to be complete, except where partial coverage is specifically indicated. In all cases where the item is referred to in the singular number, it is intended that such reference shall apply to as many such items as are required to complete the work.
- C. Use of the word "shall" has generally been omitted, but all requirements set forth are mandatory except where otherwise qualified.

1.32 Specification Explanation:

- A. For the convenience of reference and to facilitate the letting of contracts and subcontracts, these specifications are separated into titled Divisions. Such separations shall not, however, operate to make the Architect an arbitrator to establish limits to the contracts between the Contractor and subcontractors.

1.33 Compliance with Applicable Safety Standard:

- A. The Contractor shall comply with all applicable State and Federal laws and safety standards relating to construction including, but not limited to the Federal or State Occupational Safety and Health Act, and all rules and administrative regulations promulgated in connection therewith, and shall maintain such records as are required by State and Federal laws relating to construction work, and the safety and health standards regarding such work places.
- B. The Contractor will be fully responsible for the processing of job safety and will designate a qualified safety inspector in his employ.

1.34 Conditions of Surfaces:

- A. It shall be the responsibility of the Contractor to carefully inspect and examine surfaces or areas prepared to receive his work. Should he consider such surfaces or areas not proper, or satisfactory for the installation or application of his work, he shall notify the Architect in writing. Should he proceed before proper corrections have been made, it shall be at his own risk and any subsequent corrections that may be ordered or required shall be at his expense.

1.35 Protection of Existing Structures:

- A. The Contractor shall protect the existing structures in the area from damage caused by his work or workmen, and be responsible for any damage thus caused.
- B. The Contractor shall be responsible to replace to its original condition all areas disturbed by construction.

1.36 Compliance with Standard and Industry Specifications:

- A. Any materials or operation specified by reference to the published specifications of a manufacturer, by the American Society for Testing Materials (ASTM), the American National Standards Institute (ANSI), the Aluminum Association (AA), local or state Building Codes or other published standards, including the Occupational Safety and Health Act and regulations promulgated pursuant to such Act, shall comply with the requirements of the standard or standards as listed. In case of conflict between the project specifications and the referenced standards, the one having the more stringent requirements shall govern.

1.37 Manufacturer's Directions:

- A. All manufactured articles, materials, and equipment shall be applied, installed, covered, erected, used, cleaned, and conditioned as directed by the manufacturer's printed instructions unless herein specified to the contrary.

1.38 Codes:

- A. Contractor shall conform to applicable City, County, State, and National Codes, current edition, including, but not limited to the following:
 - 1. NFPA Edition adopted by the State having jurisdiction and the NFPA Life Safety Code
 - 2. ASTM Code
 - 3. National Board of Fire Underwriters Code
 - 4. International Building Code (2006 edition)
 - 5. Occupational Safety and Health Act (OSHA) and/or a State Occupational Safety and Health Act, whichever is in force.
 - 6. Asbestos School Hazard Abatement Reauthorization Act (ASHARA) extending asbestos requirements to non school buildings.

1.39 Toilet Facilities:

- A. The Contractor shall be required to provide on site temporary toilet facilities for his employees.

1.40 Smoking:

- A. No smoking is allowed (**period**) on any portion of the building or near the building entry.

1.41 Cigarette butts from smoking by roofing personnel shall be contained by roofing company and disposed of properly off site. Roofer to provide his own butt disposal containers on site.

1.42 Building Permits:

- A. The Contractor shall be responsible for obtaining Building Permits from City of Gatlinburg Building Inspections Department and the cost of permit shall be included in bid amount.
(Owner's representative stipulates fee at \$ 0.00)

End of Section - 00100

To:

City of Gatlinburg
Mr. Robert L Holt, Treasurer
 City Hall Building, 1230 Parkway E., Suite 2-P.O. Box 5
 Gatlinburg, Tennessee 37738

From:

 _____ Name if Bidder
 _____ Address of Bidder

 (____)-____ Voice (____)-____ Fax Phones

- 1.1 The undersigned, having examined the proposed Contract Documents titled:

Gatlinburg Reagan Drive Firehall ReRoof 2019

and having visited the site and examined the conditions affecting the work, hereby propose and agree to furnish all labor, material, equipment and to perform operations necessary to complete the work as required by said proposed Contract Documents for the **stipulated sum of:**

 _____ Dollars(\$_____))

- 1.2 **Unit Price Allowances:** The undersigned offers a unit price allowance for the following items, to be used in calculation of additions or subtraction from the quantities shown within the Bid/Project Manual:
- A. Replace Plywood Roof Sheathing/Deck per 4' x 8' x 5/8" sheet \$_____/Sheet.
- B. Replace Wood Framing per board foot \$_____/Board Foot.
- 1.3 **Alternate Price Amount:** The undersigned offers the following amount for the possible removal and replace of the existing Gutters as shown within the Bid/Project Manual:
- \$_____ Gutter Alternate
- 1.4 The Undersigned acknowledges a **Contract Contingency Allowance** within his Bid Amount at a cost of **\$ 2,000.00** for unforeseen conditions, to be administered by the Architect, subject to Owners Approval.
- 1.5 The Undersigned understands and agrees to comply with and be bound by the **Instructions to Bidders** issued for this Work.
- 1.6 The Undersigned acknowledges **receipt of Addenda** number and date:
- _____
 _____ Dated: _____
- _____
 _____ Dated: _____
- 1.7 The Undersigned stipulates a **Time of Completion** of _____ (____) days following Notice to Proceed.
- A. The Owner acknowledging that should any unforeseen problems arise, additional time may necessary, and appropriate time extension will be granted.
- 1.8 **Bid Security** in the amount of _____ Dollars (\$_____), in the form of _____ is submitted herewith in accordance with the Invitation to Bid.
 _____ Cashier's Check, Certified Check or Bid Bond

- 1.9 The Undersigned **attaches** to this BID the following Forms:
- Bid Bond** (AIA-A310 or Equivalent, or Letter of Credit)
 - Insurance Submittal** (00312)
 - Affidavit of Compliance with Tennessee Drug Free Workplace**, (Section 00320) and **Certificate of Compliance** from the **Tennessee Department of Labor and Workforce Development**.
 - Acknowledgment Form Completed for **Worker Background Check** Requirement
 - Manufacturer's Sample Warranties** (PVC_KEE)
 - Manufacturer's Shingle Warranty (Shingle)
 - Certified Installer** (PVC-KEE) letter from Manufacturer.
- 1.10 The Undersigned agrees to **hold and honor his bid for Thirty (30) days**. The Undersigned agrees, if written notice of the acceptance of this bid is mailed, telegraphed or delivered to the undersigned within Thirty (30) days after the opening thereof, or at any time thereafter before this bid is withdrawn, the undersigned agrees to execute and deliver a contract in the prescribed form and furnish the required bond with Five (5) days after the contract is presented to him, for signature.
- 1.11 The Undersigned agrees to **commence work** under this contract on or before a date to be specified in the Notice to Proceed and to fully complete the Project by the date of completion listed above. Bidder further agrees to pay as **Liquidated Damages**, the sum of \$ 200.00 for each consecutive calendar day thereafter as provided in the General Conditions.
- 1.12 The Undersigned certifies that this **Bid is not the result of, or affected by, any unlawful act of collusion** with any other person or company engaged in the same line of business or commerce, or any other fraudulent act punishable under Tennessee or United States laws.
- 1.13 The Undersigned certifies that his/her firm does not discriminate on the basis of race, color, national origin, age, sex, or disability in its hiring and employment practices. With regard to all aspects of this contract, the Bidder/Proposed Contractor certifies and warrants it will continue to comply with this policy.
- 1.14 The Undersigned, acknowledges that the City of Gatlinburg reserves the right, in case of Bidder (Contractor) **default**, to procure the articles or services from other sources and hold the defaulting Bidder (Contractor) responsible for any excess costs occasioned thereby.
- 1.15 The Undersigned, in submitting this bid, understands that the City of Gatlinburg reserves the right to reject any or all Bid Proposals, to evaluate Bid Proposals and to negotiate additional terms. The City of Gatlinburg shall not be required to accept the lowest Bid Proposal, but may accept the Bid Proposal which, in its sole discretion, is in the City's best interest, taking into account all factors and circumstances, including but not limited to the cost quoted in the proposal and the prior experience, qualifications and financial condition of the proposer.

Corp. Seal (affixed below)

Bidder: _____

By: _____

Title _____

Address: _____

TN. Lic. No.: _____ Lic. Class: _____

Bid dated this _____ Day of _____, 19____

End of Section 00300

(THIS FORM MUST BE ATTACHED TO THE OUTSIDE OF THE BID ENVELOPE. NO BID WILL BE CONSIDERED IF THIS FORM IS INCOMPLETE OR NOT ATTACHED TO THE OUTSIDE OF THE BID ENVELOPE.)

Bid for: Gatlinburg Reagan Drive Firehall ReRoof 2019
To Open At _____ 2019

PART I - ALL BIDDERS MUST COMPLETE

TO:	THE CITY OF GATLINBURG
DATE: →	
TIME: →	
LOCATION:	City Hall, City of Gatlinburg 1230 Parkway East, Suite 2 - P.O. Box 5 Gatlinburg, Tennessee 37738
NAME OF BIDDER: →	
ADDRESS OF BIDDER: →	
LICENSE NO: (IF BIDDER IS LICENSED IN MORE THAN ONE CLASSIFICATION, INCLUDE THE LICENSE NO., LICENSE CLASSIFICATION AND EXPIRATION DATE FOR ALL RELEVANT CLASSIFICATIONS). →	
LICENSE CLASSIFICATION OF BIDDER: →	
EXPIRATION DATE: →	
MONETARY LIMITS: →	

PART 2

IF BIDDING INVOLVES: (1) ELECTRICAL WORK, (2) PLUMBING WORK, OR (3) HEATING, VENTILATION OR AIR CONDITIONING WORK, THE BIDDER MUST COMPLETE PART 2. IF NOT, ENTER NONE IN THE SPACE FOR ITEM (E) BELOW.

(A) NAME HOLDING ELECTRICAL LICENSE:	(A) NAME HOLDING PLUMBING LICENSE:	(A) NAME HOLDING HVAC LICENSE:
(B) LICENSE NUMBER OF CONTRACTOR HOLDING ELECTRICAL LICENSE:	(B) LICENSE NUMBER OF CONTRACTOR HOLDING PLUMBING LICENSE:	(B) LICENSE NUMBER OF CONTRACTOR HOLDING HVAC LICENSE:
© LICENSE CLASSIFICATION AND LIMITS:	© LICENSE CLASSIFICATION AND LIMITS:	© LICENSE CLASSIFICATION AND LIMITS:
(D) EXPIRATION DATE OF ELECTRICAL LICENSE:	(D) EXPIRATION DATE OF PLUMBING LICENSE:	(D) EXPIRATION DATE OF HVAC LICENSE:
(E)	(E)	(E)

All information required by TCA 62-6-119 is on this face of this bid envelope.

Any Bidder Proposed Sub-Contractor shall be listed below with supplemental Sub-Contractor's Insurance Submittal. Use separate paper and enclose within Bid Envelope if needed.

Bidders Initials _____

**CITY OF GATLINBURG: Gatlinburg Reagan Drive Firehall ReRoof 2019
INSURANCE CHECKLIST**

THE CERTIFICATE OF INSURANCE MUST SHOW ALL COVERAGES & ENDORSEMENTS WITH "YES" AND ITEMS 26 TO 30.

REQUIRED	NUMBER	TYPE OF COVERAGE	COVERAGE LIMITS
YES	1	WORKERS COMPENSATION	STATUTORY LIMITS OF TENNESSEE
YES	2	EMPLOYERS LIABILITY	\$100,000 PER ACCIDENT \$100,000 PER DISEASE \$500,000 DISEASE POLICY LIMIT
YES	3	COMMERCIAL GENERAL LIABILITY	\$1,000,000 CSL BI/PD EACH OCCURRENCE \$1,000,000 ANNUAL AGGREGATE
YES	4	PREMISES/OPERATION	\$500,000 CSL BI/PD EACH OCCURRENCE \$1,000,000 ANNUAL AGGREGATE
YES	5	AUTOMOBILE LIABILITY	\$1,000,000 BI/PD EACH OCCURRENCE UNINSURED MOTORIST
YES	6	OWNED/HIRED/NON-OWNED	\$1,000,000 BI/PD EACH OCCURRENCE UNINSURED VEHICLES OR MOTORIST
YES	7	INDEPENDENT CONTRACTOR	\$1,000,000 CSL BI/PD EACH OCCURRENCE \$1,000,000 ANNUAL AGGREGATE
YES	8	PRODUCT LIABILITY	\$500,000 CSL BI/PD EACH OCCURRENCE \$1,000,000 ANNUAL AGGREGATE
YES	9	COMPLETED OPERATIONS	\$500,000 CSL BI/PD EACH OCCURRENCE \$1,000,000 ANNUAL AGGREGATE
YES	10	CONTRACTUAL LIABILITY (MUST BE SHOWN ON CERTIFICATE)	\$1,000,000 CSL BI/PD EACH OCCURRENCE \$1,000,000 ANNUAL AGGREGATE
YES	11	PERSONAL AND ADVERTISING INJURY LIABILITY	\$1,000,000 EACH OFFENSE \$1,000,000 ANNUAL AGGREGATE
YES	12	UMBRELLA LIABILITY COVERAGE	\$1,000,000 (Above 1 mil Equals 2 Mil total)
NO	13	PER PROJECT AGGREGATE ENDORSEMENT	
NO NO NO NO NO	14	PROFESSIONAL LIABILITY ARCHITECTS & ENGINEERS ASBESTOS & REMOVAL LIABILITY MEDICAL MALPRACTICE MEDICAL PROFESSIONAL LIABILITY	
NO	15	MISCELLANEOUS E & O	
NO	16	MOTOR CARRIER ACT ENDORSEMENT	
NO	17	MOTOR CARGO INSURANCE	
NO	18	GARAGE LIABILITY	
NO	19	GARAGE KEEPER'S LIABILITY	
NO	20	INLAND MARINE BAILEE'S INSURANCE	
NO	21	MOVING AND RIGGING FLOATER ENDORSEMENT TO CGL.	
NO	22	DISHONESTY BOND	
YES	23	BUILDERS RISK (Or INSTALLATION FLOATER)	
NO	24	XCU COVERAGE	
NO	25	USL&H	

26. Carrier Rating shall be Best's Rating of A-VII OR Better or its equivalent.

27. NOTICE OF CANCELLATION, NON-RENEWABLE OR MATERIAL CHANGES IN COVERAGE SHALL BE PROVIDED TO CITY OF GATLINBURG AT LEAST 30 DAYS PRIOR TO ACTION. THE WORDS "ENDEAVOR TO" AND "BUT FAILURE TO" (TO END OF SENTENCE) ARE TO BE ELIMINATED FROM THE NOTICE OF CANCELLATION PROVISION ON STANDARD ACCORD CERTIFICATES.

28. The City shall be named as an additional insured on all policies except Workers Compensation and Auto.
29. The CERTIFICATE OF INSURANCE shall show the BID NUMBER AND TITLE.
30. Other Insurance Required_____.
31. The Contractor agrees to save, defend, keep harmless and indemnify the City Of Gatlinburg and all of its agents, Employees (Collectively the CITY) And the ARCHITECT From and against any and all claims, loss, damage, injury, cost (Including court costs and Attorney's fees), Charges, Liability Or Exposure, however caused, resulting from, arising out of or in anyway connected with the Contractor's performance of the Agreement terms on its obligations under the agreement.

INSURANCE AGENT'S STATEMENT AND CERTIFICATION: I have reviewed the above requirements with the Bidder named below and have advised tghe Bidder of required coverage not provided through this agency.

AGENCY NAME: _____

AUTHORIZING SIGNATURE: _____

BIDDER'S STATEMENT AND CERTIFICATION: IF AWARDED THE CONTRACT, I WILL COMPLY WITH THE CONTRACT INSURANCE REQUIREMENTS.

BIDDER NAME: _____

AUTHORIZING SIGNATURE: _____

End of Section 00312

Required Bid Attachment

AFFIDAVIT REGARDING DRUG-FREE WORKPLACE PROGRAM

STATE OF _____)
COUNTY OF _____)

The undersigned, having been duly sworn, deposes and says as follows:

1. I am over 18 years of age, and I have personal knowledge of the matters stated herein.
2. I am the _____ of _____,
(Position) (Name of Company)
hereinafter referred to as "the Bidder".
3. As of the date of the submittal of its bid on the Project: **Gatlinburg Reagan Drive Firehall ReRoof 2019**, the Bidder has a drug-free workplace program that complies with the requirements of Tennessee Code Annotated Section 50-9-101, et seq.

Further, Affiant saith not.

Signature

Sworn to and subscribed before me, this _____ day of _____ 2002.

Notary Public

My commission expires _____

(Note: Additional Certificate of Compliance from the Tennessee Department of Labor and Workforce Development shall also be attached. Failure to provide both shall deem Bid as Non-responsive.)

End of Affidavit - Section 00320

SECTION 01008 - SUPPLEMENTARY GENERAL CONDITIONS

RELATION TO GENERAL CONDITIONS

The following supplements modify the "the Contract for Construction," AIA Document A107-1999.

ARTICLE 6: GENERAL PROVISIONS

1.1 EXECUTION, CORRELATION AND INTENT

- A. Add the following new subparagraphs:
 - 6.1.A If there any conflict or discrepancy within or between any of the Contract Documents involving the quality or quantity of Work required, it is the intention of the Contract that the Work of highest quality or greatest quantity shown or specified shall be furnished .
 - 6.1.B Whether or not the word "all" is used in the specifications, coverage is intended to be complete, except where partial coverage is specifically and expressly noted. In all cases where an item is referred to in the singular number, it is intended that the reference shall apply to as many such items as are required to complete the work. Words such as "install", "provide", "furnish", and "supply" shall be construed as meaning complete furnishing, installing, and constructing unless modified by additional information.
 - 6.1.C In case there are discrepancies or conflicts among the Contract Documents, precedence of the various documents shall be as follows in descending order:
 - I. Agreement
 - II. Addenda
 - III. General Conditions, Supplementary General Conditions of Division I
 - IV. Technical Specifications
 - V. Drawings Large Scale
 - VI. Drawings Small Scale Drawings.

ARTICLE 6: GENERAL PROVISIONS

1.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

- A. Add subparagraph 6.6 with the following:
 - 6.6 The Contractor will be furnished free of charge five (5) copies of Drawings and Project Manuals. Additional sets will be furnished at the cost of reproduction, postage, and handling.

ARTICLE 7: OWNER

1.3 OWNER RESPONSIBILITY

- A. Add the following new Paragraph
 - 7.4 Owner Responsibility

The Owner shall have no responsibility for nor control of construction supervision, schedules, means, methods, techniques, sequences, procedures, or coordination of any portion of the Work under this Contract.

ARTICLE 8: CONTRACTOR

1.4 REVIEW OF CONTRACT DOCUMENT AND FIELD CONDITIONS BY CONTRACTOR

- A. Add the following new subparagraph
 - 8.1.4 No verbal agreement or conversation with any officer, representative, agent, or employee of the Owner or Architect, either before or after the execution of this contract shall affect or modify the terms or obligations herein contained.

END OF SECTION

SECTION 01010 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 Scope:

- A. The work indicated by the Contract Documents consists of providing all items, articles, materials, operations, or methods listed, mentioned, or scheduled on the **Drawings (Section 01951 herein)** and in these Specifications, or other Documents, including all labor, materials, services, equipment, and incidentals necessary for their completion, including but not limited to the scope of work as listed on each drawing of Section 01951.

1.2 Use of Site and Storage of Materials:

- A. Equipment and materials shall be so handled and sorted at the site as to avoid interference with the operation of the buildings for the Owner's business. In no case shall emergency fire vehicles be blocked from immediate access to the buildings.
- B. No materials shall be stored or stacked on the existing roof deck in such a manner as to exceed a live load of **15** psf, except as approved by Architect.
- C. All damage to existing ground cover, existing paving, concrete walks, masonry or precast concrete, caused by storage of equipment and materials, construction vehicular traffic, or by other construction operations under the Contract shall be corrected by the Contractor without additional cost to the Owner.
- D. All roofing materials shall be stored under cover, in such locations, and by such methods that will prevent the entrance of moisture into the materials. Insofar as possible, materials shall not be delivered to the site until they can be incorporated in the work the same day they are delivered. It is the responsibility of the Contractor to protect all roofing materials and roof insulation from ground and construction moisture and weather before and during construction.

1.3 Sequence of Work:

- A. The sequence of work in the various roof areas shall be such as to minimize construction traffic over completed roof areas.
- B. Roofing material shall be hoisted directly from grade to the roof level where roofing is to be installed and shall not be transported over existing roofs at roof levels below work areas.
- C. Roofing work shall be coordinated with weather forecasts to preclude installation during rain.

1.4 Certification:

- A. Upon completion of the work, the Contractor shall furnish to the Owner, the roofing Manufacturer's written certification that the work has been installed in accordance with the specifications and that the roofing and flashing have been installed in accordance with the roofing Manufacturer's requirements for the type of roofing and flashing specified, and issue The Manufacturer's Warranty to Owner.

1.5 Final Inspection:

- A. Upon completion of the work, a final inspection shall be made by representatives of the Owner, the Contractor and the Architect, as well as the Roofing Manufacturer, to ascertain acceptance of the project for warranty issuance. Final payment for the work will not be authorized until such final inspection has been made by all parties, including the Manufacturer of the Roofing System and all work is found to have been performed in accordance with the Contract requirements

1.6 Contract Documents:

- A. Contract Documents shall be as enumerated under Article 8 of the Agreement and shall take precedence in the order as listed herein, except where noted otherwise.

1.7 Definitions:

- A. General Explanation: A substantial amount of the Contract Document specification language constitutes specific definitions for terms found in the other contract documents, including the drawings which must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon. Certain terms used repetitiously in the Contract Documents are defined generally in this Article.
1. General Requirements: The provisions or requirements of the Division 1 Sections. The General Requirements apply to the entire work of the Contract and, where so indicated, to their elements of work which are included in the Project.
 2. Owner: Refers to the Owner as defined in the Owner-Contractor Agreement.
 3. Contractor: Refers to the party or parties contracting to perform the work to be done under this Contract or the legal representatives of such party or parties.
 4. Architect: Refers to Architect: Doyle E. Jones, 134 Court Avenue, Suite 207, Sevierville, Tennessee, 37862 or his legal representatives. Contacts or requests to the Architect shall be to Doyle E. Jones (865) 453-6311.
 5. Indicated: The term "indicated" is a cross reference to details, notes or schedules on the Drawings, other paragraphs or schedule in the Specifications, and similar means of recording requirements in the Contract are used in lieu of "indicated," it is for the purpose of helping the reader locate the cross reference, and no limitation of location is intended except as specifically noted.
 6. Directed, Requested, Etc.: Where not otherwise explained, terms such as "directed," "required," "authorized," "selected," approved," "accepted," and "permitted," mean "directed by the Architect," "requested by the Architect," etc. However, no such implied meaning will be interpreted to extend the Architect's responsibility into the Contractor's area of construction supervision.
 7. Approve: Where used in conjunction with the Architect's/Engineer's response to submittals, requests, applications, inquiries, reports and claims by the Contractor, the meaning of the term "approved" will be held to the limitations of the Architect's responsibilities and duties as specified in the General and Supplementary Conditions. In no case will "approve" by the Architect be interpreted as a release of the Contractor from responsibilities to fulfill the requirements of the Contract Documents.
 8. Furnish: Except as otherwise defined in greater detail, the term "furnish" is used to mean supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.
 9. Install: Except as otherwise defined in greater detail, the term "install" as used to describe operations at the project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing protection, cleaning and similar operations, as applicable in each instance.
 10. Provide: Except as otherwise defined in greater detail, the term "provide" means furnish and install, complete and ready for the intended use, as applicable in each instance.
 11. Installer: The entity (person or firm) engaged by the Contractor or his sub-contractor or sub-contractor for the performance of a particular unit of work at the project site, including installation erection, application and similar required operations. It is a general

requirement that such entities (Installers) be expert in the operations they are engaged to perform.

1.8 Governing Regulations:

- A. Codes:
 - 1. Work shall conform to the requirements of the 2006 Edition of the International Building Code and the 2006 Edition of the Life Safety Code.
 - 2. Plumbing and gas piping work shall conform to the requirements of the International Plumbing and Gas Codes, 2006 editions.
 - 3. Electrical work shall conform to the requirements of the National Electrical Code, NFPA No. 70, Latest Edition.
- B. Code Standards:
 - 1. Heating, ventilating and air conditioning work shall conform to requirements of NFPA No. 90A, Standard for the Installation of Air Conditioning and Ventilating Systems.
- C. Material and Testing Standards:
 - 1. Components of the work shall conform to requirements of American Society for Testing and Materials (ASTM) standards, American National Standards Institute (ANSI) standards, and trade association standards, as listed in the various other sections of the specifications.

1.9 Manufacturer's Directions:

- A. All manufactured articles, material and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's instructions and recommendations and their specifications shall be brought to the attention of the Architect and the procedures reconciled before proceeding with the work.
- B. Wherever the plans and/or the specifications call for product to be installed in accordance with the manufacturer's recommendations, a copy of these recommendations shall be furnished by the Contractor and shall be kept in the job superintendent's office. They shall be available to the Architect and the Owner's representative at all times requested during construction.

1.10 Drawings:

- A. Contract Construction Drawings are as enumerated in the Owner-Contractor Agreement.

End of Section 01010

SECTION 01330 - SUBSTITUTIONS

PART 1 - GENERAL REQUIREMENTS, applies to all work hereunder.

1.1 Description of Requirements:

A. Definitions and Explanations:

1. The Contractor's request for changes in products, materials and methods of construction required by the Contract documents are considered requests for "substitutions, " and are subject to requirements hereof.
2. "OR EQUAL": Where named products, materials or methods are accompanied by "Or Equal" or other language of the same effect, Contractor's requests to use unnamed products, materials or methods are considered requests for substitutions, and are subject to requirements thereof.
3. **Requested substitutions during bidding** period, which have been accepted prior to the Contract Date, are included in Contract document and are not subject to requirements for substitutions as specified herein.
4. Contractor's determination of and compliance with governing regulations and lawful orders issued by governing authorities do not constitute "substitutions;" and do not constitute a basis for change orders, except as provided for in Contract documents.

1.2 Limitations for Making Substitutions:

- A. Conditions: Refer to Supplementary Conditions, paragraph 4.4.4.1 for description of the circumstances which entitle Contractor to submit a request for a substitution and conditions which must be fulfilled in so doing.
 1. "OR EQUAL" clauses (if any) in Contract documents enable Contractor to request substitutions where indicated.
 2. Where required product, material or method cannot be provided within Contract time, but not as a result of Contractor's failure to pursue the work promptly or coordinate various activities properly.
 3. Where required product, material or method cannot be provided in a manner which is compatible with other materials of the work or cannot be properly coordinated therewith, or cannot be warranted (guaranteed) as required, or cannot be used without adversely affecting Owner's insurance coverage on completed work, otherwise overcome except by making requested substitution, which the Contractor thereby certifies to overcome such non-compatibility, non-coordination, non-warranty, non-insurability or other non-compliance as claimed.
 4. Where required product, material or method cannot receive required approval by a governing authority and requested substitution can be so approved.
 5. Where substitutional advantage is offered Owner, in terms of cost, time or other valuable considerations, after deduction offsetting responsibilities Owner may be required to bear, including additional compensation to Architect for redesign and evaluation services, increased cost of other work by Owner or separate contractors and similar considerations.
- B. Work-Related Submittals: Contractor's submittal of, and Architect's acceptance of, shop drawings, product data or samples which indicate work not complying with requirements of contract documents, does not constitute an acceptable and valid request for, nor approval of, a substitution.

1.3 Submittals:

- A. Requests for Substitutions: Submit three (3) copies of requests for substitutions, fully identified for product, material or method being replaced by substitution, including related specification section and drawing number(s), and fully documented to show compliance with requirements for substitutions. Submit the following:
1. Complete product data, drawings and descriptions of materials and methods where applicable.
 2. Samples where applicable or requested.
 3. Detailed comparison of significant qualities (size, weight, durability, performance and similar characteristics and including visual effect where applicable) for proposed substitution in comparison with original requirements.
 4. Coordination information, indicating every required change in every other element of the work which is effected by substitution, extended to include work by Owner and separate contractors.
- B. Change Order Form: Submit requests for substitutions which propose a change in either the Contract sum or Contract time, in form and by procedures required for change order proposals.
- C. Action by Architect: General: Within one week of receipt of Contractor's request for substitution, Architect will request additional information or documentation as may be needed for his evaluation of request. Within two weeks of receipt of request, or within one week of receipt of requested additional information or documentation (whichever is later) Architect will notify the Contractor of either acceptance or rejection of proposed substitution.
1. Rejection will include statement of reasons for rejection (non-compliance with requirements for requested substitutions or other reasons as detailed).
 2. Acceptance will be in the form of a change order, when required by the Contract documents.

End of Section - 01330

Section 01340 - SUBMITTALS:

PART 1 - GENERAL REQUIREMENTS, applies to all work hereunder.

1.1 Description of Requirements:

- A. The types of submittals controlled by these general requirements include shop drawings, product data, samples and miscellaneous work related submittals. Detail submittal requirements are specified in applicable sections for each unit of work.
- B. Definitions: The work-related submittals of this Section, in addition to the definitions of the General Conditions and elsewhere in the Contract documents, are further categorized for convenience as follows:
 - 1. Shop Drawings include specially prepared technical data of all forms including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form for application to more than one project.
 - 2. Product Data include standard printed information on materials, products and systems; not specially-prepared for this project, other than the designation of selections from among available choices printed herein.
 - 3. Samples include both fabricated and unfabricated physical examples of materials, products and units of work; both as complete units as smaller portions of units of work; either for limited visual inspection or (where indicated) for more detailed testing and analysis.

1.2 General Submittal Requirements:

- A. Coordination and Sequencing: Coordinate preparation and processing of submittals with performance of the work so that work will not be delayed by submittals. Coordinate and sequence different categories of submittals for the same work, and for interfacing units of work, so that one will not be delayed for coordination with another. No extension of time will be allowed because of failure to properly coordinate and sequence submittals.
- B. Preparation of Submittals: Provide permanent marking on each submittal to identify project, data, contractor, submittal name and similar information to distinguish it from other submittals. Package each submittal appropriately for transmittal and handling. Submittals which are received from sources other than through Contractor's office will be returned "without action."
 - 1. Show Contractor's executed review and approval marking and provide space for Architect's "Action" marking.
 - 2. Transmittal Form: Provide places to indicate project, date, "To"; "From"; names of subcontractors, supplies, manufacturers, required references, category and type of submittal, purpose, description, distribution record (for both transmittal and submittals), and signature of transmitter.

1.3 Specific Category - Submittals Requirements

- A. General: Except as otherwise indicated in individual work sections, comply with general requirements specified herein for each indicated category of submittal.
 - 1. Shop Drawings: Provide information, on blue or black line prints, with graphic information at accurate scale (except as otherwise indicated), with name of preparer indicated (firm name). Show dimensions and note which are based on field measurement. Identify materials and products in the work shown. Indicate compliance with standards, and special coordination requirements. Do not allow shop drawing copies without appropriate final "Action" markings by Architect to be used in connection with the work.

- a. Submittal: Unless otherwise specified, the number of shop drawings which the Contractor shall submit and, if necessary resubmit, is the number that the Contractor requires to be returned plus two (2) copies which will be retained by the Architect.
2. Product Data: Collect required data into one submittal for each unit of work or system; and mark each copy to show which choices and options are applicable to project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked and special coordination requirements. Maintain one set of product data (for each submittal) at project site, available for reference by Architect or others.
 - a. Submittals: Do not submit product data, or allow its use on the project, until compliance with requirements of Contract documents has been confirmed by Contractor. Submittal is for information and record, unless otherwise indicated. Initial submittal is final submittal unless returned promptly by Architect marked with an "Action" which indicates an observed non-compliance. Submit three (3) copies (two [2] will be returned).
3. Samples: Provide units identical with final condition of proposed materials or products for the work. Include "range" samples (not less than 3 units) where unavoidable variations must be expected, and describe or identify variations between units of each set. Provide full set of optional samples where Architect's selection is required. Prepare samples to match the Architect's sample where so indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations and compliance with standards. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by Architect. Architect will not "test" samples (except as otherwise indicated) for other requirements, which are therefore the exclusive responsibility of the Contractor.
 - a. Submittal: Provide a single set of samples for Architect's "Review" and "Action". Initial submittal is final submittal unless returned with "Action" which requires resubmittal..
 - b. Quality Control Sets: Maintain set of samples at project site, in suitable condition and available for quality control comparisons by Architect and by other
4. Warranties: Furnish two (2) executed copies of specified and coincidental product warranties.
5. Closeout Submittals: Refer to Section 01720 for specific general requirements on submittal of closeout information.
 - a. Record Document Copies: Furnish one (1) set.
 - b. Maintenance/Operation Manuals: Furnish two (2) bound copies.
 - c. Materials and Tools: Refer to individual work sections for required quantities of spare parts, extra and overrun stock, maintenance tools and devices, keys and similar physical units to be submitted.
6. General Distribution: Provide additional distribution of submittals (not included in foregoing copy submittal requirements) to subcontractors, suppliers, fabricators, installers, governing authorities and others as necessary for proper performance of the work. Include such additional copies in transmittal to Architect where required to receive "Action" marking before final distribution. Show such distributions on transmittal forms.
7. "Architect's Action": Where action and return is required or requested, Architect will review each submittal and return without delay.
 - a. Architect will stamp each shop drawing following his review to signify the following "Action."

ARCHITECT: DOYLE E. JONES, RRC

134 Court Avenue, Suite 207
Sevierville, TN 37862 (865) 453-6311

- ☐ APPROVED
☐ APPROVED AS CORRECTED

If checked above, fabrication MAY be undertaken. Approval does not authorize changes to contract sum unless stated in separate letter or change order.

If checked below, fabrication MAY NOT be undertaken. Resubmit corrected copies for final approval. Correction should be limited to items marked.

- ☐ REVISE AND RESUBMIT
☐ NOT APPROVED

Reviewing is only for conformance with the design concept of the Project and compliance with the information given in the Contract documents. The Contractor is responsible for dimensions to be confirmed and correlated at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction, and for coordination of the work of all trades.

By: _____

Date: _____

End of Section 01340

SECTION 01640 - PRODUCT HANDLING

PART 1 - GENERAL

1.1 Description:

- A. Work included: Protect products scheduled for use in the work by means including, but not necessarily limited to, those described in this Section.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. Additional procedures also may be prescribed in other Sections of these specifications.

1.2 Quality Assurance:

- A. Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

1.3 Manufacturer's Recommendations:

- A. Except as otherwise approved by the Architect, determine and comply with manufacturer's recommendations on product handling, storage, and protection.

1.4 Packaging:

- A. Deliver products to the job site in their manufacturer's original container, with labels intact and legible.
 - 1. Maintain packaged materials with seals unbroken and labels intact until time of use.
 - 2. Promptly remove damaged material and unsuitable items from the job site, and promptly replace with material meeting the specified requirements, at no additional cost to the Owner.
- B. The Architect may reject as non-complying such material and products that do not bear identification satisfactory to the Architect as to manufacturer, grade, quality, and other pertinent information.

1.5 Protection:

- A. Protect finished surfaces, including jambs and soffits of openings used as passageways, through which equipment and materials are handled.
- B. Provide protection for finished floor surfaces in traffic areas prior to allowing equipment or materials to be moved over such surfaces.
- C. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the Owner.

1.6 Repairs and Replacements:

- A. In event of damage, promptly make replacements and repairs to the approval of the Architect and not additional cost to the Owner.
- B. Additional time required to secure replacements and to make repairs will not be considered by the Architect to justify an extension in the Contract time of completion.

End of Section - 01640

SECTION 01720 - PROJECT CLOSEOUT AND RECORDS

DIVISION 1, GENERAL REQUIREMENTS, applies to all work hereunder.

1.1 DESCRIPTION OF REQUIREMENTS

- A. Definitions: Closeout is hereby defined to include general requirements near the end of Contractor time, in preparation for final acceptance, final payment, normal termination of contract, occupancy by Owner and similar actions evidencing completion of the work. Specific requirements for individual units of work are specified in Sections of Division 2 through 16. Time of closeout is directly related to "Substantial Completion," and therefore may be either a single time period for the entire work or series of time periods for individual parts of the work which have been certified as substantially complete at different dates. That time variation (if any) shall be applicable to other provisions of this Section, regardless of whether resulting from "phased completion" originally specified by the contract documents or subsequently agreed upon by Owner and Contractor.

1.2 PREREQUISITES TO SUBSTANTIAL COMPLETION

- A. General: Prior to requesting Architect's inspection for certification of substantial completion, as required by General Conditions (for either the entire work or portions thereof), complete the following list and know exceptions in request.
1. In progress payment request coincident with or first following date claimed, show either 100% completion of portion of work claimed as "substantially complete," or list incomplete items, value of in completion, and reasons for being incomplete.
 2. Obtain and submit release enabling Owner's full and unrestricted use of the work and access to services and utilities, including (where required) occupancy permits, operating certificates and similar releases.
 3. Complete final cleaning up requirements (later here specified).
 4. Touch-up and otherwise repair and restore marred exposed finishes.

1.3 INSPECTION PROCEDURES

- A. General: Upon receipt of Contractor's request for inspection including the Contractor's list of items to be completed or corrected (AIA 201, 9.8.1), the Architect will either proceed with inspection or advise Contractor of prerequisites not fulfilled. following initial inspection, Architect will either prepare certificate of substantial completion, or advise Contractor of work which must be performed to issuance of certificate; and repeat inspection when requested and assured that work has been substantially completed.
1. When the Architect makes his final inspection to verify those corrections and perhaps finds that some of the items which were previously listed have not been corrected, the Contractor will be held responsible for the costs of the Architect's time and services required for subsequent "Final Inspection" visits. These services will be billed to the Contractor direct and final payment to the Contractor will not be approved by the Architect until the additional services mentioned above are paid in full by the Contractor.
 - a. For these Extra Architectural Services (and related Engineering Services), the Contractor agrees to pay the Architect as follows: \$ 90.00 per hour for each hour involved in extra field inspection, as well as \$ 50.00 per hour for each office hour related to this extra work; further, the Contractor agrees to pay the Architect \$0.32 per mile for travel expense to and from the project site; and all other costs involved in relation to any additional final inspections, such as long distance telephone calls, reproduction copies, etc.

1.4 PREREQUISITES TO FINAL ACCEPTANCE

- A. General: Prior to requesting Architect's final inspection for certification of final acceptance and final payment, as required by General Conditions, complete the following and list known exceptions (if any) in request:
1. Submit final payment request with final releases and supporting documentation not previously submitted and accepted.
 2. Submit certified copy of Architect's final punch-list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by Architect.
 3. Submit consent of Surety.
 4. Revise and submit evidence of continuing insurance coverage complying with insurance requirements (If Applicable).

1.5 RECORD DOCUMENT SUBMITTALS

- A. General: Specific requirements for record documents are indicated in individual sections of these specifications. Other requirements are indicated in General Conditions. Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for Architect's reference during normal working hours.
1. Record Drawings: Maintain a white-print set (blue-line or black-line) of contract drawings, as furnished by the Architect, and shop drawings in clean, undamaged condition, with mark-up of actual installations which vary from the work as originally shown. Mark whichever drawing is most capable of showing "field" condition fully and accurately; however, where shop drawings are used for mark-up, record a cross-reference at corresponding location on contract drawings. Mark with red erasable pencil and, where feasible, use other contract drawings, use other colors to distinguish between variations in separate categories of work. Mark-up new information which is recognized to be of importance to Owner, but was for some reason not shown on either contract drawings. Give particular attention to concealed work, which would be difficult to measure and record at a later date. Note related change order numbers where applicable. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on cover of each set.
 2. Maintenance Manuals: Organize maintenance-and-operating manual information into suitable sets of manageable size, and bind into individual binders properly identified and indexed (thumb tabbed); Include emergency instructions, spare parts listing, warranties, wiring diagrams, recommended "turn-around" cycles, inspection procedures, shop drawings, product data and similar applicable information. Bind each manual of each set in a heavy-duty 2", 3 ring vinyl-covered binder, and include pocket folders for folded sheet information. Mark identification on both front and spine of each binder.

1.6 CLOSEOUT PROCEDURES

- A. General Operating/Maintenance Instruction: Arrange for each installer of work requiring continuing maintenance (by Owner) or operation, to meet Owner's personnel, at project site, to provide basic instructions needed for proper operation and maintenance of entire work. Include instructions by manufacturer's representatives where installers are not expert in the required procedures. Review maintenance manuals, record documentation, tools, spare parts and materials, lubricants, fuels, identification system, control sequences, hazards, cleaning and similar procedures and facilities. For operational equipment, demonstrate start-up, shutdown, emergency operations, noise and vibration adjustments, safety, economy/efficiency adjustments and similar operations. Review maintenance and operations in relation with applicable warranties, agreements to maintain, bonds and similar continuing commitments.

1.7 FINAL CLEANING

- A. General: Special cleaning for specific units of work is specified in sections of Division 2 through 16. General cleaning during progress of work is specified in General Conditions. Provide final cleaning of the work, at time indicated, consisting~ of cleaning each surface or unit of work to

normal "clean" condition expected for a first class building cleaning and maintenance program. Comply with manufacturers' instructions for cleaning operations. The following are examples, but not by way of limitation, of cleaning levels required:

1. Remove labels which are not required as permanent labels.
2. Clean transparent materials, including mirrors and window/door glass, to a polished condition, removing substances which are noticeable as vision-obscuring materials. Replace broken glass.
3. Clean exposed exterior hard-surfaced finishes, including metals, masonry, stone, concrete, painted surfaces, plastic, tile, wood, special coatings, and similar surfaces, to a dirt-free condition, free of dust, stains, films and similar noticeable distracting substances. Except as otherwise indicated; avoid disturbance of natural weathering of exterior surfaces. Restore reflective surfaces to original reflective condition.
4. Remove debris and surface dust from limited-access spaces including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.
5. Clean project site (yard and grounds), including landscape, development areas, of litter and foreign substances. Sweep paved areas to a broom-clean condition; remove stains, petro-chemical spills and other foreign deposits.
6. Compliance: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at site, or bury debris or excess materials on Owner's property, or discharge volatile or other harmful or dangerous materials into drainage systems; remove waste materials from site and dispose of in a lawful manner.

1.8 CONTINUING INSPECTIONS

- A. General: Except as otherwise required by specific warranties, agreements to maintain, workmanship/maintenance bonds, and similar continuing commitments, comply with Owner's requests to participate in inspections at end of each time period of such continuing commitments. Participate in general inspection of the work approximately one year beyond date(s) of substantial completion.

End of Section 01720



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A03-Ext-IMG_5854.JPG



A04-Ext-IMG_5855.JPG



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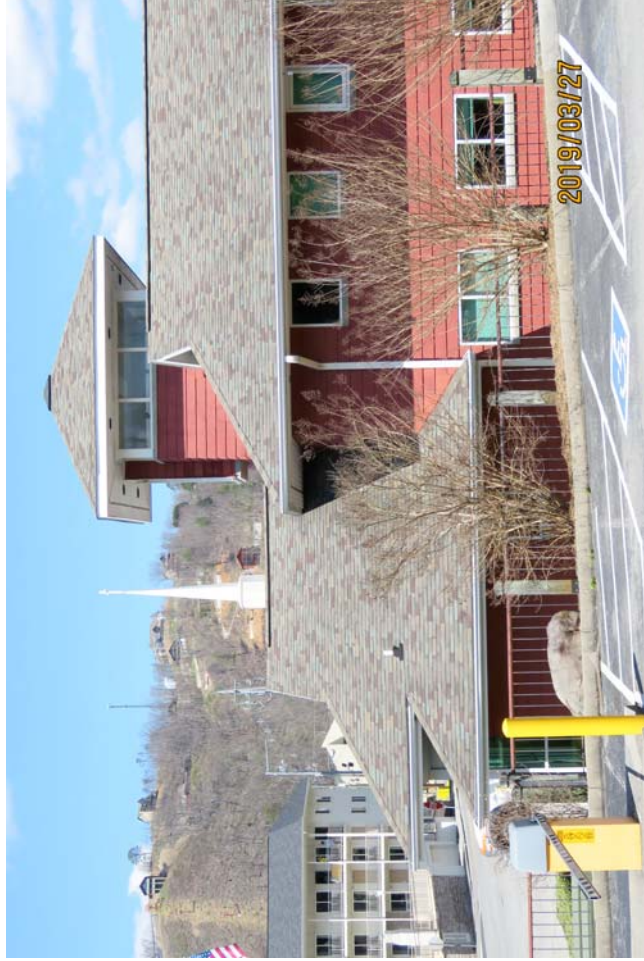
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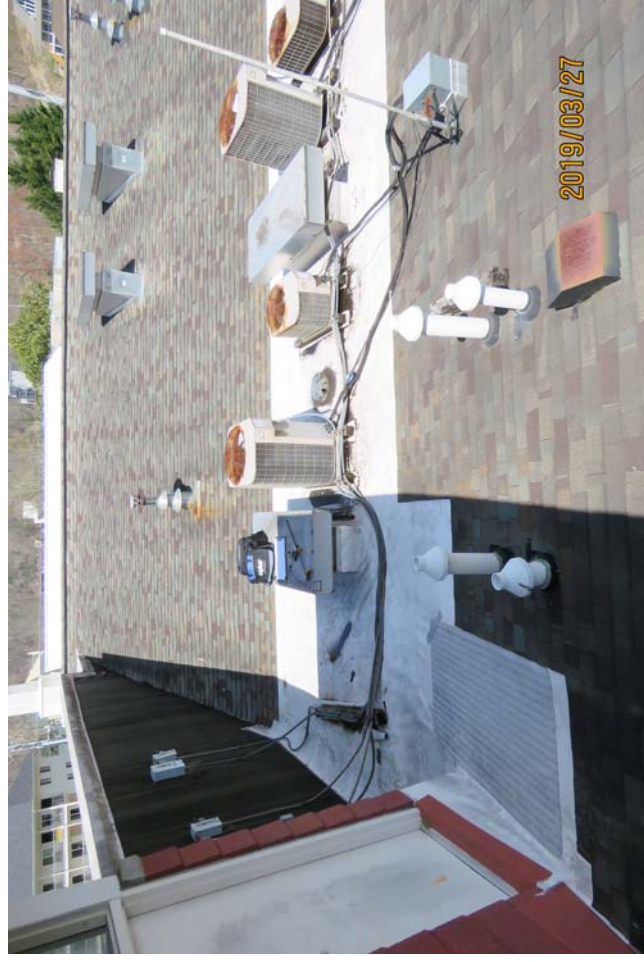
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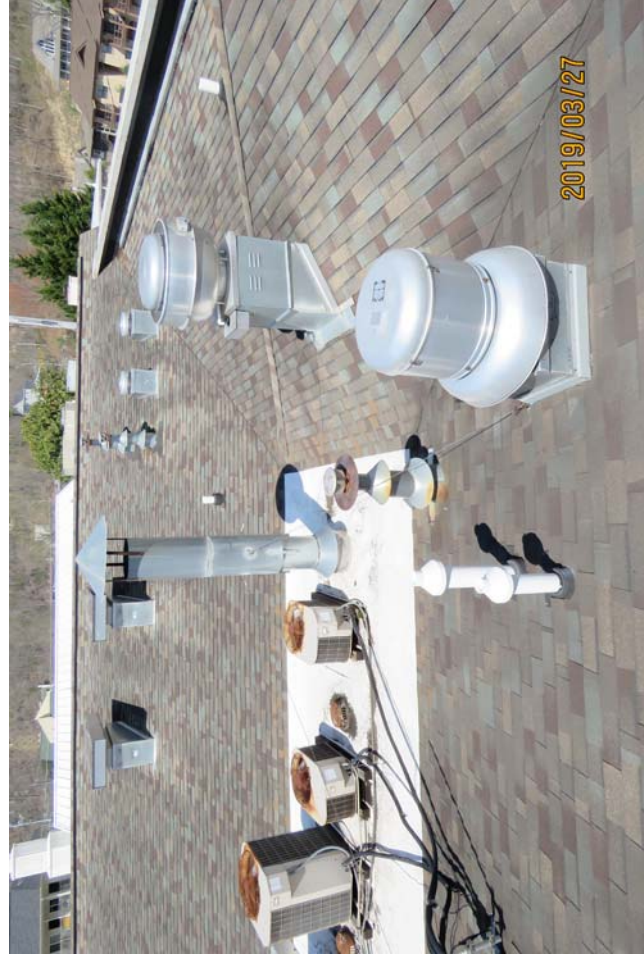
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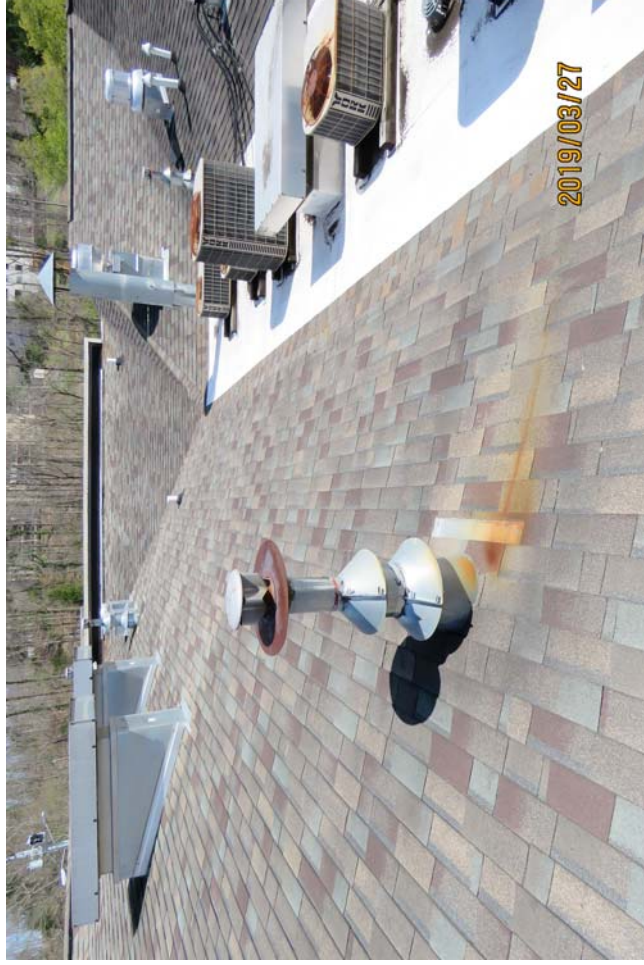
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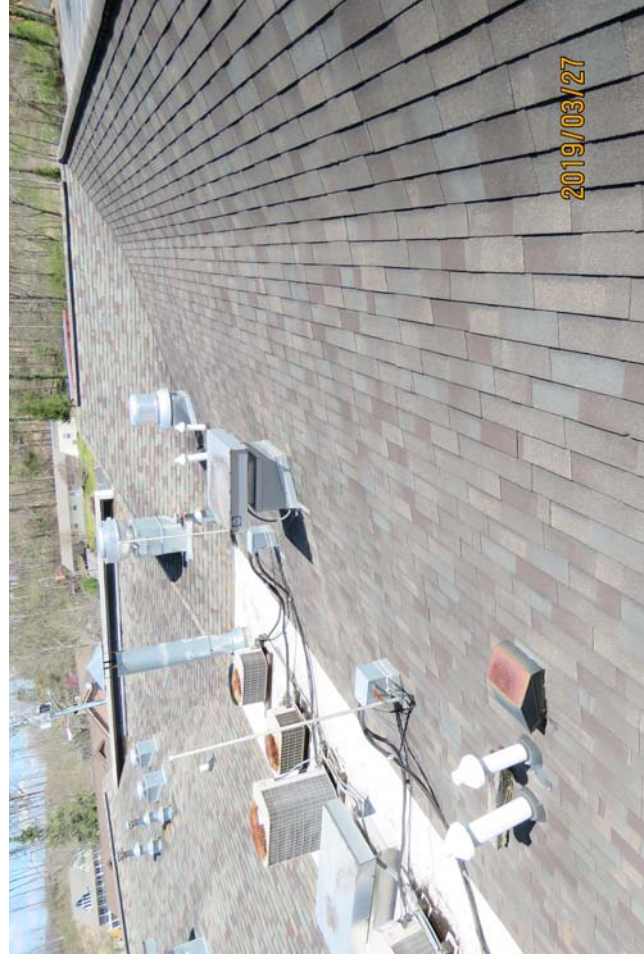
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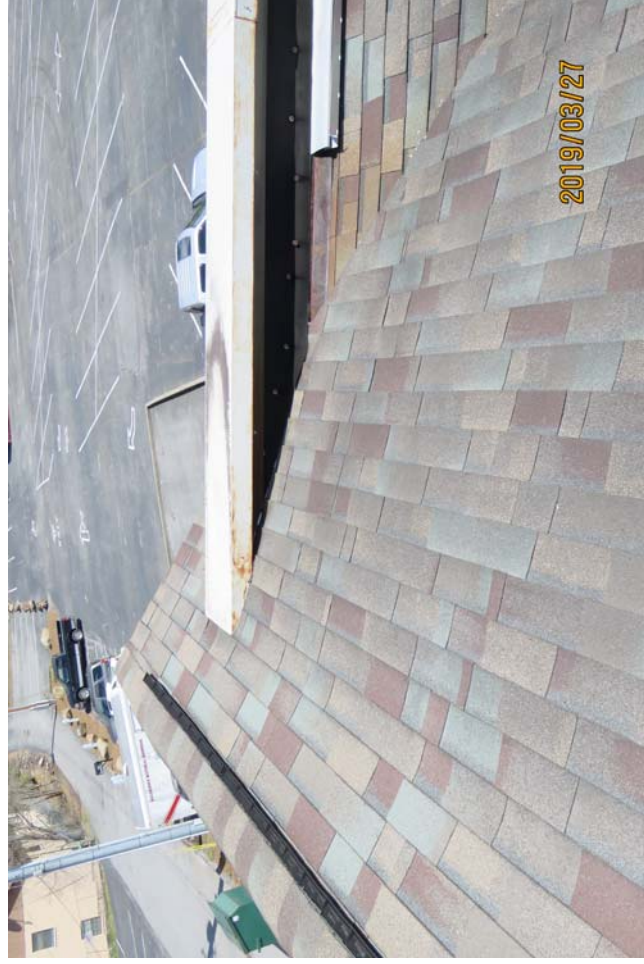
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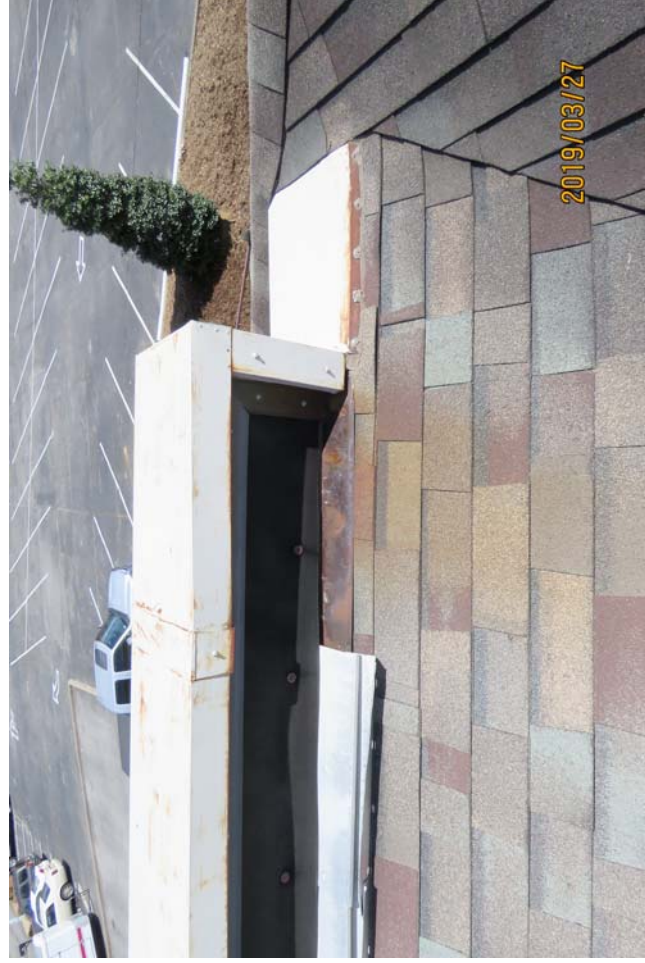
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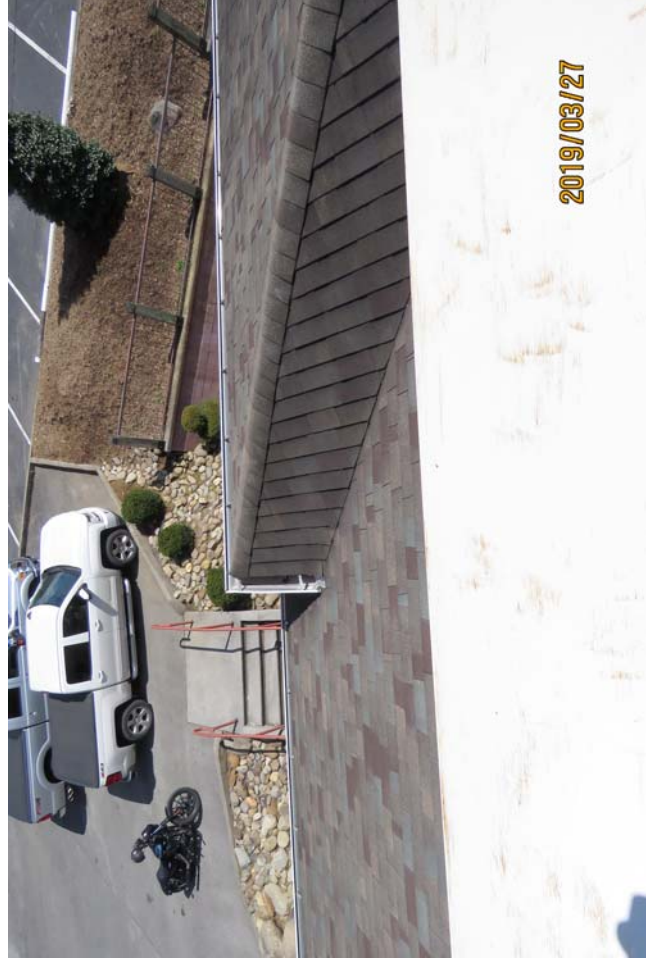
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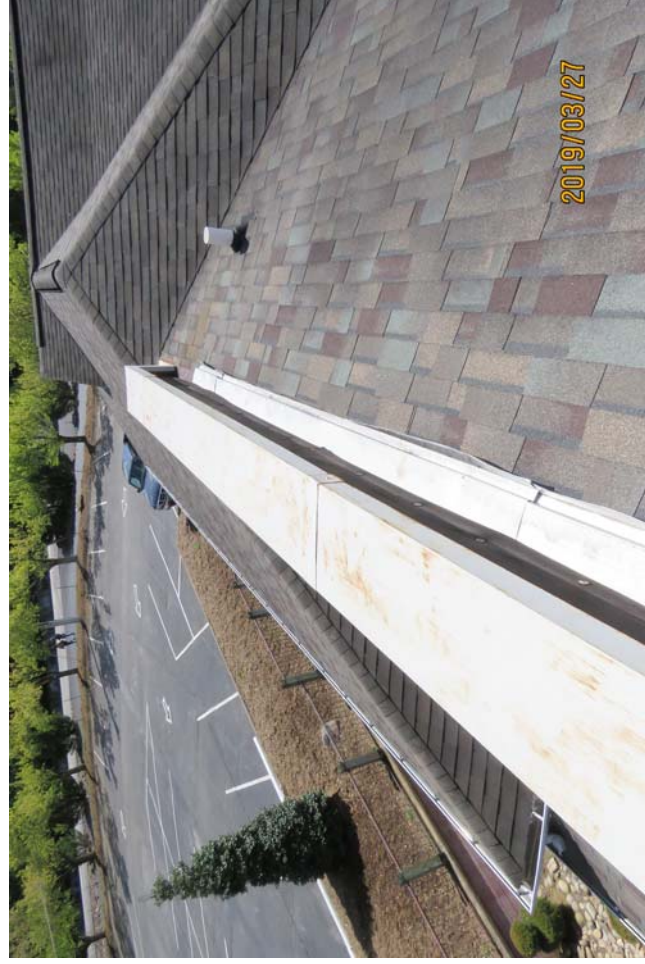
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D09-Cond5-IMG_5819.JPG



D10-Cond5-IMG_5820.JPG

NOTES:

N1 - CONDENSER UNITS CU#1 THRU CU#5 RELOCATED AND INSTALLED ON NEW RAIL CURBS SEE DTLS ON SHEET 4/01951.

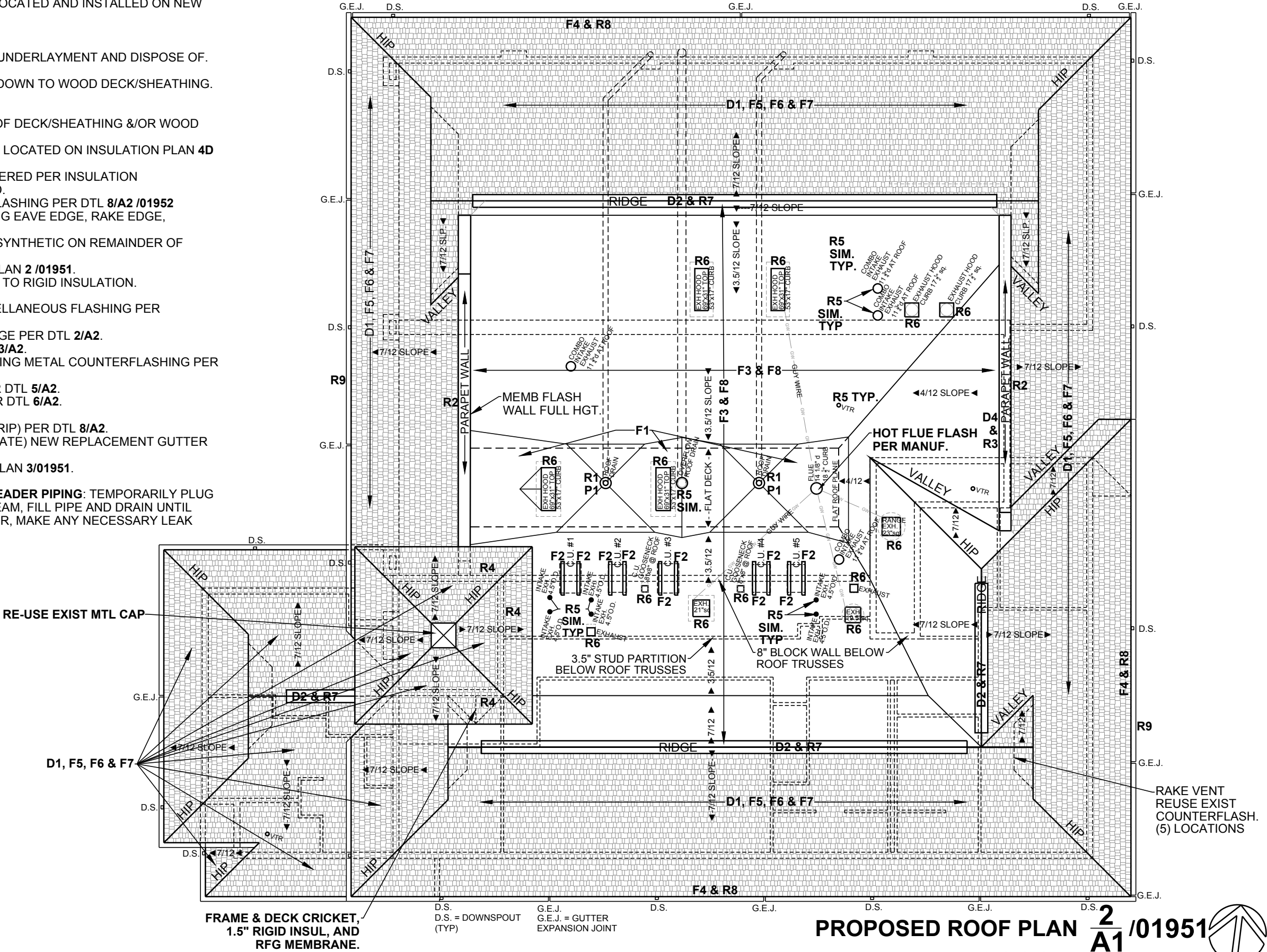
ROOFING SCOPE OF WORK:

- D1 - REMOVE EXISTING ROOF SHINGLES AND UNDERLAYMENT AND DISPOSE OF.
D2 - REMOVE RIDGE VENT AND DISPOSE OF.
D3 - REMOVE MEMBRANE ROOFING AND BUR DOWN TO WOOD DECK/SHEATHING.
D4 - REMOVE FLASH VENT AND DISPOSE OF.

- F1 - REPLACE AN DETERIORATED PLYWD ROOF DECK/SHEATHING &/OR WOOD FRAMING PER BID ALLOWANCE.
F2 - INSTALL A.C. CONDENSER RAIL CURBS AS LOCATED ON INSULATION PLAN 4D & 4E ON SHEET 4/01951.
F3 - INSTALL RIGID INSULATION FLAT AND TAPERED PER INSULATION PLAN 3/01951, MECHANICALLY ATTACHED.
F4 - INSTALL EAVE DRIP STRIP ALUM METAL FLASHING PER DTL 8/A2 /01952
F5 - INSTALL NEW "ICE-SHIELD" 36" WIDE ALONG EAVE EDGE, RAKE EDGE, VALLEYS, HIPs AND RIDGES.
F6 - INSTALL UNDERLAYMENT (BREATHABLE) SYNTHETIC ON REMAINDER OF ROOF NOT COVERED BY ICESHIELD.
F7 - INSTALL ASPHALT SHINGLES PER ROOF PLAN 2 /01951.
F8 - INSTALL MEMBRANE ROOFING, ADHERED, TO RIGID INSULATION.

- R1 - INSTALL ROOFING MEMBRANE AND MISCELLANEOUS FLASHING PER DETAIL 1/A2 AT EXISTING ROOF DRAINS.
R2 - INSTALL FASCIA (PARAPET WALL CAP) EDGE PER DTL 2/A2.
R3 - INSTALL FLASH VENT FLASHING PER DTL 3/A2.
R4 - INSTALL WALL FLASHING RE-USING EXISTING METAL COUNTERFLASHING PER DTL 4/A2.
R5 - INSTALL VENT THRU ROOF FLASHING PER DTL 5/A2.
R6 - INSTALL EQUIPMENT CURB FLASHING PER DTL 6/A2.
R7 - INSTALL RIDGE VENT PER DTL 7/A2.
R8 - INSTALL EAVE METAL FLASHING (DRIP STRIP) PER DTL 8/A2.
R9 - INSTALL (IF OWNER SELECTS BID ALTERNATE) NEW REPLACEMENT GUTTER PER DTL 9/A2.
R10 - INSTALL WALKTREAD PER INSULATION PLAN 3/01951.

P1 - FLOOD TEST ROOF DRAIN RAIN WATER LEADER PIPING: TEMPORARILY PLUG DISCHARGE END AT LEADERHEAD DOWNSTREAM, FILL PIPE AND DRAIN UNTIL DRAIN IS COVERED, LET STAND FOR ONE HOUR, MAKE ANY NECESSARY LEAK REPAIRS AND RE-TEST UNTIL DRY.



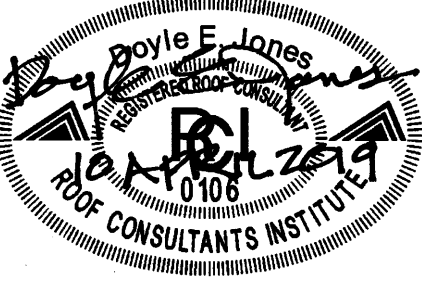
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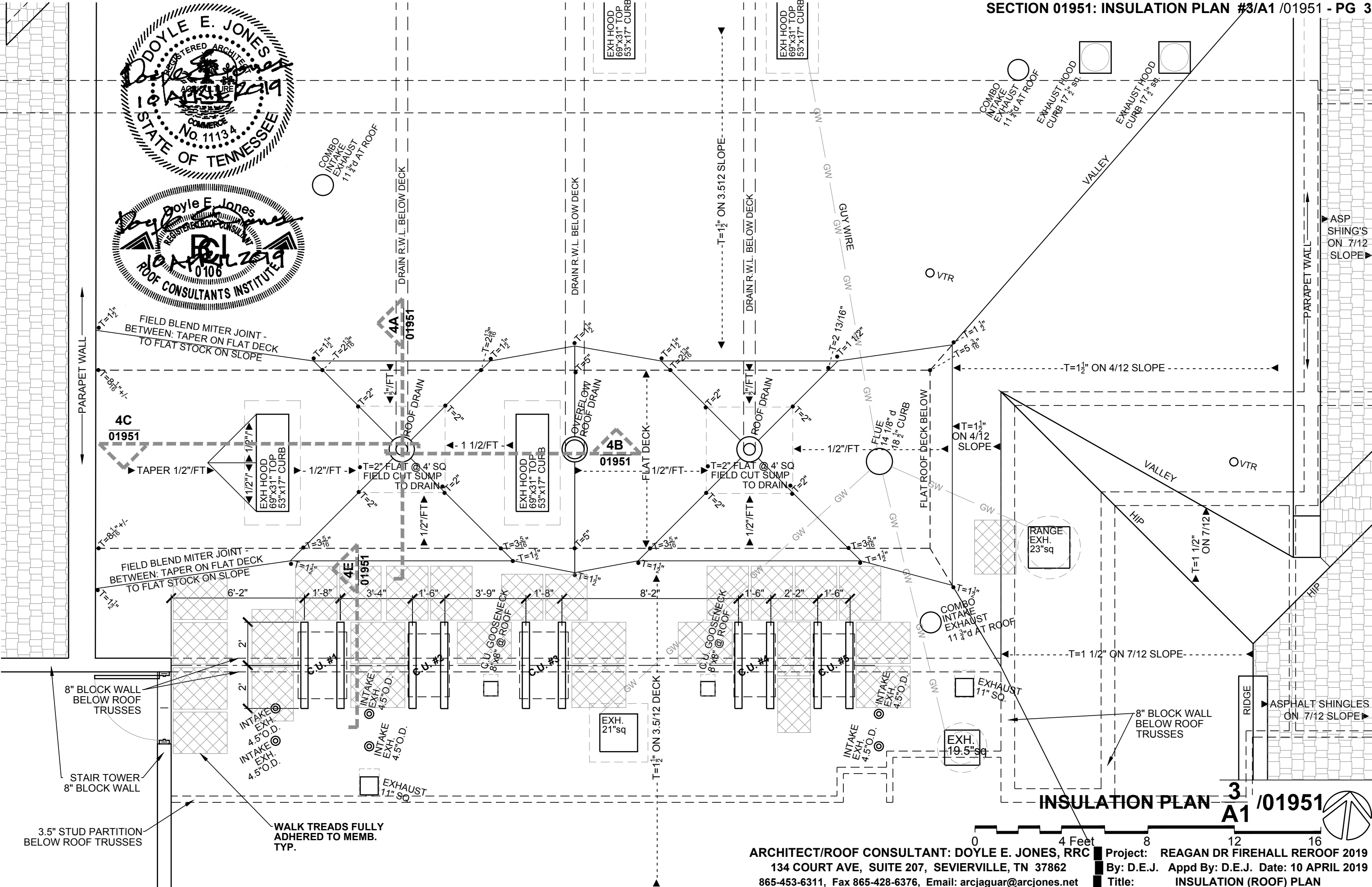
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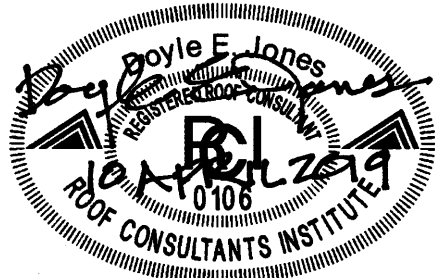
WALKTREADS AT SOME EQUIP, REQUIRED SEE INSUL. PLAN 3/01951

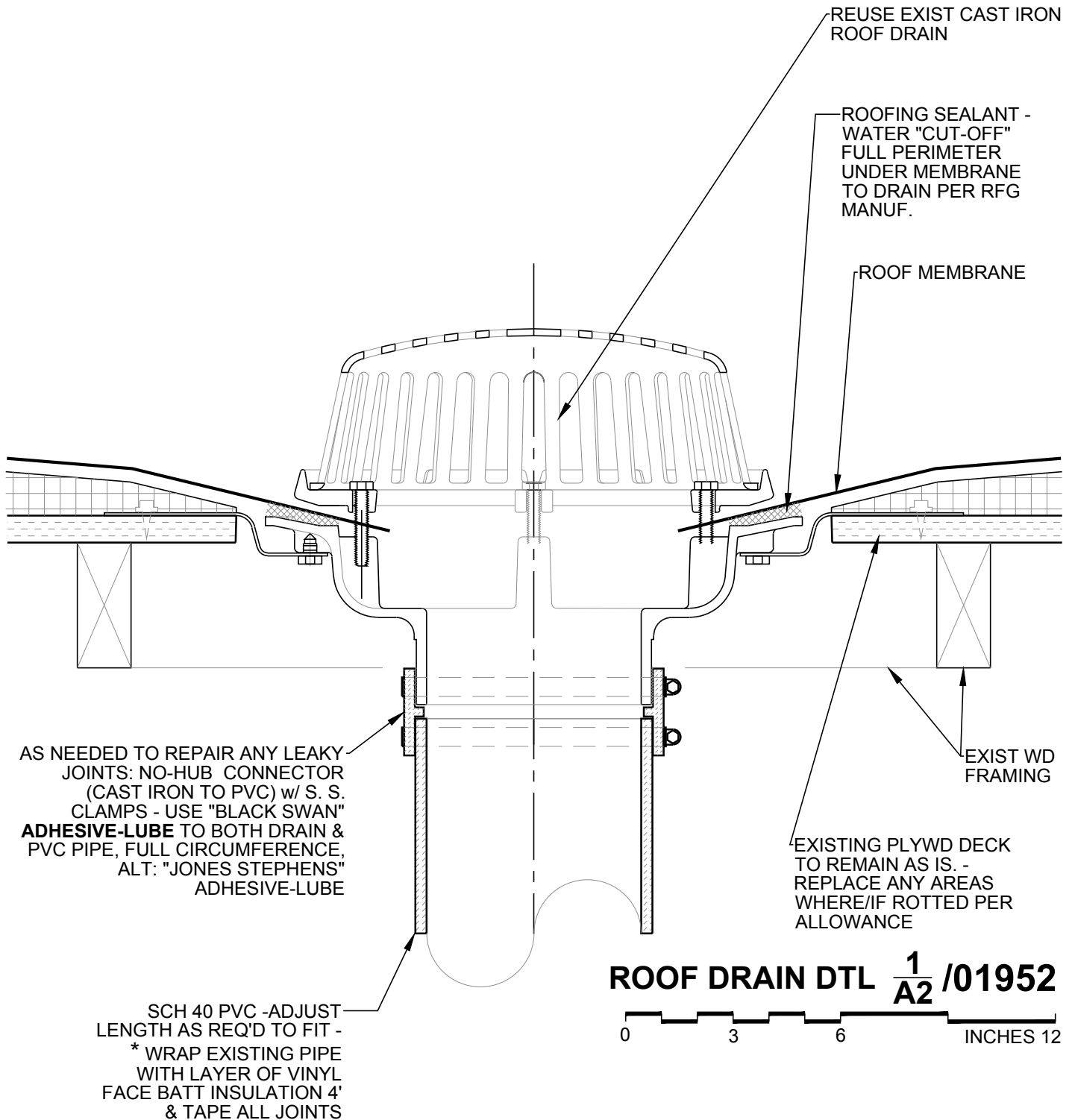
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134 COURT AVE, SUITE 207, SEVIERVILLE, TN 37862
865-453-6311, Fax 865-428-6376, Email: arcjaguar@arcjones.net

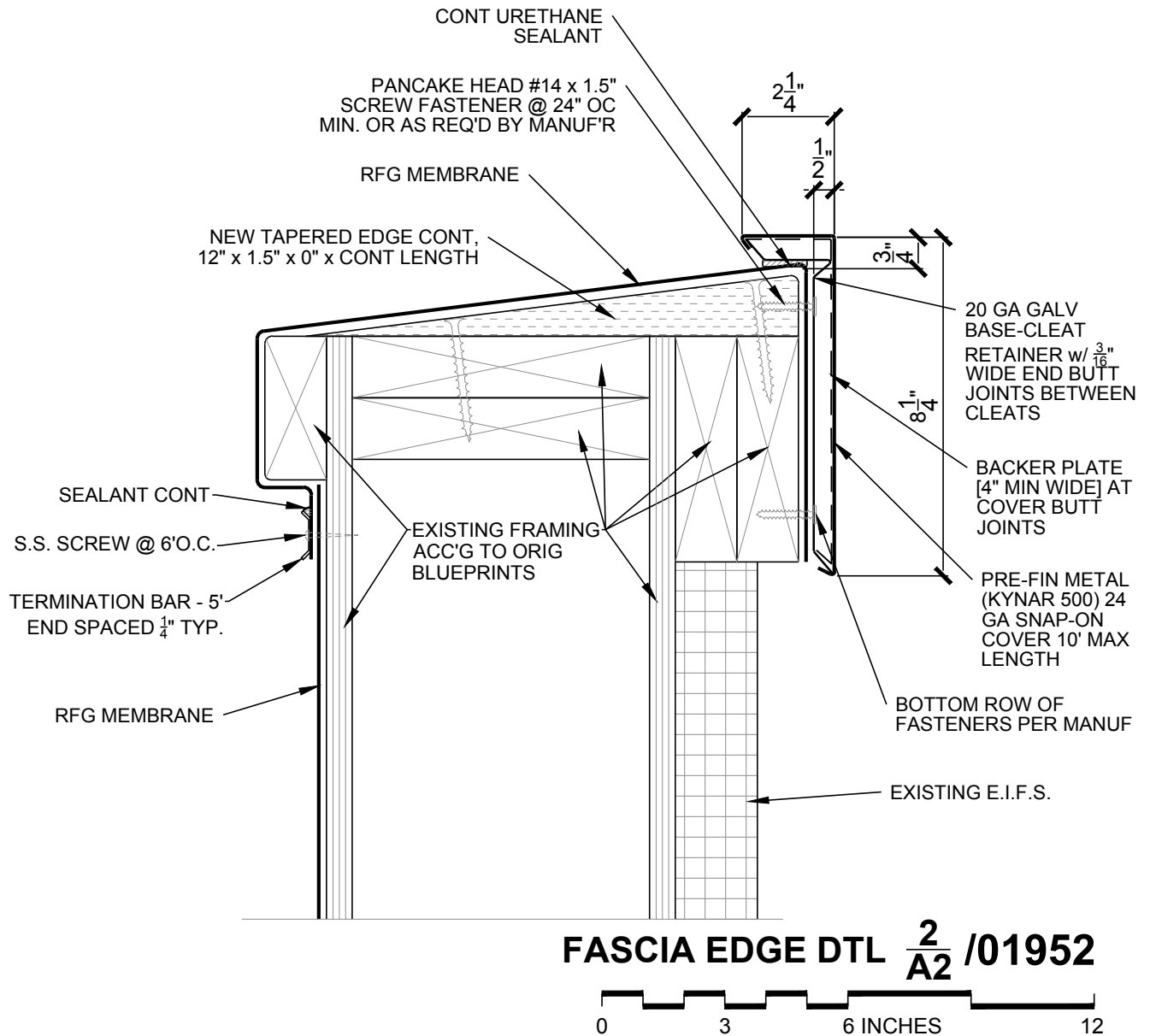
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By: D.E.J. Appd By: D.E.J. Date: 10 APRIL 2019
Title: PROPOSED ROOF PLAN

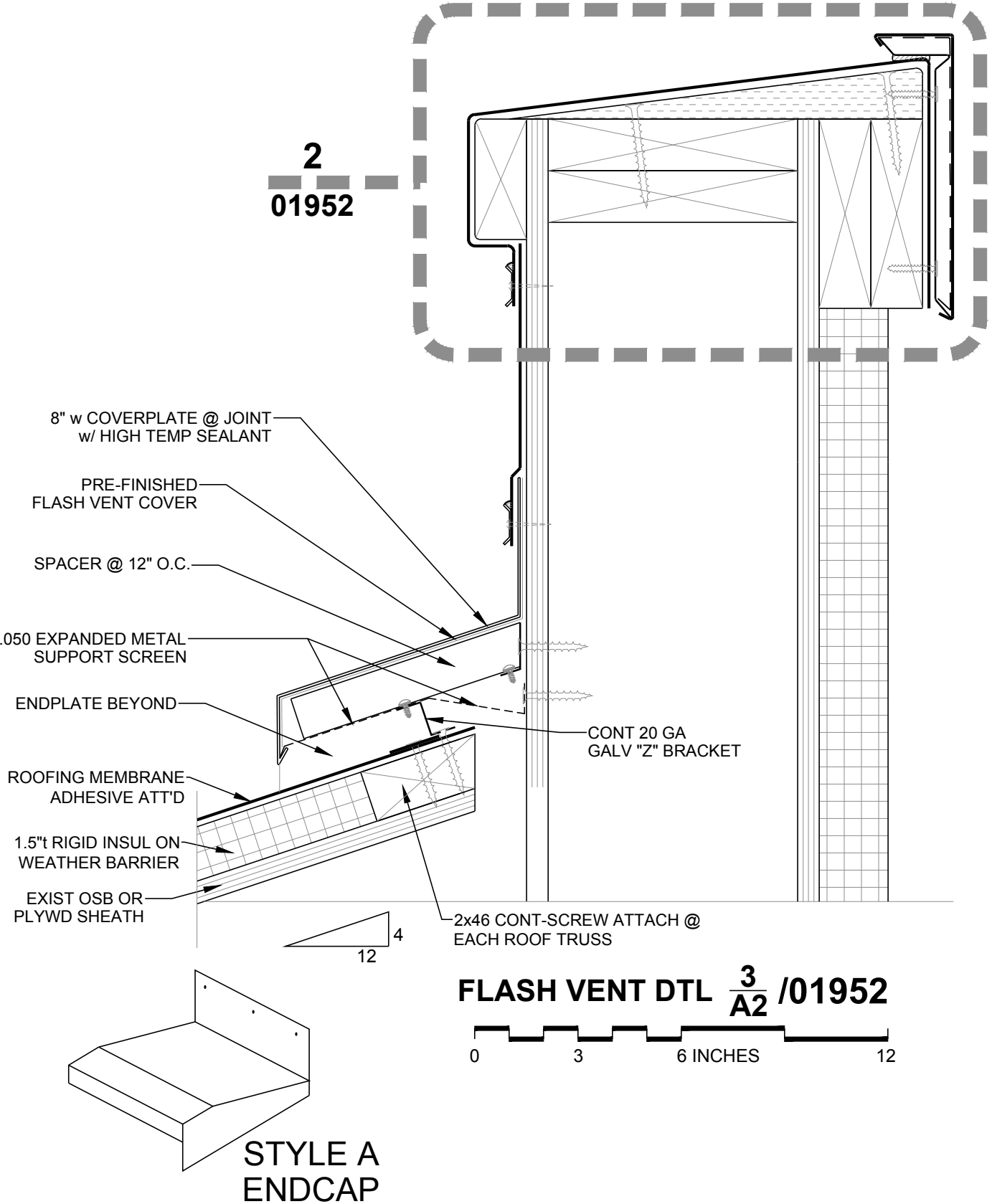


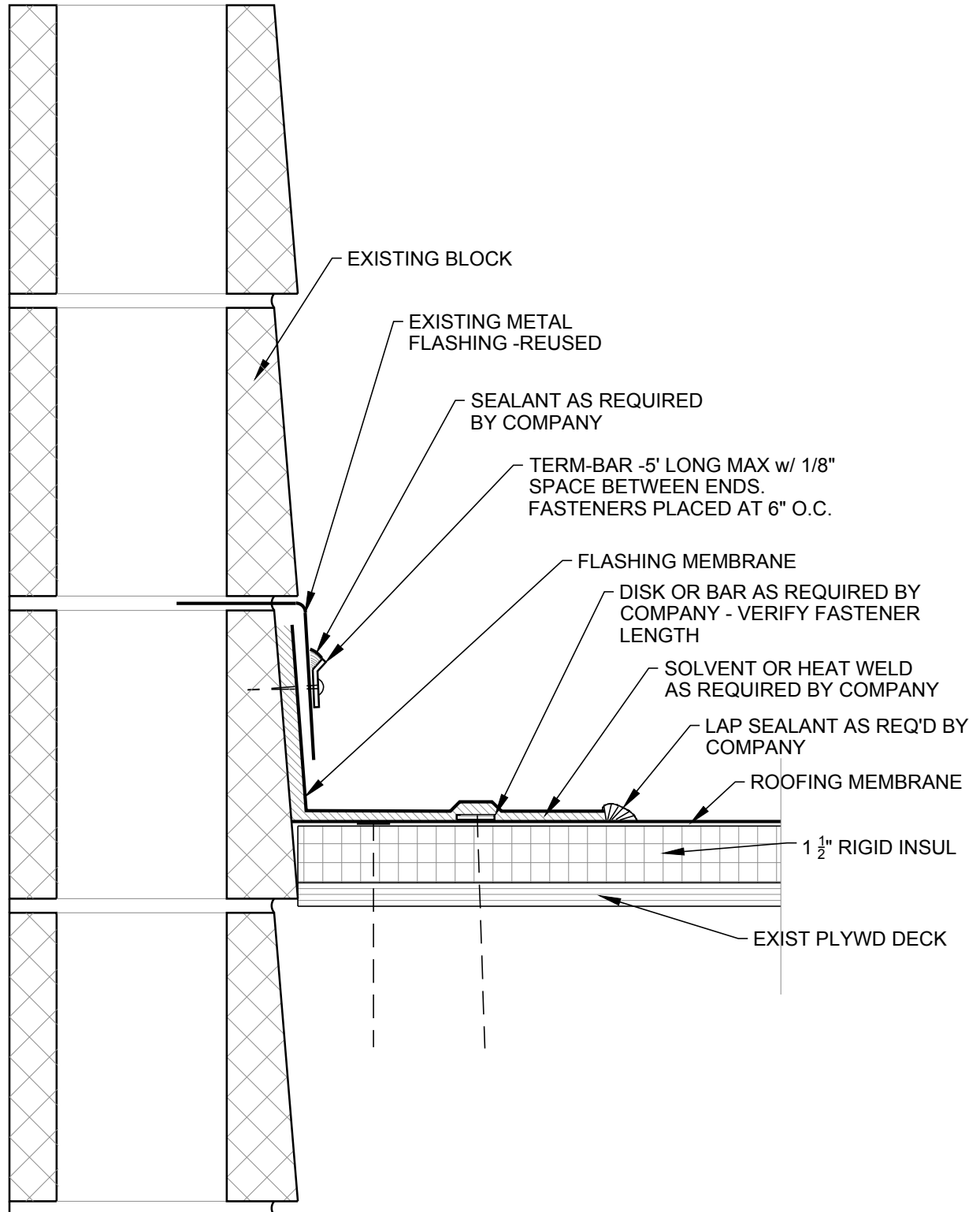






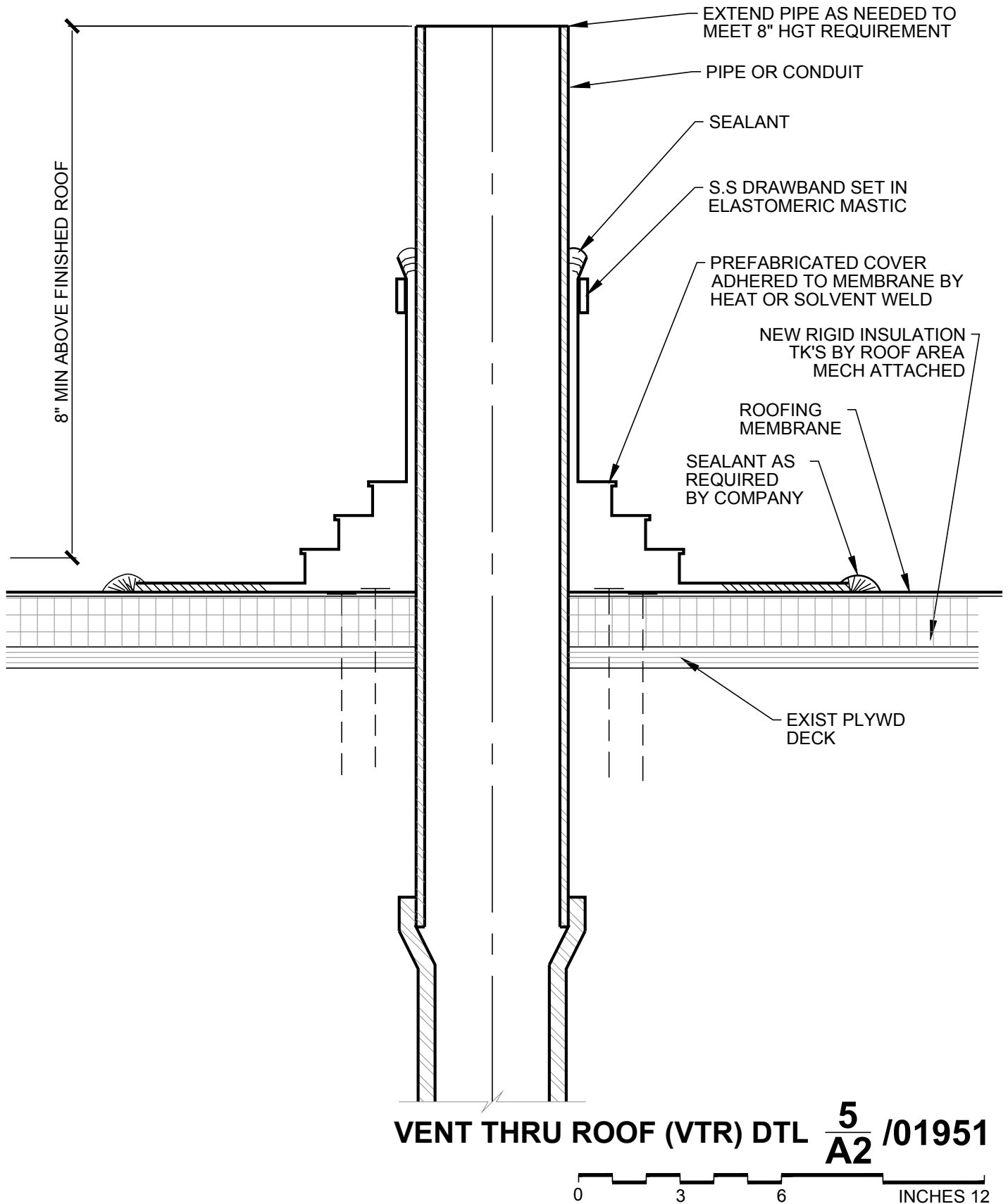


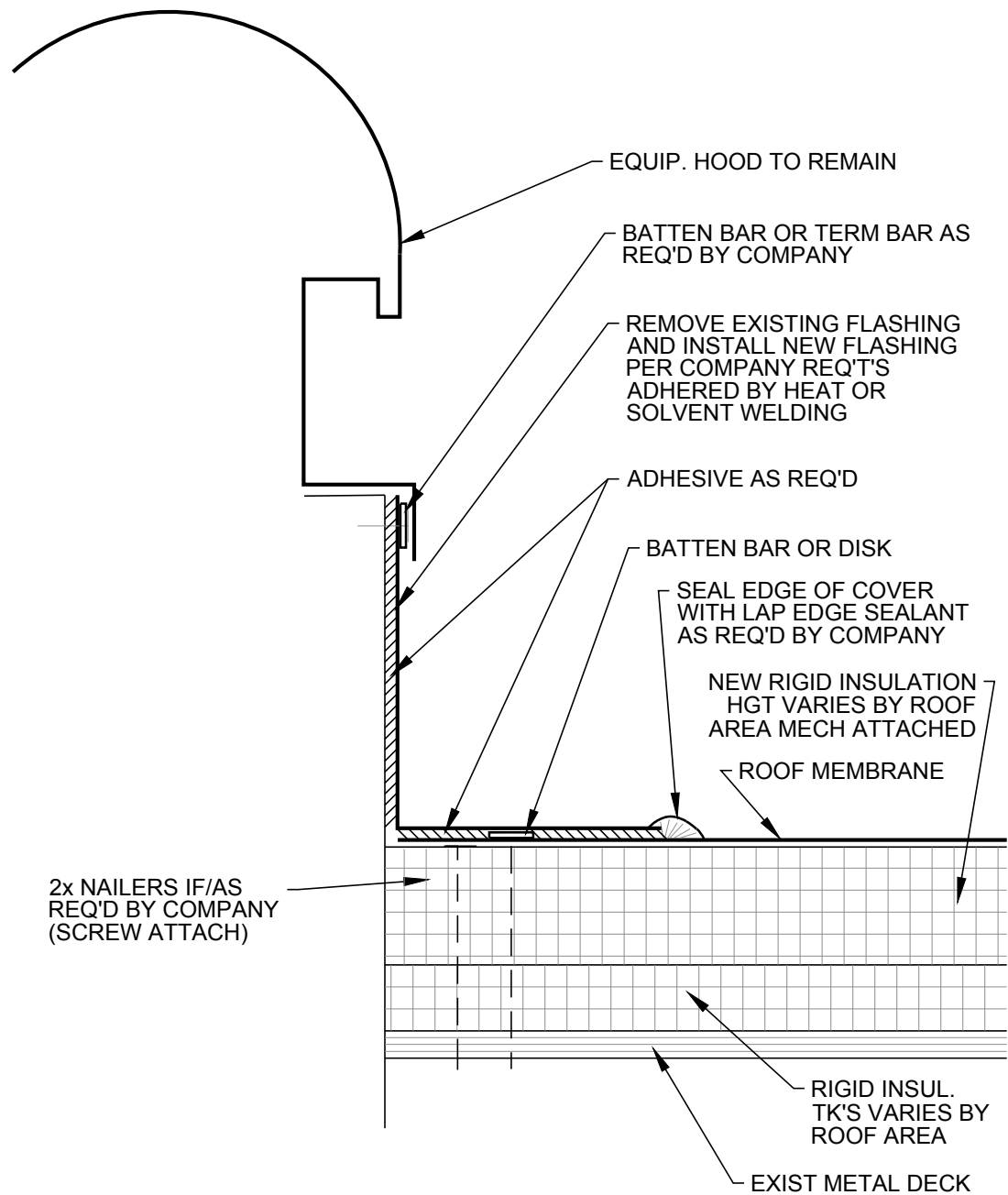




WALL FLASHING DTL **4**
A2 /01951

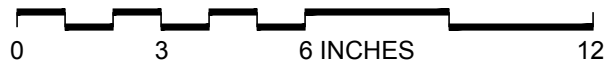
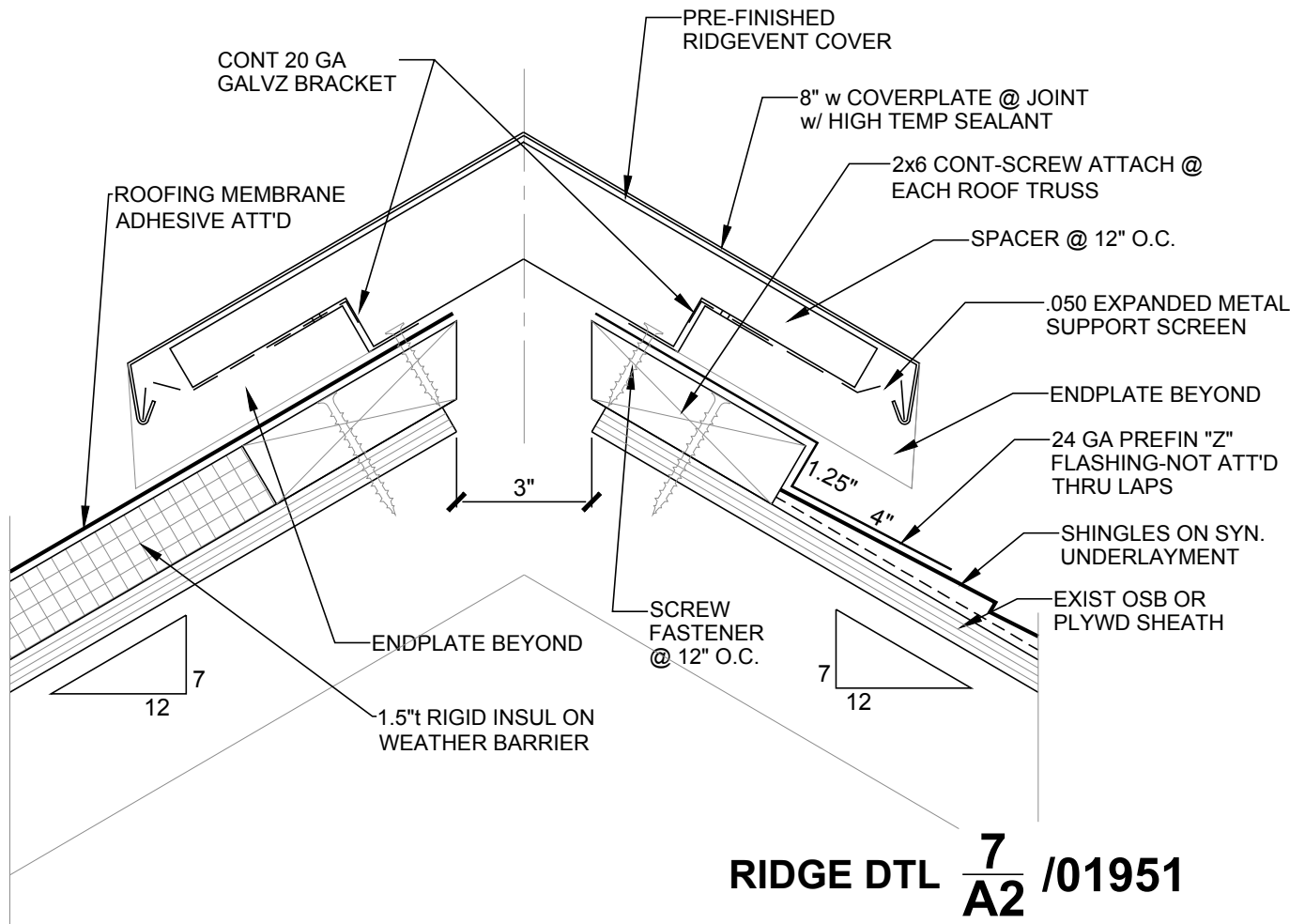
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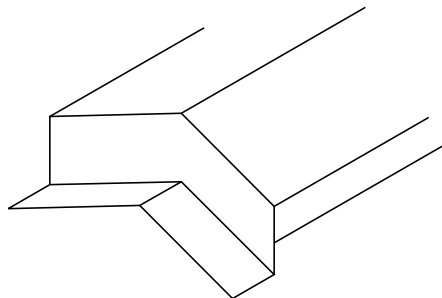


EQUIPMENT CURB DTL **6** /01951
A2

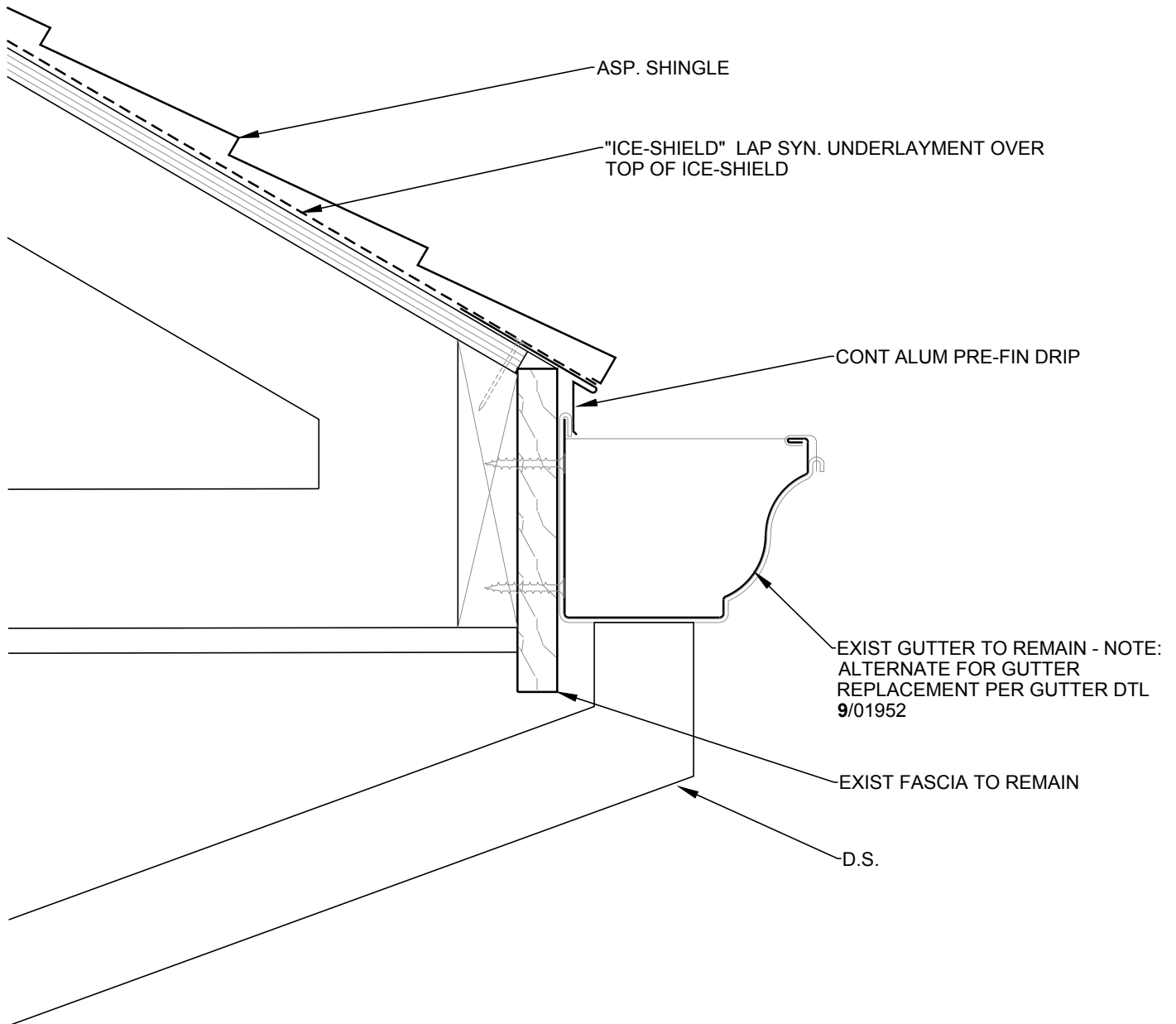
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NOTE:
RIDGE VENT BASED ON METAL-ERA "HI-PERF
RIDGE VENT (OR PRIOR APPROVED EQUAL)

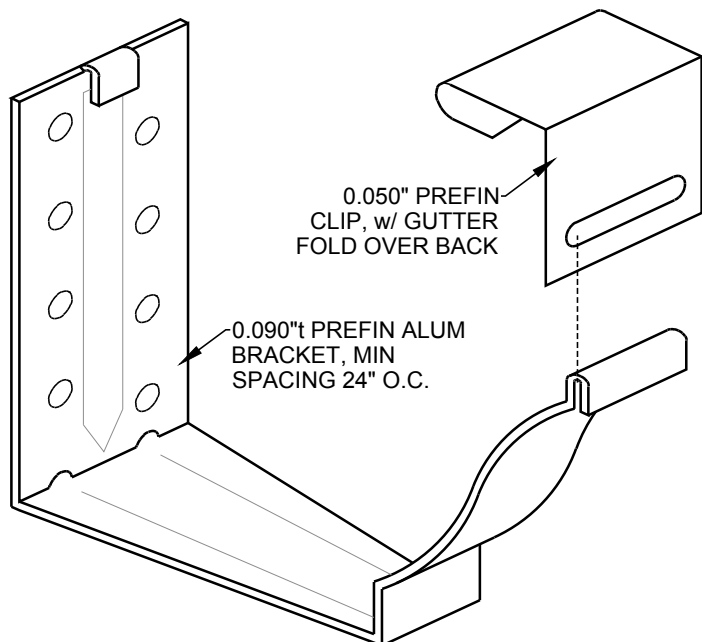


**STYLE B
ENDCAP**

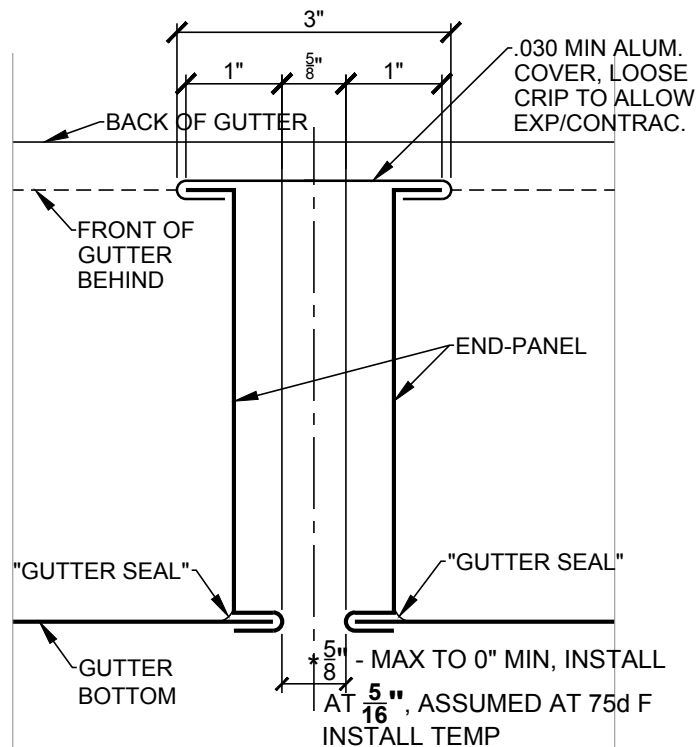


FASCIA/DRIP EDGE DTL **8**
A2 /01951

0 3 6 INCHES 12



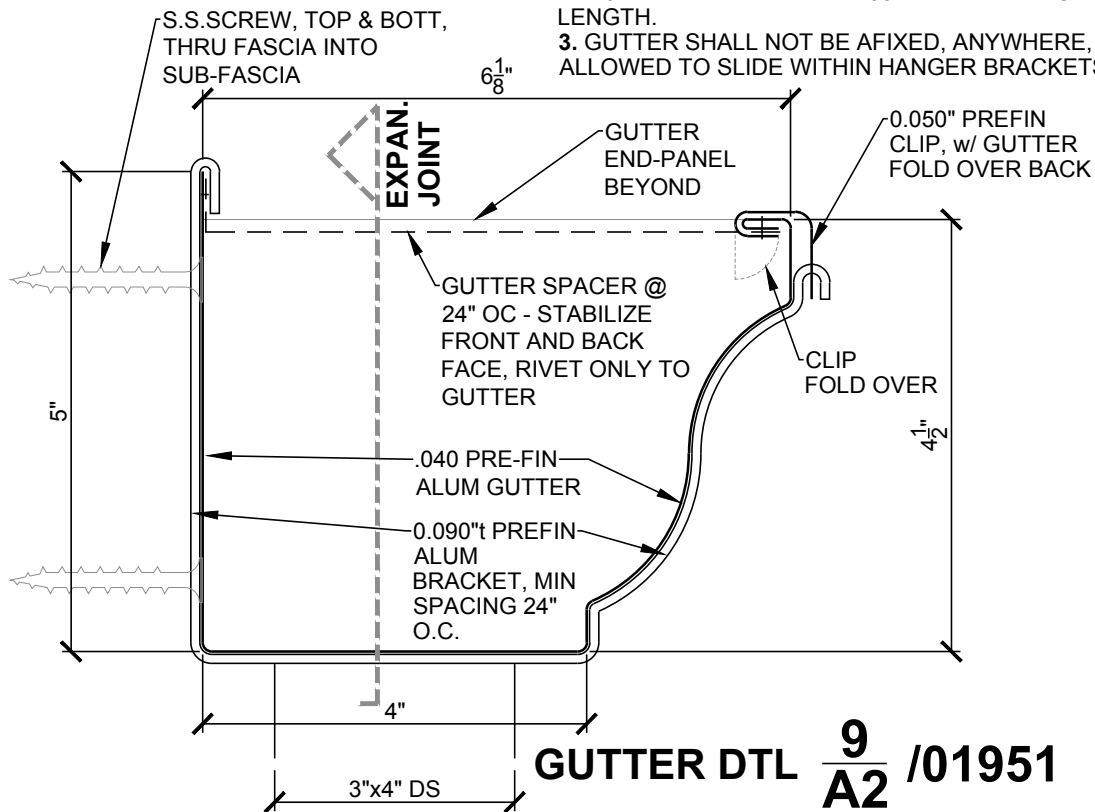
ISOMETRIC VIEW OF GUTTER BRACKET & CLIP



EXPANSION JOINT DTL

NOTE:

1. GUTTER EXPANSION JOINTS AT 30' MAX. O.C..
2. THERMAL EXPANSION IN ALUMINUM LENGTH BETWEEN WINTER MIN TO SUMMER MAX EQUALS 2.176" DIFFERENTIAL PER 100 LINEAR FEET OF LENGTH.
3. GUTTER SHALL NOT BE AFIXED, ANYWHERE, BUT ALLOWED TO SLIDE WITHIN HANGER BRACKETS.



GUTTER DTL 9/A2 /01951

0 1" 2 3 4 INCHES 6

**SECTION 02072 - MINOR DEMOLITION
(Roofing Removal)**

PART 1- GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Removal and disposal of existing asphalt shingles, underlayment, membrane roofing, miscellaneous metal fabrications, gutters and deteriorated framing.

1.2 PROJECT CONDITIONS

- A. Occupancy:
 - 1. The Tenant will continue to occupy the existing buildings.
- B. Existing Conditions:
 - 1. After the project is begun, the Contractor is responsible for the condition of structures.
- C. Unforeseen Conditions: Should unforeseen conditions be encountered that affect design or function of project, investigate fully and submit an accurate, detailed, written report to the architect. While awaiting the Architect's response, reschedule operations if necessary to avoid delay of overall project.

PART 2- PRODUCTS (NOT USED)

PART 3- EXECUTION

3.1 EXAMINATION

- A. Insofar as is practicable, arrange operations to reveal unknown or concealed conditions for examination and verification before removal or demolition.

3.2 PREPARATION

- A. Protection:
 - 1. Provide protective measures to ensure free and safe passage of persons to and from occupied areas.
 - 2. Erect temporary protection such as walks, fences, railings, canopies, etc., where and as required by authorities having jurisdiction.

3.3 DEMOLITION - GENERAL

- A. Remove: Unless items are otherwise indicated to be reinstalled or salvaged, remove and scrap.
- B. Remove and Install New: Remove and dispose of items indicated and install new items in the same location (or in the location indicated).
- C. Perform work in a systematic manner.
- D. Remove existing construction only to the extent required by new construction and as indicated in the contract documents.
- E. Perform selective demolition using methods which are least likely to damage work to remain and which will provide proper surfaces for reroofing.

- F. Remove debris daily.
- G. Use any methods permitted by governing regulations and the requirements of the contract documents.

3.4 DISPOSAL OF DEMOLISHED MATERIALS

- A. Promptly dispose of materials resulting from demolition operations. Do not allow materials to accumulate on site.
- B. Transport materials resulting from demolition operations and legally dispose of off-site.

3.5 CLEANING

- A. Remove tools and equipment. Dispose of scrap.
- B. Broom clean walkway areas.
- C. Leave exterior areas free of debris.
- D. Clean soil, smudges, and dust from surfaces to remain.

END OF SECTION 02072

SECTION 06100 - CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Plywood Sheathing (decking)
 - 2. Re-Roofing wood nailers 2x4.
 - 3. Rough carpentry for:
 - a. Miscellaneous lumber for attachment and support of other work, **Blocking**, if needed, to replace any possible deteriorated existing blocking.

1.2 DEFINITIONS

- A. Exposed: Wood products that will be exposed to view when work is completed, with or without a paint or stain finish.

1.3 QUALITY ASSURANCE

- A. Lumber: Comply with NIST PS 20 and approved grading rules and inspection agencies.
- B. Inspection Agencies:
 - 1. WWPA: Western Wood Products Association.
- C. Grade Stamps for Concealed Lumber: Each piece of lumber, applied by inspection agency and showing compliance with each specified requirement.

1.4 DELIVERY STORAGE AND HANDLING

- A. Protect wood products against moisture and dimensional changes. Support stacks at several uniformly spaced points to prevent deformation. Store stacks raised above ground. Cover to protect from rain and snow. Select and arrange cover to allow air circulation under and all around stacks to prevent condensation. Maintain and restore displaced coverings. Remove from the site any wood products that have been subjected to moisture or that do not comply with the specified moisture requirements.

PART 2 - PRODUCTS

2.1 CONCEALED BOARDS - LESS THAN 2 INCHES THICKNESS (Blocking &/or Framing)

- A. Moisture Content: Kiln-dry (15 percent maximum).
- B. Surfacing: S4S.

2.2 Grading Agency:

- A. WWPA.
- B. Species:
 - 1. Douglas Fir-Larch.
 - 2. Douglas Fir (South).
 - 3. Hem-Fir.
- C. Grade: No. 1, 1 common, or select merchantable boards.

2.3 Roof Sheathing:

- A. 5/8 inch thick span rated for 24 inch framing Plywood matching existing. (Replacement sheathing where deteriorated sheathing is encountered. If sheathing is determined to be another thickness; consult Architect and adjust accordingly.

2.4 MISCELLANEOUS MATERIALS

- A. Fasteners: Provide as required by applicable codes and as otherwise indicated.

PART 3 - EXECUTION

3.1 INSTALLATION - GENERAL

- A. Arrange work to use full length pieces except where lengths would exceed commercially available lengths. Discard pieces with defects that would lower the required strength or appearance of the work.
- B. Cut and fit members accurately. Install plumb and true to line and level.
- C. Fasten carpentry in accordance with applicable codes and recognized standards.
- D. Use fasteners of appropriate type and length. Pre-drill members when necessary to avoid splitting wood.

3.2 MISCELLANEOUS CARPENTRY

- A. Provide miscellaneous blocking, nailers, grounds, and framing as shown and as required for support of facing materials, fixtures, specialty items, and trim. Cut and shape to the required size. Provide in locations required by other work.
- B. Use countersunk fasteners appropriate to applied loading.

End of Section 06100

SECTION 07312 - ASPHALT SHINGLE ROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Asphalt shingles, granular surfaced, laminated, "Architectural " style and accessories for structures with attic spaces.

1.2 RELATED SECTIONS

- A. Section 07635 - Gutters Flashings and Trim.
- B. Section 07921 - Sloped Ventilation (Ridge Vents & Flash Vents)

1.3 REFERENCES

- A. Flashing, ASTM International (ASTM):
 - 1. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- B. Roofing Cement, ASTM International (ASTM):
 - 1. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
- C. Fasteners, ASTM International (ASTM):
 - 1. ASTM F 1667 - Specification for Driven Fasteners, Nails, Spikes and Staples, Type I, Style 20
- D. E. Shingles, ASTM International (ASTM):
 - 1. ASTM D 3018 - Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules.
 - 2. ASTM D 3161 - Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method).
 - 3. ASTM D 7158/D 7158M-11 - Standard Test Method for Wind Resistance of Asphalt Shingles (Uplift Force/Uplift Resistance Method).
 - 4. ASTM D 3462 - Standard Specification for Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules.
 - 5. ASTM E 108 - 11 - Standard Test Methods for Fire Tests of Roof Coverings (ULC S107).
- E. Asphalt Roofing Manufacturers Association (ARMA)
- F. FM Class Number 4473 Specification Test Standard for Impact Resistance Testing of Rigid Roofing Materials by Impacting with Freezer Ice Balls.
- G. National Roofing Contractors Association (NRCA).

1.4 SUBMITTALS

- A. Submit under provisions of Section 01
- B. Product Data: Manufacturer's data sheets, including product characteristics, performance criteria, on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods
- C. Selection Samples: For each finish product specified, one complete sets of color chips representing manufacturer's full range of available colors and patterns.

1. Submit samples of full-sized shingles to match finish and profile for each type of roofing shingle to be used on the Project.

1.5 REGULATORY REQUIREMENTS

- A. Provide a roofing system achieving an ASTM E 108 Class A fire classification.
- B. Ensure that materials and fastening methods meet requirements of jurisdictional authorities. The Installer shall be licensed or otherwise authorized to install roofing in the jurisdiction the work is to be performed in.
- C. Install all roofing products in accordance with all Federal, Provisional, State and local building codes.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
- B. Provide all primary roofing products including shingles, underlayment, and leak barrier by a single manufacturer.
- C. Installer Qualifications: Where required for extended limited warranty coverage, the installer shall be approved or otherwise authorized to install all roofing products to be installed on this project. Work is to be executed only by those skilled to perform it expeditiously and who has been responsible for satisfactory installations similar to that specified during a period of at least the immediate past three years.
- D. Mock-Up Demonstration: Provide a mock-up for evaluation of surface preparation techniques and application for installation of system to be installed.
 1. Do not proceed with remaining work until workmanship and pattern are approved by Architect or equivalent.
 2. Rework Mock-Up area as required to produce acceptable work.
- E. Source: Primary roofing products, including shingles, underlayment, and ice and dam protection shall be supplied by a single manufacturer.

1.7 PRE-INSTALLATION MEETINGS

- A. Topics: The installer and Owner's representative shall review all pertinent requirements for the project, including but not limited to, scheduling, weather considerations, project duration, product availability, and requirements for the specified warranty.
- B. Agenda will include:
 1. Installation procedures and manufacturer's recommendations.
 2. Coordination with installation of other work.
 3. Availability of roofing materials.
 4. Preparation and approval of substrate and penetrations through roof.
 5. Other items related to successful execution of work.
 - a. Materials: Assemble materials to build a 4 foot by 8 foot roof Mock-Up Panel.
 - b. 4' x 4' x 1/2" OSB or Plywood Panel (not thickness of sheathing required if deteriorated sheathing is encountered during re-roofing)
 - c. 2 x 6 x 4' edge to demonstrate wall flashing condition.
 - d. Ice Dam membrane
 - e. Shingle starter strip, 8lf min
 - f. Underlayment
 - g. Metal drip edge strip
 - h. Fasteners (nails)
 - i. Flashing Boots (VTR)
 - j. Step flashing

- k. Plastic asphalt cement (caulking tube)

1.8 DELIVERY, STORAGE, AND HANDLING

- A. All materials shall arrive on site with their original containers or wrappings carrying the manufacturer's seals and labels intact. Store materials at least 100 mm (4 inches) off the ground or roof deck and be contained in the manufacturer's unopened and labeled packaging until they are ready for installation. Packing is to have the manufacture's name, product brand name, and standards pertaining thereof.
- B. Store products in a covered, ventilated area.
- C. Store bundles on a flat surface. Maximum stacking height shall not exceed manufacturer's recommendations. Store all rolls on end.

1.9 PROJECT CONDITIONS

- A. Apply each part of the roofing system only when surfaces are clean and dry.
- B. Cover walls and other surfaces in the vicinity of hoisting apparatus (when used) with heavy canvas or other suitable protective material. Any damage caused shall be repaired to match the original materials and appearance at no cost to the Owner.
- C. Conduct operations to leave deck exposed for the minimum period of time. Protect the work area as required to prevent water infiltration or environmental damage to building interior.
- D. Material shall be neatly stored, elevated, and protected from damage due to wetness or freezing.
- E. Maintain one copy of manufacturers' application instructions at the Project site.
- F. Weather Conditions:
 - 1. Proceed with work only when existing and forecasted weather conditions will permit work to be performed as recommended by manufacturer.
 - 2. When application conditions might limit the effectiveness of the sealing strip, such as in cool weather or in areas subject to high winds or blowing dust, shingle adherence shall be ensured through manual sealing.

1.10 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.11 WARRANTY SUPPLEMENT

- A. In addition to manufacturer's standard warranty the following supplements modify the warranty provisions.
- B. Provide manufacturer's supplemental warranty to cover labor and materials in the event of a material defect for the following period after completion of application of shingles:
 - 1. First 15 Years (Limited Lifetime Warranty) for selected products.
 - 2. Extended Warranty Protection.
 - 3. Upgraded Wind Warranty from 110 to 130 mph (by complying with all manufacturers' conditions and instructions).
 - 4. Warranty Transferability Clause: Make available to the Owner, manufacturer's standard supplemental warranty for transferring warranty to a new owner.
 - 5. Contractor's 3 year installation (labor) warranty.

1.12 MAINTENANCE

- A. Extra Materials:
 - 1. Provide one square of shingles for Owners storage.
 - 2. Consult Owner for storage location.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. IKO Manufacturing; (www.iko.com).
 - 2. Certainteed Corp (www.certainteed.com)
 - 3. GAF Materials Corp (www.gaf.com)
 - 4. Owens Corning (www.owenscorning.com)
 - 5. Tamko Roofing Products, Inc (www.tamko.com)
- B. Substitutions: Under provisions of Division 01

2.2 SHINGLES

- A. Shingles: Cambridge as manufactured by IKO Manufacturing (used as basis of design).
 - 1. Type: Architectural
 - 2. Exposure: 5-7/8 inches (152 mm).
 - 3. FM Class No. 4473, Class 4. (Cambridge IR).
 - 4. Limited 10-Year Algae Resistant Warranty.
 - 5. Limited wind warranty coverage up to: 110 mph.
 - 6. Color: As selected by Architect from manufacturer's color range available in the location of the Project.

2.3 HIP AND RIDGE SHINGLES

- A. Product: Hip & Ridge 12 Ridge Cap Shingles: A high profile self-sealing hip and ridge cap shingle matching the color of selected roof shingle. Each bundle covers approximately 33 lineal feet (10 linear meters).

2.4 ICE & WATER PROTECTOR

- A. Product: Self-adhering, self-sealing, bituminous sheet with advanced flexibility, slip resistant surface meeting ASTM D 1970. Each roll contains approx. 200 sq. ft. (36 inches by 66.7 feet) (18.6 sq. m) (914 mm x 20.3 m). Each roll is backed by a silicone treated release film for easier installation.

2.5 SHINGLE UNDERLAYMENT

- A. Product: Synthetic Underlayment: ASTM D4869 (Dupont "RoofLiner).

2.6 ROOFING CEMENT

- A. Product: Asphalt Plastic Roofing Cement meeting the requirements of ASTM D 4586, Type I or II.

2.7 ATTIC VENTILATION

- A. Ridge ventilator designed to allow the passage of air out of attics. For use in conjunction with eave/ soffit intake ventilation products. Roof ventilation shall be installed as instructed from the architectural drawings.
 - 1. See Section 07929 - Sloped Ventilation for Ridge Vent and Flash Vent.

2.8 NAILS/FASTENERS

- A. Product: Standard round wire, zinc-coated steel meeting local building codes.
- B. Product: Pneumatic driven fastening is not be allowed.

2.9 METAL FLASHING

- A. See other sections.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until the roof deck has been properly prepared.

3.2 APPLICATION

- A. Follow manufacturer's application instructions in conjunction with manufacturer's reference standards and in accordance with local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
- B. Install ice dam protection underlayment directly on plywood at all eaves, ridges, hips and roof edges as well as at all penetrations, abutments, and to vertical walls as instructed. Apply 1-ply of underlayment over the entire remaining deck surface, except where Ice & Water protector membrane has been installed.

3.3 PREPARATION

- A. Remove all existing roofing down to the roof deck.
- B. Verify that the deck is dry, sound, clean, and smooth. It shall be free of any depressions, waves, and/or projections. Cover with sheet metal, all holes over 25 mm (1 inch) in diameter, cracks over 12 mm (1/2 inch) in width, loose knots, and excessively resinous areas.
- C. Replace damaged deck with new materials after consultation with Architect.
- D. Clean deck surfaces thoroughly prior to installation of Ice & Water protector membranes used for eaves protection and before installation of underlayment.

3.4 PREPARATION

- A. Clean deck surfaces thoroughly prior to installation of Ice & Water protector membranes used for eaves protection and before installation of underlayment.
- B. At areas that receive Ice & Water protector membrane, fill knotholes and cracks with latex filler.
- C. Install crickets on the upslope side of "stair tower" wall as drawn.

3.5 INSTALLATION OF UNDERLAYMENTS

- A. General:
 - 1. Install using methods recommended and in accordance with local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
 - 2. Install an ice dam protection underlayment of self-adhesive membrane directly on to the plywood at all eaves and roof edges as well as at all penetrations, abutments, and to

vertical walls. Add one ply of underlayment over the entire deck surface, except where Ice & Water protector membrane has been installed.

B. Eaves:

1. Install eave protection using methods recommended and in accordance with local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
2. Install eaves edge metal flashing tight with fascia boards; lap joints 51 mm (2 inches) and seal with plastic cement; nail at the top of the flange.
3. Base flashing shall be in place before shingles are applied. Cap flashings of sheet metal and base flashing of metal or mineral surfaced roofing shall be used at chimneys, skylights, vents, walls and other vertical surfaces and sealed with asphalt plastic cement. Flashing shall conform to the requirements of applicable building codes and good roofing practice.
4. Overhang eaves with underlayment by a nominal 6 mm (1/4 inch) minimum and extending up the roof at least 600 mm (24 inches) beyond the interior wall line.

C. Valleys:

1. Install eaves protection at least 914 mm (36 inches) wide and centered on the valley. Lap ends 152 mm (6 inches) and seal.

D. Roof Deck:

1. Replace any deteriorated roof deck / sheathing if encountered under allowance and unit price specification scenario.

E. Penetrations:

1. Vent pipes: Install a 24 inches square piece of Ice & Water protector membrane lapping over roof deck underlayment; seal tightly to pipe.
2. Vertical walls: Install Ice & Water protector membrane for eaves protection extending at least 152 mm (6 inches) up the wall and 305 mm (12 inches) on to the roof surface. Lap the Ice & Water protector membrane over the roof deck underlayment. Sheet metal flashing along the slopes of roof shall be stepped with a minimum of 76 mm (3 inches) head lap in both lower flashing and counter flashing. Where roof slopes downward from wall, flashing shall extend over shingles. Where a roof slopes upward from the wall, flashing shall extend up the slope under the shingles to a point equal in height of 400 mm (15-3/4 inches) to the flashing on masonry. Counter flashing shall be embedded approximately 25 mm (1 inch) into the wall with turn back water stop.

F. Rake Edges:

1. Install metal edge flashing over the Ice & Water protector membrane and roof deck underlayment; set tight to rake boards; lap joints at least 52 mm (2 inches) and seal with plastic cement; secure with nails.

3.6 INSTALLATION OF SHINGLES

A. General:

1. Install in accordance with manufacturer's instructions and local building codes in conjunction with reference standards.
2. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
3. Minimize breakage of shingles in cold weather (below 4 degrees C or 40 degrees F) by avoiding dropping bundles on edge or by "breaking bundles" over the roof ridge or other bundles. Separating shingles carefully, taking extra precautions in colder temperatures.
4. Handle shingles carefully in hot weather to avoid scuffing the surfacing or damaging the shingle edges.

B. Placement and Nailing:

1. Use galvanized (zinc coated) roofing nails, 11 or 12 gauge, with at least 10 mm (3/8 inches) diameter heads, long enough to penetrate through plywood.

2. Use number of nails as prescribed by manufacturer per shingle placed in the nail line per manufacturer's instructions and local codes. Placement of nails varies based on the type of shingle specified, roof slope, and other environmental considerations. Consult the manufacturer's application instructions for the specified shingle for details.
3. Drive nails straight so that nail head is flush with, but not cutting into shingle surface. Do not overdrive or under drive the nails.
4. Shingle offset varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.

C. Valleys:

1. Install valleys using the "open metal valley" method:
 - a. Snap diverging chalk lines on the metal flashing, starting at 76 mm (3 inches) each side of top of valley, spreading at 3 mm per 300 mm (1/8 inch per foot) to the eaves.
 - b. Run shingles to chalk line.
 - c. Trim last shingle in each course to match the chalk line; do not trim shingles to less than 300 mm (12 inches) wide.
 - d. Cut a 50 mm (2 inches) triangle off the top corner to direct water into the valley and embed the valley end of each shingle into a 75 mm (3 inches) band of asphalt plastic cement.
 - e. Apply a 50 mm (2 inches) wide strip of plastic cement under ends of shingles, sealing them to the metal flashing.

D. Penetrations

1. All penetrations are to be flashed according to Asphalt Roofing Manufacturers Association (ARMA), and/or National Roofing Contractors Association (NRCA) guidelines to meet local building codes.

3.7 VENTILATION

A. General:

1. Ridge:
 - a. Cut continuous vent slots through the sheathing, stopping 18 inches from each end of the ridge.
 - b. Install ridge vent material along the full length of the ridge, including uncut areas, per section 07929 Sloped Ventilation.

3.8 PROTECTION

- A. Protect installed products from foot traffic until completion of the project.
- B. Any roof areas that are not completed by the end of the workday are to be protected from moisture and contaminants.

3.9 EXTRA SHINGLE STORAGE

- A. Consult Owner representative for location and then store the shingles accordingly.

END OF SECTION

SECTION 07533 - SINGLE PLY PVC-KEE ROOFING

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 the following:
 - 1. Removal of existing roofing layers down to existing metal deck.
 - 2. Adhesively fastened Copolymer **[PVC-KEE]** sheet roofing.
 - 3. Roof insulation board mechanically fastened.
 - 4. Accessories including (condenser unit) rail curbs.
 - 5. Wall flashing.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Install sheet membrane roofing and base flashing that are watertight; will not permit the passage of liquid water; and will withstand wind loads, thermally induced movement, and exposure to weather without failure.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing system manufacturer based on testing and field experience.
- C. FM Listing: Provide roofing system and that meets equivalent FM **Windstorm Classification: Class 1-120** for wind uplift restraint, and Edge Fascia uplift restraint for 120 mph winds.

1.4 SUBMITTALS

- A. Product Data: For each type of roofing product specified. Include data substantiating that materials comply with requirements.
 - 1. Roofing System: Submittal required.
 - 2. Insulation System: Flat stock and tapered, Submittal required.
 - 3. Fascia Edge Metal: Submittal required.
- B. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install specified roofing system.
- C. Warranty: **Attach to Bid** as Attachment a sample copy of **standard roofing system manufacturer's warranty stating obligations, remedies, limitations, and exclusions of warranty**.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer to perform work of this Section who has specialized in installing roofing similar to that required for this Project and who is approved, authorized, or licensed by the roofing system manufacturer to install manufacturer's product.
- B. Preinstallation Conference: Before installing roofing system, conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings." Notify participants at least 5 working days before conference.
 - 1. Meet with Owner; Architect; Owner's insurer, if applicable; roofing Installer; roofing system manufacturer's representative; deck installer, if applicable; and installers whose

- work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 3. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 4. Review loading limitations of deck during and after roofing.
 5. Review flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing.
 6. Review governing regulations and requirements for insurance, certificates, and inspection and testing, if applicable.
 7. Review temporary protection requirements for roofing system during and after installation.
 8. Review roof observation and repair procedures after roofing installation.
 9. Review site setup location for material storage, dumpster placement, vehicle parking, and school hours for drop-off and pick-up for non-interference.
 10. Document proceedings, including corrective measures or actions required, and furnish copy of record to each participant.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid materials from direct sunlight.
 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.7 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.

1.8 WARRANTY

- A. General Warranty: The warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Standard Roofing Manufacturer's Warranty: Submit a written warranty, without monetary limitation, signed by roofing system manufacturer agreeing to promptly repair leaks resulting from defects in materials or workmanship for the following warranty period:
 1. **Warranty Period: 20 years.**
 2. Copies of the sample warranty to be attached to Bid as a required Submittal.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, Roofing Systems Companies (manufacturers) offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Polyester Reinforced Proprietary Polymeric Compound Thermoplastic Sheet Membrane:
 - a. Carlisle Syntec (KEE PVC) Systems.
 - b. Duro-Last (Duro-last EV)[KEE] Roofing.
 - c. Flex Roofing (Evaloy) Systems.
 - d. GAF "Everguard PVC XK with Evaloy" System.
 - e. Johns Manville (Evaloy) Tri-Polymer Membrane System.
 - f. Soprema, USA "Flagon PVC (Evaloy) Membrane System.
 - g. Versico (Versiflex-E KEE HP) Roofing Systems.
- B. Acceptable Alternate Roofing Systems Companies:
 - 1. Fibertite by Seaman Corporation
 - 2. Bond Cote "Series 600 E Plus" Membrane Mechanically Attached System by Bondcote Roofing Systems
 - 3. Any other company private labeling the Cooley C3 Membrane and system, will be considered for approval prior to Bidding.

2.2 COMPOUNDED THERMOPLASTIC SHEET

- A. Compounded Thermoplastic Sheet: Uniform, polyester-reinforced flexible sheet compounded from not less than 50 percent PVC resins and plasticizers, stabilizers, fillers, and pigments, of the following material, thickness, backing, exposed face color, and physical properties, containing **"Dupont Evaloy"** alloy plasticizer:
 - 1. Sheet Material: Copolymer of **Polyvinyl Chloride and Evaloy**.
 - 2. Sheet Thickness: nominal **60 mils**, minimum 57.
 - 3. Backing: No backing.
 - 4. Exposed Face Color: **White**.
 - 5. Physical Properties: Provide compounded thermoplastic sheets with the following properties as determined per ASTM test method indicated:
 - a. Breaking Strength: 275 lbf/in. 48 kN/m; ASTM D751, Procedure A.
 - b. Elongation at Break: 25 percent; ASTM D 751.
 - c. Tearing Strength: 90 lbf/400 N minimum; ASTM D 751, Procedure B.
 - d. Seam Strength: 75 percent, minimum, of breaking strength of unseamed sample; ASTM D 751, Procedure B.
 - e. Resistance to Heat Aging: 90 percent retention of breaking strength and elongation at break after 56 days at 176 deg F/80 deg C or after 28 days at 185 deg F/85 deg C; ASTM D 3045.
 - f. Low-Temperature Bend: Pass at minus 40 deg F minus 40 deg C; ASTM D 2136.
 - g. Accelerated Weathering Test: No cracking or crazing after 5000 hours; ASTM D 4434.
 - h. Linear Dimension Change: 0.5 percent maximum after 6 hours at 176 deg F/80 deg C; ASTM D 1204.
 - i. Water Absorption: Less than 3 percent mass change after 168 hours' immersion at 158 deg F/70 deg C; ASTM D 570.

2.3 AUXILIARY MATERIALS

- A. General: Furnish auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing material.
 - 1. Furnish liquid-type auxiliary materials that meet VOC limits of authorities having jurisdiction.

- B. Sheet Flashing: Manufacturer's standard copolymer coated sheet flashing of same material, type, thickness, and color as sheet copolymer membrane.
- C. Bonding Adhesive: Manufacturer's standard bonding adhesive.
- D. Slip Sheet: Manufacturer's as / if required, recommended slip sheet, of type required for application.
- E. Snap-On Fascia Edge system: Olympic (OMG) or prior approved equal, Aluminum cap material, 0.040", color to be selected from Manufacturer Prefinished Kynarr 500 finish, with Aluminum Retainer cleat, 0.050" aluminum, with stainless steel attachment screws.
- F. Metal Termination Bars: Manufacturer's standard aluminum bars, approximately 1 inch 25 mm wide, roll formed and prepunched.
- G. Metal Battens: Manufacturer's standard aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch 25 mm wide by 0.05 inch .3 mm thick, prepunched. Disk in lieu of battens are acceptable, provided uplift characteristics are maintained.
- H. 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.
- I. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, seam calk, termination reglets, and other accessories recommended by roofing system manufacturer for intended use.

2.4 INSULATION / RECOVERY BOARD MATERIALS

- A. Provide manufacturer's standard preformed insulation units, sized for proper fit in indicated applications.
- B. **Insulation A:** Polyisocyanurate Board Insulation or other as required by Roof Manufacturer: Manufactured from glass-fiber-reinforced (faced) polyisocyanurate foam:
 - 1. As suitable and acceptable to Single Ply Membrane Manufacturer.
 - 2. Comply with FS HH-I-1972/1, Type 1, Class 2 requirements.
 - 3. Facings: Laminated facings to each side of boards, suitable for membrane system.
 - 4. Aged r-values (per inch): - (Long Term Thermal Resistance (LTTR) 15 Year time weighted average value)
 - a. **R =5.6 per inch** assumed and used by Architect for all R Value calculations.
 - 5. Thickness: **Tapered and Uniform Thickness** per drawings
- C. **Drain Sump** "featherable" on-site insulation suitable and acceptable to membrane manufacturer, per drawings to meet a minimum 48" x 48" insul "sump bowl".

2.5 INSULATION ACCESSORIES

- A. General: Furnish roof insulation accessories recommended by insulation manufacturer for intended use and compatible with sheet roofing material.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions of FM 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.

2.6 OTHER ACCESSORIES

- A. Equipment Support Curb Rails:

1. Pre-fabricated galvanized 18 gage steel construction with internal reinforcing, mitered & welded corners and joints, integral base plate, 2X4 wood nailer, with metal counter-flashing cap; with base plate to fit existing roof slope, as drawn.
 - a. Curb design as drawn based upon "THE PATE COMPANY", ES-2 model curb.

PART 3- EXECUTION

3.1 EXAMINATION

- 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.

3.2 PREPARATION

- A. **Owner Occupancy:** Owner shall maintain use of building during the construction period and children will be present on site.
- B. Removal and Disposal: Remove asphalt roofing and existing PVC-KEE membrane down to existing plysd deck; and dispose of appropriately. Pay all fees associated with disposal.
- C. Clean substrate of dust, debris, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- D. Temporarily install roof drain plugs to 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.
- E. 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.

3.3 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 tapered insulation under area of roofing to conform to slopes indicated and to Shop Drawings.
- D. Install insulation under area of roofing membrane to achieve required thickness. Where overall insulation thickness is 2 inches 50 mm or greater, install required thickness in 2 or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches 150 mm in each direction.
- E. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.

- F. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch 6 mm with insulation.
 - 1. Cut and fit insulation within 1/4 inch 6 mm of nailers, projections, and penetrations.
- G. Attach (mechanically) Insulation: Install each layer of insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type indicated.
 - 1. Fasten insulation according to requirements of FM's "Approval Guide" for specified Windstorm Resistance Classification and the insulation and roofing system manufacturers' written instructions. Note: earlier paragraph regarding differing uplift requirements for school and gymnasium.
 - 2. Fasten insulation according to the insulation and roofing system manufacturers' written instructions to meet specified wind-uplift requirements, but not less than 1 fastener for each 4 sq. ft. 0.38 sq. m and at least 5 fasteners per board.
 - 3. Fasten insulation according to the insulation and roofing system manufacturers' written instructions.
- H. Attach (adhesively) insulation: Install each layer of insulation and secure to deck using full spray or beads with spacing as specified by the manufacturer.

3.4 MECHANICALLY FASTENED SHEET MEMBRANE INSTALLATION

- A. Install thermoplastic 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.
 - 1. Install sheet according to ASTM D 5082.
- B. Sweep and clean loose debris from the deck / substrate.
- C. Start installation of sheet in presence of roofing system manufacturer's technical personnel.
- D. Accurately align sheets and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- E. Mechanically fasten sheet securely at terminations and perimeter of roofing.
- F. Apply roofing sheet with side laps shingled with slope of roof deck where possible.
- G. Spread sealant bed over deck drain flange at deck drains and securely seal roofing sheet in place with clamping ring.
- H. In-Seam Attachment: Secure one edge of the sheet using fastening plates or battens centered within the membrane seam and mechanically fasten sheet to roof deck. Field-weld seam according to "Seam Installation" Article.
- I. Install sheet and auxiliary materials to tie in to existing roofing.

3.5 SEAM INSTALLATION

- A. Clean seam areas, overlap sheets, and weld side and end laps of sheets and flashings according to manufacturer's written instructions to ensure a watertight seam installation. Weld seam as follows:
 - 1. Weld Method: Hot air or solvent, as standard with roofing system manufacturer.
- B. Test lap edges with probe to verify seam weld continuity. Apply seam calk to seal cut edges of sheet membrane, as required by Manufacturer.
- C. Repair tears, voids, and lapped seams in roofing that does not meet requirements.

3.6 ADHESIVELY ATTACHED SHEET MEMBRANE INSTALLATION

- A. Install thermoplastic 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.
 - 1. Install sheet according to ASTM D 5082.
- B. Sweep and clean loose debris from the deck / substrate.
- C. Start installation of sheet in presence of roofing system manufacturer's technical personnel.
- D. Accurately align sheets and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- E. Mechanically fasten sheet securely at terminations and perimeter of roofing if and as required by manufacturer.
- F. Position Sure-Flex Membrane over acceptable substrate and fold membrane back so half the underside is exposed.
- G. Apply Adhesive to the exposed underside of the membrane and the corresponding substrate area with a plastic core medium nap paint roller at the appropriate coverage rate.
- H. Allow adhesive to dry and roll coated membrane into coated substrate. Avoid wrinkling.
- I. Brush down the bonded section of membrane immediately with a soft bristle push broom.
- J. Fold back the un-bonded half of the sheet and repeat the bonding procedure.
- K. Install adjoining membrane sheets in the same manner, overlapping edges a minimum of 2 inches to provide for a minimum 1-1/2" hot air weld. It is recommended that all splices be shingled to avoid bucking of water.
- L. Heat weld the membrane sheets a minimum of 1-1/2" with an Automatic Heat Welding Machine.

3.7 FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrate 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 sheet flashing as recommended by manufacturer.
- D. Clean seam areas, overlap sheets, and firmly roll flashings into the adhesive. Weld side and end laps to ensure a watertight seam installation.
- E. Test lap edges with probe to verify seam weld continuity. Apply lap sealant and seal exposed edges of sheet flashing terminations.
- F. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.
- G. Membrane coated metal flashing (secondary emergency roof overflow drains) fabricate to fit steel outer sleeve thru existing block and brick veneer exterior parapet wall.

3.8 FIELD QUALITY CONTROL

- A. Verify field strength of seams a minimum of twice daily, according to manufacturer's written instructions, and repair seam sample areas.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Architect.
 - 1. Notify Architect or Owner 48 hours in advance of the date and time of inspection.

3.9 PROTECTING AND CLEANING

- A. Protect sheet 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 nature and extent in a written report, with copies to Architect and Owner.
- B. 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.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures required by manufacturer of affected construction.

3.10 ROOFING INSTALLER'S WARRANTY

- A. Submit Warranty according to earlier provisions.

END OF SECTION 07533

SECTION 07635 - GUTTERS FLASHINGS & TRIMS

PART 1 - GENERAL

1.1 ALTERNATE:

- A. Gutter replacement is to be considered as an additive alternate to the Bid Amount.
- B. The Base Bid scope of work stipulates the existing gutters to remain and be protected during the reroofing project.

1.2 SUMMARY

- A. Section Includes:
 - 1. Gutters and downspouts.
 - 2. Edge Flashings (Eave Drip Strip for Asphalt Shingles)

1.2 REFERENCES

- A. American Architectural Manufacturers Association (AAMA) (www.aamanet.org):
 - 1. 620 - Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Aluminum Substrates.
- B. ASTM International (ASTM) (www.astm.org):
 - 1. B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- C. Sheet Metal and Air Conditioning Manufacturer's Association International (SMACNA) (www.smacna.org) - Architectural Sheet Metal Manual.

1.3 SUBMITTALS

- A. Submittals for Review:
 - 1. Shop Drawings: Show locations, types and thicknesses of metal, profiles, dimensions, fastening methods, provisions for expansion and contraction, and joint details.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum 5 years experience in work of this Section.
- B. Fabricate, and install in accordance with Architect's drawings.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Aluminum Sheet:
 - 1. Gutters: ASTM B209, alloy 3003, temper H14, 0.040 inch thick.
 - a. Finish: Precoated with fluoropolymer coating, AAMA 2605, containing minimum 70 percent PVDF resins, two coat system, color to be selected from manufacturer's full color range.
 - 2. Downspouts: ASTM B209, alloy 3003, temper H14, 0.030 inch thick.
 - a. Finish: Precoated with fluoropolymer coating, AAMA 2605, containing minimum 70 percent PVDF resins, two coat system, color to be selected from manufacturer's full color range.
 - 3. Eave Drip Strip: ASTM B209, alloy 3003, temper H14, 0.024 inch thick.

- a. Finish: Precoated with fluoropolymer coating, AAMA 2605, containing minimum 70 percent PVDF resins, two coat system, color to be selected from manufacturer's full color range.

2.2 ACCESSORIES

- A. Gutter Hangers: 0.090 Aluminum, forged to shape, per Architect's Drawings.
 - 1. Finish: Precoated with fluoropolymer coating, AAMA 2605, containing minimum 70 percent PVDF resins, two coat system, color to be selected from manufacturer's full color range.
- B. Gutter Retainer clips: 0.050 Aluminum forged to shape per Architect's Drawings.
 - 1. Finish: Precoated with fluoropolymer coating, AAMA 2605, containing minimum 70 percent PVDF resins, two coat system, color to be selected from manufacturer's full color range.
- C. Gutter spacers: 0.050 Aluminum forged to shape per Architect's Drawings.
 - 1. Spacers stabilize gutter front lip to gutter back edge.
 - 2. Finish: Mill finish aluminum.
- D. Fasteners: Stainless steel, minimum 1.75 inches long.
- E. Joint Sealers:
 - 1. Gutters: "Gutter-Seal" approved by gutter manufacturer.

2.3 FABRICATION

- A. Fabricate components in accordance with Architect's drawings.
 - 1. Profiles:
 - a. Gutters: As drawn
 - b. Downspouts: As drawn.
 - c. Fabricate end caps, downspout outlets and headers, straps, brackets, and downspout strainers in profile to suit gutters and downspouts.
- B. Form sections accurate to size and shape, square and free from distortion and defects.
- C. Provide for thermal expansion and contraction in aluminum sheet metal:
 - 1. Gutters:
 - a. Place expansion joints at maximum 30 feet on center, as drawn.
 - b. Locate expansion joints between downspouts; prevent water flow over joint, located as drawn.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Expansion Joints in Gutters.
 - 1. Install as & where drawn.
 - 2. Install aluminum gutter end-caps as drawn.
- B. Install flashings with concealed fasteners where possible..
- C. Fit flashings tight, with square corners and surfaces true and straight.
- D. Seam and seal field joints.
 - 1. Seal gutter end panels with "gutter-seal".
 - 2. Seal gutter downspout discharge flange with "gutter-seal".

- E. Separate dissimilar metals with bituminous coating or non-absorptive gaskets.
- F. Gutters: Secure into support brackets using fold over clip at each bracket.
 - 1. Gutter movement: Note: Gutter is not fixed, in that it can expand and contract laterally within brackets and clips.
- G. Downspouts:
 - 1. Secure with straps spaced maximum 8 feet on center and within 1 foot of ends and elbows.
 - 2. Flash downspout flanges a minimum of 2 inches into gutters, fasten & seal.

3.2 CLEANING

- A. Clean sheet metal; remove slag, flux, stains, spots, and minor abrasions without etching surfaces.

END OF SECTION

SECTION 07929 - SLOPED VENTILATION

PART 1 - GENERAL

1.1 SECTION INCLUDES:

- A. Sloped Roof Ventilation:
 - 1. Ridge vents.
 - 2. Flash vents.

1.2 SUBMITTALS:

- A. Comply with Division 01.
- B. Product Data: Submit manufacturer's product data, including installation instructions.
- C. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating dimensions, materials, components, fasteners, finish, and accessories.
- D. Samples: Submit manufacturer's sample of sloped roof ventilation
 - 1. Sample Length: Minimum 5-1/2 inches (140 mm).
- E. Color Samples: Submit manufacturer's color samples of sloped roof ventilation, consisting of complete color chart representing manufacturer's full range of available colors.
 - 1. Submit metal chips of specific colors as requested by the Architect.
- F. Manufacturer's Certification: Submit manufacturer's certification that sloped roof ventilation complies with specified requirements and is suitable for intended application.
- G. Warranty Documentation: Submit manufacturer's standard warranty.

1.3 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer regularly engaged in the manufacturing of sloped roof ventilation of similar type to that specified for a minimum of 10 years.
- B. Installer's Qualifications:
 - 1. Installer regularly engaged in installation of sloped roof ventilation of similar type to that specified for a minimum of 5 years.
 - 2. Use persons trained for installation of sloped roof ventilation of similar type to that specified following manufacturer's installation instructions.
- C. Testing: Meet specified testing requirements.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Delivery Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging.
- B. Storage and Handling Requirements:
 - 1. Store and handle sloped roof ventilation in accordance with manufacturer's instructions.
 - 2. Inspect and report damage or other issues to manufacturer within 72 hours of receipt of materials.
 - 3. Keep sloped roof ventilation in manufacturer's original, unopened containers and packaging until installation.
 - 4. Store sloped roof ventilation in clean, dry area indoors.
 - 5. Do not store sloped roof ventilation directly on floor or ground.
 - 6. Protect sloped roof ventilation and finish during storage, handling, and installation to prevent damage.

1.5 WARRANTY

- A. Warranty Period, Product:
 - 1. Metal-Era "Hi-Perf" Ventilation Systems: 20 years or lifetime of roof on which it was originally installed, whichever comes first, and when intake and exhaust ventilation is designed by manufacturer as a complete system.
 - a. Wind: Maximum 130 mph.

2. Other Products: Five-year workmanship warranty covering replacement or repair of products that are defective in material or workmanship.
- B. Warranty Period, Finish: Limited 30-year warranty for prefinished coil-coated steel and aluminum coated with Kynar 500 standard colors covering fade, chalk, and film integrity.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Metal-Era, Inc., 1600 Airport Road, Waukesha, Wisconsin 53188. Phone 800-558-2162. Fax 800-373-9156. www.metalera.com. info@metalera.com.
- B. Substitutions: Only by prior approved equal.

2.2 RIDGE VENTS

- A. Ridge Vents: Metal-Era "Hi-Perf" ridge vent, slope-to-slope, shingled version.
 1. Water Infiltration Test, TAS 100 (A): Passed.
 2. Ridge Vent Cover Material: 0.040-inch (1.01-mm) aluminum.
 - a. Formed Lengths: 12'-0" (3.65 m), with slotted fastening holes.
 3. Cover Plates: At each joint, 8 inches (203 mm) wide.
 4. Continuous Z-Brackets: 20-gauge (0.91-mm) galvanized steel.
 5. Intermittent Spacers: 0.050-inch (1.27-mm) aluminum, 12 inches (305 mm) on center.
 6. Expanded Metal Support Screens: 0.050-inch (1.27-mm) aluminum.
 7. Endcaps: Per drawings.
 8. Deflectors:
 - a. Roof Pitch: Less than 4/12.
 - b. Formed Lengths: 12'-0" (3.65 m).
 - c. Deflector Baffles: At deflector joints, 3-1/2 inches (89 mm) wide.
 9. Continuous Z-Brackets, Intermittent Spacers, and Expanded Metal Support Screens: Factory assembled.
- B. Ridge Vents (Flash Vents): Metal-Era "Hi-Perf" ridge vent, sloped roof meets vertical wall intersection.
 1. Ridge Vent Cover Material: 0.040-inch (1.01-mm) aluminum.
 - a. Formed Lengths: 12'-0" (3.65 m), with slotted fastening holes.
 2. Cover Plates: At each joint, 8 inches (203 mm) wide.
 3. Continuous Z-Brackets: 20-gauge (0.91-mm) galvanized steel.
 4. Intermittent Spacers: 0.050-inch (1.27-mm) aluminum, 12 inches (305 mm) on center.
 5. Expanded Metal Support Screens: 0.050-inch (1.27-mm) aluminum.
 6. Continuous Cleats: 22-gauge (0.85-mm) galvanized steel.
 7. Endcaps.
 8. Deflectors: Not required

2.3 FINISHES

- A. Finish: Hylar 5000/Kynar 500.
 1. Color: To be selected from manufacturers standards.

2.4 ACCESSORIES

- A. Joint Sealants: Urethane NP1 or prior approved equal.
- B. Fasteners: Appropriate for intended substrate.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive sloped roof ventilation.
- B. Verify surfaces to support sloped roof ventilation are clean, dry, straight, secure, and of proper dimensions.
- C. Notify Architect of conditions that would adversely affect installation.
- D. Do not begin installation until unacceptable conditions are corrected.

3.2 INSTALLATION

- A. Install sloped roof ventilation in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Remove protective vinyl film immediately before installation.
- C. Install sloped roof ventilation watertight.
- D. Install sloped roof ventilation to allow for thermal movement.
- E. Joint Sealants: Apply joint sealants in accordance with manufacturer's instructions.

3.3 ADJUSTING

- A. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.
- B. Remove and replace with new material, damaged components that cannot be successfully repaired, as determined by Architect.

3.4 CLEANING

- A. Clean sloped roof ventilation promptly after installation in accordance with manufacturer's instructions.
- B. Do not use harsh cleaning materials or methods that could damage finish.

3.5 PROTECTION

- A. Protect installed sloped roof ventilation to ensure that, except for normal weathering, materials will be without damage or deterioration at time of Substantial Completion.

End of Section