

COLUMBUS CONSOLIDATED GOVERNMENT
Georgia's First Consolidated Government



FINANCE DEPARTMENT
PURCHASING DIVISION

100 TENTH STREET, P. O. BOX 1340
COLUMBUS, GEORGIA 31902-1340
706-653-4105, Fax 706-225-3033
www.columbusga.org

Date: **November 15, 2017**

<p>REQUEST FOR BIDS:</p> <p>RFB NO. 18-0023</p>	<p>Qualified vendors are invited to submit sealed bids, subject to conditions and instructions as specified, for the furnishing of:</p> <p align="center">ROOFING SERVICES AT NORTH PRECINCT</p>
<p>GENERAL SCOPE</p>	<p>Provide all labor, equipment and materials to remove the existing roof system to the wooden & decks, and replace with specified TPO roof system. Requests for substitution will be accepted until 1:00 PM on Wednesday, December 6, 2017. Contractors shall email substitution requests, as outlined on page 11, Section II, Item B of the specifications.</p>
<p>MANDATORY PRE-BID / SITE VISIT</p>	<p>A <u>Mandatory Pre-Bid Conference/Site Visit</u> is scheduled at 11:00 AM (Eastern) on Wednesday, November 29, 2017. Vendors shall convene at the North Precinct, which is located at 8395 Beaver Run Road, Midland, Georgia 31820. Vendors will be allowed a 10-minute grace period. Any vendor who is not present at the North Precinct, within 10 minutes after the time slated for the beginning of the mandatory pre-bid conference/site visit, shall not be allowed to participate any further in the bid process.</p>
<p>DUE DATE</p>	<p align="center">DECEMBER 13, 2017 - 2:30 PM (Eastern)</p> <p>Bids must be received and date/time stamped on or before the due date by the Finance Department/Purchasing Division, 5th Floor - Government Center, 100 10th St, Columbus, GA. Bids will be opened during the 3:00 p.m. hour in the Conference Room of the Purchasing Division. Bidders are not required, but are invited to attend the bid opening.</p>
<p>ADDENDA</p>	<p align="center"><u>IMPORTANT INFORMATION</u></p> <p>Any and all addenda will be posted on the Purchasing Division's web page, at http://www.columbusga.org/finance/Excel_Docs/Bid_Opportunities.htm. It is the vendors' responsibility to periodically visit the web page for addenda before the due date and prior to submitting a bid.</p>
<p>"NO BID" RESPONSE</p>	<p>If you are not interested in this solicitation, refer to page 3.</p>

Andrea J. McCorvey
Purchasing Manager



IMPORTANT INFORMATION

E-Notification

Effective December 31, 2014, Columbus Consolidated Government (the City) discontinued mailing postcard notifications to its registered vendors, and began using the Georgia Procurement Registry e-notification system.

You must register with the Team Georgia Marketplace/Georgia Procurement Registry to receive future procurement notifications at <http://doas.ga.gov/Suppliers/Pages/SupplierStart.aspx>.

If you have any questions or encounter any problems while registering, please contact the Team Georgia Marketplace Procurement Helpdesk:

Telephone: 404-657-6000

Fax: 404-657-8444

Email: procurementhelp@doas.ga.gov

STATEMENT OF "NO BID"

Complete and return this form immediately if you do not intend to Bid:

Email: dlewis@columbusga.org
Fax: 706-225-3033
Mail: Columbus Consolidated Government
Purchasing Division
P O Box 1340
Columbus, GA 31902-1340

We, the undersigned decline to bid on your **RFB NO. 18-0023** for **ROOFING SERVICES AT NORTH PRECINCT** for the following reason(s):

- Specifications too "tight", i.e. geared toward one brand or manufacturer only (explain below)
- There is insufficient time to respond to the Invitation for Bids.
- We do not offer this product or service.
- We are unable to meet specifications.
- We are unable to meet bond requirements.
- Specifications are unclear (explain below).
- We are unable to meet insurance requirements.
- Other (specify below)

Comments: _____

COMPANY NAME: _____
AGENT: _____
DATE: _____
EMAIL: _____

GENERAL PROVISIONS

THESE GENERAL PROVISIONS SHALL BE DEEMED AS PART OF THE BID SPECIFICATIONS. The provisions of the Procurement Ordinance for the Consolidated Government of Columbus, Georgia as adopted and amended by Council shall apply to all invitations for bids and award of all contracts and is specifically incorporated herein by this reference. A copy of the ordinance is on file in the Purchasing Division.

- 1. TERM "CITY."** The term "City" as used throughout these documents will mean Consolidated Government of Columbus, GA.
- 2. PREPARATION OF FORM.** Bid proposals shall be submitted on the forms provided by the City. All figures must be written in ink or typewritten. Figures written in pencil or erasures are not acceptable. However, mistakes may be crossed out, corrections inserted adjacent thereto, initialed in ink by the person signing the proposal. If there are discrepancies between unit prices quoted and extensions, the unit price will prevail. Failure to properly sign forms, in ink, will render bid incomplete.
- 3. EXECUTION OF THE BID PROPOSAL.** Execution of the bid proposal will indicate the bidder is familiar and in compliance with all local laws, regulations, ordinances, site inspections, licenses, dray tags, etc.
- 4. BID SUBMISSION. Fax bid submissions will not be accepted as a response to the Invitation for Bids.** Bids must be submitted in a sealed envelope or package. The exterior of the envelope or package must reference the bidder's name and address, the bid number, bid title, and must indicate the contents represent a "bid" or "no bid" submission. Failure to properly identify the bid submission may result in rejection of the bid.
- 5. BID DUE DATE.** The bid submission must arrive in the Purchasing Division on or before the stated due date and time. Upon receipt, bids will be time and date stamped. Bids will remain sealed and secured until the stated due date and time for the bid opening.
- 6. BID OPENING.** The Purchasing Division Manager or Purchasing staff appointee will open bids. The bid amount and other pertinent information as determined by the Purchasing Division Manager will be read and recorded. The bids as recorded at the bid opening represent draft tabulation and may include incorrect price extensions or transcription errors, and are subject to change if conflicting information is discovered during analysis of the bid responses. A bid tabulation will be made available to bidders after extensions have been checked and all other specification compliance has been determined. **In the essence of time, bidders may not be allowed to review bids at the bid opening. However, bidders will be allowed to make appointments to review the bids at a later date.**
- 7. LATE BIDS.** It is the responsibility of the bidder to ensure bids are submitted by the specified due date and time. Bids received after the stated date and time will be returned, unopened, to the bidder. The official clock to determine the date and time will be the time/date stamp located in the Finance Department. All bids received will be time and date stamped by the official clock. The City will not be held responsible for the late delivery of bids due to the U.S. Mail Service, or any other courier service.
- 8. RECEIPT OF ONE SEALED BID.** In the event only one sealed bid is received, no formal bid opening shall take place. First, the Purchasing Division shall conduct a survey of vendors to inquire of "no bid" responses and non-responsive vendors. If, from the survey, it is determined by the Purchasing Division that specifications need revision, the one bid received will be returned, unopened, to the responding vendor, with a letter of explanation and a new bid solicitation prepared. If it is determined that other vendors need to be contacted, the bid due date will be extended, and the one bid received will remain sealed until the new bid opening date. The vendor submitting the single bid will receive a letter of explanation. **If it is determined the one bid received is from the only responsive, responsible bidder, then the bid shall be opened by the Purchasing Division Manager or designee, in the presence of at least one other witness. The single bid will be evaluated by the using agency for award recommendation.**
- 9. RECEIPT OF TIE BIDS.** In the event multiple responsive, responsible bidders are tied for the lowest price and all other terms and requirements are met by the all tied bidders, the award recommendation shall be as follows:
 - a. Award to the local bidder, if one of the bidders has its principal place of business in Columbus, Georgia.
 - b. If all or none of the bidders has its principal place of business in Columbus, Georgia, then award the bid to the bidder who has received the award previously.
 - c. If neither bidder received the award previously, and neither of the tied bidders has its principal place of business in Columbus, Georgia, then the bid award shall be equally divided between the tied bidders.
 - d. If it is not feasible to divide the award, and if all or none of the tied bidders has its principal place of business in Columbus, Georgia, and neither was awarded the bid previously, then all bids will be rejected and the bid will be re-advertised.
- 10. RECEIPT OF MULTIPLE BIDS. Unless otherwise stated in the bid specifications, the City will accept one and only one bid per vendor.** Any unsolicited multiple bid(s) will not be considered. If prior to the bid opening, more than one bid is received from the same vendor, the following will occur: (1) the bidder will be contacted and required to submit written acknowledgment of the bid to be considered; (2) the additional bid(s) will be returned to the bidder unopened. If at the bid opening more than one bid is enclosed in a single bid package, the City will consider the vendor non-responsive and bids will be returned to the bidder.

11. CONDITION AND PACKAGING. Unless otherwise defined in the bid specifications, it is understood and agreed that any item offered or furnished shall be new, in current production and in first class condition, that all containers shall be new and suitable for storage or shipment, and that prices include standard commercial packaging.

12. FREIGHT/SHIPPING/HANDLING CHARGES. All freight, shipping, and handling charges shall be included in the bid price. The City will pay no additional charges.

13. CORRECTION OR WITHDRAWAL OF BID/CANCELLATION OF AWARDS. Corrections or withdrawals of inadvertently erroneous bids before or after bid opening, or cancellation of awards of contracts based on such bid mistakes may be permitted where appropriate. Mistakes discovered before bid opening may be modified or bid withdrawn by written notice received in the office of Purchasing prior to the time of the bid opening. After bid opening, no changes in bid prices or other provisions of bids prejudicial to the interest of the City or fair competition shall be permitted. In lieu of bid correction, a low bidder alleging a material mistake of fact may be permitted to withdraw its bid if the mistake is clearly evident, or if the bidder submits evidence that clearly and convincingly demonstrates that a mistake was made. All decisions to permit corrections or withdrawals of bids or to cancel awards or contracts based on bid mistakes will be supported by the written determination of the Purchasing Officer.

14. ADDENDA AND INTERPRETATIONS. If it becomes necessary to revise any part of this bid, a written addendum will be provided to all bidders. The City is not bound by any oral representations, clarifications, or changes made to the written specifications by City employees, unless such clarification or change is provided to the bidders in written addendum form from the Purchasing Officer. Bidders will be required to acknowledge receipt of the addenda (if applicable) in their sealed bid proposal. The vendor may provide an initialed copy of each addendum or initial the appropriate area on the bid form (pricing page). Failure to acknowledge receipt of the addenda (when applicable) will render bid incomplete. **It is the bidder's responsibility to ensure that they have received all addenda.**

15. BID EVALUATION AND AWARD. During the evaluation of bids, the City reserves the right to request clarification of bid responses and to request the submission of references, if deemed necessary for a complete evaluation of bid responses. Award will be made to the responsive and responsible bidder whose bid is most economical according to criteria designated in the solicitation. The determination of the lowest responsive and responsible bidder may involve all or some of the following factors: prices, conformity to specifications, financial ability to meet the contract, previous performance, facilities and equipment, availability of repair parts, experience, delivery promise, terms of payment, compatibility as required, other cost, and other objective and accountable factors, if any, (which are further described in the specifications). The City shall be the judge of the factors and will make the award in the best interest of the City.

16. TIME FOR CONSIDERATION. Bids must remain in effect for at least sixty (60) days after date of receipt to allow for evaluation.

17. BID SECURITY AND PERFORMANCE BOND. Bid security (Bid Bond) shall be required for all competitive sealed bids for construction contracts when the price is estimated by the Purchasing Officer to exceed \$10,000. Bid security shall be a bond provided by a surety company authorized to do business in the State, or in the form of a certified check. Such bonds may also be required on construction contracts under \$10,000 or other procurement contracts when circumstances warrant. Bid security shall be in an amount equal to at least five percent (5%) of the bid amount. The City will accept a copy of a bid bond at the bid opening. However, if a copy of a bid bond is submitted, the bidder must submit to the Purchasing Division the identical original document within five (5) days after the bid opening. **If the original document is not received within the five (5) days, the bid will not be considered.** When a construction contract is awarded in excess of \$25,000, the successful bidder will be required to furnish a **Performance Bond** executed by a surety company authorized to do business in the State. The performance bond shall be equal to one hundred percent (100%) of the price specified in the bid.

18. SUBCONTRACTING. Should bidder intend to subcontract all or any part of the work specified, name(s) and address(es) of sub-contractor(s) must be provided in bid proposal (use additional sheet if necessary). The bidder shall be responsible for subcontractor(s) full compliance with the requirements of the bid specifications. **THE COLUMBUS CONSOLIDATED GOVERNMENT WILL NOT BE RESPONSIBLE FOR PAYMENTS TO SUBCONTRACTORS.**

19. DISQUALIFICATION OF BIDDERS AND REJECTION OF BIDS. Bidders may be disqualified and rejection of bid proposals may be recommended by the City for any (but not limited) to the following reasons:

- (A) Receipt after the time limit for receiving bid proposals as stated in the bid invitation.
- (B) Any irregularities contrary to the General Provisions or bid specifications.
- (C) Unbalanced unit price or extensions.
- (D) Unbalanced value of items.
- (E) Failure to use the proper forms furnished by the Consolidated Government.
- (F) Failure to complete the proposal properly
- (G) Omission of warranty, product literature, samples, acknowledgment of addenda or other items required to be included with bid proposal.
- (H) Failure to properly sign forms in ink.

The City reserves the right to waive any minor informality or irregularity. The City reserves the right to reject any and all bids.

20. BRAND NAMES "OR EQUAL". Whenever in this invitation any particular material, process and/or equipment are indicated or specified by patent, proprietary or brand name of manufacturer, such wording will be deemed to be used for the purpose of facilitating description of the material, process and/or equipment desired by the City. It is not meant to eliminate bidders or restrict competition in any bid process. Any manufacturers' names, drawings, trade names, brand names, specifications and/or catalog numbers used herein are for the purpose of description and establishing general quality levels. Bidders may propose equivalent equipment, services or manufacturer. Any proposal that is equivalent to or surpasses stated specifications will be considered. Determination of equivalency shall rest solely with the City. **Please Note: Due to existing equipment, specific manufacturers may be required to facilitate compatibility.**

21. ASSIGNMENT OF CONTRACTUAL RIGHTS. It is agreed that the successful bidder will not assign, transfer, convey or otherwise dispose of the contract or its right, title or interest in or to the same, or any part thereof, without previous consent of the City and any sureties.

22. DISCOUNTS. Terms of payments offered will be reflected in the space provided on the bid proposal form. Cash discounts will be considered net in the bid evaluation process. All terms of payment (cash discounts) will be taken and computed from the date of delivery of acceptable material or services, or the date of receipt of the invoice, whichever is later.

23. TAXES. The City is exempt from State Retail Tax and Federal Excise Tax. Tax Exemption No. GA Code Sec. 48-8-3. Federal ID No. 58-1097948.

24. FEDERAL, STATE AND LOCAL LAWS. All bidders will comply with all Federal, State, and Local laws and ordinances, relative to conducting business in Columbus, Georgia.

25. BID INCLUSIONS. When bid inclusions are required, such as warranty information, product literature/specifications, references, etc. The inclusions should reference all aspects of the specific equipment or service proposed by the bidder. Do not include general descriptive catalogs. References to literature or other required inclusions submitted previously do not satisfy this provision. Bids found to be in non-compliance with these requirements will be subject to rejection.

26. NON-COLLUSION. By signing and submitting this bid, bidder declares that its agents, officers or employees have not directly or indirectly entered into any agreements, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this bid. In the event, said bidder is found guilty of collusion, the company and agents will be removed from the City's bid list for one full year and any current orders will be canceled.

27. INDEMNITY. The successful bidder agrees, by entering into this contract, to defend, indemnify and hold City harmless from any and all causes of action or claims of damages arising out or under this contract.

28. DISADVANTAGED BUSINESS ENTERPRISE. Disadvantaged Business Enterprises (minority or women owned businesses) will be afforded full opportunity to submit proposals in response to this invitation and will not be discriminated against on the grounds of race, color, creed, sex, sexual orientation, gender identity or national origin in consideration for an award. It is the policy of the City that disadvantaged business enterprises and minority business enterprises have an opportunity to participate at all levels of contracting in the performance of City contracts to the extent practical and consistent with the efficient performance of the contract.

29. AFFIRMATIVE ACTION PROGRAM - NON-DISCRIMINATION CLAUSE. The City has an Affirmative Action Program in connection with Equal Employment Opportunities. The successful bidder will comply with all Federal and State requirements concerning fair employment and employment of the handicapped, and concerning the treatment of all employees, and will not discriminate between or among them by reason of race, color, age, religion, sex, sexual orientation, gender identity, national origin or physical handicap.

30. AWARDS TO LOCAL BUSINESSES. Except for construction contracts, awards will be made to responsive and responsible local businesses proposing a cost not more than two percent (2%) above the low bid or quote for contracts involving an expenditure of \$25,000.00 or less and made to responsive and responsible local businesses proposing a cost not more than one percent (1%) above the low bid or quote for contracts involving an expenditure greater than \$25,000.00. (Ordinance No. 95-5). ****STATE OR FEDERALLY FUNDED PROJECTS EXCLUDED****

31. RIGHT TO PROTEST. A protest with respect to an Invitation for bids or Request for Proposals shall be submitted in writing no less than five (5) days **prior** to the opening of bids or the closing date of proposals to the Purchasing Officer. If the matter is not resolved, then an appeal may be filed with the City Manager or City Council.

32. FAILURE TO QUOTE. Vendors choosing not to submit a bid must return a **Statement of “No Bid”** and request to be retained or removed from bid list. Failure to respond to three bid invitations will result in firm’s removal from the City’s bid list for that particular commodity.

33. PRODUCT/EQUIPMENT DEMONSTRATION - SITE VISIT. During the evaluation of bids, the City reserves the right to request a demonstration or site visit of the product, equipment or service offered by a bidder. The demonstration or site visit shall be at the expense of the bidder. Bidders who fail to provide demonstration or site visit, as requested, will be considered non-responsive.

34. CANCELLATION PROVISIONS. When such action is in the best financial interest of the City, contracts for supplies to be purchased or services to be rendered under an annual (term) contract basis may be canceled and re-advertised at the discretion of the Purchasing Officer and in accordance with contract terms.

After the receipt of a product or piece of equipment, it is found that said item does not perform as specified and required, payment for said product or equipment will be withheld. The successful vendor will be notified of the non-performance in writing. After notification, the successful vendor will have ten (10) calendar days, from the date of notification, to deliver product or equipment that performs satisfactorily. If a satisfactory product is not delivered within 10 calendar days, from the notification date, the City will cancel the contract (purchase order) and award to the next low, responsive, responsible bidder. The vendor will be responsible for the pick-up or shipment of the unsatisfactory equipment or product.

35. QUESTIONS. Questions concerning specifications must be submitted, in writing, at least 5 (five) working days (Monday-Friday) prior to receipt date. Questions received less than five working days prior to receipt date will not be considered.

36. SAMPLES. When samples are required to be included with the proposal response, the bidder will be responsible for the following:

- 1) **Unless otherwise specified**, bidders are required to submit exact samples of item(s) bid. Do not submit sample of “like” item(s).
- 2) Affix an identification label to each individual sample to include bidder’s name, bid name and number.
- 3) Make arrangements for the return of sample after the bid award. All shipping costs will be the responsibility of the bidder. If bidder does not make arrangements for return of sample, within 60 days after award, the sample will be discarded.

37. GOVERNING LAW: The parties agree that this Agreement shall be governed by the laws of Georgia, both as to interpretations and performance.

38. PAYMENT DEDUCTIONS. The City reserves the right to deduct, from payments to awarded vendor(s), any amount owed to the City for various fees, to include, but not limited to: False Alarm fees, Ambulance fees, Occupation License Fees, Landfill fees, etc.

39. PAYMENT TERMS. The City's standard payment term is usually net 30 days, after successful receipt of goods or services. Payment may take longer if invoice is not properly documented or not easily identifiable, goods/services are not acceptable, or invoice is in dispute.

NOTICE TO VENDORS

Columbus Council, by Ordinance 92-60 has prohibited any business that is owned by any member of Columbus Council or the Mayor, or any business in which any member of Columbus Council or the Mayor has a substantial pecuniary interest from submitting a bid for goods or services to the Consolidated Government of Columbus, Georgia.

Likewise, by Ordinance 92-61, no business which is owned by any member of any board, authority or commission, subordinate or independent entity, or any business in which any member of any board, authority or commission, subordinate or independent entity has substantial pecuniary interest may submit a bid to the Consolidated Government if such bid pertains to the board, authority or commission.

MANDATORY
PRE-BID CONFERENCE/SITE VISIT
ATTENDANCE CONFIRMATION FORM

Date: _____

To: Della A. Lewis, Buyer Specialist
Email: dlewis@columbusga.org
Fax Number: (706) 225-3033

Re: RFB No. 18-0023; Roofing Services at North Precinct

A Mandatory Pre-Bid Conference/Site Visit is scheduled at 11:00 AM (Eastern) on Wednesday, November 29, 2017. Vendors shall convene at the North Precinct, which is located at 8395 Beaver Run Road, Midland, Georgia 31820. **Vendors will be allowed a 10-minute grace period. Any vendor who is not present at the North Precinct, within 10 minutes after the time slated for the beginning of the mandatory pre-bid conference/site visit, shall not be allowed to participate any further in the bid process.**

The purpose of the conference is to discuss any questions or concerns vendors may have regarding the specifications and to allow vendors to view the work area. Vendors must notify Della Lewis, Buyer via email, dlewis@columbusga.org or fax number 706-225-3033, to confirm attendance at the mandatory pre-bid conference/site visit.

Vendors shall sign an attendance sheet at the Mandatory Pre-Bid Conference. Only vendors who have signed the attendance(s) sheet will receive future addenda and will be allowed to bid on this project. Bids received from vendors who do not attend the Mandatory Pre-Bid Conference/Site Visit will be deemed no-responsive and will not be considered for award.

I will attend the Mandatory Pre-Bid Conference/Site Visit scheduled for 11:00 AM (Eastern) on Wednesday, November 29, 2017:

Company Name	# of Attendees		

Contact Person	Email Address		

Mailing Address	City	State	Zip

Telephone Number	Fax Number		

DO YOU HAVE QUESTIONS, CONCERNS OR NEED CLARIFICATION ABOUT THIS SOLICITATION?

COMMUNICATION CONCERNING ANY SOLICITATION CURRENTLY ADVERTISED MUST TAKE PLACE IN WRITTEN FORM AND ADDRESSED TO THE PURCHASING DIVISION.

ANY INQUIRY RECEIVED BY NOON (12:00 PM) ON THE FIFTH CALENDAR DAY PRIOR TO THE DATE FIXED FOR THE OPENING OF BIDS WILL BE GIVEN CONSIDERATION.

ALL QUESTIONS OR CLARIFICATIONS CONCERNING THIS SOLICITATION SHALL BE SUBMITTED IN WRITING. THE CITY WILL NOT ORALLY OR TELEPHONICALLY ADDRESS ANY QUESTION OR CLARIFICATION REGARDING BID/PROPOSAL SPECIFICATIONS. IF A VENDOR VISITS OR CALLS THE PURCHASING DIVISION WITH SUCH QUESTIONS, HE OR SHE WILL BE INSTRUCTED TO SUBMIT THE QUESTIONS IN WRITING.

ALL CONTACT CONCERNING THIS SOLICITATION SHALL BE MADE THROUGH THE PURCHASING DIVISION. BIDDERS SHALL NOT CONTACT CITY EMPLOYEES, DEPARTMENT HEADS, USING AGENCIES, EVALUATION COMMITTEE MEMBERS OR ELECTED OFFICIALS WITH QUESTIONS OR ANY OTHER CONCERNS ABOUT THE SOLICITATION. QUESTIONS, CLARIFICATIONS, OR CONCERNS SHALL BE SUBMITTED TO THE PURCHASING DIVISION IN WRITING. IF IT IS NECESSARY THAT A TECHNICAL QUESTION NEEDS ADDRESSING, THE PURCHASING DIVISION WILL FORWARD SUCH TO THE USING AGENCY, WHO WILL SUBMIT A WRITTEN RESPONSE.

THE PURCHASING DIVISION WILL FORWARD WRITTEN RESPONSES TO THE RESPECTIVE BIDDER OR IF IT BECOMES NECESSARY TO REVISE ANY PART OF THIS SOLICITATION, A WRITTEN ADDENDUM WILL BE ISSUED TO ALL BIDDERS.

THE CITY IS NOT BOUND BY ANY ORAL REPRESENTATIONS, CLARIFICATIONS, OR CHANGES MADE TO THE WRITTEN SPECIFICATIONS BY CITY EMPLOYEES, UNLESS SUCH CLARIFICATION OR CHANGE IS PROVIDED TO THE BIDDERS IN A WRITTEN ADDENDUM FROM THE PURCHASING MANAGER.

BIDDERS ARE INSTRUCTED TO USE THE ENCLOSED "QUESTION/CLARIFICATION FORM" TO FAX OR EMAIL QUESTION.

ANY REQUEST, AFTER A SOLICITATION HAS CLOSED AND PENDING AWARD, MUST ALSO BE SUBMITTED IN WRITING TO THE PURCHASING DIVISION.

SPECIFICATIONS
ROOFING SERVICES AT NORTH PRECINCT
RFB NO. 18-0023

I. SCOPE:

Provide all labor, equipment and materials to remove the existing roof system to the wooden & decks, and replace with specified TPO roof system.

A. Contractors are responsible for all measurements and estimating material quantities required to satisfy these specifications.

B. The work shall commence within (30) days after award, or as agreed upon by the Contractor and Owner.

C. The successful Contractor shall be responsible for all building permits.

II. BRAND NAMES & SUBSTITUTIONS REQUESTS:

A. Any manufacturer's names, drawings, trade names, brand names, information and/or catalog numbers used herein are for purpose of description and establishing general quality levels. Such references are not intended to be restrictive; any equivalent products of any manufacturer may be offered.

B. Substitution Requests: **Requests for substitution will be accepted until 1:00 PM on Wednesday, December 6, 2017. Contractors shall email substitution requests to the attention of Della Lewis at dlewis@columbusga.org**

1. A **"substitution"** is defined as a roof system that meets the same performance criteria as the basis of design, but from a supplier or manufacturer different than the basis of design.

2. A request for substitution **must be made by the bidding entity**, not the manufacture or supplier of the materials. The request for substitution must contain the following elements:

a. **A cover letter** indicating who is requesting the substations, a description of the substitution, and the rational for why it should be considered.

b. **Proof** that the proposed system meets the criteria set forth in Section 07 52 42 1.4 **"Performance Requirements"**

c. **Proof** that the proposed system meets the criteria set forth in Section 07 52 42 2.4 **"Material Performance Requirements"**

d. **Proof** that each proposed substitute products are **functionally equal to the specified products**, preceded by a cover sheet referencing which specified product the substitution is for. At a minimum, the following products shall be addressed:

- i. T.P.O. Roof Membrane
- ii. Adhesives and cleaners
- iii. Substrate (Lightweight)

- e. **Proof** that the **proposed system warranty** would meet the duration, terms, and ponding water policy as the design basis warranty.

III. **QUESTIONS/ADDENDA:**

Questions and Requests for Clarification, received by noon (12:00 PM) on the fifth calendar day prior to the date fixed for the opening of bids, will be given considerate (see pages 9 & 10).

Changes to the specifications (if any) will be provided in the form of an addendum, which will be posted on the web page of the Purchasing Division of Columbus Consolidated Government at http://www.columbusga.org/finance/Excel_Docs/Bid_Opportunities.htm. **It is the vendors' responsibility to periodically visit the web page for addenda before the due date and prior to submitting a quote.**

IV. **INSURANCE:**

Vendors shall be required, at their own expense, to furnish to the City of Columbus Purchasing Division, evidence showing the insurance coverage to be in force throughout the term of the contract. Insurance requirements are listed on the attached **Insurance Checklist (See Form 1)**. **The limits shown are minimum limits. Proposers shall indicate the actual limit they will provide for each insurance requirement. The vendor shall complete the Insurance Checklist and include with sealed bid. Certificate of Insurance is acceptable.** The Insurance Checklist will indicate to the City, the bidder's ability and agreement to provide the required insurance, in the event of contract award.

V. **GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT/E-VERIFY:**

In accordance with the Georgia Security and Immigration Compliance Act/E-Verify, every public employer, every contractor of a public employer, and every subcontractor of a public employer's contractor must register and participate in a federal work authorization program (see http://www.dol.state.ga.us/spotlight/sp_sb_529_new_rules.htm). To access your E-Verify Company Identification Number, see <https://e-verify.uscis.gov/emp/vislogin.aspx?JS=YES>. **A properly completed, notarized E-Verify Affidavit must be included with sealed bid; failure to do so will render the contractor's bid non-responsive and ineligible for further consideration.**

VI. **INDEMNIFICATION:**

The Contractor covenants to save, defend, hold harmless, and indemnify the City, and all of its officers, departments, agencies, agents, and employees (collectively the "City") from and against any and all claims, losses, damages, injuries, fines, penalties, costs (including court costs and attorney's fees), charges, liability, or exposure, however caused, resulting from, arising out of, or in any way connected with the Contractor's intentional, negligent, or grossly negligent acts or omissions in performance or nonperformance of its work called for by the Contract Documents.

VII. BID SUBMISSION REQUIREMENTS:

Each bidder shall include the following information with bid submission. Bidder shall submit **THE ORIGINAL AND 1 IDENTICAL COPY**. *With the exception of the E-Verify Affidavit*, the City reserves the right to request any omitted information, **WHICH DOES NOT AFFECT THE SUBMITTED BID PRICE**. Bidders shall be notified, in writing, and shall have two (2) days, after notification to submit the omitted information. If the omitted information is not received within two (2) days, the Bidder shall be deemed non-responsive and the Bid Submission will be deemed **"Incomplete"**:

- A. Bid Form (Pricing Page):** Provide all information requested (**Form 5**).
- B. Contract Signature Page:** Provide all information requested (**Form 6**).
- C. Warranty Information:** Provide a copy of the manufacturer's warranty, printed on Manufacturer's letterhead.
- D. Non-Collusion Affidavit:** Provide all information requested (**Form 4**).
- E. Statement of Qualifications and Work Guarantee (Form 2):** Provide all information requested. Bidder must submit a signed statement that warrants and guarantees that all work will be performed in accordance with the bid specifications and will not be defective. Prompt notice of all defects shall be given to the contractor. All defective work, whether or not in place, may be rejected, corrected or accepted, as determined by the City.
- F. Bid Bond:** Provide a bid surety in the form of a Cashier's Check, Certified Check, or Bid Bond payable to the Consolidated Government of Columbus, Georgia in the amount of five percent (5%) of the sum of the bid submittal. The bid surety will be forfeited to the City if successful Bidder fails to execute a contract within ten (10) calendar days after award notification, or if the successful Bidder fails to furnish a Performance Bond (see page 14, section VIII) within ten (10) calendar days after award notification.
- G. Insurance:** Refer to Page 12, Section IV.
- H. E-Verify Affidavit:** **A properly completed, notarized E-Verify Affidavit must be included with sealed proposal; failure to do so will render the firm's proposal non-responsive and ineligible for further consideration.**
- I. Addenda:** Vendors must include acknowledgment of receipt of addenda (**if any**) in their sealed bid. Provide an initialed copy of each addendum or initial the appropriate area on bid form (pricing page). Addenda will be posted on the web page of the Columbus Consolidated Government, Finance Department/Purchasing Division at https://www.columbusga.org/finance/purchasing/docs/opportunities/Bid_Opportunities.htm. **Vendors are responsible for periodically visiting the web page, to check for addenda, prior to the bid due date and before submitting a bid.**

THE FOLLOWING ITEMS WILL BE REQUIRED OF THE AWARDED VENDOR(S) PRIOR TO CONTRACT SIGNING OR ISSUANCE OF PURCHASE ORDER. AFTER NOTIFICATION, THE AWARDED VENDOR(S) WILL HAVE FIVE (5) BUSINESS DAYS TO PROVIDE THE INFORMATION BELOW, OR THE NEXT RESPONSIVE, RESPONSIBLE BIDDER WILL BE RECOMMENDED FOR AWARD.

- 1) **Business License:** Vendors located in Muscogee County shall submit a current copy of their City of Columbus Business License (Occupation License). If the business is not located in Muscogee County and has proof of being properly licensed by a municipality in Georgia, and paid applicable occupation taxes in that city, the vendor will not be required to pay occupation taxes in Columbus, Georgia.

If the business location is not in Georgia, vendor must provide a current copy of their active Articles of Incorporation from the State and/or a current business license from the City/State in which business is located.

If you have questions regarding this requirement, please contact Yvonne Ivey, Revenue Manager, at 706-225-3091.

- 2) **W-9 Request for Taxpayer Identification Number and Certification**

Bids must be delivered sealed in an envelope or package. The envelope or package should reference the bidder's name, full address and the bid number and/or bid name. Mail or hand-deliver bid to:

Columbus Consolidated Government
Purchasing Division

RE: RFB No. 18-0023, Roofing Services at North Precinct

(Mail) P. O. Box 1340
Columbus, GA 31902-1340

(Deliver) 5th Floor – Finance Department
100 10th Street
Columbus, Georgia 31901

VIII. PERFORMANCE BOND: After award of the contract by Columbus City Council, the successful Bidder shall, without any additional cost to the City, furnish a Performance Bond in the amount of one hundred percent (100%) of the total proposal price within ten (10) calendar days after notification of an award. Such bond shall be issued from a reliable surety company, licensed to do business in the state of Georgia and acceptable to the City.

IX. AWARD/NOTICE TO PROCEED/FINAL INSPECTION/INVOICE

- A. Award: This bid will be awarded to the lowest, responsive, responsible bidder. The City will be the judge of the factors and will make the award accordingly. Should the successful bidder not be able to supply the required services, the City reserves the right to procure from other sources. After award of the bid by Columbus City Council, the successful vendor will be required to sign a contract for the project.
- B. Notice to Proceed: Johnny Harp (Facilities Maintenance Manager), or his designee, shall issue the notice to proceed with the work.
- C. Final Inspection: Contractor must obtain final inspection approval from Johnny Harp after work is completed and approved by Edifice Consulting, Inc.
- D. Invoices: After satisfactory and completion of the work, the successful vendor shall forward an invoice to the following address. The invoice shall reference the purchase order number. Failure to reference the purchase order number may delay payment of the invoice:

Columbus Consolidated Government
Accounting Division
P. O. Box 1340
Columbus, Georgia 31902-1340

X. TERMINATION OF CONTRACT

- A. Default: If the contractor refuses or fails to perform any of the provision of this contract with such diligence as will ensure its completion within the time specified in this contract, or any extension thereof, otherwise fails to timely satisfy the contract provisions, or commits any other substantial breach of this contract, the Purchasing Division Director may notify the contractor in writing of the delay or non-performance and if not cured within ten (10) days or any longer time specified in writing by the Purchasing Division Director, such director may terminate the contractor's right to proceed with the contract or such part of the contract as to which there has been delay or a failure to properly perform.

In the event of termination in whole or in part the Purchasing Division Director may procure similar supplies or services, from other sources, in a manner and upon terms deemed appropriate by the Purchasing Division Director. The contractor shall continue performance of the contract to the extent it is not terminated and shall be liable for excess costs incurred in procuring similar goods or services.

B. Compensation: Payment for completed supplies delivered and accepted by the City shall be at the contract price. The City may withhold from amounts due the contractor such sums as the Purchasing Division Director deem necessary to protect the City against loss because of outstanding liens or claims of former lien holders and to reimburse the City for the excess costs incurred in procuring similar goods and services.

C. Excuses for Nonperformance or Delayed Performances: Except with respect to defaults of subcontractors, the contractor shall not be in default by reason of any failure in performance of this contract in accordance with its terms, if the contractor has notified the Purchasing Division Director within 15 days after the cause of the delay and the failure arises out of causes such as: acts of God; acts of public enemy; acts of the City and any other governmental entity in its sovereign or contractual capacity; fires; floods; epidemics; quarantine restrictions; strikes or other labor disputes; freight embargoes; or unusually severe weather. If the failure to perform is caused by the failure of a subcontractor to perform or to make progress, and if such failure arises out of causes similar to those set forth above, the contractor shall not be deemed in default, unless the supplies or services to be furnished by the subcontractor were reasonably obtainable from other sources in sufficient time to permit the contractor to meet the contract requirements.

Upon request of the contractor, the Purchasing Division Director shall ascertain the facts and extent of such failure, and, if such director determines that any failure to perform was occasioned by any one or more of the excusable causes, and that, but for the excusable cause, the contractor's progress and performance would have met the terms of the contract, the delivery schedule shall be revised accordingly.

INSURANCE CHECKLIST

**Roofing Services at North Precinct
RFB No. 18-0023**

**CERTIFICATE OF INSURANCE MUST SHOW ALL COVERAGE
AND ENDORSEMENTS INDICATED BY "X"**

CSL = Combined Single Limit; BI = Bodily Injury; PD=Property Damage

Required Coverage(s)		Limits (Figures denote minimums)	Bidders Limits/Response
X	1. Worker’s Compensation and Employer’s Liability	STATUTORY REQUIREMENTS	
	Comprehensive General Liability		
X	2. General Liability Premises/Operations	\$1 Million CSL BI/PD each occurrence, \$1 Million annual aggregate	
X	3. Independent Contractors and Sub - Contractors	\$1 Million CSL BI/PD each occurrence, \$1 Million annual aggregate	
	4. Products Liability	\$1 Million CSL BI/PD each occurrence, \$1 Million annual aggregate	
X	5. Completed Operations	\$1 Million CSL BI/PD each occurrence, \$1 Million annual aggregate	
X	6. Contractual Liability (Must be shown on Certificate)	\$ 1 Million CSL BI/PD each occurrence, \$1 Million annual aggregate	
	Automobile Liability		
X	7. *Owned/Hired/Non-Owned Vehicles/ Employer non ownership	\$1 Million BI/PD each Accident, Uninsured Motorist	
	Others		
	8. Miscellaneous Errors and Omissions	\$1 Million per occurrence/claim	
X	9. Umbrella/Excess Liability	\$1 Million Bodily Injury, Property Damage and Personal Injury	
	10. Personal and Advertising Injury Liability	\$1 Million each offense, \$1 Million annual aggregate	
	11. Professional Liability	\$1 Million per occurrence/claim	
	12. Architects and Engineers	\$1 Million per occurrence/claim	
	13. Asbestos Removal Liability	\$2 Million per occurrence/claim	
	14. Medical Malpractice	\$1 Million per occurrence/claim	
	15. Medical Professional Liability	\$1 Million per occurrence/claim	
	16. Dishonesty Bond		

	Required Coverage(s)	Limits (Figures denote minimums)	Bidders Limits/Response
	17. Builder's Risk	Provide Coverage in the full amount of contract	
	18. XCU (Explosive, Collapse, Underground) Coverage		
	19. USL&H (Long Shore Harbor Worker's Compensation Act)		
	20. Contractor Pollution Liability	\$2 Million per occurrence/claim	
	21. Environmental Impairment Liability	\$2 Million per occurrence/claim	
	22. Pollution	\$2 Million per occurrence/claim	
X	23. Carrier Rating shall be Best's Rating of A-VII or its equivalents		
X	24. Notice of Cancellation, non-renewal or material change in coverage shall be provided to City at least 30 days prior to action.		
X	25. The City shall be named Additional Insured on all policies		
X	26. Certificate of Insurance shall show Bid Number and Bid Title		

*If offeror's employees will be using their privately owned vehicles while working on this contract and are privately insured, please state that fact in the **Bidders Limits/Response** column of the insurance checklist.

BIDDER'S STATEMENT:

If awarded the contract, I will comply with contract insurance requirements.

BIDDER NAME: _____

AUTHORIZED SIGNATURE: _____

STATEMENT OF QUALIFICATIONS & WORK GUARANTEE
ROOFING SERVICES AT NORTH PRECINCT
RFB No. 18-0023

The undersigned certified under oath that the information provided herein is true and sufficiently complete so as not to be misleading.

Submitted to: _____

Submitted by: Firm Name: _____

Address: _____

Principal Office Location: _____

Qualification Statement Submitted for - Project Name: _____

Type of Work:

Site Preparation _____	Roofing _____	Plumbing _____
HVAC _____	Sprinkler _____	Electrical _____
General Const. _____	Other _____	

(File separate form for each classification of work)

Organization:

Please provide the following information concerning your organization:

Type of Entity: Corporation _____ Partnership _____ Individual _____ Other _____

Name of Principal, Owners or Partners

<u>Name</u>	<u>Position</u>	<u>Years of Service with Organization</u>
-------------	-----------------	---

_____	_____	_____
_____	_____	_____
_____	_____	_____

Number of years this organization has been in business? _____

Have members of this organization operated under former names/businesses? Yes _____ No _____
If "yes," list name, type of entity and names of principal, owners or partners.

Provide a brief description of the general type of construction the firm performs. Please indicate for this project the work you intend to subcontract or perform.

	<u>Perform</u>	<u>Subcontract</u>
Earth Work	_____	_____
Concrete Work	_____	_____
Masonry Work	_____	_____

Structural Work	_____	_____
Roofing Work	_____	_____
Sprinkler	_____	_____
Plumbing	_____	_____
HVAC	_____	_____
Electrical	_____	_____

Experience

Please list on a separate sheet marked "ATTACHMENT A" the major construction projects your organization has in progress providing the name of project, owner, architect, contract amount, bonding company, insurance carrier, percentage complete and scheduled completion date.

Please list on a separate sheet marked "ATTACHMENT B" the major projects your organization has completed in the past five years, giving the name of project, owner, architect, contract amount, bonding company, date of completion and percentage of the cost of the work performed with your own forces.

Insurance and Bonds

Please list names of current insurance carrier and number of projects insured by carrier:

Please list names of bonding company/agent utilized for projects constructed during the last five years:

Warranty

Describe your Warranty and Guarantee of Work (Use additional paper if necessary _____)

Claims and Suits

Has your organization ever failed to complete any construction work it has been awarded? Yes _____ No _____

Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? (If the answer is yes, please describe in full.) Yes _____ No _____

Has there been in the last ten years, or is there now pending or threatened, any litigation, arbitration, investigation, or governmental or regulatory proceeding involving claims in excess of \$100,000 or requesting a declaratory judgment or injunctive relief with respect to the construction or operation of any building which your firm, its principals, predecessors or affiliates constructed? Yes _____ No _____

Are all city, county, state and Federal taxes of any type, including real estate, FICA and Workmen's Compensation paid to date? Yes _____ No _____

Is there any potential claim, demand, litigation, arbitration, investigation, governmental proceeding or regulatory proceeding involving your firm, or its principals, predecessors or affiliates? If the answer to either of the preceding questions is "Yes," please describe in full in an attachment. Yes _____ No _____

In addition to the litigation, arbitration, investigation or governmental or regulatory proceeding referred to in the preceding paragraphs, is there any litigation, arbitration, investigation or governmental or regulatory proceeding now pending or threatened

to which your firm is or may be a party, or are you aware of any potential claim or demand, which might otherwise affect the capacity of your firm to perform with respect to your involvement with the Owner, whether or not it concerns other work which you have undertaken? If so, please describe in full.

Yes ____ No ____

Bankruptcy

Has your firm, its principals, predecessors, or affiliates been the subject of any proceeding under the federal bankruptcy laws or any other proceedings under state or federal law in which a court or government agency has assumed jurisdiction over any of the assets or business of your firm, its principals, predecessors or affiliates? If so, please identify the proceedings, the court or governmental body and the date such jurisdiction was assumed in an attachment.

Yes ____ No ____

Name and address of firm preparing attached financial statement and date thereof.

References

Please list below Trade References:

Please list below Bank References:

Authorized Signature

Print Name of Signatory

Date

**VENDOR INFORMATION REGARDING
GEORGIA SECURITY AND IMMIGRATION COMPLIANCE
*and***

**House Bill 87, also known as,
The Illegal Immigration Reform and Enforcement Act of 2011**

Section 3 of House Bill 87 amends O.C.G.A. §13-10-91.

O.C.G.A. §13-10-91(b)(1) states, in part, “A public employer shall not enter into a contract ... for the physical performance of services unless the contractor registers and participates in the federal work authorization program.”

Accordingly, the affidavits on the pages that follow relate to documentation you must provide the City.

All contractors must complete the attached “CONTRACTOR AFFIDAVIT”. Additionally, if you utilize subcontractors, they must complete the “SUBCONTRACTOR AFFIDAVIT” and or the “SUB-SUBCONTRACTOR AFFIDAVIT.”

*****In lieu of the affidavit required by this subsection, a contractor, subcontractor, or sub-subcontractor who has no employees and does not hire or intend to hire employees for purposes of satisfying or completing the terms and conditions of any part or all of the original contract with the public employer shall instead provide a copy of the state issued driver's license or state issued identification card of such contracting party and a copy of the state issued driver's license or identification card of each independent contractor utilized in the satisfaction of part or all of the original contract with a public employer. A driver's license or identification card shall only be accepted in lieu of an affidavit if it is issued by a state within the United States and such state verifies lawful immigration status prior to issuing a driver's license or identification card.**

See <https://e-verify.uscis.gov/emp/vislogin.aspx?JS=YES> to access your E-Verify Company Identification Number.

Information is available at: http://www.dol.state.ga.us/spotlight/sp_sb_529_new_rules.htm

FORM 3

CONTRACTOR AFFIDAVIT E-VERIFY / GEORGIA SECURITY & IMMIGRATION COMPLIANCE ACT

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of **Columbus Consolidated Government** has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Company ID Number (**numerical, 4-7 digits**)

Date of Authorization

****See <https://e-verify.uscis.gov/emp/vislogin.aspx?JS=YES> to access your E-Verify Company Identification Number.**

Name of Contractor

Roofing Services at North Precinct; RFB No. 18-0023

Name of Project

Columbus Consolidated Government

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ____, 201__ in _____ (city), _____ (state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

Subscribed and sworn before me on this the ____ day of _____, 201__.

NOTARY PUBLIC

My Commission Expires:

A properly completed, notarized E-Verify Affidavit must be included with sealed proposal; failure to do so will render the firm's proposal non-responsive and ineligible for further consideration.

FORM 4

Non-Collusion Affidavit of Prime Bidder

STATE OF _____ COUNTY OF _____

I, _____, being first duly sworn, deposes and says that:

He or she is _____
(Owner, Partner, Officer, Representative or Agent)

of _____, the Bidder that has submitted the attached Bid;

He or she is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

Such Bid is genuine and is not a collusive or sham Bid;

Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this Affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against Columbus Consolidated government or any person interested in the proposed Contract; and

The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this Affiant.

BIDDER: _____

By: _____

(name signed)

(name printed or typed)

Title: _____

Date: _____

Subscribed and sworn to me this ____ day of _____, 20__

NOTARY PUBLIC: _____

(name signed)

(name printed or typed)

Commission Expires: _____

(SEAL)

FORM 5

BID FORM (PRICING PAGE) ROOFING SERVICES AT NORTH PRECINCT RFB NO. 18-0023

By signing this form, the authorized representative attests to the fact that the company has examined all agreements and specifications and has examined the site of the work; and on the basis of the agreements and specifications, the company proposes to furnish all necessary labor, materials, and equipment and will perform said work in the manner specified:

Item	Manufacturer of Proposed Products	Total Sq/Ft Measured & Included in this Bid	Total Bid
TPO Roof System at North Precinct			\$
Unit Pricing (per Section 01 22 00.07)			
1. Replacement of existing deteriorated wood blocking and nailers		Per board foot	\$
2. New retrofit drains at bitumen roofs		each	\$
3. Existing metal deck removal and replacement		Per square foot	\$
4. Existing metal deck rehabilitation		Per square foot	\$
5. Replacement of existing wood deck		Per board foot	\$
6. Fluid applied roof membrane		Per 30 square feet	\$
Alternates (per Section 01 023 00.07)			
Amount to be added to Base Bid to provide and install a new prefabricated metal canopy		Lump Sum	\$
Additional Bid Criteria			
We will begin the work, as specified, within _____ days after notice to proceed.			
The average number of roofing crew on-site for this project will be _____ people.			
Our anticipated number of actual working days to complete this project is _____ days.			

IMPORTANT INFORMATION:

PLEASE SUBMIT ONE ORIGINAL AND ONE IDENTICAL COPY OF EACH BID

By signing this Bid Form, the authorized representative understands the City reserves the right to request any omitted information, with the exception of the E-Verify Affidavit, **WHICH DOES NOT AFFECT THE SUBMITTED BID PRICE**. Bidders shall be notified, in writing, and shall have two (2) days, after notification to submit the omitted information. If the omitted information is not received within two (2) days, the Bidder shall be deemed non-responsive and the Bid Submission will be deemed "Incomplete". Use the following check-list to verify the items are included in sealed bid:

Bid Form
 Qualifications
 Bond
 Warranty
 Non-Collusion Affidavit
 Insurance
 GSICA Forms
 Addenda

Initial below to acknowledge receipt of the following addenda (if any):

Addendum No. 1 _____
 Addendum No. 2 _____
 Addendum No. 3 _____

Company Name
 Authorized Signature
 Print Name
 Date

FORM 6

**CONTRACT SIGNATURE PAGE
ROOFING SERVICES AT NORTH PRECINCT
RFB NO. 18-0023**

The undersigned hereby declares that he has/they have carefully examined the specifications herein referred to and will provide all equipment, terms and services of the Consolidated Government of Columbus, Georgia.

ATTEST:

Signature of Authorized Representative Date

Witness as to the Contractor

Print Name and Title of Signatory

Witness as to the Contractor

Company: _____

Address: _____

Telephone: _____

Fax: _____

Email: _____

* * * * *

**CONSOLIDATED GOVERNMENT OF
COLUMBUS, GEORGIA**

Accepted this ___ day of _____ 20 ___

APPROVED AS TO LEGAL FORM:

Isaiah Hugley, City Manager

Clifton C. Fay, City Attorney

ATTEST:

Tiny B. Washington, Clerk of Council



TECHNICAL SPECIFICATIONS

NORTH PRECINCT ROOF PROJECT COLUMBUS

COLUMBUS CONSOLIDATED GOVERNMENT COLUMBUS, GEORGIA

OCTOBER 23, 2017

ISSUED FOR:

- PRELIMINARY (NOT FOR CONSTRUCTION)**
- BIDDING AND CONSTRUCTION (100%)**

PROJECT NUMBER: 17CCGJ03RR145

**SECTION 00 01 03
PROJECT DIRECTORY**

PROJECT:

North Precinct Roof Project Columbus
8395 Beaver Run Road
Midland, GA. 31820

OWNER:

Columbus Consolidated Government
602 11th Avenue, Bldg. A
Columbus, GA. 31902-1340

CONSULTANT:

Edifice Consulting, Inc.
P.O. Box 1060
Byron, Georgia 31008

Email: jody@edifice.biz

END OF SECTION

SECTION 00 01 10
TABLE OF CONTENTS

00 00 00 INTRODUCTORY REQUIREMENTS

SECTION 00 01 01	PROJECT TITLE PAGE
SECTION 00 01 02	PROJECT DIRECTORY
SECTION 00 01 10	TABLE OF CONTENTS
SECTION 00 01 15	LIST OF DIAGRAM SHEETS

01 00 00 GENERAL REQUIREMENTS

SECTION 01 11 13.07	SUMMARY OF WORK
SECTION 01 22 00.07	UNIT PRICES
SECTION 01 23 00.07	ALTERNATES
SECTION 01 31 00.07	PROJECT MANAGEMENT AND COORDINATION
SECTION 01 33 24	SUBMITTALS
SECTION 01 61 00	WARRANTY REQUIREMENTS
SECTION 01 77 00.07	CLOSEOUT PROCEDURES

02 00 00 EXISTING CONDITIONS

SECTION 02 41 19.14	SELECTIVE ROOF DEMOLITION
---------------------	---------------------------

03 00 00 CONCRETE

SECTION 03 52 17	LIGHTWEIGHT CELLULAR INSULATING CONCRETE ROOF DECK
------------------	--

05 00 00 METALS

SECTION 05 31 24	METAL ROOF DECK REHABILITATION AND REPLACEMENT
------------------	--

06 00 00 WOOD, PLASTICS, AND COMPOSITES

SECTION 06 10 53	MISCELLANEOUS ROUGH CARPENTRY
SECTION 06 15 16.81	WOOD ROOF DECK REHABILITATION

07 00 00 THERMAL AND MOISTURE PROTECTION

SECTION 07 01 50.19	PREPARATION FOR RE-ROOFING
SECTION 07 52 42.13	THERMOPLASTIC POLYOLEFIN (TPO) MEMBRANE ROOFING
SECTION 07 62 00	SHEET METAL FLASHING AND TRIM

END OF SECTION

SECTION 00 01 15
LIST OF DRAWING SHEETS

KEY PLAN 1	OVERALL ROOF PLAN
KEY PLAN 2	OVERALL SCHEMATIC DRAINAGE PLAN
DIAGRAM 1	ROOF EDGE AT UPPER ROOF
DIAGRAM 2	TRANSITION FROM UPPER ROOF TO LOWER ROOF #1 AND #2
DIAGRAM 3	TRANSITION FROM UPPER ROOF TO LOWER REAR ROOF
DIAGRAM 4	PARAPET AT UPPER ROOF
DIAGRAM 5	ROOF EDGE AT LOWER ROOF #2
DIAGRAM 6	ROOF EDGE AT LOWER ROOF #1
DIAGRAM 6	ROOF EDGE AT LOWER ROOF #1
DIAGRAM 8	PILASTER CAP AT FRONT ENTRANCE
DIAGRAM A	PRE-FABRICATED PIPE FLASHING
DIAGRAM B	FIELD FABRICATED PIPE FLASHING
DIAGRAM C	CURB FLASHING AT NON-REMOVABLE COMPONENT
DIAGRAM D	CURB FLASHING AT REMOVABLE COMPONENT

END OF SECTION

SECTION 01 11 13.07
SUMMARY OF WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams, key plans, and general provisions of the Contract including General and Supplementary Conditions and other Division 01-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Work covered by the Contract Documents.
 - 2. Miscellaneous Provisions.

1.03 PROJECT ACCESS SUMMARY

- A. Work for this project is on a law enforcement facility; do not enter the building. No building access except in case of emergency.
- B. Refer to Owner requirements.

1.04 GENERAL DESCRIPTION OF BASE BID ROOFING WORK

- A. Remove existing roofs down to the existing wood and metal decks. Refer to Section 02 41 19, "Selective Building Demolition" for demolition work.
- B. Rehabilitate existing wood decks, and metal decks. Prepare decks for installation of new roof system.
- C. Install new temporary roof system.
- D. Install new wood nailers, as specified, at roof edges to accommodate new insulation height.
- E. Increase height of existing and/or remaining curbs as required to provide minimum 8-inch base flashing height above finished roof surface. Refer to project diagrams for additional requirements.
- F. Install new lightweight concrete insulating deck system, as specified. Ensure slope to drain roof to gutters. Examples of roof slopes shown on Key Plans are schematic approximations of drainage patterns.
 - 1. Contractor to provide tapered insulation shop drawing design package. Refer to project Submittal requirements (Section 01 33 24).
- G. Install fully adhered fleeceback Thermoplastic Polyolefin (TPO) roof system as specified, directly over new lightweight insulating concrete roof deck system.
- H. Install flashing, gutters, downspouts, and accessories as specified.
- I. Refer to project Alternates and Unit Prices for additional work requirements.

1.05 MISCELLANEOUS PROVISIONS

- A. Without exception, no product or material used on the Project will contain asbestos. Contractor is responsible for providing Consultant with manufacturer's written technical data for questionable items. If installed materials are found to contain asbestos, these materials will be removed and replaced with acceptable materials at Contractor's expense.
- B. Prior to Substantial Completion, inspect, test and adjust performance of every system of the roofing Work to ensure that overall performance complies with the Project Specifications.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 22 00.07

UNIT PRICES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams, key plans, and general provisions of the Contract, including General and Supplementary Conditions and other Division 01-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.

1.03 DEFINITIONS

- A. A unit price is an amount proposed by Bidders and stated on the Proposal Form as a price per unit of measurement for materials or services that will be added to or deducted from the Contract Sum by Change Order in the event the estimated quantities of Work required by the Contract Documents are increased or decreased.

1.04 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
 - 1. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- C. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 SCHEDULE OF UNIT PRICES

- A. Unit Price No. 1: Replacement Of Existing Deteriorated Wood Blocking And Nailers
 - 1. Description: Removal and replacement of deteriorated and/or damaged wood blocking and/or nailers, according to Section 06 10 53, “Miscellaneous Rough Carpentry”.
 - 2. Unit of Measurement: Cost per board foot of blocking and/or nailers based on board feet of blocking and/or nailers removed.
 - 3. Work for this unit price shall be performed in accordance with the requirements of this project manual and other contract documents.
 - 4. Contractor to determine need for additional work in conjunction with this unit price and include in the unit price.

- B. Unit Price No. 2: New Retrofit Drains at Bitumen Roofs
 - 1. Description: Removal of deteriorated, non-functional and/or damaged roof drain bowls strainers and clamping rings, according to Section 022 14 26.14, “Retrofit Roof Drains”.
 - 2. Unit of Measurement: Cost for each individual complete retrofit roof drain assembly based on each individual existing drain bowl to be retrofitted.
 - 3. Work for this unit price shall be performed in accordance with the requirements of this project manual and other contract documents.
 - 4. Contractor to determine need for additional work in conjunction with this unit price and include in the unit price.

- C. Unit Price No. 3: Existing Metal Deck Removal and Replacement.
 - 1. Description: Removal and replacement of existing metal deck materials due to deterioration and/or damage. Refer to specification Section 05 31 24, Metal Roof Deck Rehabilitation and Replacement.
 - 2. Unit of Measurement: Cost per square foot of roofing materials based on survey of existing roofing materials removed.
 - 3. Work for this unit price shall be performed in accordance with the requirements of this project manual and other contract documents.
 - 4. Contractor to determine need for additional work in conjunction with this unit price and include in the unit price.

- D. Unit Price No. 4: Existing Metal Deck Rehabilitation.
1. Description: Rehabilitation of existing metal deck materials due to deterioration and/or damage, as required. Refer to specification Section 05 31 24, Metal Roof Deck Rehabilitation and Replacement.
 2. Unit of Measurement: Cost per square foot of roofing materials based on survey of existing roofing materials rehabilitated.
 3. Work for this unit price shall be performed in accordance with the requirements of this project manual and other contract documents.
 4. Contractor to determine need for additional work in conjunction with this unit price and include in the unit price.
- E. Unit Price No. 5: Replacement of Existing Wood Deck
1. Description: Removal and replacement of deteriorated and/or damaged wood decking, according to Section 06 15 16.81, Wood Roof Deck Rehabilitation.
 2. Unit of Measurement: Cost per board foot of roofing materials based on quantity of existing roofing materials removed.
 3. Work for this unit price shall be performed in accordance with the requirements of this project manual and other contract documents.
 4. Contractor to determine need for additional work and costs in conjunction with this unit price and include in the unit price.
 5. Existing wood decking required to be removed in accordance with diagrams and other specification sections are considered part of the base bid for this project. This unit price item refers to additional deteriorated and/or damaged wood decking.
- F. Unit Price No. 6: Fluid Applied Roof Membrane
1. Description: Provide and install specified TPO roof system Fluid Applied Roof Membrane in locations directed by Consultant.
 2. Unit of Measurement: Per 30 square feet of installed membrane.
 3. Work for this unit price shall be performed in accordance with the requirements of this project manual and other contract documents.
 4. Contractor to determine need for additional work and costs in conjunction with this unit price and include in the unit price.

END OF SECTION

SECTION 01 23 00.07

ALTERNATES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams, key plans, and general provisions of the Contract, including General and Supplementary Conditions and other Division 01-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes administrative and procedural requirements for alternates.

1.03 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.04 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
 - 1. Execute accepted alternates under the same conditions as other work of the Contract.
- C. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 SCHEDULE OF ALTERNATES

- A. Alternate No. 1: Amount to be Added to the Base Bid to Provide and Install a new Pre-Fabricated Metal Canopy.
1. Contractor to provide and install new prefabricated 8'-0"x4'-0" aluminum canopy (awning) over exterior doorway. Refer to project Key Plan for location. Work included in this Alternate shall meet applicable building code requirements.
 2. Unit of Measurement: Total lump sum cost to perform work of this Alternate.
 3. Work for this Alternate shall be performed in accordance with the requirements of this project manual and other contract documents.
 4. Contractor to determine need for additional work in conjunction with this Alternate and include in their price.

END OF SECTION

SECTION 01 31 00.07

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams, key plans, and general provisions of the Contract, including General and Supplementary Conditions and other Division 01-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination Drawings.
 - 2. Project meetings.
 - 3. Requests for Interpretation (RFI).
- B. Related Sections include the following:
 - 1. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.03 DEFINITIONS

- A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.04 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components.
- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
- C. Preparation of Contractor's Construction Schedule.
 - 1. Preparation of the Schedule of Values.
 - 2. Delivery and Processing of Submittals.
 - 3. Progress Meetings.
 - 4. Pre-installation Conferences.
 - 5. Project Closeout Activities.

1.05 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
- B. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Consultant, Architect, and General Contractor of scheduled meeting dates and times.
- C. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
- D. Minutes: Record significant discussions and agreements achieved.
 - 1. Distribute the Meeting Minutes to everyone concerned, including Owner and Consultant, within three (3) days of the meeting.
- E. Preconstruction Conference: Schedule a Preconstruction Conference before starting construction, at a time convenient to Owner and Consultant, but no more than ten (10) days prior to start commencement of roofing work. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
 - 1. Attendees: Authorized representatives of Owner, Consultant, Contractor, and relevant subcontractors shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Critical work sequencing and long-lead items.
 - c. Designation of key personnel and their duties.
 - d. Procedures for processing field decisions and Change Orders.
 - e. Procedures for RFI's.
 - f. Procedures for testing and inspecting.
 - g. Procedures for processing Applications for Payment.
 - h. Use of the premises and existing building.
 - i. Work restrictions.
 - j. Owner's occupancy requirements.
 - k. Responsibility for temporary facilities and controls.
 - l. Construction waste management and recycling.
 - m. Parking availability.
 - n. Work and storage areas.
 - o. Equipment deliveries and priorities.
 - p. First aid.
 - q. Security.

- r. Progress cleaning.
 - s. Working hours.
 - 3. Minutes: Record and distribute meeting minutes.
 - 4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- F. Progress Meetings: Contractor is required to be present at any project progress meetings requested by the Owner and/or Consultant.
- 1. The location, time and agenda for Progress Meetings will be set by the Owner and/or Consultant.
 - 2. Contractor shall have their Project Superintendent and any other personnel or representatives present, as requested by the Consultant.

1.06 REQUESTS FOR INTERPRETATION (RFI)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
- 1. RFI shall originate with Contractor. RFI submitted by entities other than Contractor will be returned with no response.
 - 2. Coordinate and submit RFI in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
- 1. Project name.
 - 2. Date.
 - 3. Name of Contractor.
 - 4. Name of Consultant.
 - 5. RFI number, numbered sequentially.
 - 6. Specification Section number and title and related paragraphs, as appropriate.
 - 7. Drawing number and detail references, as appropriate.
 - 8. Field dimensions and conditions, as appropriate.
 - 9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 - 10. Contractor's signature.
- C. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings and other information necessary to fully describe items needing interpretation.

- D. Consultant's Action: Consultant will review each RFI, determine action required and return it. Allow seven (7) working days for Consultant's response for each RFI. RFI's received after 2:00 P.M. EDST will be considered as received the following working day.
1. The following RFI will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Consultant's actions on submittals.
 - f. Incomplete RFI's or RFI's with numerous errors.
 2. Consultant's action may include a request for additional information, in which case Consultant's time for response will start again.
 3. Consultant's action on RFI's that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section "Contract Modification Procedures."
 4. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Consultant in writing within ten (10) days of receipt of the RFI response.
 5. On receipt of Consultant's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Consultant within seven (7) days if Contractor disagrees with response.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 33 24

SUBMITTALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams and general provisions of the Contract, including General and Supplementary Conditions and other Division 00-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes administrative and procedural requirements governing roofing submittals.
 - 1. A required submittal constitutes a project requirement whether or not the requirement is called out in the project documents.
- B. Types of submittals include the following:
 - 1. Prior to contract award.
 - 2. Prior to mobilization of work.
 - 3. During work.
- C. Related Sections include the following:
 - 1. Refer to specification sections 00-48 for items of work covered by submittals.

1.03 PROCEDURES FOR SUBMITTING

- A. Number of sets: one (1), except where noted
- B. Provide all submittals on 8.5" X 11" paper
- C. Use a cover page to separate and clearly identify each submittal. Cover page will list Job name, job number, contractor name, submittal number, and submittal title. Submittals without cover pages will be rejected, with no further review.
- D. Cause all pages of each individual submittal to be connected to the cover page.
- E. Product data sheets with multiple product listing shall have the product submitted clearly marked and otherwise identified.
- F. Multiple page submittals shall be submitted in order, so should the submittal package.

1.04 SUBMITTALS PRIOR TO CONTRACT AWARD

- A. Due: Prior to award from the apparent successful bidder upon notification of apparent successful bidder status.
- B. Format and delivery: Do not staple, fold, spindle, bend, hole-punch, or otherwise physically alter the paper on which the submittal is printed in any way that would slow or jam a high-speed scanner. Properly package submittals to protect them during shipping. Damaged documents will be returned without review.
 - 1. Deliver to Glenn Howell, Edifice Consulting, Inc., P.O. Box 1060, Byron, GA. 31008
- C. Content:
 - 1. A list of three (3) jobs of similar scope where the specified applications have been used, under similar conditions as specified, with contact information for access to the facilities.
 - 2. Copy of the roofing manufacturers warranty, which meets all requirements of the specified warranties.
 - 3. A letter from the proposed roof system manufacturer stating that the contractor is an approved applicator of the proposed roof system, and capable of providing the specified manufacturers warranty for that system.

1.05 SUBMITTALS PRIOR TO MOBILIZATION OF WORK

- A. Due: Minimum five working days prior to preconstruction meeting.
- B. Format and delivery: Do not staple, fold, spindle, bend, hole-punch, or otherwise physically alter the paper on which the submittal is printed in any way that would slow or jam a high speed scanner. Properly package submittals to protect them during shipping. Damaged documents will be returned without review.
 - 1. Provide to Edifice Consulting, Inc., P.O. Box 1060, Byron, GA. 31008, Attention: Glenn Howell.
- C. Content:
 - 1. A list of subcontractors that will be utilized on the project
 - 2. Safety Plan for the project.
 - 3. Proposed project schedule.
 - 4. Any additional shop drawings requested of the bidder by the Owner, or the Owner’s consultant or representative.
 - 5. A list of subcontractors, including lightweight insulating concrete subcontractor, who will be utilized on the project and the specific work they will provide including reference to specification sections in this project manual.

6. Temporary roof sheathing fastening patterns and dimensions, where applicable, for:
 - a. Field
 - b. Corners
 - c. Perimeters
7. Temporary Roof Sheathing Fasteners:
 - a. Product Data Sheets
8. Temporary Roof Membrane:
 - a. Product Data Sheets
 - b. Safety Data Sheets
9. Lightweight Insulating Concrete Roof Deck System:
 - a. Product Data Sheets
 - b. Safety Data Sheets
10. Primers:
 - a. Product Data Sheets
 - b. Safety Data Sheets
11. TPO Membrane Adhesives:
 - a. Product Data Sheets
 - b. Safety Data Sheets
12. TPO Roof Membrane:
 - a. Product Data Sheets
 - b. Safety Data Sheets
 - c. Color Chart
 - d. Manufacturer installation instructions for specified system
13. Fluid Applied Roof Membrane:
 - a. Product Data Sheets
 - b. Safety Data Sheets
 - c. Manufacturer installation instructions including project specific details.
14. Miscellaneous Roof Membrane Flashing:
 - a. Product Data Sheets
 - b. Safety Data Sheets

15. Sheet Metal Flashing and Trim:
 - a. Product Data Sheets
 - b. Color Chart
16. Roof System Edge Metal (Sheet Metal):
 - a. Product Data Sheets
 - b. Color Chart
17. Metal Wall Panel System:
 - a. Provide shop drawing submittal package including manufacturer details, dimensions, installation instructions, product data sheets, safety data sheets, and manufacturer color charts.
18. Roof Drainage Plan:
 - a. Provide shop drawing submittal package for new lightweight insulating concrete roof deck system including new slopes, and r-values.

1.06 SUBMITTALS DURING WORK

- A. Due: Within three (3) business days of all manufacturer site visits.
- B. Format and delivery: Electronic Adobe PDF format.
 1. Deliver to by email to Chuck Kilgore, chuck@edifice.biz
- C. Content:
 1. One (1) copy of the roofing system manufacturers field inspection report.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 33 24

SECTION 01 61 00
WARRANTY REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams, key plans, and general provisions of the Contract, including General and Supplementary Conditions and other Division 01-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes project warranty requirements for specific components and systems.

1.03 TPO ROOF SYSTEM WARRANTY

- A. The Contractor is to provide both a Manufacturer's Roof System Warranty, and Contractor Roof Warranty.
 - 1. Warranties which contain language regarding the governing of the warranty by any state other than the State of Georgia, must be amended to exclude such language, and substituting the requirement that the laws of the State of Georgia shall govern all such warranties.
- B. Manufacturer's Warranty: Manufacturer's TOTAL SYSTEM WARRANTY, "No Dollar Limit" (NDL) "Without Monetary Limitations", in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks.
 - 1. Special warranty includes the following items when used; roofing membrane, base flashings, roofing membrane accessories, roof insulation, fasteners, cover boards, and manufactured gravel stops and fascia.
 - 2. Warranty Period: Twenty (20) years from date of Acceptance.
- C. Contractor Roof Warranty: Standard Contractor's Roof Guarantee covering Work of this Project.
 - 1. Warranty Period: Five (5) years from date of Substantial Completion

1.04 EXPOSED SHEET METAL FACTORY APPLIED FINISH WARRANTY

- A. Special Warranty on Factory Applied Finishes: Where painted exposed metal is used, Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 659-74.
 - c. Cracking, checking, peeling, or failure of paint to adhere to the bare substrate.
 - 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 61 00

WARRANTY REQUIREMENTS | SECTION 01 61 00 - 2

SECTION 01 77 00.07
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams, key plans, and general provisions of the Contract, including General and Supplementary Conditions and other Division 01-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Warranties.
 - 3. Final cleaning.
- B. Related Sections include the following:
 - 1. Section 01 29 00, "Payment Procedures" for requirements for Applications for Payment prior to Final Completion (prior to project closeout).
 - 2. Divisions 02-48 "Sections" for specific closeout and special cleaning requirements for the Work in those Sections.

1.03 PROJECT CLOSEOUT SUBMITTALS

- A. Close out Submittals: Two (2) copies of close out submittals of which receipt and acceptance are pre-requisites for final payment shall include, but not necessarily be limited to, the following:
 - 1. Copies of all project landfill receipts from certified county landfill.
 - 2. Evidence of Payments and Release of Liens.
 - 3. Contractors Roof Warranty.
 - 4. Manufacturers Warranty.
 - 5. Final Application for Payment.

1.04 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting a Final Inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list and reasons why the Work is not complete.
 - 2. Prepare and submit project record documents, operation and maintenance manuals, and any requested final completion construction drawings.

3. Deliver any requested extra materials and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
4. Terminate and remove temporary facilities from Project site, including mockups, construction tools, and similar elements.
5. Complete all final cleaning requirements, including touchup painting.
6. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

1.05 FINAL INSPECTION

- A. Inspection: Submit a written request for a Final Inspection for Substantial Completion. On receipt of request, Consultant will either proceed with inspection or notify Contractor of unfulfilled requirements. Consultant will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Consultant that must be completed or corrected before certificate will be issued.

1.06 WARRANTIES

- A. Final payment will not be made to contractor until all specified warranties have been delivered and approved by the Consultant.

1.07 LIST OF INCOMPLETE ITEMS

- A. Preparation: Following the Final Inspection the Consultant will prepare a list of incomplete (Punch List) items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
- B. Re-Inspection: After completion of Punch List items, submit a written request to the Consultant for re-inspection. Final Application for Payment cannot be issued until all items have been satisfactorily completed.

1.08 FINAL COMPLETION

- A. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications and similar documents.
- B. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction drawings.
- C. Provide a complete set of As-Built drawings, which vary from the original contract documents showing all locations where modifications and alterations were made, deck infill, equipment removed, etc.

1.09 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS

- A. Contractor shall submit:
 - 1. Contractor's Affidavit of Payment of Debts and Claims
 - 2. Contractor's Affidavit of Release of Liens.
 - 3. Consent of Surety to Final Payment.
- B. All submittals shall be duly executed before delivery to the Consultant.

1.10 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit final statement of accounting to the Consultant. Statement shall reflect all adjustments, including, but not necessarily limited to, the following:
 - 1. Original Contract Sum.
 - 2. Additions and deductions resulting from:
 - 3. Previous change orders.
 - 4. Cash allowances.
 - 5. Unit Prices.
 - 6. Other adjustments.
 - 7. Deductions for uncorrected work.
 - 8. Penalties and bonuses.
 - 9. Deductions for liquidated damages.
 - 10. Total Contract Sum, as adjusted.
 - 11. Previous payments.
 - 12. Sum remaining due.
- B. The Consultant will prepare final change order, rejecting approved adjustment to Contract Sum not previously made by change order.

1.11 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit final application in accord with requirements of General and/or Supplementary Conditions, and all applicable requirements of this project manual.
- B. Final payment will not be made to contractor until all specified warranties have been delivered and approved by the Consultant.

1.12 FINAL CERTIFICATE FOR PAYMENT

- A. The Consultant will issue final certificate in accord with provisions of General Conditions. Should final completion be materially delayed through no fault of Contractor, the Consultant may issue a Semi-Final Certificate for Payment, in accord with provisions of General Conditions, and other applicable requirements of this project manual.

1.13 ONE YEAR INSPECTION

- A. Twenty (20) days prior to expiration of one (1) year from date of "Final Acceptance" Contractor shall notify the Consultant, in writing, of year-end inspection.
- B. The Consultant will make visual inspection of project in company with Owner and Contractor to determine whether correction of work is required, in accordance with provisions of General Conditions.
- C. For warranties beyond one (1) year, Consultant will make inspections at request of Owner, after notification to Contractor. The Consultant will promptly notify Contractor, in writing, of any observed deficiencies.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.01 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - 1. Clean Project site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter and other foreign substances.
 - 2. Sweep paved areas broom clean. Remove petrochemical spills, stains and other foreign deposits.
 - 3. Remove tools, construction equipment, machinery and surplus material from Project site.
 - 4. Remove discarded fasteners, metal trimmings, and other construction debris from roofs and gutters.

5. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 6. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
- C. Comply with safety standards for cleaning. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION

SECTION 02 41 19.14
SELECTIVE ROOF DEMOLITION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams, key plans, and general provisions of the Contract, including General and Supplementary Conditions and Division 01-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of selected portions of building, e.g. existing roof system, sheet and sheet metal flashings, as indicated in the Contract documents.

1.03 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- C. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.
- D. Replace: Remove items of existing construction, dispose of materials off- site, unless otherwise indicated and install new material as indicated.

1.04 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Where noted, historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value (i.e. copper and other valuable metals) to Owner that may be uncovered during demolition remain the property of Owner. When the value or relevance of a particular item is not clear to the Contractor, it is the Contractors responsibility to request clarification from the Owner prior to removal and disposal.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.05 FIELD CONDITIONS

- A. Owner will occupy the building during the roof removals. Should it be deemed unsafe to the building occupants during the roof removals, the Contractor will coordinate with the Owner for roof removal to take place when the building is not occupied. Otherwise, conduct selective demolition so Owner's operations will not be disrupted.
 - 1. Conditions existing at time of inspection for bidding purposes will be maintained by Owner as far as it is practical.

- B. Existing site conditions are to be maintained by the Contractor during and through the completion of the project. Contractor shall restore all site conditions including landscaping, grassing, and planting to the pre-installation status upon completion of the work. Contractor shall include the furnishing of all necessary ground protection mats as necessary to protect the existing grounds during all phases of construction.
 - 1. Pre-demolition Photographs or Videos showing existing conditions of adjoining facilities, site improvements and building construction, including finish surfaces and equipment that might be misconstrued as damage caused by demolition and/or construction operations shall be taken and submitted before the work begins.
 - 2. Notify Consultant of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
 - 3. Storage or sale of removed items or materials on-site is not permitted.

- C. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

- D. Hazardous Materials: It is not expected that asbestos-containing materials will be encountered in the Work. Refer to asbestos test lab results included in the project manual.
 - 1. If additional materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Consultant and Owner
 - 2. The cutting, handling, bagging, removal of any asbestos containing materials shall be in strict compliance with Federal Regulation, OSHA, Title 29 Subtitle B Part 1926, Chapter 1926.58; all regulations and restrictions governing the handling, removing, altering and disposal as imposed by all local, state and national governing authorities shall apply, i.e. Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA). Use standard current forms of applicable agency as required. Original copies of the disposal manifests shall be submitted to the Owner.
 - 3. Asbestos materials detected in the roof membrane and base flashings on this project will be noted on the drawings. Refer to drawings for location.
 - 4. Removal, handling and disposal of these materials shall be in strict accordance with the requirements of this project manual.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
 - 1. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
 - 1. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Consultant.
- D. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or videos.
 - 1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
- E. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.02 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.

4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Division 01 Section "Temporary Facilities and Controls."
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of selective demolition.

3.03 DEMOLITION, EXISTING CONDITIONS

- A. All existing materials and assemblies described herein are those expected to be encountered during the work of this project, based on anecdotal evidence.
1. The Owner, and Owner Representatives cannot verify the materials and configurations listed as “existing” on this project.
 2. The Contractor and their representatives are required to verify all existing materials, products, systems, and conditions on this project prior to bid submittal, prior to executing the Contract to perform work, and prior to and during the time work is completed for the Project.

3.04 SELECTIVE DEMOLITION, GENERAL

- A. Demolition Guidelines: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Evaluate all projections and penetrations to ensure that each item is secured to the building structure. Any item not considered to be secured to the structure shall be brought to the owner’s attention prior to job start, or immediately upon discovery during roofing operations.
 2. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 3. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 4. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 5. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire- suppression devices during flame-cutting operations.
 6. Maintain adequate ventilation when using cutting torches.

7. Remove decayed, animal-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 10. Dispose of demolished items and materials promptly.
 11. Removed and Reinstalled Items:
 12. Clean and repair items to functional condition adequate for intended reuse.
 13. Pack or crate items after cleaning and repairing. Identify contents of containers.
 14. Protect items from damage during transport and storage.
- B. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Consultant, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.
- D. No roofing materials will be removed or installed under adverse weather conditions. All work shall be scheduled and executed without exposing interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all reasonable risks.
- E. Only as much existing roofing shall be removed and new roofing installed as can be made weather-tight each day. This includes all flashing work.
- F. All existing roofing materials torn-off shall be immediately removed from the site to a dumping area authorized to receive such debris.
- G. Any unusual or concealed conditions discovered during the course of the work that may adversely affect the performance of the new roof system must be immediately reported to the Consultant. All work shall be halted until the Consultant has responded with a solution to the problem.
- H. Any substrate to receive new insulation, membrane or flashing shall be thoroughly dry. Existing wet materials must be removed prior to the application of the new membrane system. Should surface moisture occur on the decking, the contractor shall provide adequate equipment to dry the substrate.
- I. Temporary waterstops shall be installed at the end of each workday and if inclement weather conditions dictate during the course of day's work. These temporary waterstops shall be removed at the start of the next workday and disposed of properly. No temporary waterstops shall be made so as to obstruct water flow on the completed system (i.e. crickets, drain sumps, etc.). Polyethylene is not considered a temporary covering.

3.05 SELECTIVE DEMOLITION, SPECIFIC MATERIALS

- A. At roof areas where either complete or partial tear-off of the existing roof system assembly will occur:
 - 1. Remove the existing roof system down to the existing roof deck.
 - 2. Removal of existing roof system includes, but is not limited to removal of existing roof membrane(s), sheet metal flashings, edge metal, accessories, and trims.
 - 3. Contractor to determine need for additional demolition required and include in contract price.
- B. Miscellaneous Demolition:
 - 1. Contractor to refer to Specification Sections, “Unit Prices” and “Alternates” to determine need for additional demolition beyond base bid requirements and include in contract price.

3.06 DISPOSAL OF DEMOLISHED OR DAMAGED MATERIALS

- A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an certified, EPA-approved landfill. Follow any stated Owner specific disposal requirements.
 - 1. Collect and place demolished materials in containers.
 - 2. Do not allow demolished materials to accumulate on-site.
 - 3. Storage or sale of demolished items or materials on-site will not be permitted.
 - 4. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 5. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.
- D. New materials that are wet or damaged and unacceptable for installation on the project must be disposed of in accordance with the requirements of this project.

3.07 CLEANING

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

END OF SECTION

SECTION 03 52 17

LIGHTWEIGHT CELLULAR INSULATING CONCRETE ROOF DECK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes: Installation of new lightweight insulating concrete roof deck system over specified new temporary roof substrate.

1.03 REFERENCE STANDARDS

- A. References in these specifications to standards, test methods and codes, are implied to mean the latest edition of each such standard adopted. The following is an abbreviated list of associations, institutions, and societies which may be used as references throughout these specifications.
 1. ASTM American Society for Testing and Materials, Philadelphia, PA
 2. FM Factory Mutual Engineering and Research, Norwood, MA
 3. UL Underwriters Laboratories, Northbrook, IL

1.04 QUALITY ASSURANCE

- A. Acceptable Contractor: The contractor must be certified in writing prior to bid by the supplier to install the proposed lightweight insulating concrete system.
- B. Agency Approvals: The proposed lightweight insulating concrete system shall conform to the following requirements. No other testing agency approvals will be accepted.
- C. Underwriters Laboratories: Tested by Underwriters Laboratories in accordance with the procedures of ASTM E 119 and listed in the most recent Underwriters Laboratories Fire Resistance Directory. Lightweight insulating concrete roof insulation components are defined by Underwriters Laboratories under sections CCVW for foamed plastic and CJZZ for vermiculite aggregate in the latest edition of the Underwriters Laboratories Fire Resistance Directory.
- D. Factory Mutual: Tested by Factory Mutual Research and listed in the most recent FM Global RoofNav as non-combustible or Class 1, and for 1-90 windstorm classification utilizing the specific roof membrane system proposed for use on this project.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver materials in the supplier’s original unopened packages, fully identified as to manufacturer, brand or other identifying data and bearing the proper Underwriters Laboratories label.
- B. Storage: Store bagged concrete products in a dry location until ready for application. Expanded polystyrene board should not be stored in areas of standing water prior to application but can be exposed to rainwater before application. Boards must be clean and free from foreign substances.

1.06 PROJECT/SITE CONDITIONS

- A. Requirements Prior to Job Start
 - 1. Notification: Provide a minimum of 5 days notice to the Owner and manufacturer prior to commencing any work and notify both parties on a daily basis of any change in work schedule.
 - 2. Permits: Obtain all permits required by local agencies and pay all fees, which may be required for the performance of the work.
 - 3. Safety: Familiarize every member of the application crew with all fire and safety regulations recommended by OSHA, NRCA and other industry or local governmental groups.
- B. Environmental Requirements
 - 1. Precipitation: Do not apply materials during precipitation or in the event there is a probability of precipitation during application. Take adequate precautions to ensure that materials and building interiors are protected from possible moisture damage or contamination.
 - 2. Temperature Restrictions:
 - a. When air temperatures of 40°F (4.4°C) or above are predicted to occur within the first 24 hours after placement, normal mixing and application procedures may be used.
 - b. When air temperatures of 32°F to 40°F (0°C - 4.4°C) are predicted to occur within the first 24 hours after placement, warm water may be used.
 - c. The mix temperature should not exceed 100 degrees Fahrenheit (37.8°C) at the point of placement.
 - d. Do not install the lightweight insulating concrete system when air temperatures are below 32°F (0°C).

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Acceptable Manufacturer: Provide cellular lightweight insulating concrete roof deck system using with integral expanded polystyrene board supplied by a single manufacturer.
- B. Manufacturers:
 - 1. Elastizell Corporation of America.
 - 2. Siplast, Inc.

2.02 SYSTEM DESCRIPTION

- A. Lightweight Concrete System Description: Provide materials used in the lightweight concrete roof insulation system conforming to the following.
 - 1. Portland Cement: Portland cement conforming to Type I, II, or III as defined by ASTM C 150.
 - 2. Control Joint Filler: ASTM C 612, Class 2, glass-fiber type; compressing to one-half thickness under a load of 25 psi (172 kPa).
 - 3. Cellular Aggregate: Use cementitious materials, air-producing liquid-foaming agents complying with ASTM C 869/C 869M, and the minimum amount of water necessary to produce a workable mix in accordance with the following minimum physical properties:
 - 4. As-Cast Unit Weight: 40 to 48 lb/cu. ft. (641 to 770 kg/cu. m) at point of placement, when tested according to ASTM C 138/C 138M.
 - 5. Oven-Dry Unit Weight: 32 to 40 lb/cu. ft. (513 to 641 kg/cu. m), when tested according to ASTM C 495.
 - 6. Compressive Strength: Minimum 250 psi (1723 kPa), when tested according to ASTM C 495.
- B. Expanded Polystyrene Insulation Board: Expanded polystyrene (EPS) insulation board having a nominal density of 1 pcf (16 kg/m³) defined as Type I by ASTM C 578 and containing approximately 3% open area. Each bundle of board shall be delivered to the job site with clear identification as to manufacturer and shall carry the Factory Mutual approval label and the Underwriter's Laboratories Classified label on each bundle.
 - 1. Use insulation board provided by the lightweight insulating concrete roof deck manufacturer only.
 - 2. Water: Potable water that is clean and free of deleterious amounts of acid, alkali and organic materials.

2.03 MIX DESIGN

- A. As required for specified warranty, wind uplift, and fire resistance criteria.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. General: Ensure that all surfaces to receive lightweight insulating concrete are free of oil, grease, paints/primers, loose mill scale, dirt, or other foreign substances. Where necessary, cleaning or other corrections of surfaces to receive lightweight insulating concrete is the responsibility of the party causing the unacceptable condition of the substrate.
- B. Substrate Acceptance: With the roofing membrane contractor present, examine surfaces to receive the roof insulation system and determine that the surfaces are acceptable prior to placement of the lightweight insulating concrete system.

3.02 PREPARATION

- A. General: Remove water or any other substance that would interfere with bonding of the lightweight concrete system.

3.03 APPLICATION

- A. General: Provide equipment and application procedures conforming to the material supplier's application instructions.
- B. Applications Not Incorporating Expanded Polystyrene Panels:
 - 1. Place lightweight insulating concrete in a 2-inch minimum thickness over the approved substrate.
 - 2. Place lightweight insulating concrete in a 1-1/4 inch minimum thickness over the top of a gravel surfaced substrate.
- C. Applications Incorporating Expanded Polystyrene Panels:
 - 1. Place a 1/8-inch minimum thickness of insulating concrete slurry coat over top of the prepared substrate.
 - 2. Place the thickness of expanded polystyrene insulation panels shown in the approved shop drawings within 30 minutes of applying the insulating concrete slurry coat to the substrate.
 - 3. The maximum allowable panel step in a stair-step design is 1-inch.
 - 4. Fill the holes in the expanded polystyrene insulation panels and place a 1-inch minimum thickness of insulating concrete over top of the expanded polystyrene insulation panels within the same day's application.
- D. Thermal Resistance: Install the specified lightweight insulating concrete system to provide for an average thermal value of R-19.
- E. Slope: Install the specified lightweight insulating concrete system to provide for a minimum positive roof slope of 1/4 inch per foot. No standing water is permitted on the finished lightweight insulating concrete roof deck system surface.

3.04 FIELD QUALITY CONTROL

- A. Protection: Avoid rooftop traffic over the roof insulation system until one can walk over the surface without creating surface damage.

- B. Application Monitoring: Monitor the thickness and wet density of the lightweight insulating concrete at the time of placement to determine conformance to the manufacturer's requirements. Monitor the placement of proper thickness of polystyrene insulation board in accordance with the contract documents.
- C. Fastener Withdrawal Testing: Conduct a base ply fastener pull test 3 or more days following the application of the lightweight insulating concrete to ensure a minimum withdrawal resistance of 40 pounds per fastener.

3.05 PATCHING

- A. Patching: Perform all patching and repairing of insulating concrete using Siplast Zono-Patch or other materials approved by the lightweight insulating concrete supplier.

END OF SECTION

SECTION 05 31 24

METAL ROOF DECK REHABILITATION AND REPLACEMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams, key plans, and general provisions of the Contract, including General and Supplementary Conditions and Division 01-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes:
 - 1. Replacement of damaged or deteriorated existing metal deck and areas where new openings are created in the existing metal deck.
 - 2. Rehabilitation of damaged or deteriorated existing metal deck.

1.03 CODES AND STANDARDS

- A. The work described in this section, unless otherwise noted on the Drawings or herein specified, shall be governed by the latest editions of the following codes or specifications:
 - 1. "Specification for the Design of Cold-Formed Steel Structural Members" - AISI.
 - 2. "Structural Welding Code" - AWS D1.3.
 - 3. "Roof Deck Specifications" - Steel Deck Institute (SDI).
 - 4. "Code of Recommended Standard Practice, Roof Deck Construction" - Steel Deck Institute (SDI).

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed steel deck similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
 - 1. Qualifications of welders and welding operators, filler metal, welding techniques and procedures shall be in accordance with AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings, and the AWS Structural Welding Code.
 - 2. Certifications shall be no more than six (6) months old during the time of welding in the erection period.
- B. Powder Driven or Pneumatic Tool operators shall be trained by the tool manufacturer's representative, (not distributor or agent), in accordance to American National Standards Institute.
 - 1. Powder-actuated Fastening Systems - Safety Requirements (ANSI A10.3). New York, New York.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.
- C. Consultant may reject any material that has become damaged because of improper storage.

1.06 SEQUENCING/SCHEDULING

- A. Coordinate Work of this Section with work of other Sections as required to properly execute the Work and as necessary to maintain satisfactory progress of the work of other Sections.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Steel Roof Deck:
 - a. Nucor Corp.; Vulcraft Div.
 - b. Dek-Ing, Inc.
 - c. Or approved equal.

2.02 MATERIALS

- A. Metal Roof Deck: Deck type and gauge to match existing and shall conform to the requirements adopted by the Steel Deck Institute.
- B. Primer/Paint: Shop applied standard Vulcraft, light gray primer. Performance test standards shall meet or exceed requirements of Federal Specification TT-P-8GG, Types I and II.
- C. Galvanized Steel Sheet: ASTM A 653/A653M, Structural Steel, Grade 33, G60 (Z180) zinc coating.
- D. Welding Electrodes: Shall conform to AWS A5.1 and AWS A5.5.
- E. Screws and Deck Fasteners: As an alternate for attachment of deck.
- F. Powder Driven and Pneumatic Fasteners: Fasteners shall have knurled shank; minimum ½" diameter steel washer; electroplated zinc conforming to ASTM B633, Sc. 1, Type III; meet SDI design requirements; Factory Mutual approval, such as Hilti ENP2-21-L15, ENP2H-21-L15, ENP2K-20-L15, X-EDN19-THQ12HSN, XEDNK22 THQ12 HSN or SDM22 THS12 FDN.
- G. Accessories: Provide all accessories necessary to complete the entire installation, including cover plates required to cover all gaps where deck units abut or change direction, around columns, to cover access holes used for welding, and closures where required.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Deck attachment shall be in accordance with current Steel Deck Institute (SDI) recommendations. Fastening requirements listed in this specification are minimum requirements. The more stringent fastening requirement between these specifications and SDI requirements shall be used.
 - 1. Deck units shall be placed on supporting steel framework and adjusted to final position before being permanently fastened. Each unit shall lap a minimum of two inches (2") over supports.
 - 2. Unless noted on the contract documents metal deck units shall be fastened to the steel framework at ends, side supports, and at intermediate supports by puddle welds not less than 5/8" diameter or mechanical fasteners.
 - 3. Provide weld washers for welding all metal material lighter than 22 gauge.
 - 4. Above noted weld pattern is minimum connection. Reference drawings for required weld pattern.
- B. Install fasteners using a low velocity powder actuated tool such as the Hilti DX 750, DXA 70R, DXA 41SM or a pneumatic tool such as the Hilti R4 - X12.
 - 1. The nail head stand off shall be according to the manufacturer's recommendations and verified with an inspection gauge. The power level shall be determined by jobsite testing.
- C. Installation of fasteners shall be in accordance to design requirements and installed by manufacturer licensed operator.
- D. Side joints of the deck unit shall be fastened by tack welding or mechanical fastening not to exceed the lesser of ½ the span or 36" apart.
 - 1. This shall be minimum side lap connection requirements.
 - 2. Reference structural drawings for actual connection requirements.
 - 3. Acceptable mechanical fasteners for side laps are as follows:
 - a. Self-Drilling Screws: #10 or #12 TEK.
- E. Tack weld or sheet metal screw all accessory cover plates adequately into place.
- F. Weld metal shall penetrate all layers of deck material and shall have good fusion to the supporting members.
- G. Roof Sump Pans and Sump Plates: When sumps are present, install over openings provided in roof decking and weld or screw flanges to top of deck. Space welds not more than 12 inches apart with at least 1 weld at each corner.
- H. Miscellaneous Roof Deck Accessories: Install ridge and valley plates, finish strips, cover plates, end closures, and reinforcing channels according to deck manufacturer's written instructions.
 - 1. Weld to substrate to provide a complete deck installation.

3.02 REPAIRS AND PROTECTION

- A. Galvanizing Repairs: Prepare and repair damage galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A 780 and manufacturer’s written instructions.
- B. Repair Painting: Wire brush and clean rust spots, welds, and abraded areas on both surfaces of prime-painted deck immediately after installation, and apply repair paint.
 - 1. Apply repair paint, of same color as adjacent shop-primed deck, to bottom surfaces of deck exposed to view.

3.03 FIELD QUALITY CONTROL

- A. Testing Laboratory services shall be in accordance with the requirements of this project manual. Provide all inspections and testing as required by the International Building Code currently adopted for use in Georgia.
- B. A testing laboratory shall perform field inspection of metal deck for proper type, gage, finish, installation and attachment. Testing Laboratory shall provide a written report of their inspection.
- C. Remove and replace work that does not comply with specified requirements.
- D. Additional testing and inspecting, at Contractor’s expense, will be performed to determine compliance of corrected work with specified requirements.

END OF SECTION

SECTION 06 10 53

MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams, key plans, and general provisions of the Contract, including General and Supplementary Conditions and Division 01-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Framing with dimension lumber.
 - 2. Rooftop equipment bases and support curbs.
 - 3. Wood blocking, including plywood and nailers.

1.03 DEFINITIONS

- A. Dimension Lumber: Lumber of 2-inches nominal or greater but less than 5-inches nominal in least dimension.
- B. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. NLGA: National Lumber Grades Authority.
 - 2. SPIB: The Southern Pine Inspection Bureau.
 - 3. WCLIB: West Coast Lumber Inspection Bureau.
- C. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.01 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory marks each piece of lumber with grade stamp of grading agency.
 - 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 - 3. Provide dressed lumber, S4S, unless otherwise indicated.

2.02 LUMBER FRAMING

- A. Maximum Moisture Content: 15 percent for 2-inch nominal thickness or less, 19 percent for more than 2-inch nominal thickness.
- B. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Includes typical nominal lumber sizes including but not limited to 2x4, 2x6, 2x13 2x10, 2x10, 4x4.
- C. For concealed boards, provide lumber with 19 percent maximum moisture content and the following species and grades:
 - 1. Mixed southern pine, No. 2 grade; SPIB.
 - 2. Hem-fir or hem-fir (north), Construction or 2 Common grade; NLGA, WCLIB, or WWPA.
- D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.03 PLYWOOD

- A. Plywood: DOC PS 1, Exposure 1, C-D Plugged, in thickness indicated or, if not indicated thickness appropriate for the application indicated.
 - 1. Includes typical nominal lumber sizes including but not limited to ½” and ¾” thicknesses in typically available 4’-0” x 8’-0” boards.

2.04 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
- B. Wood Screws: ASTM A 153/A of Type 304 stainless steel.
- C. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

2.05 ELASTOMERIC UNDERLAYMENT/SEPARATION SHEET

- A. Provide underlayment/separation sheet to protect metal from corrosion/galvanic action due to miscellaneous rough carpentry products.
- B. Mid-States “Quick-Stick” HT, W R Grace "Ice & Water Shield HT".
 - 1. Or approved equal.

PART 3 - EXECUTION

3.01 INSTALLATION, GENERAL

- A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Provide blocking and framing as indicated and as required to support facing materials, equipment, sheet metal flashings, and specialty items, and trim.
- C. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- D. Use stainless steel screw of appropriate type, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

3.02 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

END OF SECTION

SECTION 06 15 16.81

WOOD ROOF DECK REHABILITATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams, key plans, and general provisions of the Contract, including General and Supplementary Conditions and Division 01-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Where existing wood decking and/or wood framing is damaged, deteriorated, or considered inadequate the existing materials should be removed and replaced to match existing and return affected area to its original design and in accordance with current applicable codes.

1.03 DEFINITIONS

- A. Dimension Lumber: Lumber of 2-inches nominal or greater but less than 5-inches nominal in least dimension.
- B. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. NLGA: National Lumber Grades Authority.
 - 2. SPIB: The Southern Pine Inspection Bureau.
 - 3. WCLIB: West Coast Lumber Inspection Bureau.
- C. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.
- D. Rehabilitation: Where existing wood decking and/or wood framing is damaged, deteriorated, or considered inadequate the existing materials should be removed and replaced to match existing and return affected area to its original design in accordance with current applicable building codes.
- E. Reference Standards:
 - 1. AITC 109 - Standard for Preservative Treatment of Structural Glued Laminated Timber; 2007.
 - 2. AITC 110 - Standard Appearance Grades for Structural Glued Laminated Timber; 2001.
 - 3. AITC 111 - Recommended Practice for Protection of Structural Glued Laminated Timber During Transit, Storage and Erection; 2005.
 - 4. AITC 113 - Standard for Dimensions of Structural Glued Laminated Timber; 2010.
 - 5. AITC A190.1 - American National Standard for Wood Products - Structural Glued Laminated Timber; 2007.
 - 6. ASTM D198 - Standard Test Methods of Static Tests of Lumber in Structural Sizes; 2015.
 - 7. ASTM D1761 - Standard Test Methods for Mechanical Fasteners in Wood; 2012.

8. ASTM D2898 - Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing; 2010.
9. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
10. AWWA U1 - Use Category System: User Specification for Treated Wood; 2012.
11. PS 1 - Structural Plywood; 2009.
12. PS 20 - American Softwood Lumber Standard; 2010.
13. SPIB (GR) - Grading Rules; 2014.
14. UL (FRD) - Fire Resistance Directory; current edition.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience and certified by AITC.
- B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than 10 years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Prevent exposure to precipitation during shipping, storage, and installation.
- B. Storage: Do not store directly on ground, or grade. Cover with breathable, water resistant covering.
- C. Handling: Keep materials clean and dry.

PART 2 - PRODUCTS

2.01 WOOD PRODUCTS, GENERAL

- A. Wood fabricated from old growth timber is not permitted.
- B. Regulatory Requirements:
 1. Conform to applicable code for fire retardant requirements.
 2. Conform to UL (FRD) requirements for applicable code.
- C. Marking: Mark each piece with producer's stamp indicating compliance with specified requirements; for pieces exposed to view in completed construction, submit manufacturer's certificate certifying that products conform to specified requirements in lieu of grade stamping.

2.02 PLYWOOD

- A. Plywood Decking:
 - 1. APA Rated Sheathing, span rating in accordance with applicable code, Exterior grade;1 A interior veneer appearance grade; sanded.
 - 2. DOC PS 1, Exposure 1, C-D Plugged, in thickness indicated or, if not indicated thickness appropriate for the application indicated.
- B. Includes typical nominal lumber sizes including but not limited to ½” and ¾” thicknesses in typically available 4’-0” x 8’-0” boards.

2.03 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Refer to specification Section 06 10 53, “Miscellaneous Rough Carpentry”.

2.04 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - a. Ensure fastener material is compatible with all wood products and adjacent materials.
 - 2. Screws:
 - a. Bugle head, hardened steel, power driven type, length three times thickness of decking.
 - b. Hot-dipped galvanized steel for high humidity, wet, and preservative-treated wood locations.
 - c. Provide stainless steel as follows, when needed for material compatibility: ASTM A 153/A of Type 304 stainless steel.
 - 3. Anchors: Toggle bolt type for anchorage to hollow masonry.
 - a. Hot-dipped galvanized steel for high humidity, wet, and preservative-treated wood locations.
 - 4. Bolts:
 - a. Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.
 - b. Provide stainless steel as follows, when needed for material compatibility: ASTM A 153/A of Type 304 stainless steel.

5. Structural Adhesive: Waterproof, air cure type, cartridge dispensed. Provide adhesive designed specifically for structural wood deck component adhesion.
 - a. Products subject to compliance with this specification are non-silicone, structural adhesive products by Chemlink (Buildsecure), Sika, and Dow.
- B. Sealants: Where needed, comply with applicable requirements in Section 079200, "Joint Sealants" and as recommended by sealant manufacturer and manufacturer of substrates for intended application.

2.05 ELASTOMERIC UNDERLAYMENT/SEPARATION SHEET

- A. Provide underlayment/separation sheet to protect metal from corrosion/galvanic action due to miscellaneous rough carpentry products.
 1. Mid-States "Quick-Stick" HT, W R Grace "Ice & Water Shield HT".
 2. Or approved equal.

2.06 WOOD TREATMENT

- A. Factory-Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
- B. Fire Retardant Treatment:
 1. Provide fire retardant wood material where required by applicable codes.
 2. Manufacturers:
 - a. Arch Wood Protection, Inc; www.wolmanizedwood.com.
 - b. Hoover Treated Wood Products, Inc; www.frtw.com.
 - c. Osmose, Inc; www.osmose.com.
 3. Exterior Type: AWPA U1, Use Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; with maximum flame spread index of 25 when tested in accordance with ASTM E84 and with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
 4. Marking: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
- C. Preservative Pressure Treatment:
 1. Manufacturers:
 - a. Arch Wood Protection, Inc; www.wolmanizedwood.com.
 - b. Viance, LLC; www.treatedwood.com.
 - c. Osmose, Inc; www.osmose.com.

2. Preservative Pressure Treatment of Plywood Decking: AWWA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative to 0.25 lb/cu ft retention (to 4.0 kg/cu m retention).
 - a. Kiln dry plywood after treatment to maximum moisture content of 18 percent.
3. Marking: Mark each piece with stamp of an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWWA standards.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that support framing is ready to receive decking.

3.02 PREPARATION

- A. Coordinate placement of bearing items.
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Provide blocking and framing as indicated and as required to support facing materials, equipment, sheet metal flashings, and specialty items, and trim.
- D. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

3.03 INSTALLATION

- A. Install decking perpendicular to framing members with ends staggered over firm bearing. On sloped surfaces, lay decking with tongue upward.
- B. Engage plywood tongue and groove edges.
- C. Allow expansion space at edges and ends.
- D. Attach decking with adhesive and screws.
 1. Use fasteners of appropriate type, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated. Ensure fasteners are installed to provide applicable code required structural integrity.
- E. Use sheathing clips at unsupported edges of plywood between supporting framing members.
- F. Cut decking to accommodate penetrations such as pipes, conduits, roof drains, and flanges.
- G. Where preservative-treated roof decking must be cut during erection, apply a field-treatment preservative to comply with AWWA M4.

- H. Anchor wood roof decking, where supported on walls, with bolts as indicated.
- I. Apply joint sealant to seal roof decking at exterior walls at the following locations:
 - 1. Between roof decking and supports located at exterior walls.
 - 2. Between roof decking and exterior walls that butt against underside of roof decking.
 - 3. Between tongues and grooves of roof decking over exterior walls and supports at exterior walls.

3.04 TOLERANCES

- A. Surface Flatness of Decking Without Load: 1/4 inch in 10 feet (2 mm/m) maximum, and 1/2 inch in 30 feet (12 mm / 9 m) maximum.

3.05 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Refer to specification Section 06 10 53, “Miscellaneous Rough Carpentry”.

3.06 ADJUSTING

- A. Repair damaged surfaces and finishes prior to installation of roofing..

END OF SECTION

SECTION 07 01 50.19
PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams, key plans, and general provisions of the Contract, including General and Supplementary Conditions and Division 01-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Roof tear-off.

1.03 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.04 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
- B. Existing Roof System: Existing roof membrane, insulation layers, cover board, gutters and downspouts, copings, and/or other associated sheet metal flashings over the roof deck.
- C. Roof Tear-Off: Where applicable, refer to Section "Selective Demolition" of this project manual.
- D. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
- E. Existing to Remain: Existing items of construction that are not indicated to be removed.

1.05 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning membrane roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination". Refer to individual Division 02-48 Sections for additional requirements.

1.06 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately below re-roofing area. Conduct re-roofing so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.
 - 1. Coordinate work activities daily with Owner so Owner can place protective dust or water leakage covers over sensitive equipment or furnishings, shut down HVAC and fire alarm or - detection equipment if needed, and evacuate occupants from below the work area if desired.
 - 2. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below the affected area. Verify that occupants below the work area have been evacuated prior to proceeding with work over the impaired deck area.
- B. Protect building to be re-roofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- D. Owner assumes no responsibility for condition of areas to be re-roofed.
 - 1. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.
- E. Limit construction loads on roof to rooftop equipment wheel loads and uniformly distribute material loads across the structure.
- F. Weather Limitations: Proceed with re-roofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering into existing roofing system or building.
- G. Hazardous Materials: It is not expected that hazardous materials such as asbestos-containing materials will be encountered in the Work.
 - 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Consultant and Owner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 PREPARATION

- A. Coordinate with Owner to shut down air intake equipment in the vicinity of the work. Cover air intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- B. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

- C. Existing Roof Drainage Components: Existing roof drainage components shall be maintained as follows:
 - 1. All existing roof drainage system components shall be cleaned and made functional prior to the removal of the existing roof system.
 - 2. Prevent debris from entering or blocking existing roof drainage system. Contractor shall inspect and remove any construction or other debris on a daily basis to ensure roof drainage.
 - 3. If roof drainage system is temporarily blocked or unserviceable due to roofing system removal or partial installation of new roofing system, provide alternative drainage method to remove water.
- D. Verify that rooftop utilities and service piping have been shut off before commencing Work.

3.02 DEMOLITION

- A. General: Notify Consultant/Owner each day of extent of proposed roof tear-off and/or material removal.
- B. Refer to specification section “Selective Roof Demolition” of this project manual.

END OF SECTION

SECTION 07 54 23.13

THERMOPLASTIC POLYOLEFIN (TPO) MEMBRANE ROOFING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams and general provisions of the Contract including General and Supplementary Conditions and other Division 00-48 Specification Sections apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Fully adhered thermoplastic polyolefin (TPO) roofing system.
 - 2. Miscellaneous system accessories and components.

1.03 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
- B. Design Uplift Pressure: The uplift pressure, calculated according to procedures in SPRI's "Wind Load Design Guide for Fully Adhered and Mechanically Fastened Roofing Systems," before multiplication by a safety factor.
- C. Factored Design Uplift Pressure: The uplift pressure, calculated according to procedures in SPRI's "Wind Load Design Guide for Fully Adhered and Mechanically Fastened Roofing Systems," after multiplication by a safety factor.

1.04 PERFORMANCE REQUIREMENTS

- A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, 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 manufacturer based on testing and field experience.
- C. Roofing System Assembly: Provide a roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE 7-10.
- D. Wind, Fire and Hail Resistance:
 - 1. FMG Listing: Provide a complete system including roofing membrane, base flashings, and component materials that comply with requirements in FMG 4450 and FMG 4470 as part of a roofing system and that are listed in FMG's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FMG markings.

- a. Fire/Windstorm Classification: Class 1A 90.
 - b. Hail Resistance: SH.
 2. Miami Dade NOA: Alternately, a complete system NOA approval may be provided in lieu of FM approval.
 - a. Windstorm Classification: -45 psf
 3. Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, and/or FMG. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.
 - a. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.
 - b. Fire-Resistance Ratings: ASTM E 119, for fire-resistance-rated roof assemblies of which roofing system is a part.
 - c. For recover projects, provide statement from membrane manufacturer clarifying applicability of referenced fire resistance approval to the specific project recover conditions.
 4. Impact Resistance: Roof coverings installed on low-slope roofs (roof slope <2:12) shall resist impact damage based on the results of tests conducted in accordance with ASTM D 3746, ASTM D 4272, or the "Resistance to Foot Traffic Test " FM 4470.
 5. For recover projects, provide statement from membrane manufacturer clarifying applicability of referenced fire, wind uplift, and impact resistance approvals to the specific project recover conditions.
- E. Agency Approvals:
1. All products used shall bear Factory Mutual Global (FMG) and Underwriters Laboratories (UL) approval.
 2. Designated seal of approval shall be clearly visible on all product packing.
 3. System and components shall comply with applicable state International Building Code (IBC) requirements including ANSI-SPRI/ES-1.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified firm that is has been their approved application in good standing for the past five (5) consecutive years prior to project bid date. Installer must have been in business under the same name for at least five (5) consecutive years. Con-tractor shall be approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's twenty (20) year warranty.
1. Installer's Field Supervision: Installer is required to maintain a full-time supervisor / foreman, with supervision-only responsibilities, on job site during times that membrane roofing work is in progress. The individual shall be experienced in installation of roofing systems similar to type and scope required for this Project.

- B. **Manufacturer Qualifications:** A qualified manufacturer that has UL listing and FMG approval for membrane roofing system identical to that used for this Project. Manufacturer shall have a minimum ten (10) years of successful manufacture of membrane using the same membrane formulation.
 - 1. Obtain components for roofing system from or approved by roofing system manufacturer. Provide primary products, including each type of roofing sheet, composition flashings, and vapor barrier (where used), produced by a single manufacturer. Provide secondary products only as recommended and approved by the manufacturer of primary products for use with roofing system specified.
 - 2. **Manufacturer's Technical Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design and extent to those specified for this Project. Manufacturer's Sales Representative will not be accepted as a Technical Representative. When material and labor, no dollar limit warranties are specified, provide the following:
 - a. One final inspection.
 - b. Manufacturer field inspection reports shall be provided in writing to Consultant within the following three (3) days of each inspection.
- C. **Source Limitations:** Obtain components for roofing system from or approved by roofing system manufacturer. Provide primary products, including each type of roofing sheet, adhesives, primers, fasteners, accessories, flashings, and vapor barrier (if any), produced by a single manufacturer. Provide secondary products only as recommended by the manufacturer of primary products for use with roofing system specified.

1.06 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 storage.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturers written instructions for handling, storing, and protecting during installation.
- D. Store and handle roofing roll goods and rigid insulation boards in a manner, which will ensure that there is no possibility of significant moisture pick-up.
- E. All material must be protected from the weather by protective tarps. Manufacturer's plastic covers are not acceptable means of protection.
- F. Handle and store roofing materials and place equipment in a manner to avoid permanent de-flexion of deck.

1.07 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. At the end of each days work temporary cut-offs and tie-ins shall be made weathertight, no exceptions.
- C. At the end of the days work all materials stored materials are to be recovered, tied and weighted down.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with specified roof system requirements, provide products by the following:
 - 1. TPO Membrane Roofing:
 - a. Carlisle-Syntec, Inc.
 - b. Firestone Building Products, Inc.
 - c. Johns Manville, Inc.
- B. Source Limitations: Obtain components for roofing system from roof membrane system manufacturer.
- C. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
 - 1. Products: Subject to compliance with requirements, provide one of the products specified.
 - 2. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

2.02 MATERIAL PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.
 - 1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
 - 2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- C. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

- D. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.03 TPO ROOF MEMBRANE

- A. Fleece-Reinforced TPO Sheet: ASTM D 6878, reinforced, uniform, flexible, fleece-backed TPO sheet.
 - 1. Thickness: 115 mils (2.92 mm), nominal.
 - 2. Exposed Face Color: White.

2.04 FLUID APPLIED ROOF MEMBRANE

- A. Provide fully reinforced cold fluid applied roof membrane system to be included in the specified warranty for the TPO roof membrane system. Color to match specified TPO roof membrane exposed face color.
- B. Approved Manufacturers:
 - 1. Membrane system manufactured by specified TPO roof membrane manufacturer.
 - 2. Membrane system approved for use and warrantable by TPO roof membrane manufacturer.

2.05 ADHESIVES AND CLEANERS

- A. All products shall be provided by the roof membrane manufacturer for use in the specified roof system.
- B. TPO Bonding Adhesive: A high-strength, adhesive designed for bonding specified membrane to various surfaces including specified lightweight insulating concrete. The adhesive is applied to both the membrane and the substrate at a coverage rate of approximately 45 - 50 square feet per gallon per finished surface (includes coverage on both surfaces).
- C. TPO Cut-Edge Sealant: A clear-colored sealant used to seal cut edges of reinforced membrane. A coverage rate of approximately 225 - 275 linear feet per squeeze bottle can be achieved when a 1/8" diameter bead is applied.
- D. Water Cut-Off Mastic: Used as mastic to prevent moisture migration at drains, compression terminations and beneath conventional metal edging (at a coverage rate of approximately 10' per tube or 100' per gallon).
- E. Universal Single-Ply Sealant: A 100% solids, solvent free, one-part, polyether sealant that provides a weather tight seal to a variety of building substrates. Can be used as a termination bar sealant or for use in counterflashing, coping/parapet, and scupper details.
- F. TPO One-Part Pourable Sealer: A one-part, moisture curing, elastomeric polyether sealant used to fill Molded Sealant Pockets. Packaged in four 1/2 gallon pouches per plastic bucket. One pouch will fill one Molded Sealant Pocket.
- G. Foil Grip Aluminum Tape: A general-purpose pressure-sensitive sealant used as a bond break at joints in TPO Coated Metal. Packaged in rolls 2" wide by 100' long.
- H. TPO Membrane Cleaner: Used to prepare membrane that has been exposed to the elements for approximately 7 days prior to heat welding or to remove general construction dirt at an approximate coverage rate of 400 square feet per gallon (one surface).

2.06 AUXILIARY MATERIALS AND ACCESSORIES

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing system. Items used from the section must be acceptable to the system manufacturer for use in conjunction with their roof system, and not effect specified warranty coverage.
- B. General Fastener Requirements: Factory-coated steel fasteners and metal plates, batten bars and termination bars meeting corrosion-resistance provisions in FMG 4470, designed for fastening roofing system components to substrate, tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer. Tested to meet or exceed specified wind uplift requirements.
 - 1. Fasteners subject to compliance with specified roof system performance requirements.
- C. Base Flashing Nails: Galvanized Simplex large head nails 15/16-inch minimum diameter.
- D. Steel Deck Insulation Fasteners and Plates:
 - 1. Extra Heavy Duty #15 by SFS, OMG, TRUFAST or fasteners provided by roof system manufacturer.
 - 2. Provide 3-inch diameter, galvanized steel plates approved by the fastener for specified wind uplift requirements.
- E. Nailers and Curbs: Wood nailers and curbs are specified in specification section "Miscellaneous Rough Carpentry".
- F. Sheet Metal Flashings and Accessories: See specification section "Sheet Metal Flashing and Trim" for roof penetration flashings, flashings and counterflashings.
- G. Termination Bar: Prefabricated 1" wide and .098" thick extruded aluminum bar pre-punched 6" on center; incorporates a sealant ledge to support lap sealant and provide increased stability for membrane terminations.
- H. Term Bar Nail-Ins: A min. 1-1/4" long expansion anchor with a zinc plated steel drive pin used for fastening the Termination Bar or Seam Fastening Plates to concrete, brick, or block walls.
- I. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer such as pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.07 ROOF INSULATION

- A. Refer to specification Section 03 52 17, Lightweight Cellular Insulating Concrete

2.08 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with roofing.
- B. Fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roof insulation, thermal barriers, and cover boards to substrate, and acceptable to roofing system manufacturer.

2.09 TEMPORARY ROOF SHEATHING BOARDS

- A. For use as temporary roof membrane substrate directly over existing roof deck.
- B. Gypsum Board: ASTM C 1177, glass-mat, water-resistant gypsum substrate, 1/2-inch thick.
 - 1. Product: Subject to compliance with requirements, provide "Dens-Deck Prime" by Georgia-Pacific Corporation.

2.10 TEMPORARY ROOF MODIFIED BITUMEN ROOF MEMBRANE MATERIALS

- A. Base Ply: ASTM D 6163 or ASTM D 6164, Grade S, Type I, polyester or fiberglass reinforced, SBS-modified asphalt sheet; smooth surfaced; suitable for application method specified.
 - 1. 1-ply application.
- B. Products: Must be provided by roof membrane system manufacturer as an approved component of the specified assembly, meeting all specification requirements.

2.11 PROTECTION MEMBRANE

- A. Roof Protection Membrane: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured product designed for walkway pad use, approximately 80 mils thick (170 mils overall) by 34" wide and acceptable to roofing system manufacturer.

PART 3 - EXECUTION

3.01 DEMOLITION, GENERAL

- A. Refer to Section "Preparation for Re-Roofing" for demolition and removal of the existing roof system and existing roof deck preparation.
- B. No roofing materials will be removed or installed under adverse weather conditions. All work shall be scheduled and executed without exposing interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all reasonable risks.
- C. Only as much existing roofing shall be removed and new roofing installed as can be made weathertight each day. This includes all flashing work.
- D. All existing roofing materials torn-off shall be immediately removed from the site to a dumping area authorized to receive such debris.
- E. Any unusual or concealed conditions discovered during the course of the work that may adversely affect the performance of the new roof system must be immediately reported to the Consultant. All work shall be halted until the Consultant has responded with a solution to the problem.
- F. Any substrate to receive new insulation, membrane or flashing shall be thoroughly dry. Existing wet materials must be removed prior to the application of the new membrane system. Should surface moisture occur on the decking, the contractor shall provide adequate equipment to dry the substrate.

- G. Temporary waterstops shall be installed at the end of each work day and if inclement weather conditions dictate during the course of day's work. These temporary waterstops shall be removed at the start of the next work day and disposed of properly. No temporary waterstops shall be made so as to obstruct water flow on the completed system (i.e. crickets, drain sumps, etc.). Polyethylene is not considered a temporary covering.

3.02 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 - 1. Verify that roof openings and penetrations are in place, set and braced.
 - 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and nailers match thicknesses of insulation.
 - 3. Proceed with installation only after unsatisfactory conditions have been corrected

3.03 PREPARATION

- A. Clean and prepare substrate according to manufacturers written recommendations. Provide clean, dust-free, and dry substrate for roofing application.
- B. Mask off adjoining surfaces not receiving roofing to prevent spillage from affecting other construction.
- C. Protect roof drains and other deck penetrations to prevent spillage and migration of roofing fluids.
- D. Remove grease, oil, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
- E. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, and other voids.

3.04 WOOD NAILERS

- A. Treated wood nailers shall be installed as indicated on project drawings. Refer to specification section "Miscellaneous Rough Carpentry".
- B. The thickness of the nailer shall be such that the top of the nailer is flush with the surface to which the membrane is to be applied.
- C. At Reroofing areas: Where existing nailers are not reused, install new continuous pressure treated nailers at all locations where new roof system edge metal shall be installed such as at parapets and gravel stops/drip edges.

3.05 FASTENERS

- A. Fasteners used to secure components of the roof system shall be accepted by the manufacturer of the membrane being installed.
- B. The fastener assembly shall be installed as specified to avoid abrasion to the membrane.

- C. The fastener manufacturer's recommendations shall be followed for:
 - 1. Fastener suitability for specific applications
 - 2. Proper drill bit for drilling correct hole size diameter and depth.
 - 3. Minimum depth of embedment into deck to achieve required resistance to pull out.
 - 4. Fastener length to provide proper fastening into deck.
 - 5. Installation tools
- D. Fasteners that are improperly installed shall be removed or corrected. Improper application may be characterized as:
 - 1. Overdriven: Fastener is driven to the point that it is causing the stress distribution surface to become concave (or deformed in the case of batten strips) excessive driving may cause failure by disengaging the fastener threads from the deck).
 - 2. Under-driven: Fastener head is not properly seated on the stress distribution surface.
 - 3. Snapped: Fastener breaks under the driving load.
 - 4. Bent: Fastener is bent to the point that it adversely affects the installation.
 - 5. Not engaged: Fastener is improperly located or is of insufficient length.

3.06 TEMPORARY ROOF MEMBRANE PLY INSTALLATION

- A. New temporary roof system at existing metal deck is as follows;
 - 1. Mechanically fasten new temporary roof sheathing boards over existing wood deck. Utilize fastening pattern required to meet specified wind uplift design requirements in the field, perimeter, and corner roof areas.
 - 2. Install new temporary roof membrane over prepared substrates. Fully heat weld specified modified bitumen roof membrane in a shingle fashion according to roofing system manufacturer's written instructions starting at low point of roofing system. Shingle in direction required to shed, not dam, water.
- B. New temporary roof system at existing wood deck is as follows;
 - 1. Contractor to provide fire resistant barrier over existing wood deck.
 - 2. Mechanically fasten new temporary roof sheathing boards over existing wood deck. Utilize fastening pattern required to meet specified wind uplift design requirements in the field, perimeter, and corner roof areas.
 - 3. Install new temporary roof membrane over prepared substrates. Fully heat weld specified modified bitumen roof membrane in a shingle fashion according to roofing system manufacturer's written instructions starting at low point of roofing system. Shingle in direction required to shed, not dam, water.
- C. Finished temporary roof membrane installation must remain fully watertight, and leak free until remainder of roof system is complete.

- D. Extend base ply modified bitumen membrane to extents shown on project diagrams. Membrane shall be fully adhered to all surfaces it is installed over.
- E. Application of heat should create a flow of hot, melted bitumen across the back surface of the membrane. Flow of bitumen shall extend min. 1/8" beyond edge (side and end laps) of membrane.
- F. Seal all laps by running a hot trowel along the edge of the seam.
- G. Run membrane tight up against any vertical surfaces such as curbs, parapets, and vents.
- H. Ensure that all penetrations in the temporary roof membrane system are installed to provide a fully watertight condition.

3.07 LIGHTWEIGHT INSULATING CONCRETE INSULATION INSTALLATION

- A. Refer to specification Section 03 52 17, Lightweight Cellular Insulating Concrete.
- B. Comply with insulation manufacturer's instructions and recommendations for the handling, installation, and bonding or anchorage of insulation to substrate.
- C. Provide smooth transition from finished insulation surface to adjacent materials (roof drains, nailers, etc.).
- D. Finished lightweight insulating concrete system surface must drain surface water. No areas of standing water, for any period of time, will be permitted on finished lightweight concrete surface, or finished roof surface.

3.08 TPO MEMBRANE HEAT WELDED APPLICATION, GENERAL

- A. Heat weld the TPO membrane using an Automatic Heat Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's specifications. At all splice intersections, roll the seam with a silicone roller immediately after the welder causes the membrane step off to ensure a continuous hot air welded seam.
- B. All splice intersections shall be overlaid with pre-fabricated T Joint Covers.
- C. Probe all seams once the hot air welds have thoroughly cooled (approximately 30 minutes).
- D. Repair all seam deficiencies the same day they are discovered.
- E. Apply Cut Edge Sealant on all cut edges of reinforced membrane (where the scrim reinforcement is exposed) after seam probing is complete. Cut Edge Sealant is not required on vertical splices.

3.09 FULLY ADHERED ROOFING INSTALLATION

- A. Fully adhere fasten roofing over area to receive roofing according to roofing system manufacturer's written instructions. Unroll roofing and allow to relax before retaining.
 - 1. Position and unroll successive sheets and align to provide a minimum 2 inch overlap (use pre-marked overlap line) along the selvage edge. At end laps (along the width of the sheet), membrane shall be butted together which will be overlaid with 6 inch wide Sure-Weld Reinforced Membrane and hot air welded on all edges.

2. Fleeceback membrane shall be fully adhered to an acceptable substrate with membrane manufacturers own adhesive. The adhesive is spray applied or extruded to the substrate only and the membrane is rolled into the wet adhesive once it has foamed up and reached string/gel time (approximately 2 minutes). Roll the membrane with a weighted (100 - 150 pounds) steel roller to set the membrane into the adhesive.
 3. Prevent overspray of adhesive onto the membrane. If adhesive should contaminate the splice area, immediately (while the adhesive is still in liquid form) clean with membrane cleaner or allow adhesive to cure and remove with a paint-type scraper.
 4. Position adjoining sheets to allow a minimum overlap of 2 inches to provide a minimum 1-1/2" hot air weld.
 5. Continue to install adjoining membrane sheets in the same manner, overlapping edges a minimum of 2 inches and complete the bonding procedures as stated previously.
- B. Accurately align roofing, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- C. Mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.
- D. Apply roofing with side laps shingled with slope of roof deck where possible.
- E. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.
1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of sheet.
 2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
 3. Repair tears, voids, and lapped seams in roofing that do not comply with requirements.
- F. Spread sealant bed over deck-drain flange at roof drains, and securely seal roofing in place with clamping ring.

3.10 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate with termination bars.

3.11 PENETRATIONS

- A. Refer to roof membrane system manufacturer requirements.

3.12 FLUID APPLIED ROOF MEMBRANE INSTALLATION

- A. Refer to roof membrane system manufacturer installation requirements.
- B. New fluid applied roof membrane installation must be fully reinforced.

3.13 WATER CUT-OFF

- A. At the end of the day's work, and when precipitation is eminent, a water cut-off shall be constructed at all open edges. Cut-off must be able to withstand extended periods of wet weather. The water cut-off shall be completely removed prior to resuming the installation of the roofing system.

3.14 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform roof tests and inspections and to prepare test reports.
- B. Test Cuts: Test specimens will be removed to evaluate problems observed during quality- assurance inspections of roofing membrane as follows:
 - 1. Approximate quantities of components within roofing membrane will be determined according to ASTM D 3617.
 - 2. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.
 - 3. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Consultant. Notify Consultant 48 hours in advance of date and time of inspection.
 - 1. Notify Consultant or Owner 48 hours in advance of date and time of inspection.
- D. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.15 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Consultant / Consultant and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

END OF SECTION

SECTION 07 62 00
SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Project diagrams, key plans, and general provisions of the Contract, including General and Supplementary Conditions and Division 01-48 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes:
 - 1. Formed roof-drainage sheet metal fabrications.
 - 2. Formed low-slope roof sheet metal fabrications.
 - 3. Formed roof penetration flashings.
 - 4. Metal wall panel system.
 - 5. Miscellaneous sheet metal fabrications.

1.03 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leak-proof, secure, and noncorrosive installation.

1.04 SUBMITTALS

- A. Refer to Division 01 Section "Submittals".

1.05 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employ skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.
- B. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
- C. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. FM Approvals Listing: Manufacture and install copings and roof edge flashings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-90. Identify materials with name of fabricator and design approved by FM Approvals.
- D. System and components shall comply with applicable state International Building Code (IBC) requirements including ANSI-SPRI/ES-1.
- E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.02 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

2.03 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
 - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
 - 2. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.

3. Fasteners for Zinc-Coated (Galvanized) Aluminum-Zinc Alloy-Coated Steel Sheet: Series 300 stainless.
 4. Fasteners for attachment of wood nailers and blocking: Series 300 Stainless steel screws.
- C. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, non-sag, nontoxic, non-staining tape
1. 2-inch wide and 1/8-inch thick.
- D. Elastomeric Sealant: Masterseal NP-1 or Sika 1-A
- E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

2.04 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 2. Obtain field measurements for accurate fit before shop fabrication.
 3. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4-inch in 20-feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
1. Use lapped expansion joint unless otherwise shown.
 2. Form expansion joints of intermeshing hooked flanges, not less than 1-inch deep, filled with butyl sealant concealed within joints as indicated on the drawings.
- D. Sealant Joints: Where movable, non expansion-type joints are required; form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.
- E. Fabricate cleats and attachment devices from compatible metals and in accordance with ANSI-SPRI ES-1 requirements.
- F. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use, rivet joints where necessary for strength.
- G. Do not use graphite pencils to mark metal surfaces.

2.05 ROOF SHEET METAL FABRICATIONS, GENERAL

- A. General: Any clarifications will be in accordance with National Roofing Contractors Association (NRCA) standards.
- B. Roof System Edge Metal Cleats (Typical in All Locations):
 - 1. Fabricate from the following materials:
 - a. Provide cleat in metal type and gauge required for specified ANSI/SPRI ES-1 wind uplift test requirements.
 - b. Ensure protection from corrosive action caused by contact of dissimilar metals.

2.06 AT TPO ROOFS:

- A. Counter-flashing:
 - 1. Fabricate from the following materials:
 - a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.
- B. Drip Edge Fascia Cladding:
 - 1. Fabricate from the following materials:
 - a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.
- C. Flashing Receivers and Miscellaneous Sheet Metal:
 - 1. Fabricate from the following materials:
 - a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.
- D. Pitch pocket penetration flashings:
 - 1. Fabricate from the following materials:
 - a. Pitch pockets are not permitted. Utilize standard TPO coated metal to match TPO membrane system, provided by TPO roof membrane system manufacturer.
- E. Vent stack-Penetration Flashing:
 - 1. Pre-manufactured boot; refer to TPO membrane system specifications.
- F. Gutter and Downspout Leader:
 - 1. Fabricate from the following materials:
 - a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.
 - b. Gutter Profile: Match existing.
 - c. Gutter Size: Match existing.

- G. Metal Wall Panel Systems:
 - 1. Fabricate from the following materials:
 - a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.
 - 2. Provide pre-engineered, blind fastened, metal wall panel system with trim, flashings, closures, fasteners, and accessories needed for a complete weathertight assembly. Basis of design is McElroy Metal R-Panel System.
 - 3. Contractor to submit shop drawings for approval. Refer to Section 01 33 24, Submittals.
- H. Pilaster Caps:
 - 1. Fabricate from the following materials:
 - a. 24 ga. Galvanized steel with factory Kynar finish in color selected by Owner from manufacturer standard colors.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 - 2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 - 3. Install continuous cleats spaced not more than 1-inch apart. Anchor each cleat with fasteners through the vertical leg face at 12-inches on center.
 - 4. Install exposed sheet metal flashing and trim without excessive oil canning, and free of buckling and tool marks.

5. Torch cutting of sheet metal flashing and trim is not permitted.
 6. Cut sheet metal with snips to provide clean edge cuts. Do not grind or abrade metal for cuts.
 7. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
1. Provide underlayment/separation sheet to protect metal from corrosion/galvanic action due to miscellaneous rough carpentry products.
 - a. Mid-States "Quick-Stick" HT, W R Grace "Ice & Water Shield HT".
- C. Bed flanges in approved sealant where required for waterproof performance.
- D. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10-feet with no joints allowed within 24-inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges not less than 1-inch deep, filled with elastomeric sealant concealed within the joints.
- E. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/2-inches for wood screws
1. Galvanized or Aluminum-Zinc Alloy-coated steel: Use stainless-steel fasteners
 2. Stainless Steel: Use stainless steel fasteners.
- F. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- G. Seal joints as required for watertight construction.
1. Use sealant-filled joints unless otherwise indicated. Embed hooked flanges of joint members not less than 1-inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant- type joints at temperatures below 40 deg F (4 deg C).
 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- H. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets with solder to width of 1-1/2-inches; however, reduce pre-tinning where pre-tinned surface would show in completed Work.
1. Do not solder metallic-coated steel and aluminum sheet.
 2. Do not pre-tin zinc-tin alloy-coated stainless steel
 3. Do not use torches for soldering.

4. Heat surfaces to receive solder, and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
5. Stainless-Steel Soldering: Tin edges of uncoated sheets, using solder for stainless steel and acid flux. Promptly remove acid flux residue from metal after tinning and soldering. Comply with solder manufacturer's recommended methods for cleaning and neutralization.

3.03 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements, NRCA's "Roofing and Waterproofing Manual" and "SMACNA's Manual." Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Copings: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated.
 1. Inter-lock exterior bottom edge of coping with continuous cleat anchored to substrate at 12-inch centers.
 2. Anchor interior leg of coping with washers and screw fasteners at 16-inch centers.
- C. Counter-flashing: Coordinate installation of counter-flashing with installation of base flashing. Insert counter-flashing in reglets or receivers and fit tightly to base flashing. Extend counter-flashing 4-inches over base flashing. Lap counter-flashing joints minimum of 4-inches. Secure in waterproof manner by means of snap-in installation and sealant or lead wedges and sealant; interlocking folded seam or blind rivets and sealant as indicated.

3.04 WALL FLASHING INSTALLATION

- A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA sheet metal standards unless a more stringent requirement has been provided for this project. Coordinate installation of wall flashing with any wall transitions and wall-openings such as at windows, doors, miscellaneous penetrations and louvers.
- B. Reglets: Saw-cut reglet joints a minimum of one 1-inch deep by one quarter-inch wide into masonry substrate/wall as indicated.

3.05 INSTALLATION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4-inch in 20-feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.06 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.

- D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturers written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. Maintain sheet metal flashing and trim in clean condition during construction.
- E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION



PROJECT DIAGRAMS

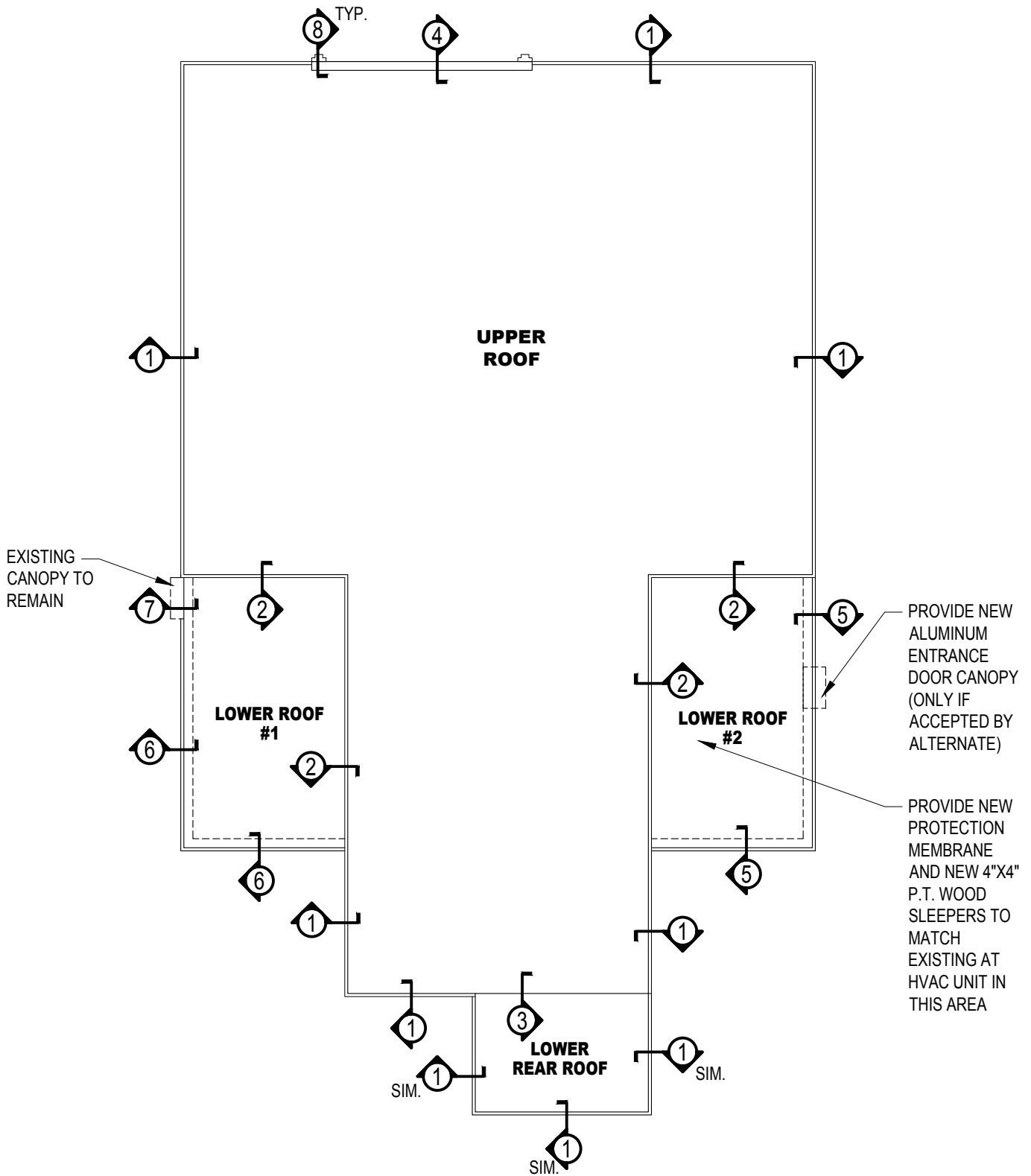
NORTH PRECINCT ROOF PROJECT COLUMBUS

**COLUMBUS CONSOLIDATED GOVERNMENT
COLUMBUS, GEORGIA**

OCTOBER 18, 2017

PROJECT NUMBER: 17CCGJ03RR145

PROJECT DIAGRAMS – 1




EXISTING CANOPY TO REMAIN

PROVIDE NEW ALUMINUM ENTRANCE DOOR CANOPY (ONLY IF ACCEPTED BY ALTERNATE)

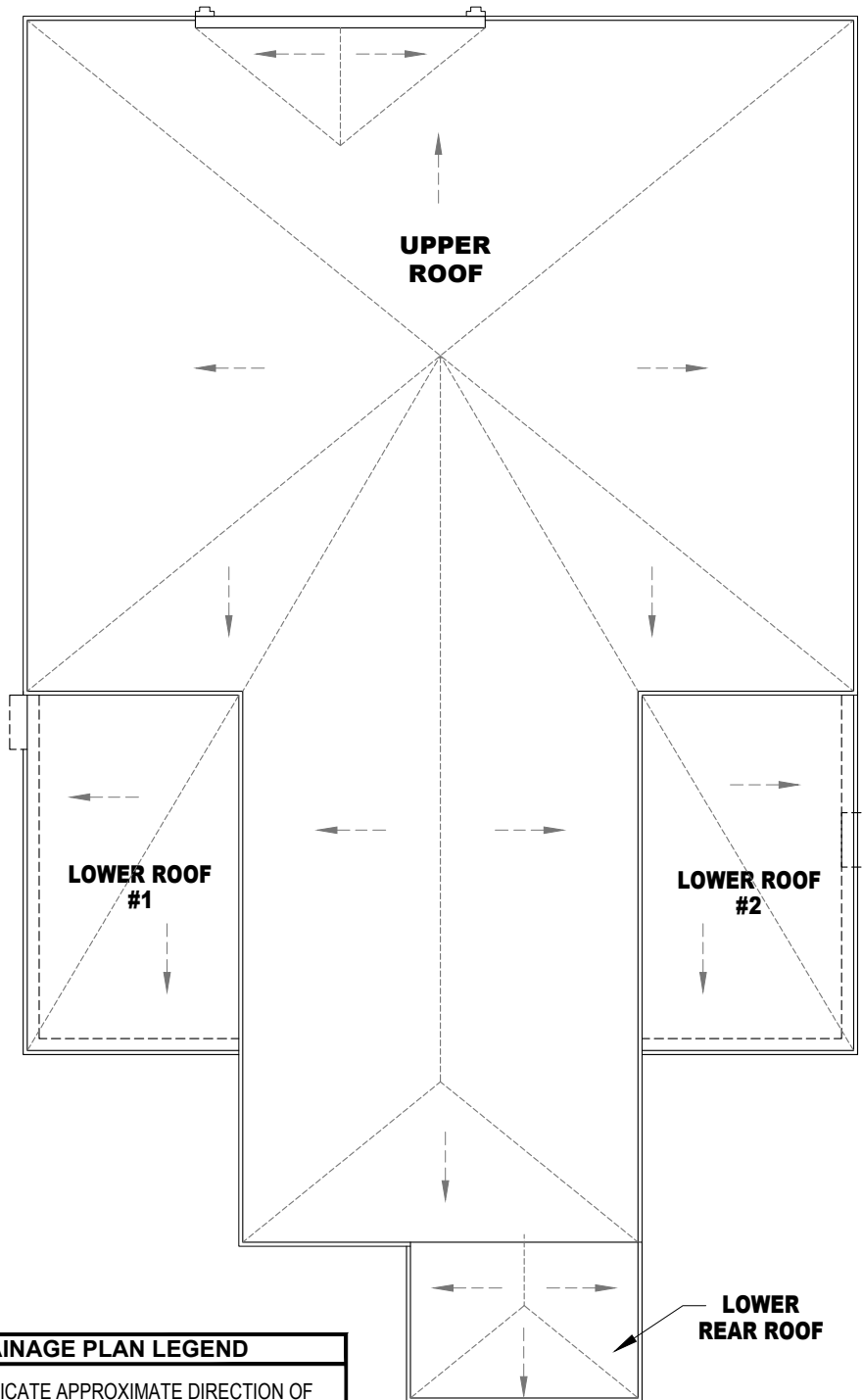
PROVIDE NEW PROTECTION MEMBRANE AND NEW 4"X4" P.T. WOOD SLEEPERS TO MATCH EXISTING AT HVAC UNIT IN THIS AREA

NORTH PRECINCT ROOF PROJECT COLUMBUS COLUMBUS, GEORGIA	PROJECT #: 17CCGJ03RR145
	DATE: 23 OCT 2017
KEY PLAN 1 OVERALL ROOF PLAN	SCALE: NOT TO SCALE



A Georgia Corporation

KEY PLANS	DIAGRAMS
-2-	-12-



DRAINAGE PLAN LEGEND

ARROWS INDICATE APPROXIMATE DIRECTION OF NEW FINISHED ROOF SLOPE TO ENSURE DRAINAGE TO SCUPPERS & GUTTERS. CONTRACTOR TO PROVIDE TAPERED INSULATION SHOP DRAWING DESIGN.

**NORTH PRECINCT ROOF PROJECT COLUMBUS
COLUMBUS, GEORGIA**

**KEY PLAN 2
OVERALL SCHEMATIC DRAINAGE PLAN**

PROJECT #:
17CCGJ03RR145

DATE:
23 OCT 2017

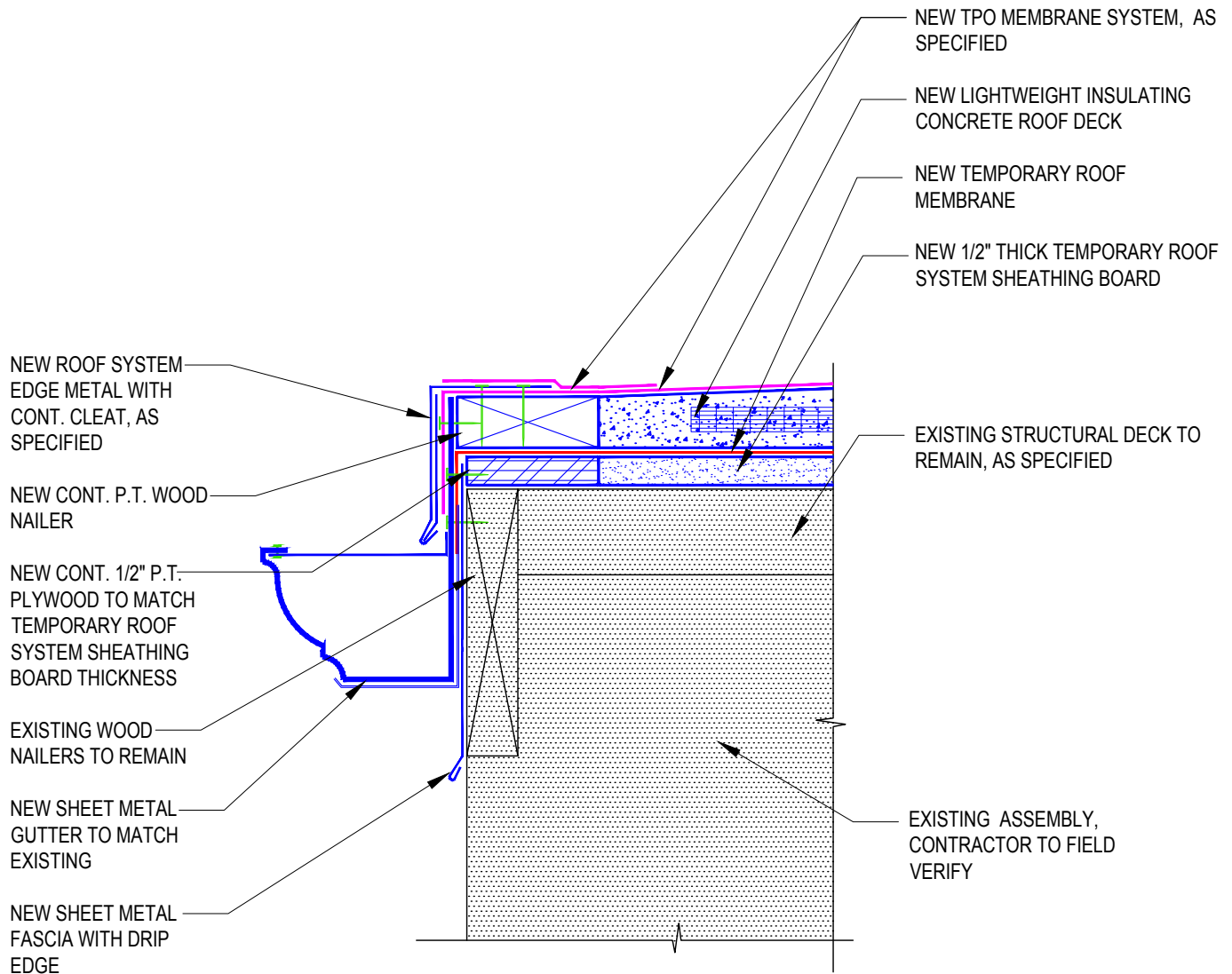
SCALE:
NOT TO SCALE

EDIFICE
CONSULTING, INC.
A Georgia Corporation


KEY PLANS	DIAGRAMS
-2-	-12-

GENERAL NOTES:

1. ANY SPACE SHOWN BETWEEN SOME MATERIALS IS FOR GRAPHIC CLARITY ONLY. ALL MATERIALS SHOULD BE TIGHTLY ABUTTED UNLESS OTHERWISE NOTED.
2. ROOF SLOPES SHOWN ARE A GRAPHIC APPROXIMATION OF FIELD CONDITIONS. CONTRACTOR TO FIELD VERIFY ACTUAL ROOF SLOPES PRIOR TO CONSTRUCTION.
3. EXISTING CONDITIONS SHOWN FOR GENERAL REFERENCE ONLY, CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS

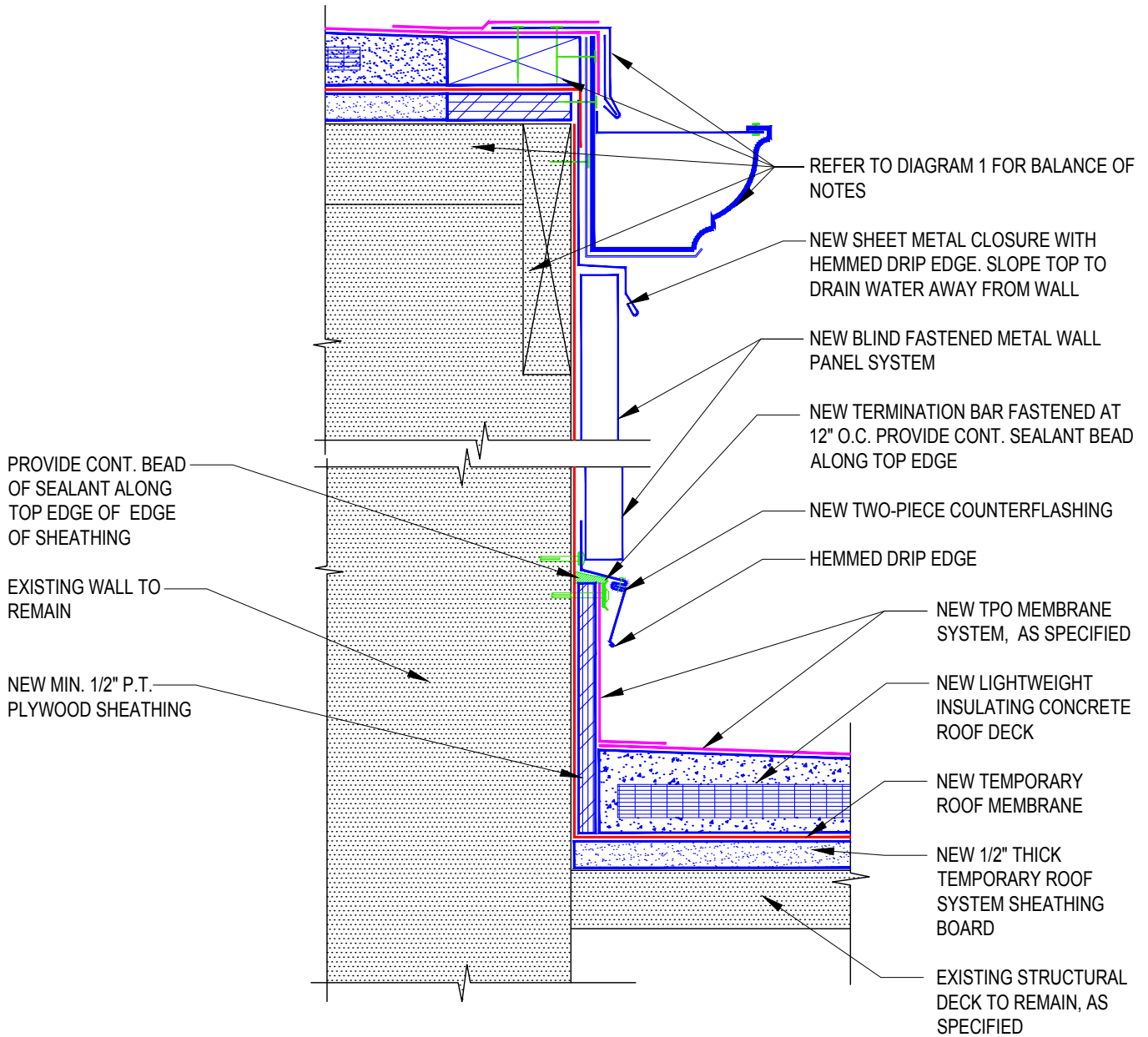


NORTH PRECINCT ROOF PROJECT COLUMBUS COLUMBUS, GEORGIA	PROJECT #: 17CCGJ03RR145
	DATE: 23 OCT 2017
DIAGRAM 1 ROOF EDGE AT UPPER ROOF	SCALE: NOT TO SCALE


	
KEY PLANS	DIAGRAMS
-2-	-12-

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NORTH PRECINCT ROOF PROJECT COLUMBUS COLUMBUS, GEORGIA	PROJECT #: 17CCGJ03RR145
	DATE: 23 OCT 2017
	SCALE: NOT TO SCALE
DIAGRAM 2 TRANSITION FROM UPPER ROOF TO LOWER ROOF #1 & #2	

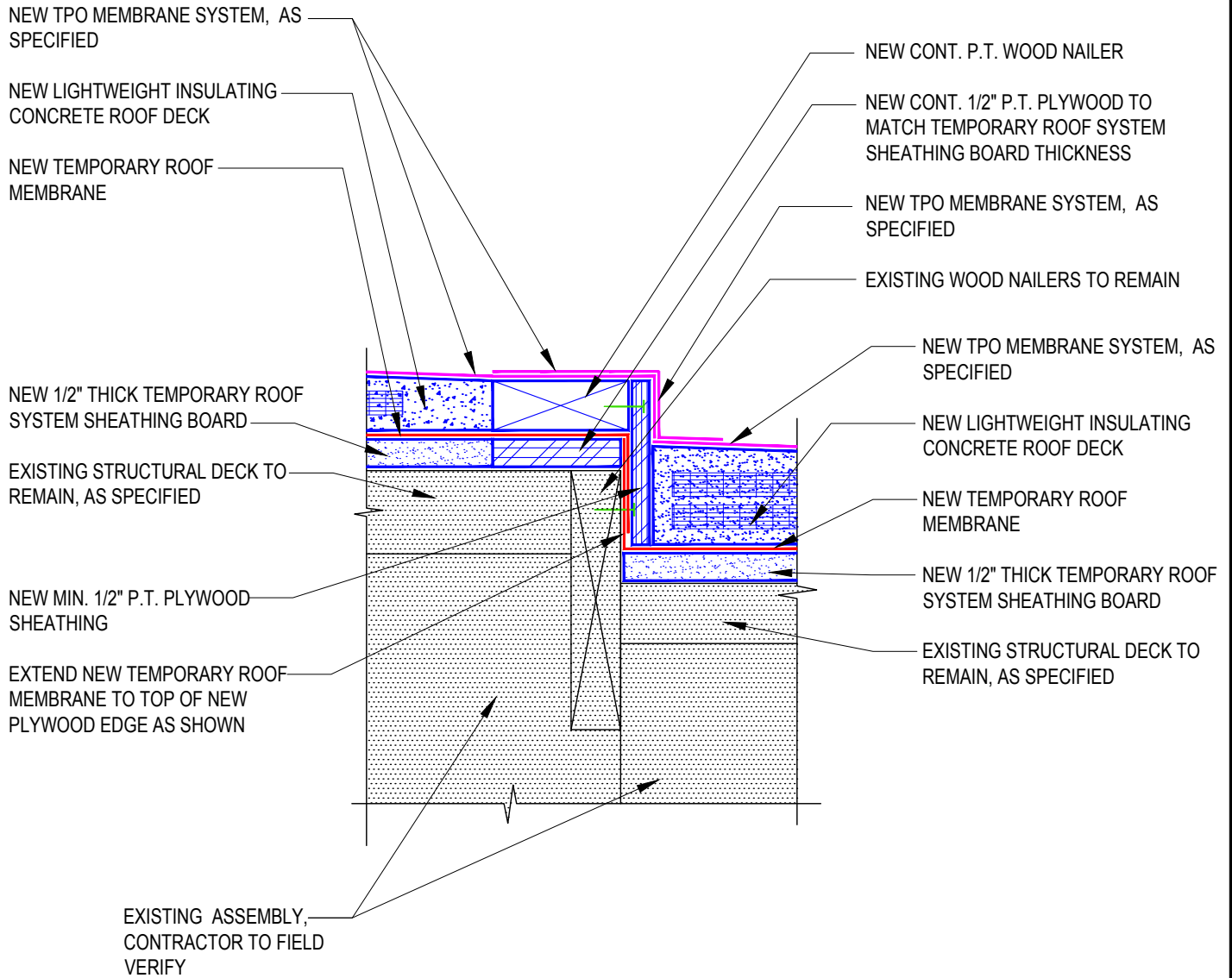


MEDIFICE
CONSULTING, INC.
A Georgia Corporation


KEY PLANS	DIAGRAMS
-2-	-12-

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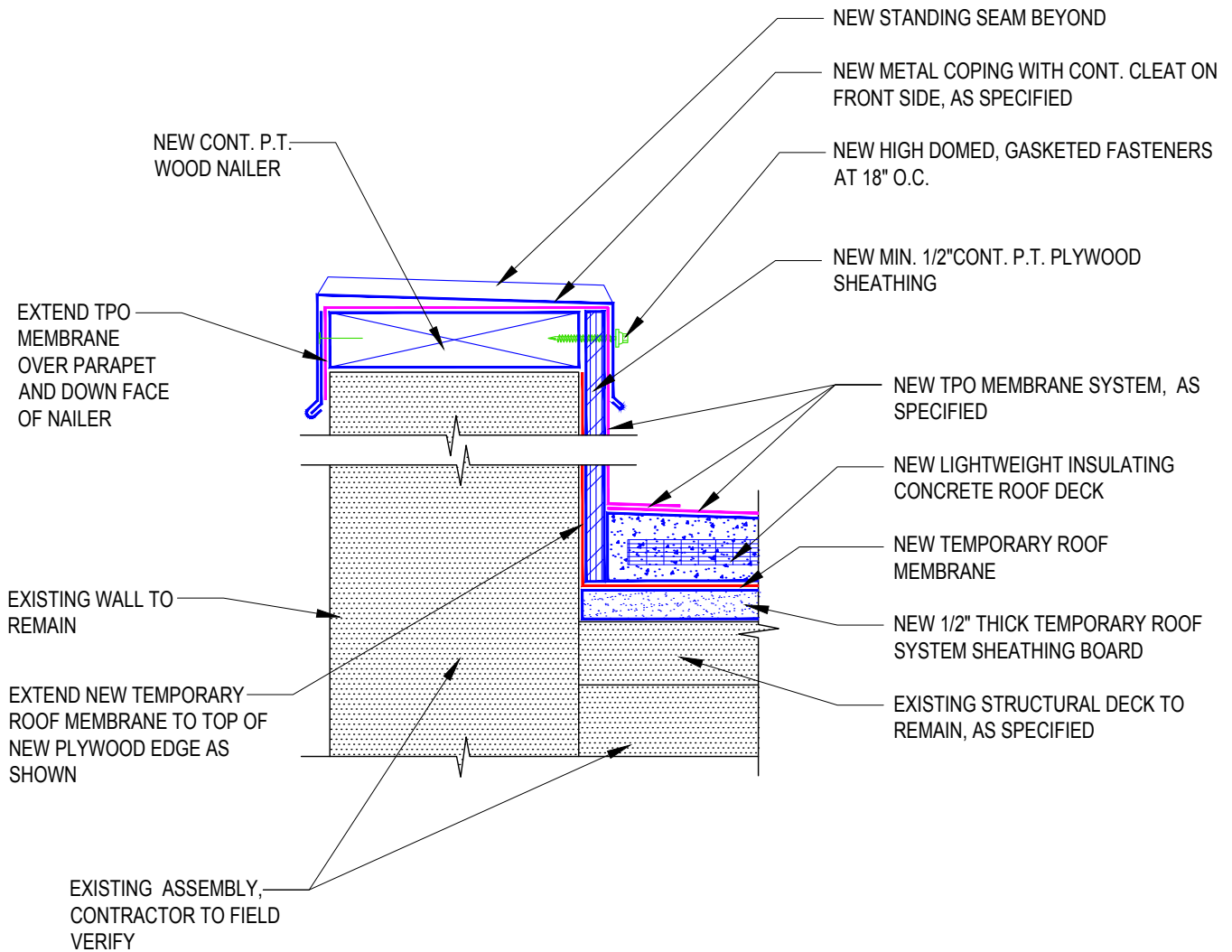
NORTH PRECINCT ROOF PROJECT COLUMBUS COLUMBUS, GEORGIA	PROJECT #: 17CCGJ03RR145
	DATE: 23 OCT 2017
DIAGRAM 3 TRANSITION FROM UPPER ROOF TO LOWER REAR ROOF	SCALE: NOT TO SCALE




KEY PLANS	DIAGRAMS
-2-	-12-

GENERAL NOTES:

1. ANY SPACE SHOWN BETWEEN SOME MATERIALS IS FOR GRAPHIC CLARITY ONLY. ALL MATERIALS SHOULD BE TIGHTLY ABUTTED UNLESS OTHERWISE NOTED.
2. ROOF SLOPES SHOWN ARE A GRAPHIC APPROXIMATION OF FIELD CONDITIONS. CONTRACTOR TO FIELD VERIFY ACTUAL ROOF SLOPES PRIOR TO CONSTRUCTION.
3. EXISTING CONDITIONS SHOWN FOR GENERAL REFERENCE ONLY, CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS



<p>NORTH PRECINCT ROOF PROJECT COLUMBUS COLUMBUS, GEORGIA</p> <p>DIAGRAM 4 PARAPET AT UPPER ROOF</p>	PROJECT #: 17CCGJ03RR145
	DATE: 23 OCT 2017
	SCALE: NOT TO SCALE

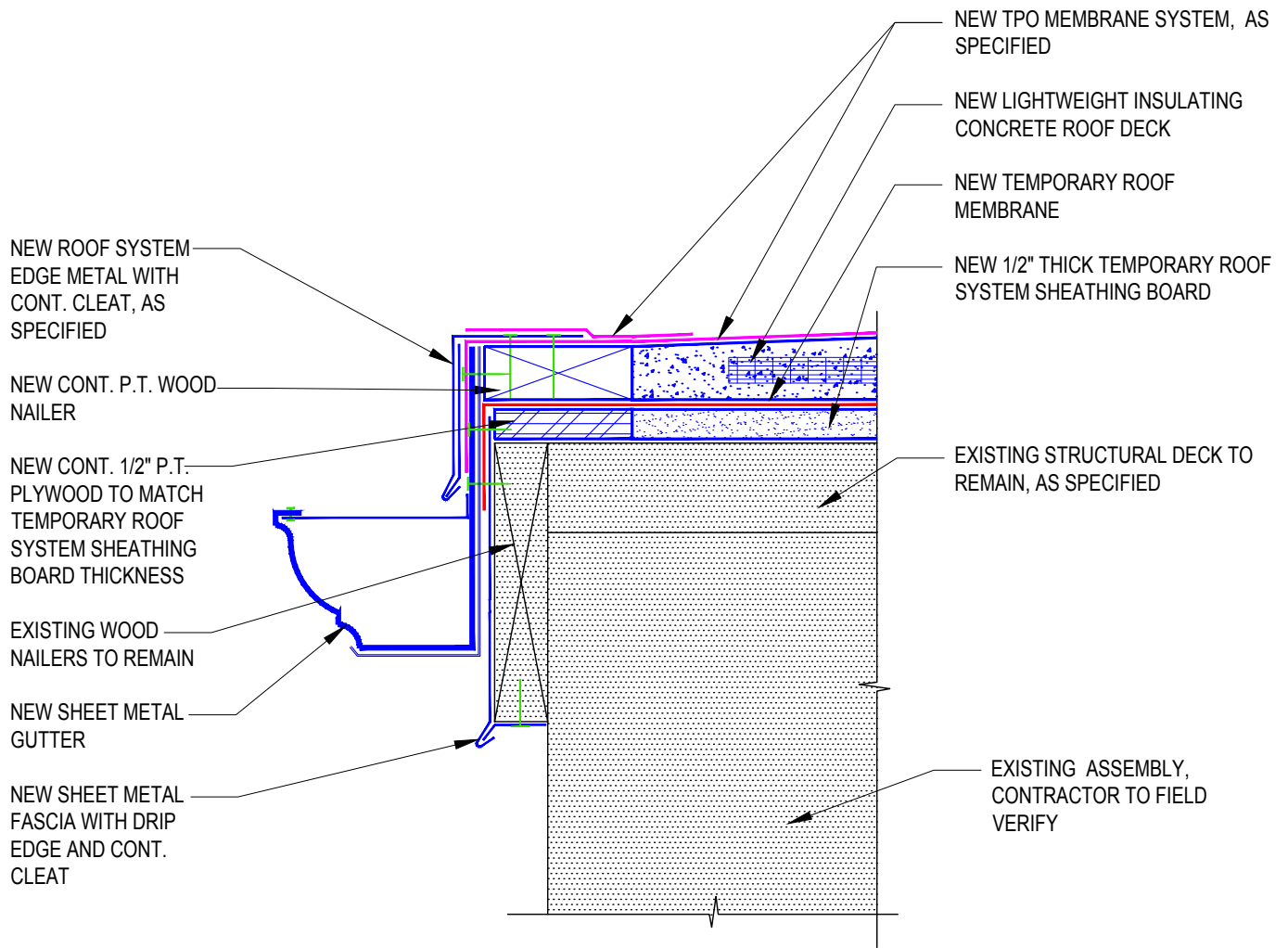


**EDIFICE
CONSULTING, INC.**
A Georgia Corporation


KEY PLANS	DIAGRAMS
-2-	-12-

GENERAL NOTES:

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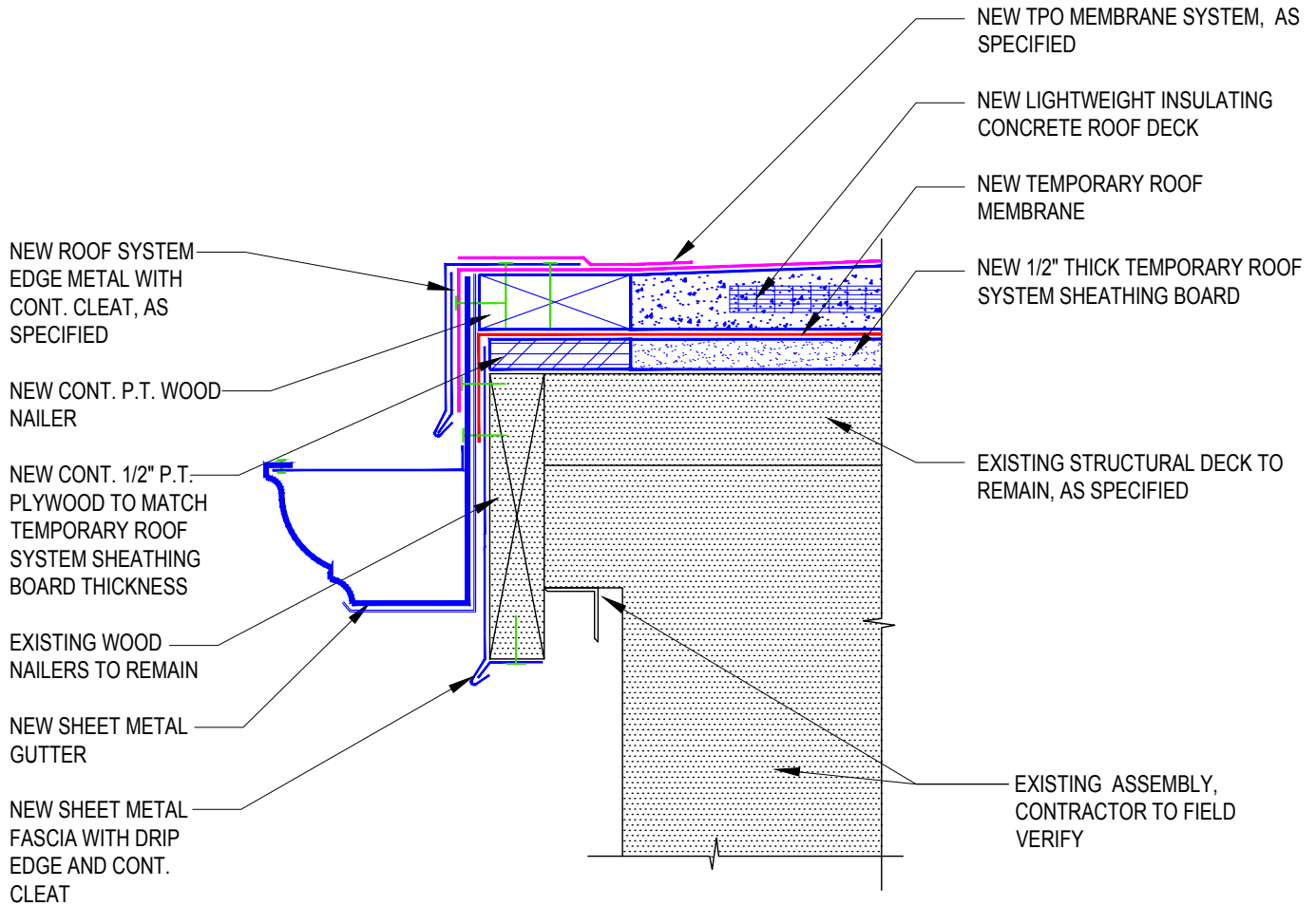
NORTH PRECINCT ROOF PROJECT COLUMBUS COLUMBUS, GEORGIA	PROJECT #: 17CCGJ03RR145
	DATE: 23 OCT 2017
DIAGRAM 5 ROOF EDGE AT LOWER ROOF #2	SCALE: NOT TO SCALE




KEY PLANS	DIAGRAMS
-2-	-12-

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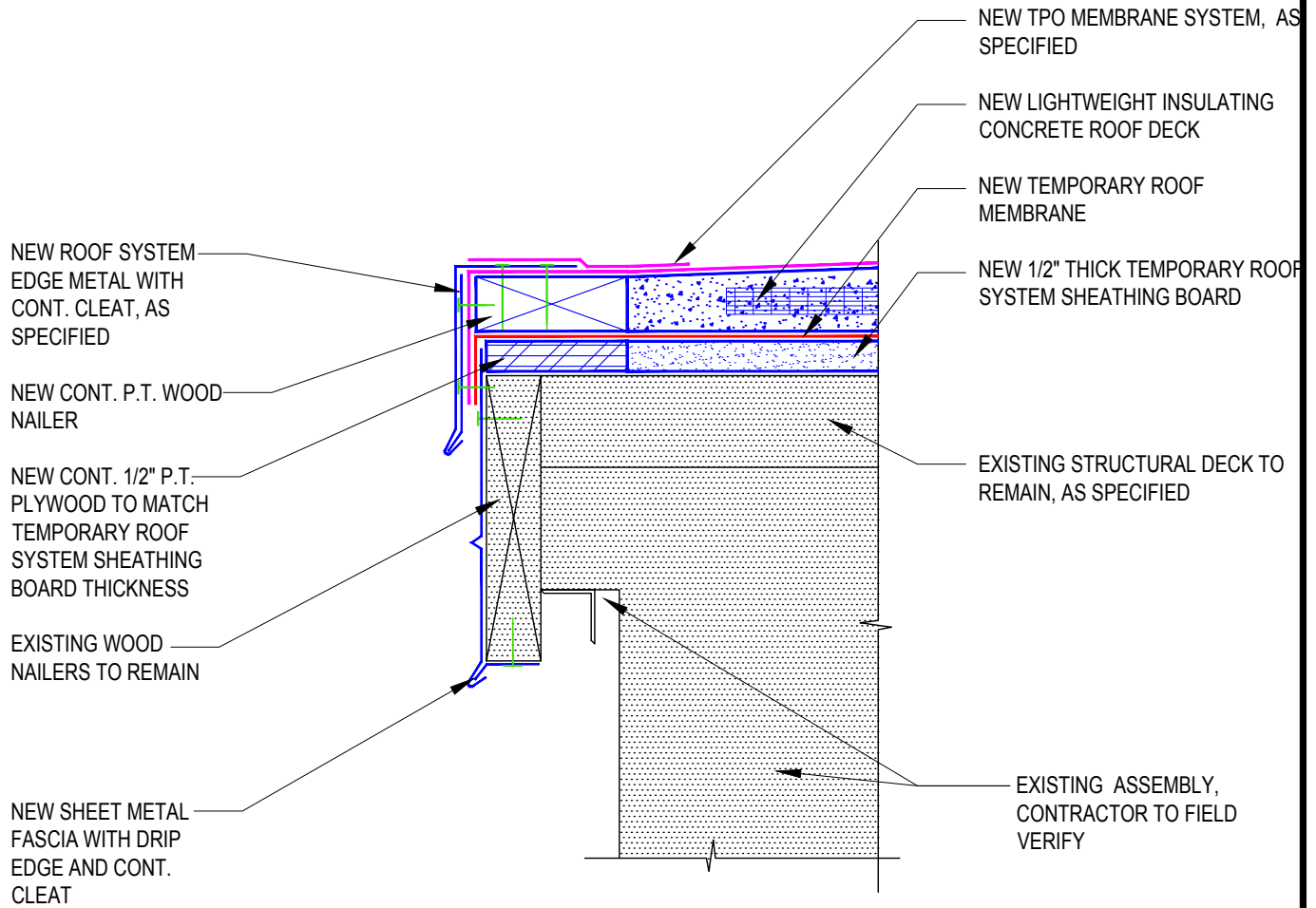


NORTH PRECINCT ROOF PROJECT COLUMBUS COLUMBUS, GEORGIA	PROJECT #: 17CCGJ03RR145
	DATE: 23 OCT 2017
DIAGRAM 6 ROOF EDGE AT LOWER ROOF #1	SCALE: NOT TO SCALE

	
KEY PLANS	DIAGRAMS
-2-	-12-


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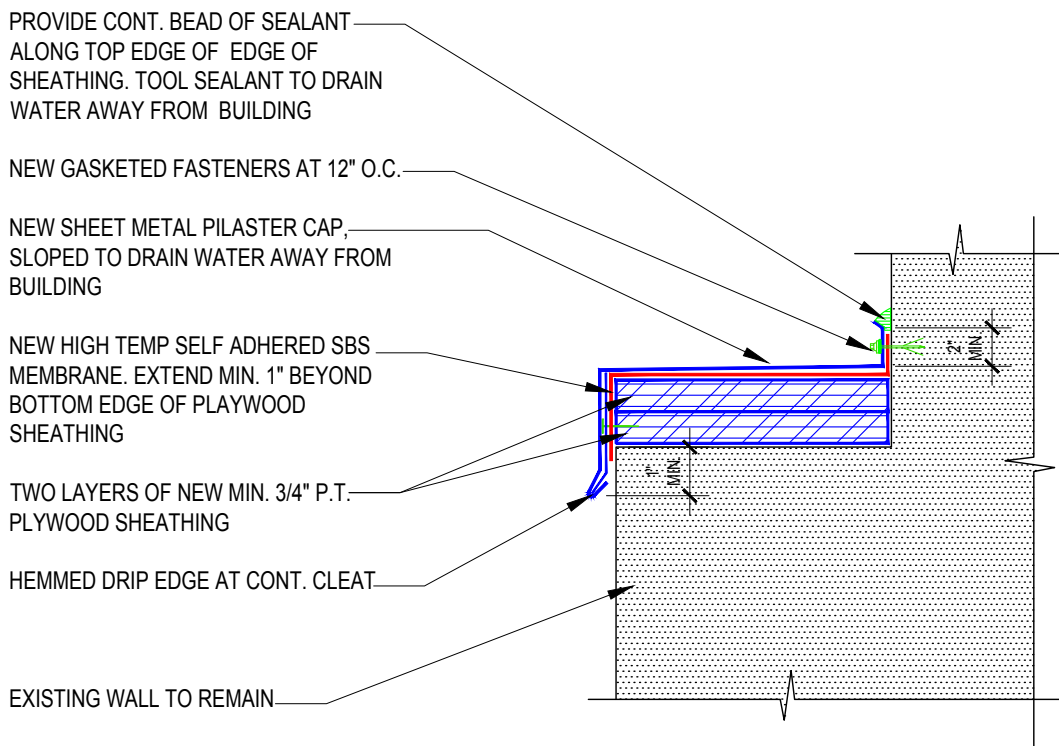
**EXISTING CANOPY
NOT SHOWN**

NORTH PRECINCT ROOF PROJECT COLUMBUS COLUMBUS, GEORGIA	PROJECT #: 17CCGJ03RR145
	DATE: 23 OCT 2017
DIAGRAM 7 ROOF EDGE AT LOWER ROOF #1	SCALE: NOT TO SCALE


	
KEY PLANS	DIAGRAMS
-2-	-12-

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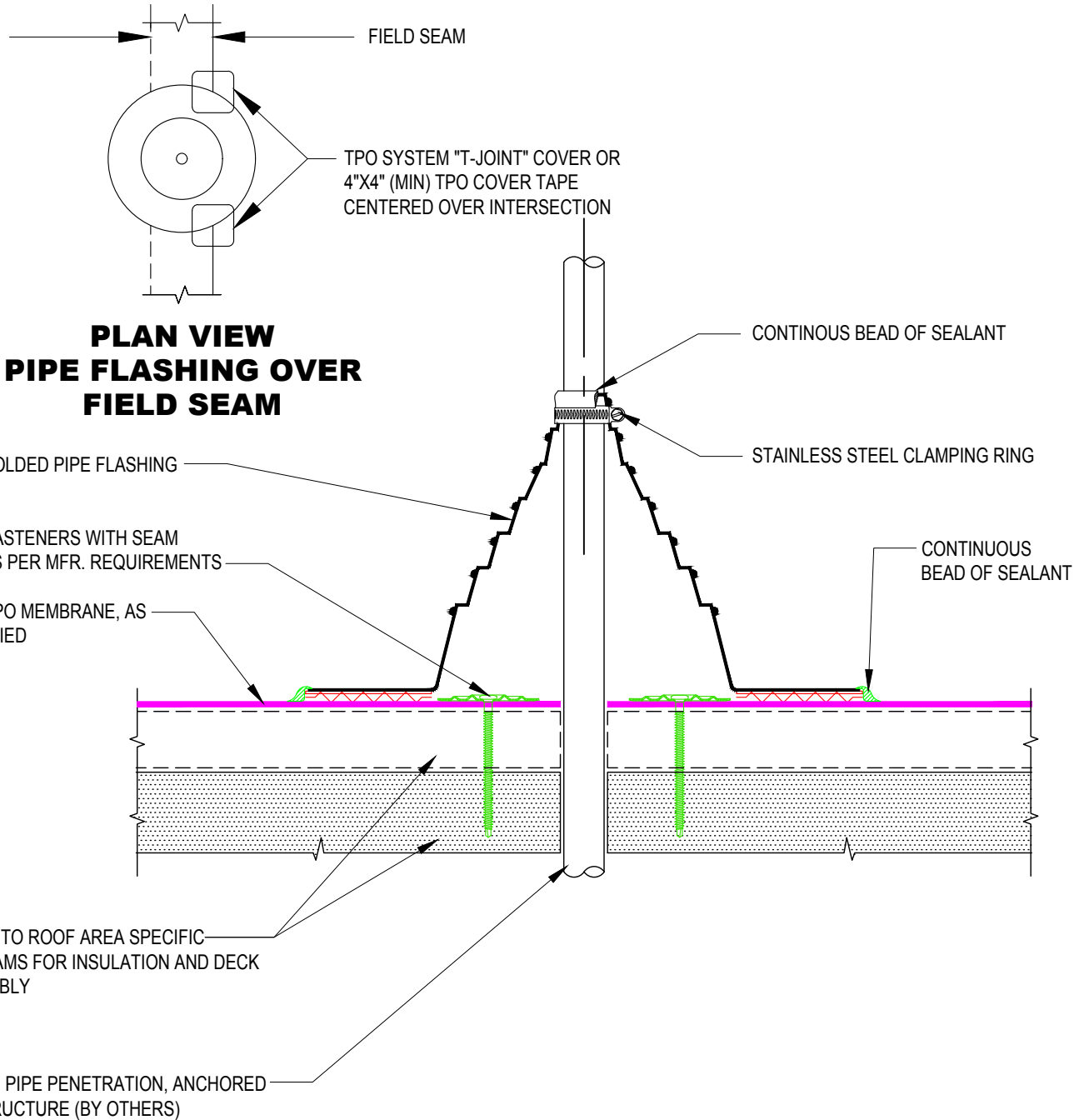


NORTH PRECINCT ROOF PROJECT COLUMBUS COLUMBUS, GEORGIA	PROJECT #: 17CCGJ03RR145
	DATE: 23 OCT 2017
DIAGRAM 8 PILASTER CAP AT FRONT ENTRANCE	SCALE: NOT TO SCALE

	
KEY PLANS	DIAGRAMS
-2-	-12-

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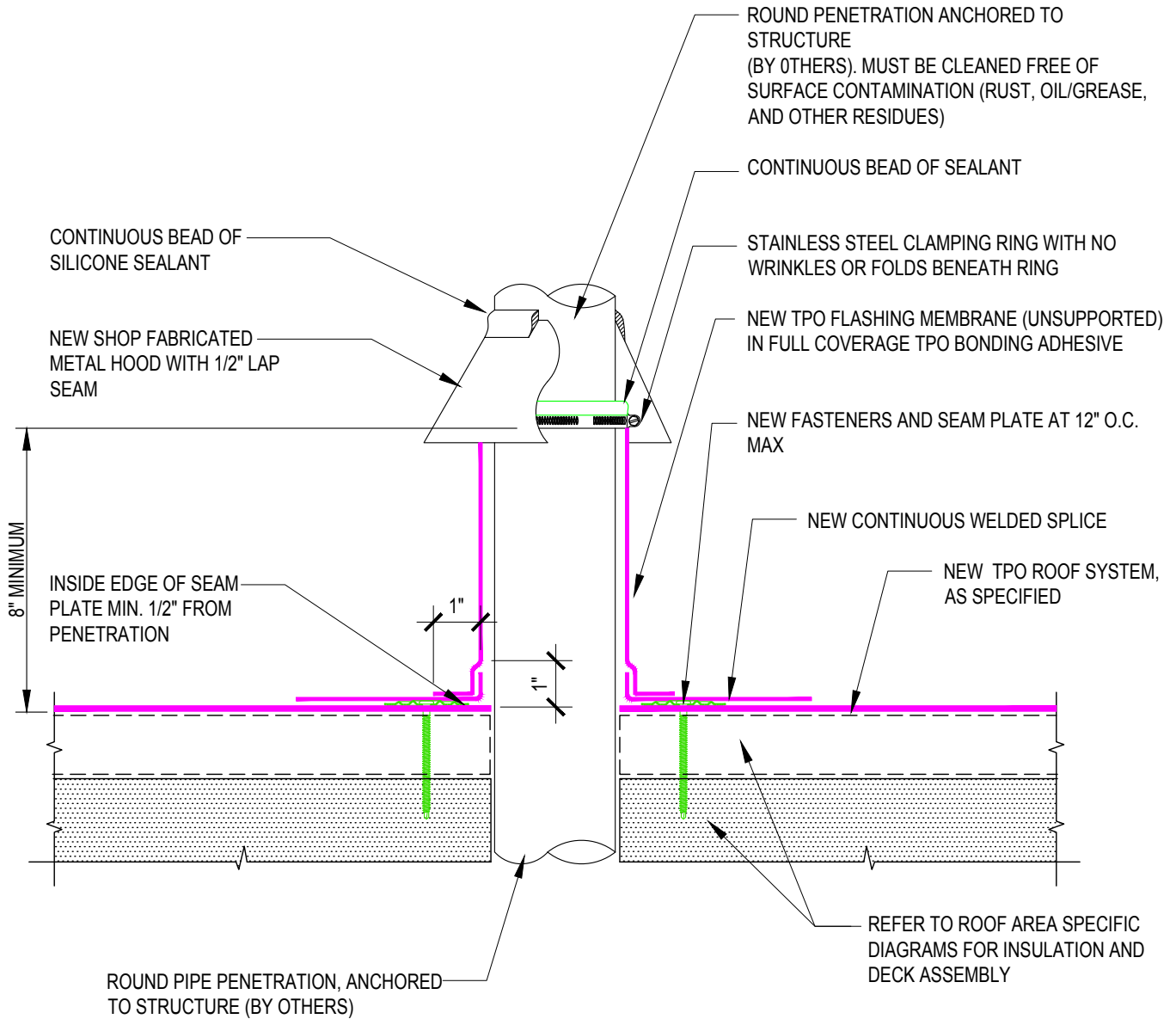


NORTH PRECINCT ROOF PROJECT COLUMBUS COLUMBUS, GEORGIA	PROJECT #: 17CCGJ03RR145
	DATE: 23 OCT 2017
DIAGRAM A PRE-FABRICATED PIPE FLASHING	SCALE: NOT TO SCALE


EDIFICE CONSULTING, INC. <small>A Georgia Corporation</small>	
KEY PLANS	DIAGRAMS
-2-	-12-

GENERAL NOTES:

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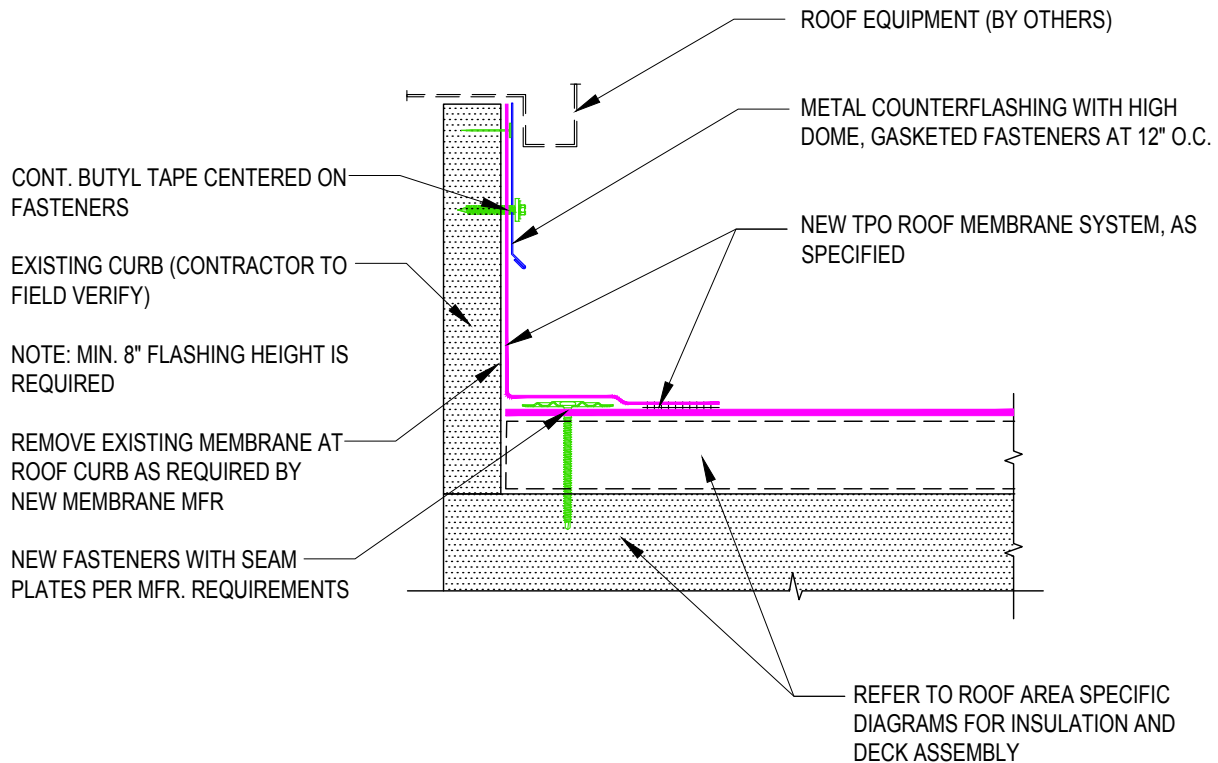
NORTH PRECINCT ROOF PROJECT COLUMBUS COLUMBUS, GEORGIA	PROJECT #: 17CCGJ03RR145
	DATE: 23 OCT 2017
DIAGRAM B FIELD FABRICATED PIPE FLASHING	
SCALE: NOT TO SCALE	




KEY PLANS	DIAGRAMS
-2-	-12-

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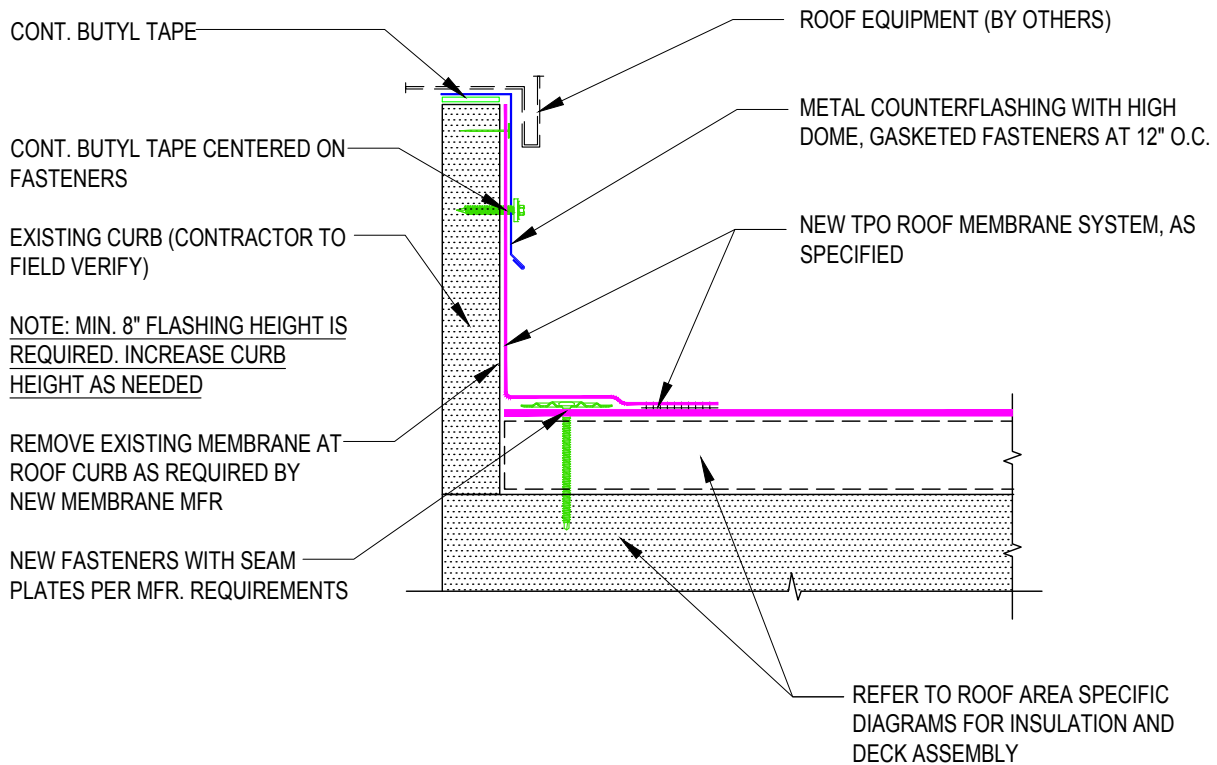


NORTH PRECINCT ROOF PROJECT COLUMBUS COLUMBUS, GEORGIA	PROJECT #: 17CCGJ03RR145
	DATE: 23 OCT 2017
DIAGRAM C CURB FLASHING AT NON-REMOVABLE COMPONENT	SCALE: NOT TO SCALE


 A Georgia Corporation	
KEY PLANS	DIAGRAMS
-2-	-12-

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NORTH PRECINCT ROOF PROJECT COLUMBUS COLUMBUS, GEORGIA	PROJECT #: 17CCGJ03RR145
	DATE: 23 OCT 2017
DIAGRAM D CURB FLASHING AT REMOVABLE COMPONENT	SCALE: NOT TO SCALE

 TEDIFICE CONSULTING, INC. <small>A Georgia Corporation</small>	
KEY PLANS	DIAGRAMS
-2-	-12-